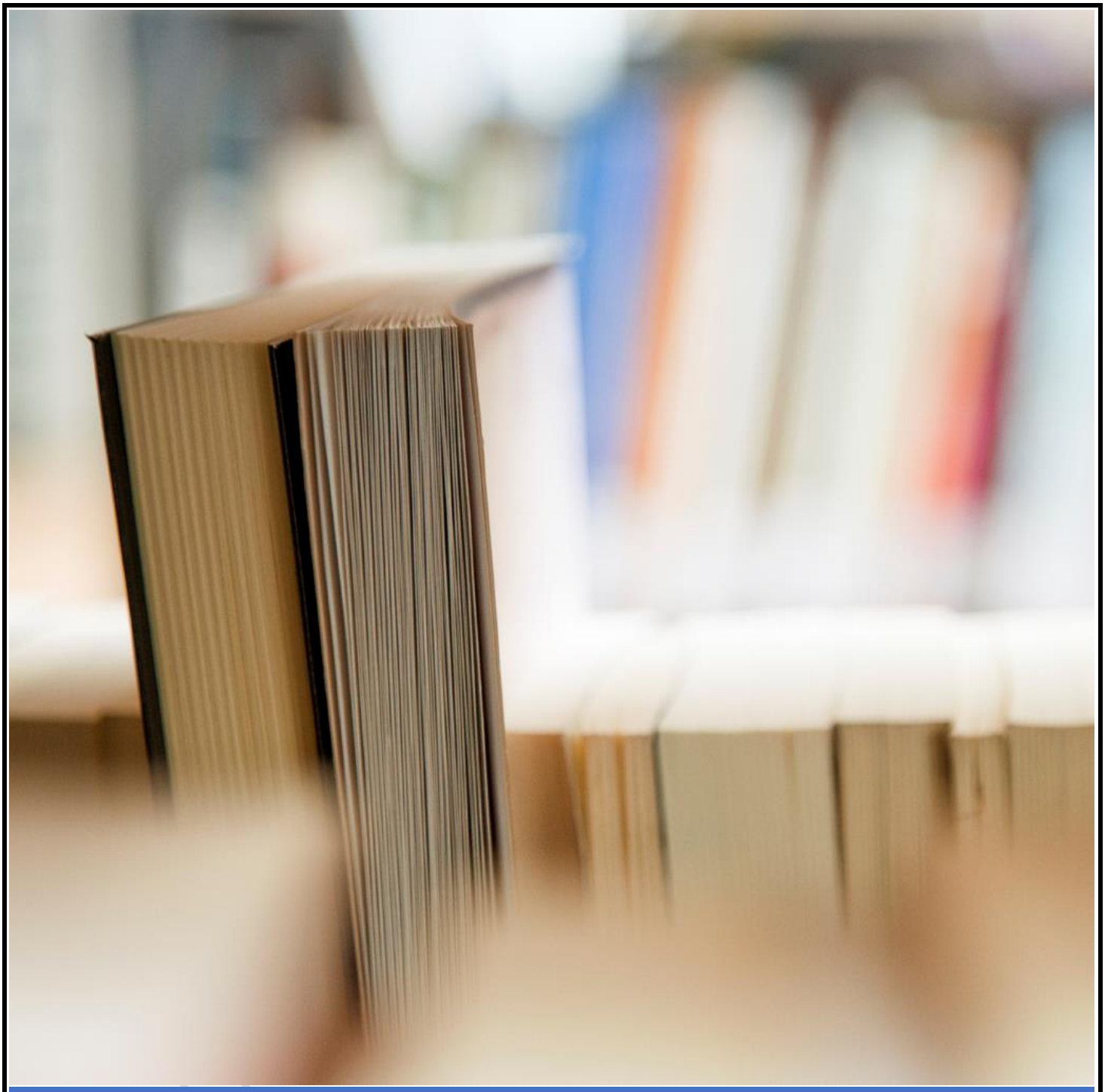

JASU-Journal of Medo Research Activities

Jalal-Abad State University
named after B.Osmonov

Foreword

Keneshbek Usenow Jhumabekovich

Rector

Jalal-Abad State University

Named after B.Osmonov

It is with great pleasure and pride that I introduce this JASU research journal. The research presented here embodies our institution's commitment to excellence, innovation, and the pursuit of knowledge. I extend my sincerest appreciation to the authors, reviewers, and editorial team whose dedication and expertise have made this publication possible. May this journal serve as a beacon of inspiration and a testament to the impactful research being conducted at our institution."

"Research in medicine is not merely an academic pursuit; it is the compass guiding us toward new discoveries, better therapies, and ultimately, the alleviation of human suffering." - Dr. Paul Farmer.

Jalal-Abad State University Named After B.Osmonov

Faculty of Medicine

PUBLICATIONS OF YEAR 2023 - 2024

BY JALAL-ABAD STATE UNIVERSITY

Volume 9, Issue 3, March – 2024
ISSN No:-2456-2165
International Journal of Innovative Science and Research Technology
https://doi.org/10.38124/ijisrt/IJISRT24MAR1858

Anxiety, Stress and Depression in Overseas Medical Students and its Associated Factors: A Descriptive Cross-Sectional Study at Jalalabad State University, Jalalabad, Kyrgyzstan

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Abstract:-

➢ ***Background:***

Stress can be described as a mental state of tension or be concerned brought on by an unpleasant circumstance. Stress is an ordinary human reaction that encourages us to face challenges and dangers in life. According to the WHO, four out of every five college students are contemplating or have attempted suicide. Medical education is considered as demanding because students undergo several psychological transformations. It is estimated that half of all significant adult psychiatricillnesses, including depression, begin before the age of fourteen. 75 % of college students do not seek help for mental health issues. (1)

➢ ***Materials and Methods:***

A cross-sectional study was conducted in three months period of time from the month September till November 2023, among 150 students of various years at Jalalabad State Medical University using online Google forms. The study was conducted using DASS 21-itemquestionnaire to assess the level of stress, anxiety, and depression among students. The data were analyzed usingthe Statistical Package for Social Sciences (SPSS) version
22.0 software. Ethical approval was taken from the University.

➢ ***Result:***

In the study 9% of people reported having a moderate to extremely severe degree of stress, anxiety 27.3% and depression was found among 4% respectivelyin students. Stress and study of year were substantially correlated. (p = 0.007). Anxiety and extracurricular activities were found to be significiant (p = 0.004). Extracurricular activities and depression were linked. (p
= 0.029) and the type of family they belong to (p = 0.015). While stress and depression were shown to be uncommon among medical students, anxiety was found to be more common, which might be related to a variety of factors such as new environments, difficult subjects, complex terminology, etc.

➢ ***Conclusion:***

It is important to highlight the points like financial issues, home sick, behaviour of teachers and friends etc would be the stressful elements that might lead to increase the psychological problem among medical student. Following research endeavors in this domain ought to endeavor to address these constraints. In any event, we believe that our results emphasize the necessity of putting policies in place to protect and, where appropriate, improve the mental health and general wellbeing of medical students.

Keywords:- *Anxiety, Depression, Prevalence, Stress, Medical Student*.

I. INTRODUCTION

Stress is a condition of anxiety or tension in the mind brought on by a difficult circumstance. Stress is an inevitablehuman response that drives us to face obstacles and threats inlife. Everyone goes through periods of stress. But how we react to stress has an important impact on our general well- being. Stress affect the body as well as the mind. A small amount of stress is healthy and useful for our everyday activities. Excessive stress may be detrimental our mental andphysical well being. Developing coping mechanisms for stress can reduce emotions of excess and improve both our physical and mental well-being. Mental health is one of the biggest factors that determines life satisfaction and quality. Inwealthy and developing countries alike, undergraduate university students usually suffer from poor mental health, an extensive psychological disease.

According to the American Psychological Association, anxiety and depression are emotional responses that produce symptoms such as fatigue, irritation, muscular strain, and difficulty getting to sleep. Anxiety persists even in the absence of a stressors, whereas stress is typically triggered by an external stimulus and may remain for brief periods.

Prolonged stress is widely recognized to contribute to the development of many illnesses and impose a significant financial burden on the community.(2) Stress, anxiety, and depressive disorders can create mental distress which might

lead to adverse effect on academic performance in college students. (3)

Workload and exams, minimal time for recreation, competitiveness, worries about living up to parental expectations, forming new connections, relocating, biological variables like age and gender, and financial hardship are all causes of stress during college. (4,5)

Psychological anguish is generally higher among our respondents than it is in the entire population. Perhaps this is due to medical students' extensive coursework and clinical fieldwork. Mental illnesses, substance abuse, anxiety, sadness, and suicidal thoughts are all examples of stress-related consequences.(6)

Due to the numerous psychological changes that students experience during medical school. Various study findings indicate that students' mental health deteriorates when they start medical school and stays poor throughout the course of study. (7)

According to estimates, depression and other adult psychiatric illnesses become apparent by the age of fourteen. Depression symptoms are reported by 44% of American college students. Of college students, 25.6% of men and 31.7% of women said they had experienced depression to the point that it was hard for them to function at least once in a year. Male suicides are four times higher than female death by suicide, yet for every male attempt, three female attempts are made. Each year, more than 3,900 youngsters take their own lives.(8)

II. SUBJECTS AND METHODOLOGY

It was a descriptive cross-sectional study which was done online through google forms from September to November 2023. Data were collected from all respondents who were asked to fill in the questionnaire, the first part had socio-demographic information and the other part was with Stress, Anxiety and Depression Scale 21-item (DASS-21).

The DASS-21 stress subscale was used to assess the level of stress. Normal (0–14), mild (15–18), moderate (19–25), severe (26–33), and extremely severe (34 and above) are the classifications that comprise the stress subscale scores. The DASS-21's anxiety subscale was also used to gauge the degree of anxiety. Subscale scores were classified as follows: normal (0–7), mild (8–9), moderate (10–14), severe (15–19), and extremely severe (20 and above); the DASS-21 depression subscale was used to determine the degree of depression. The subscale scores are divided into five categories: where mild has score (10–13), moderate with score (14–20), severe with score (21–27), and extremely severe with score (28 and above).

III. RESULT

A total of 150 respondent from different year of medical students from Jalalabad State University, medical faculty.

Table 1: Distribution of Respondents as per their year of study

Responses	Frequency	Percentage(%)
1st year	19	12.7
2nd year	31	20.7
3rd year	68	45.3
4th year	12	8.0
5th year	20	13.3
Total	150	100.0

Above table indicates that the majority of respondents 45%(68) out of 150 were from 3rd year followed by 20% from 2nd year and least from 4th year (8%).

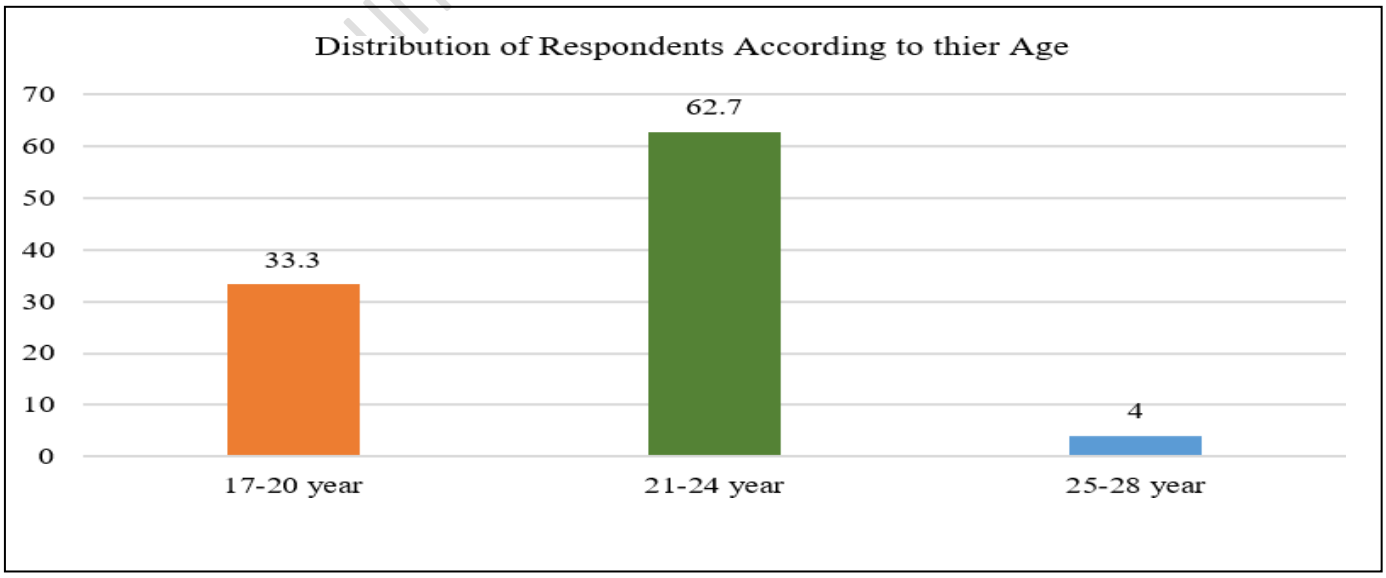

Fig 1: Distribution of Respondents According to their Age

Among 150 respondents , 33.3% students were in between age 17 – 20 years old , 62.7% students in between 21 – 24 years old and 4% students were in age between 25 – 28 years old. Majority of students have age between 21 – 24 and they are under the category of vicenarian in which person have a lot of pressure for stable career. (Figure 1)

Table 2: Distribution of Respondents as their Gender

Responses	Frequency	Percentage(%)
Male	105	70.0
Female	45	30.0
Total	150	100.0

Above table shows that maximum respondents that took part in our research study were male with 70% and remaining 30% were only female participants.

Table 3: Distribution of Respondents According to their Country they belong to

Responses	Frequency	Percentage(%)
Pakistani	70	46.7
Indian	74	49.3
Bangladeshi	5	3.3
Nepali	1	.7
Total	150	100.0

Out of 150 respondents majority 49.3%(n=74) were from Indians, 46.7%(n=70) from Pakistani and remaining 3.3%(n=5) and 0.7%(n=1) were from Bangladeshi and 1 Nepali respondent respectively.

Table 4: Distribution of Respondent as Remaining Socio-Demographic Information

Responses	Frequency (n=150)	Percentage (%)
Type of family		
Joint	107	71.3
Single parent	29	19.3
Guardians	14	9.3
Marital Status		
Single	147	98.0
Married	3	2.0

Above table shows that, 71.3% students are living in joint family, 19.3% are living with their parents and 9.3% are living with their guardians 98% students are unmarried and 2% are married that have burden and responsibilities of their personal life with studies that made the medical school life more tough for them.

Table 5: Distribution of Respondent according to their Responses Affect on their Daily Life

Characteristics	Frequency (N=150)	Percentage (%)
Spending Time on social media		
Too Much	59	39.3
Some time	66	44.0
Little Bit	25	16.7
Trouble in sleep		
Yes	48	32.0
No	76	50.7
May Be	26	17.3
Suffering from home sickness		
Yes	40	26.7
No	61	40.7
Sometime	49	32.7
Fear of license exam and future plans		
Yes	96	64.0
No	28	18.7
May be	26	17.3
Type of nature		
Introvert	105	70.0
Extrovert	45	30.0
Most stressful element during your medical school		
Financial issues	53	35.3
Relationships	24	16.0
Study burden	46	30.7
Home sickness	17	11.3
Lack of appetite	10	6.7

According to data, majority of 83.3% students spend time on social media that lead to waste of time result in burden of studies and stress. Our study revels that 48 students(32%) are suffering from insomnia. Every medical student worry about their career how to proceed by passing license exam, according to data, 64% students have fear of license exam, 17.3% feel sometimes fear of license exam and 18.7% students don't experience any fear. Among our respondents 70% students are introvert that might be one reason of depression and anxiety and 30% students are extrovert.

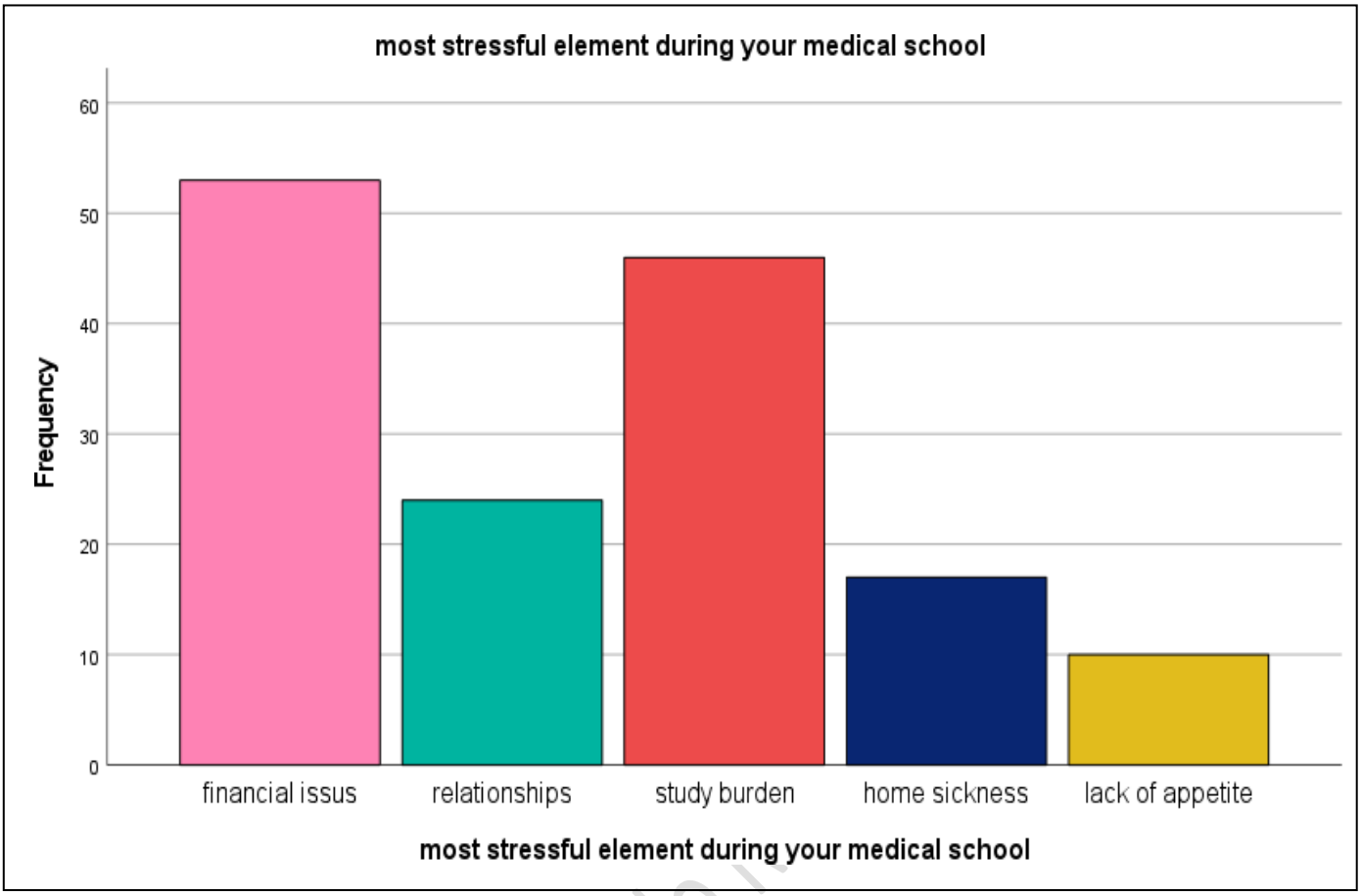

Fig 2: Distribution of Respondents According to their Feeling Regarding Most Stressful Condition in Medical School

Above figure shows that the most stressful element in medical school, is financial issues with 35.3% followed by study burden with 30.7% and home sickness (11.3%) are also major elements.

Table 6: Distribution of Respondents with their Symptoms of Anxiety, Depression, and Stress Determined by the Degree of Severity

Severity Level	Frequency (n=150) Percentage(%)		
	Stress	Anxiety	Depression
Normal	104(69.3)	76(50.7)	108(72)
Mild	31(20.7)	33(22)	36(24)
Moderate	12(8)	30(20)	6(4)
Severe	3(2)	11(7.3)	0(0)
Extremely Severe	0(0)	0(0)	0(0)

Above table shows that among medical students, the incidence of moderate to extremely severe stress was found to be 9% anxiety to be 27.3%, and depression to be 4%. whereas it was shown that medical students had a low level of stress and depression.

Table 7: Distribution of Respondents According to their Extra Curriculum Activities

Extra Curriculum Activities	Frequency	Percentage(%)
Active	132	88
Not Active	18	12
Total	150	100

Out of 150 respondents majority of respondents 88% were involved in some parts of extra curriculum activities where as remaining 12% said they never took any part in any extra curriculum activity.

Table 8: Correlation Between Socio-Demographic and Anxiety, Depression and Stress

Factor Variables	Stressed Score		P-value (95% CI)
Year of study	Yes (n=15)	Percentage	.007*
1st year	6	40	
2nd year	8	(53.4)	
3rd year	1	(6.7)	
	Anxiety score		
Extra curricular activities	Yes (N=41)		0.004*
Active	36	87.80	
Not active	5	12.1	
	Depression Score		
Family Type	Yes (N=6)		0.015*
Joint	4	66.7	
Single parents	2	33.4	
Extra curricular activities	Yes (N=6)		0.029*
Active	5	83.4	
Not active	1	16.7	

* = Significant Statistically

Stress was significantly associated with year of study (p = 0.007). Anxiety and extracurricular involvement were associated. (p = 0.004). Depression was associated with extra curricular activity (p =0.029) and the type of family they belong to (p = 0.015). The prevalence of anxiety was high which could be due to new environment, difficult subject to understand, tough terminology etc similarly it was found that there was not any proof of stress or depression among medical students.

IV. DISCUSSION

A total of 150 respondent from different year of medical students from Jalalabad State University were selected from the sampling size where as the age was 21-24 years old with mean age of 22±1 years. Majority 70% of the respondents are male predominance was found over females with (30%). Out of 150 respondents 45%(68) were from 3rd year, 20.7% were from 2nd year and 13.3% were from 5th year respectively.One of the most important factors influencing the quality and pleasure of life is mental health. Different socioeconomic backgrounds may create a range of risk factors for mental health once students enter universities.

In our study, financial issues was the most stressful elements during medical life experienced by respondents similarly other factors causing stress and anxiety were study burden problems in relationships, home sickness and fear of licence exams & Future plans. Similar findings were found in study done by Ahmad A Mirza, which states that Anxiety and depression were primarily associated with younger ages, poorer socioeconomic status, living alone in a rented room, financial difficulties, and long working and study hours. (9)

Stress (30.7%), anxiety (47.3%), and depression (28%) were identified to be prevalent symptoms among medical students in this study. Similar findings was found in Zaragoza, Spain, a study of medical professionals revealed that stress symptoms were more common in this 34.5%, anxiety in 23.6%, and depression in 18.4% of respondents (10) Where as In contrast, the current study's prevalence of anxiety was higher than that of research done in ndia (9.8%) (11) and Nepal (5%) (12).

According to the current survey's results, a high number of medical students experienced both stress and anxiety. A 2016 analysis study published in the Journal of the American Medical Association examined many studies involving over 129,000 medical students in 47 countries and found that almost thirty percent of them experienced depression. This is much greater than the 9 percent of 18 to 25-year-olds in the overall population who experience depression nationally, as reported by the National Institute of Mental Health.(13)

We found that 69.3% of the participants were normal, while the remaining participants had stress levels of mild (20.7%), moderate (8%), and severe (2%), respectively (p-value is 0.007 using the DASS test). By comparison, a study conducted in Albaha, Saudi Arabia, discovered that 14.5% of the participants were normal, while the remaining participants had stress levels of mild (24%), moderate (30%),and severe (31.5%), respectively (p-value = 0.00001). The prevalence of anxiety was high which could be due to new environment, difficult subject to understand, tough terminology etc.(14)

In our study, 50.3% of the participants were normal, while the remaining participants (49.7%) had anxiety levels of mild (22.7%), moderate (20%), and severe (7.3%) respectively. A cross-sectional study which was conducted in Pakistan indicated that medical students had a significant prevalence of anxiety (47.7%). Of the students, 27.6% had mild anxiety, 13.6% had moderate anxiety, and 6.5% had severe anxiety symptoms.(9) These findings were consistent with our findings. Of the participants in our study, 72% were normal, while the remaining participants (28%) had either mild (24%) or moderate (4%), but no respondent had severe depression. According to Ahmad A Mirza globally, medical students are thought to experience depression or its symptoms at a rate of 27.2%. Study conducted at UAE states that 28.6%

medical students showed depression and it was common among preclinical students. These results corroborated our findings. (15)

V. CORRELATION BETWEEN SOCIO-DEMOGRAPHIC FACTORS AND ANXIETY, DEPRESSION AND STRESS LEVEL

Respondents who were in 1st year and second year of medical study had statistically significant association with the stress disorder. This might be due to in an unfamiliar environment, meeting friends beyond the family, or encountering an alternate teaching-learning method. academic pressure, competitive environment. Whereas effective support system, stress management techniques and early intervention programs can help mitigate these stressors and promote student well being. A study done in Germany at Heidelberg University and the University of Düsseldorf found that many participants moving from school to university was associated with significant personal challenges, particularly difficulties related to living alone for the first time.(16) Study conducted at College of Medicine, King Saud University also revealed highest prevalent rate of stress among first-year students (78.7%), followed by the second-year (70.8%) which has the similar result found in our that study too where First and second year students are linked to higher levels of stress (>90%) compared to other years. (17,18)

In our study, we found that there is association between anxiety and depression with extra-curricular activity (p = 0.004 & 0.029 respectively) which was contradictory to study done by Mukesh H V where extracurricular activities can offer valuable experiences and skills development but they also pose challenges that may contribute to increased anxiety & depression among medical students. High expectation from the society, competition, social pressure, peer pressure etc might be the factors to increase the possibility of occuring anxiety & depression among medical students. Finding a balance and prioritizing self-care are essential for managing these stressors effectively. (19)

Similarly depression was found to be positively associated with type of family . It shows that respondents living in joint family has increased the risk of depression similar to study done by Kate Parker which states that adolescents who were highly engagged in joint family had greater life satisfaction and fewer psychological issues. It might be the respondents had to leave their family back home and here they have to live along they might be missing strong family support within joint families. (20)

Medical students faces high levels of pressure and demands so they should find a balance between academic demands and personal well being. Taking care of oneself not only benefits the individual but also contributes to a healthier and more resilient medical community. The negative effects of long duration of course of study and challenging medical education on the psychological status of students have been shown in several studies.

VI. CONCLUSION

In our study the findings suggest that the stress level in the initial three years of the course was higher than the last two years of the course. Physical problems might have led to extra stress but students that are active in extra-curricular activities are on high risk of anxiety. The surrounding environment and lack of family support have more risk to cause depression among medical students. academic performance, or between regular participation in the course and grades. The results of the first-year medical students' high levels of stress also imply that, upon admission to medical school, extra attention should be given to finding any obvious psychological stress or psychiatric issues.

SUGGESTIONS AND RECOMMENDATIONS

In Google form , there was one section where students will specify how they do different activities to cope up with their stress and our 150 respondents give their individual suggestions that it is summarize here in a paragraph; Most students used to listen music, do some exercises like yoga, plan trip outside the city, do some religious activities, gaming, get together with their friends, take deep sleep, talk to their parents or their loved ones, listening motivational speeches, reciting their holy books, playing sports, watching movies, sharing problems with friends and family, eating good and delicious food, and doing their favorite hobbies like dancing, singing etc. (some students use meditation, drugs, smoking, alcohol intake for dealing with their stress. Whenever there is Art of medicine is loved, there is also a love of humanity: So, as a medical students, we should take care of psychological and physical health of students to prepare a productive doctor for society.

The main conclusion of elevated psychological stress among Jalalabad State University of Medical Faculty students emphasizes the importance of integrating counseling and preventative mental health treatments within the typical clinical services provided to medical students.

REFERENCES

[1]. Aldrich RS. Suicide Prevention: College Students' Intention to Intervene. Archives of Suicide Research. 2016 Jul 20;21(3):403–12.

[2]. Dhabhar FS. The short-term stress response – Mother nature's mechanism for enhancing protection and performance under conditions of threat, challenge, and opportunity. Frontiers in Neuroendocrinology [Internet]. 2018 Apr;49(PMC5964013):175–92.

[3]. Ramón-Arbués E, Gea-Caballero V, Granada-López JM, Juárez-Vela R, Pellicer-García B, Antón-Solanas I. The Prevalence of Depression, Anxiety and Stress and Their Associated Factors in College Students. International Journal of Environmental Research and Public Health [Internet]. 2020 Sep 24;17(19):7001.

[4]. Kumaraswamy N. Academic stress, anxiety and depression among college students—A brief review. Int. Rev. Soc. Sci. Hum. 2013;5:135–143.

[5]. Bangasser D.A., Curtis A., Reyes B.A.S., Bethea T.T., Parastatidis I., Ischiropoulos H., van Bockstaele E.J., Valentino R.J. Sex differences in corticotropin-releasing factor receptor signaling and trafficking: Potential role in female vulnerability to stress-related psychopathology. Mol. Psychiatry. 2010;15:877. doi: 10.1038/mp.2010.89. 896–904.

[6]. Nandi M, Hazra A, Sarkar S, Mondal R, Ghosal MK. Stress, and its risk factors in medical students: an observational study from a medical college in India. Indian J Med Sci. 2012;66(1–2):1–12. doi:10.4103/0019-5359.110850

[7]. Rosal MC, Ockene IS, Ockene JK, Barrett SV, Ma Y, Hebert JR. A longitudinal study of students' depression at one medical college. Acad Med. 1997;72:542–6.

[8]. Pedrelli P, Nyer M, Yeung A, Zulauf C, Wilens T. College Students: Mental Health Problems and Treatment Considerations. Academic Psychiatry [Internet]. 2019 Aug 21;39(5):503–11.

[9]. Mirza AA, Baig M, Beyari GM, Halawani MA, Mirza AA. Depression and Anxiety Among Medical Students: A Brief Overview. Advances in Medical Education and Practice. 2021 Apr;Volume 12:393–8.

[10]. Yusoff MSB, Abdul Rahim AF, Baba AA, Ismail SB, Esa AR. P-1408 - Prevalence and associated factors of stress, anxiety and depression among entering medical students. European Psychiatry. 2012 Jan;27:1

[11]. Paruthi S. Recommended Amount of Sleep for Pediatric Populations: A Consensus Statement of the American Academy of Sleep Medicine. Journal of Clinical Sleep Medicine [Internet]. 2016 Jun 15;12(06):785–6

[12]. RanuRawat SK, Manju L. Prevalence of depression and its associated factors among medical students of a private medical college in south India. Int J Commun Med Public Health. 2016;3(6):1393–8.

[13]. Sharma A. A Response to "Depression and Anxiety Among Medical Students: A Brief Overview." – The Issue of Stigmatisation in the Medical Profession [Letter]. Advances in Medical Education and Practice. 2021 May;Volume 12:537–8

[14]. Atta IS, Almilaibary A. The Prevalence of Stress Among Medical Students Studying an Integrative Curriculum During the COVID-19 Pandemic. Advances in Medical Education and Practice. 2022 Jan;Volume 13:35–45

[15]. Ahmed I, Banu H, Al-Fageer R, Al-Suwaidi R. Cognitive emotions: Depression and anxiety in medical students and staff. Journal of Critical Care. 2009 Sep;24(3):e1–7.

[16]. Bergmann C, Muth T, Loerbroks A. Medical students' perceptions of stress due to academic studies and its interrelationships with other domains of life: a qualitative study. Medical Education Online. 2019 Jan 1;24(1):1603526.

[17]. Bergmann C, Muth T, Loerbroks A. Medical students' perceptions of stress due to academic studies and its interrelationships with other domains of life: a qualitative study. Medical Education Online. 2019 Jan 1;24(1):1603526.

[18]. Abdulghani HM, AlKanhal AA, Mahmoud ES, Ponnamperuma GG, Alfaris EA. Stress and Its Effects on Medical Students: A Cross-sectional Study at a College of Medicine in Saudi Arabia. Journal of Health, Population and Nutrition. 2011 Nov 13;29(5)

[19]. Mukesh HV, Acharya V, Pillai R. Are extracurricular activities stress busters to enhance students' well-being and academic performance? Evidence froma natural experiment. Journal of Applied Research in Higher Education. 2022 Jan 17;ahead-of-print(ahead-of-print).

[20]. Parker K, Hallingberg B, Eriksson C, Ng K, Hamrik Z, Kopcakova J, et al. Typologies of Joint Family Activities and Associations With Mental Health and Wellbeing Among Adolescents From Four Countries. Journal of Adolescent Health. 2022 April.

World Journal of Advanced Research and Reviews
eISSN: 2581-9615 CODEN (USA): WJARAI
Cross Ref DOI: 10.30574/wjarr
Journal homepage: https://wjarr.com/

Knowledge and health care seeking behavior of tuberculosis patients attending hospital in Jalal-abad, Kyrgystan

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World Journal of Advanced Research and Reviews, 2024, 21(03), 1575–1585

Abstract

Background: Tuberculosis is the 13th leading cause of death and the second leading infectious killer disease affecting specially low and middle income countries. In Central Asia, Kyrgystan has the highest tuberculosis incidence. The main objective of the study is to explore patient's early health seeking behaviour and awareness of tuberculosis.

Methodology: A cross-sectional investigation was conducted from January 22 to February 26, 2024 at the Tuberculosis Isolation Center in Jalalabad. The convenience sampling strategy was utilized to obtain the total sample size (260) from the hospital. Patients admitted to the hospital for the treatment of their Tuberculosis were only included in the study.

Result: Out of 260 respondents who visited TB center were 26 ± 2 years with majority 34.6% in the years between 20- 30, similarly regarding gender majority were male respondents with 64% where female respondents were 35.8%. In the study it shows there is a statistically significant association between age and knowledge about tuberculosis (p = 0.033). Individuals aged 20-30 tend to have better knowledge. Education level of respondents also shows significantly associated with knowledge about tuberculosis (p=0.001). Illiterate individuals and those with only primary education are more likely to have poor knowledge compared to those with secondary or higher education.

Conclusion: The knowledge regarding tuberculosis was high 91.2% among TB patients similarly overall health seeking behavior of our respondents shows that 97.7% had a good health care seeking practices.

Keywords: Knowledge; Health seeking; Behavior; Tuberculosis

1. Introduction

In 2021, over 1.6 million individuals died of tuberculosis (187 000 of whom were HIV positive). In Central Asia, Kyrgystan has the highest tuberculosis incidence. Kyrgystan is among the 27 nations with the highest TB and MDR-TB burden in the world (1). Globally, around 10.6 million people have been infected with tuberculosis 6 million males, 3.4 million females, and 1.2 million children. Tuberculosis is found in all countries and age groups. However, tuberculosis is both treatable and avoidable. Multidrug-resistant tuberculosis (MDR-TB) is a public health concern. Only roughly one in every three persons with drug-resistant tuberculosis received treatment in 2021. The United Nations Sustainable Development Goals (SDGs) include one of their health targets: ending the tuberculosis epidemic by 2030.

The Kyrgyz Republic ranks in the top 30 nations in the world for multiple drug-resistant tuberculosis (DR-TB). According to the World Health Organization (WHO), 29 percent of new tuberculosis infections in the Kyrgyz Republic are drug-resistant, compared to 3.3 percent worldwide. (3)

The USAID TB CARE I Program in Kyrgyzstan aims to assist the Kyrgyz Republic in implementing the National Tuberculosis Program by providing assistance in the following areas: universal access to care, laboratory quality checks, infection control checks, programmatic management of drug-resistant tuberculosis, monitoring and evaluation. The USAID TB CARE I initiative helps to establish collaboration and coordination among all partners involved in tuberculosis control, effectively mobilizing available capital and human resources to combat this illness in the Kyrgyz Republic. (4)

Failure or delay in seeking health care from health institutions increases the likelihood of disease spread and poor treatment outcomes. Health care seeking behavior in presumptive TB patients is described as how patients with presumptive TB in the community seek help from the nearest health institution or use health care for their TB symptoms in order to maintain good health and avoid illness.(5) According to one community-based study conducted in Zambia, 65.1% of people with tuberculosis do not seek medical care for their symptoms. (6)

In India, tuberculosis remains a hazardous health problem, with over 3,000 fatalities and 2.2 million new cases each year.(7) The knowledge and stigma of sickness influence health-seeking behavior. A study in India on the health-seeking behavior of TB patients found a link with stigma; those who claimed they were ashamed of having TB were more likely to receive treatment after 15 days. (8)

To reach the objective of a TB-free world, all TB patients must have global access to high-quality treatment. (9) Most countries currently offer free treatment options under the National Tuberculosis Control Programme (NTP). NTP is typically provided by the government health services of a country's national health system. However, the NTP delivery system includes numerous private health care providers and non-governmental organizations (NGOs). (10)

Early detection and treatment shortens the infectious period, which is critical to tuberculosis control. In contrast, TB patients are diagnosed and treated early, and in the majority of cases, morbidity, mortality, and drug resistance are likely to be higher. (11) A fundamental difficulty for TB control efforts is ensuring that TB patients seek diagnosis and, once identified, receive treatment. (12) The poor case detection rate can be attributed to a variety of circumstances, including patient-related delays in seeking medical care or the health-care system's failure to diagnose patients. According to studies, patient delay accounts for 77% of the entire delay duration between the beginning of TB symptoms and the initiation of treatment. (13)

2. Methodology

A cross sectional study was carried out from January 22 to January 26, 2024 from tuberculosis isolation center of Jalalabad. The convenience sampling technique was used to collect the total sample size (260) from the hospital. The patient who admitted in the hospital for the treatment were only included for the study. SPSS software was used to do the analysis of the result from the data they were collected. P value less than 0.05 was considered as statistically significant.

3. Results of the study

A total of 260 patient who came to TB center for their treatment were included for this study. The average age of the respondents who visited TB center were 26 ± 2 years with majority 34.6% in the years between 20-30,14.2% were below 20 years of age, 24.2% were in between 30-40 and 26.9% were above 40 years of age. (Table1)

Table 1: Distribution of respondents according to their socio-demographic information

SN	Variable	Frequency(n=260)	Percentage (%)
1.	Age		
	Below 20	37	14.2
	20-30	90	34.6
	30-40	63	24.2
	Above 40	70	26.9
2	Education		
	Literate	109	41.9
	Primary level	96	26.9
	Secondary level	44	16.9
	Above secondary level	11	4.2
3	Income		
	Below 1 lakh	68	26.2
	Below 5 lakhs	74	28.5
	Below 10 lakhs	46	17.7
	Below 20 lakhs	36	13.8
	Other	36	13.8
4	Gender		
	Female	93	35.8
	Male	167	64.2
5	Nationality		
	Kyrgyzstan	229	88.1
	Uzbekistan	12	4.6
	Other	19	7.3
6	Marital status		
	Single	83	31.9
	Widow/widower	11	4.2
	Divorced	41	15.8
	Married	125	48.1

Above table shows, majority 41.9% respondents were literate 26.9% were having primary level of education, 16.9% had secondary level of education and only 4.2% had above secondary level education. Majority 28.5% of the respondents were having income below 5 lakhs, 26.2% were having below 1 lakh 17.7% were having below 10 lakhs,13.8% were having below 20 lakhs and 13.8% were not having an exact validation about their income. Majority were male respondents with 64% where female respondents were 35.8%, similarly regarding nationality, Kyrgyz respondents were 88.1% followed by 4.6% from Uzbekistan and others. Similarly in this study 48.1 % of our respondents were married, 31.9% were single followed by 15.8 % divorced and 4.2% were widow. (Table 1)

Table 2 Distribution of respondents according to their TB treatment status

Responses	Frequency(n)	Percentage (%)
1st line	103	39.6
2nd line	54	20.8
3rd line	61	23.5
Completed	11	4.2
Treatment break	31	11.9
Total	260	100

Above table shows the treatment status of TB patients of which 39.6% are under 1st line treatment, 20.8% were having 2nd line treatment, 23.5% were having 3rd line, only 4.2% very minimal percentage have completed their course of treatment and 11.9% are in treatment break.

Table 3 Distribution of respondents according to their habit

Responses	Frequency(n)	Percentage (%)
Smoking	54	20.8
Drinking	48	18.5
Both	37	14.2
None	121	46.5
Total	260	100

Above table shows 20.8% of the respondents have a habit of smoking,18.5% have drinking habits and remaining 14.2% are having both habits and majority 46.5% have none of the habits.

Table 4 According to respondents' responses, is TB a major health problem in Kyrgyzstan

Responses	Frequency(n)	Percentage (%)
Yes	155	59.6
No	105	40.4
Total	260	100

Above table shows 59.6% respondents answered yes for TB being a major health problem in Kyrgyzstan and 40.4% answered no it's not a major health problem in their country.

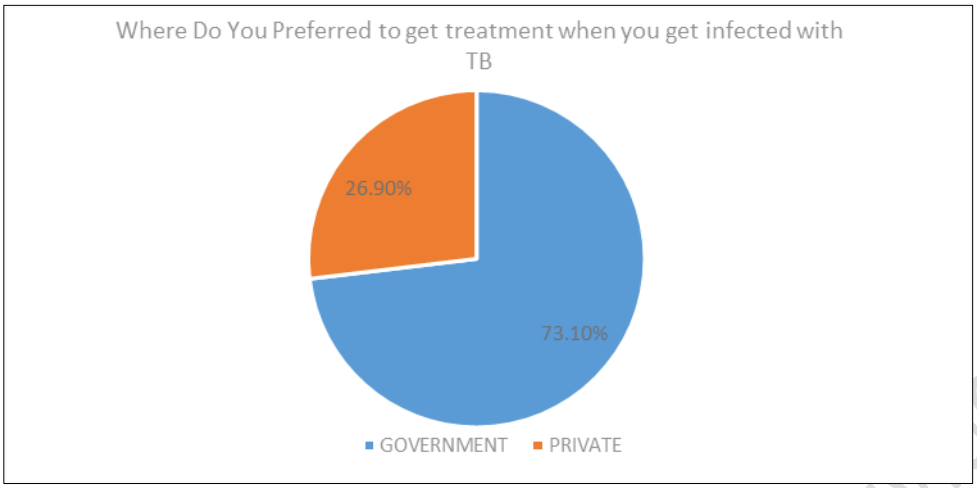

Figure 1 Respondents' choice of place for their treatment

Above figure shows the patients preferences to get treatment when they get infected with TB of which 73.1% preferred to receive treatment from government facility whereas remaining 26.9% preferred private health facility.

Table 5 Respondents' perception on getting admission to hospital after getting TB

Responses	Frequency(n)	Percentage (%)
Yes	226	86.90
No	34	13.10
Total	260	100

Above table shows that majority of the respondents 86.9% like to get admitted and 13.1% do not like to get admitted for the treatment of their TB.

Table 6 Distribution of respondents according to their level of knowledge

Responses on Knowledge about	Correct answer	Incorrect responses
Bacteria as a cause of TB	204(78.5)	56(21.5)
Is it curable	222(85.4%	38(14.6)
Mode of transmission	191(73.5)	69(26.5)
Organ mainly affected by TB	242(93.1)	18(6.9)
Duration of treatment	217(83.5)	43(16.5)
Only restricted to lung	204(78.5)	56(21.5)
Causative organism	242(93.1)	18(6.9)

Above table represents a different aspect or question related to knowledge on tuberculosis, with columns indicating the number of respondents who answered each question correctly and incorrectly, regarding the cause of TB was answered correctly by 78.5 percent of our respondents similarly curability of TB knowledge based question was asked where 85.4
% of our respondents correctly answered regarding mode of transmission was correctly answered by 73.5 % of our respondents, organ mainly affected was answer by majority 93.1% of our respondents ,similarly duration of TB treatment was aware to majority 83% of our respondents and only 56% of our respondents were in assumption of TB infection restricted to lungs which was a wrong concept.

Table 7 Distribution of respondents according to their level of knowledge on TB

Level of Knowledge	Frequency(n)	Percentage (%)
Good Knowledge	237	91.2%
Poor Knowledge	23	8.8%

Above table shows the knowledge of TB shared by our respondents, 91.2% of our respondents shared good knowledge whereas only 8.8 percent of respondents were with poor knowledge.

Table 8 Factors associated with Knowledge on tuberculosis with socio demographic information

	Level of Knowledge			P-vale
	Total(n=260)	Good Knowledge	Poor Knowledge	
Age				0.033*
Below 20	37	35	2	
20-30	90	76	14	
30-40	63	58	5	
Above 50	70	68	2	
Education				0.001*
Literate	109	90	19	
Primary level	96	92	4	
Secondary Level	44	44	0	
Above secondary	11	11	0	
Occupation				0.004*
Agriculture	88	73	15	
Business	61	56	5	
Government Job Holder	23	21	2	
Private Job Holder	76	76	0	
Others	12	11	1	
Type of Family				0.001*
Nuclear	151	129	22	
Single Parent	73	73	0	
Guardian	36	35	1	

*Statistically Significant

Based on the provided data, several socio-demographic factors are associated with knowledge about tuberculosis. There is a statistically significant association between age and knowledge about tuberculosis (p = 0.033). Individuals aged 20- 30 tend to have better knowledge compared to those below 20 or aged 30-40. Education level is significantly associated with knowledge about tuberculosis (p = 0.001). Illiterate individuals and those with only primary education are more likely to have poor knowledge compared to those with secondary or higher education. Occupation also shows a significant association with knowledge about tuberculosis (p = 0.004). Individuals in agriculture and business sectors tend to have poorer knowledge compared to those working in government or private sectors. The type of family is significantly associated with knowledge about tuberculosis (p = 0.001). Individuals from nuclear families tend to have better knowledge compared to those from single-parent or guardian households.

Table 9 Distribution of respondents according to their Health Care Seeking behaviour

Variables	Frequency	Percentage
Would you return again to the healthcare facility to seek advice and treatment		
Yes	237	91.2%
No	23	8.8%
Do you think getting early treatment is good for treating TB		
Yes	233	89.6%
No	27	10.4%
Have you visited traditional healers		
Yes	37	14.2%
No	223	85.8%
Health care seeking behavior		
Good	254	97.7%
Poor	6	2.3%

Above table shows the health seeking behavior of our respondent's 91.2 percent of our respondents agreed for going again to healthcare facility to seek advice and treatment and rest denied, where as 89.6 percent of our respondents agreed to get early treatment and only 10.4% denied, it was seen that 14.2 percent of our respondents shown superstition and went to traditional healers and 85.8 percent went to professional. Overall health seeking behavior of our respondents shows that 97.7% had a good health care seeking practices whereas remaining 2.3% only had poor practices. (Table 9)

Table 10 Knowledge about USAID TB care I program implemented in Kyrgyzstan

Responses	Frequency(n)	Percentage (%)
Yes	156	60
No	104	40
Total	260	100

Above table shows that 60% of people know about USAID TB care program implemented in Kyrgyzstan and 40% doesn't know about the program.

Table 11 Distribution of respondents by the way they got diagnosed for their TB

Responses	Frequency (n)	Percentage (%)
Sputum test	120	46.20
Chest X ray	80	32.30
Blood test	60	21.50
Total	260	100

Above table shows 46.2% respondents responding sputum test as diagnosis for their TB, 32.3% as chest x-ray and remaining 21.5% said through blood test they had confirmed their diagnosis.

Table 12 Respondents thought on getting recovered by self

Responses	Frequency (n)	Percentage (%)
Yes	104	40
No	154	60
Total	260	100

Above table shows 40% respondents thought they can recover by themselves whereas majority of them 60% believed that they cannot get recovered by themselves.

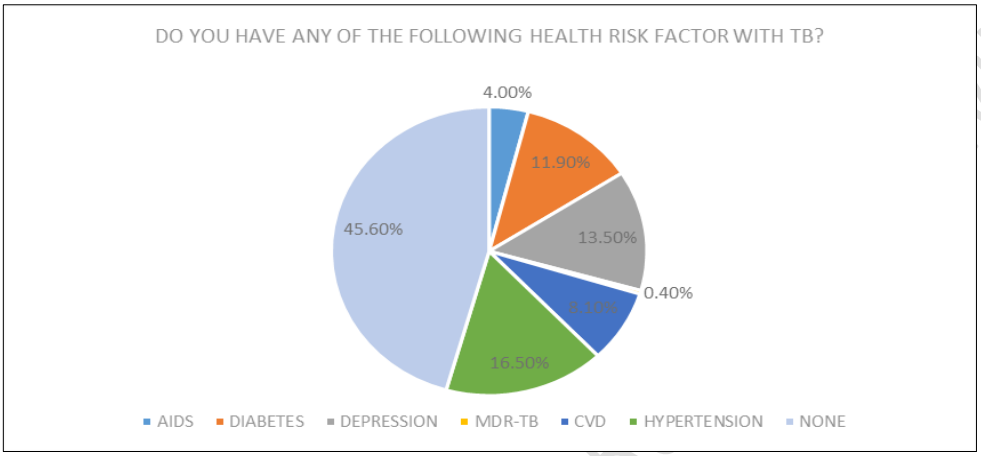

Figure 2 Distribution of respondents according to their Health risk factors with TB

Above figure shows 4% respondents were having HIV/AIDS, 11.9% were having Diabetes along with TB, 13.5% were suffering from depression, 0.4% were having MDR-TB, 8.1% were having CVD, 16.5% were having Hypertension and remaining 45.6% didn't have any associated health consequences with TB.

Table 13 Distribution of respondents according to their mental health (0-10 scale)

Responses	Frequency (n)	Percentage (%)
1-3(Depressed)	86	33.1
4-7(Moderate impact)	131	50.4
8-10(Good)	43	16.5
Total	260	100

Above table shows 33.1% respondents said they were depressed, 50.4% were moderate with their health status diagnosed with TB and remaining 16.5% were good didn't have any effect on their mental health.

Table 14 Have respondents received moral support by their family or friends

Responses	Frequency(n)	Percentage (%)
Yes	200	76.9
No	60	23.1
Total	260	100

Above table shows 76.9% respondents have received moral support from their family members or might be from their friends where as remaining 23.1% didn't get.

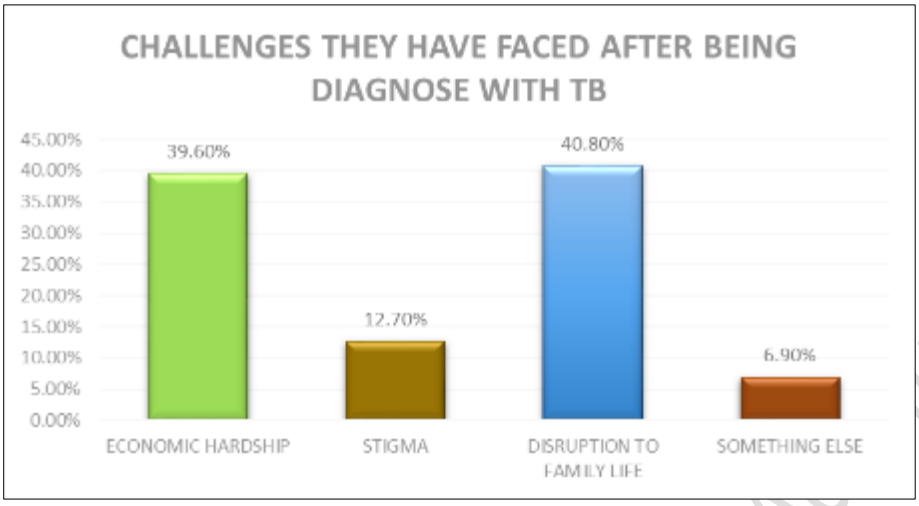

Figure 3 Challenges faced by the respondents after being diagnosed with TB

Above figure shows the challenges respondents have faced after being diagnosed with TB of which 39.6% were having economic hardships, 12.7 were having stigma,40.8% were having disruption to life and 6.9% were having something else. (Figure 4)

Table 15 Distribution of respondents according to the impact of TB on daily living?

Responses	Frequency(n)	Percentage (%)
TB stopped me doing things i like to do	81	31.2
TB caused economic hardship	64	24.6
Cough breathing is embarrassing	39	15.0
Become fraiol or an invalid	5	1.9
TB is a nuisance to friend/family/neighbors	30	11.5
Don't feel in control of my TB	41	15.8
Total	260	100

Aove table shows how the respondent's life were impacted by TB of which 31.2% were stopped from doing things they like to do,24.6% were affected by economic hardship,15% were having coughing/breathing got embrassed,1.9% became fraiol or an invalid,11.5% were facing TB as a nuisance to friends/family/neighbors and 15.8% felt they were not in control.

4.Discussion

According to a study conducted in West Ethiopia, the majority of patients (69.6%) were under the age of 40, while 30.4% were over the age of 40. In our study, the majority of respondents (73%) were under the age of 40, while 26.9% were over the age of 40. According to our survey, 38.1% of respondents were farmers, but a study performed in West Ethiopia found that 34.15% of respondents were farmers. Similarly, a survey conducted in Ethiopia found that 34.8% of respondents did not know the cause of tuberculosis, whereas just 21.5% knew. In our study, 21.5% of respondents incorrectly stated that tuberculosis is limited to the lungs, indicating a potential misperception. This assumption was not specifically addressed in the West Ethiopia study (14).

In one Saudi Arabia survey, 71.3% of respondents were university level (15), however in our research, 4.2% had more than a secondary level of education, which was exactly the opposite of our results.

In Northern India, 87% of study participants reported initiating self-care measures, such as home treatments for tuberculosis symptoms (16). In contrast, just 40% of respondents in our study thought they might heal by self- treatment. This indicates a greater reliance on traditional or home treatments in Northern India than in our study population.In another Indian study, 72% of respondents consulted nonprofessional private healers for their symptoms (17), however only 28% of our study respondents sought aid from unprofessional healthcare practitioners.

In a survey conducted in Kenya, comments were recorded on whether tuberculosis could be entirely healed; the study found that 46% of participants were aware that tuberculosis is curable (18). Similarly, in our study, 38% of respondents were aware that tuberculosis is treatable, whereas the remainder believed it was a fatal condition.

Our survey found that coworkers provided emotional support to 76.9% of respondents. In contrast, Indonesian researchers discovered that only 42.5% of respondents reported receiving emotional support.(19)

In the study from the United States, 28% of patients had a history of smoking, and poor treatment results were much higher. In our study, 20.8% of respondents smoked, 18.5% drank and 14.2% had both. These practices are recognized as a risk factor for poor TB treatment results, highlighting the need for specific treatments to address them during TB therapy.(20) According to a survey conducted in Ukraine, the majority of respondents (88%) preferred to seek TB treatment at polyclinics or hospitals (21). Similarly, in our survey, 88% of respondents decided to be admitted to the hospital right after being diagnosed with tuberculosis.

There is a statistically significant relationship between age and understanding about tuberculosis. Individuals aged 20- 30 likely to have more knowledge than those under 20 or aged 30-40. A comparable statistically significant effect with younger age was discovered in a study conducted in West Ethiopia (pvalue 0.066). Similarly, in the same study conducted in West Ethiopia, the p value for occupation was 0.001, whereas in our research, it was 0.004, indicating a strong link between occupation and knowledge of tuberculosis. (14)

A study conducted in Saudi Arabia found a link between education level and respondents' knowledge with a p-value of 0.8, however in our study, education level is statistically significant connected with knowledge of tuberculosis (p-value = 0.001). Individuals who are illiterate or have only had primary education are more likely to have inferior knowledge than those who have completed secondary or higher education. (15)

5.Conclusion

Our study revealed strong awareness of TB's effects on lungs ,other organs and its transmission which is essential for early detection and adherence to treatment. Most respondents were familiar with Kyrgyzstan's USAID TB program, indicating successful awareness efforts. Additionally,majority of respondents (97.7%) showed positive health-seeking behavior for TB treatment. Overall, there's a positive inclination towards seeking care at healthcare facilities, reflecting trust in the system and proactive TB management.

Limitations

Assessment was based on participants self-reports, which may lead to recall bias. Additionally, the study's sample size was limited due to the short duration of the research period.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

References

[1] World Health Organization. Tuberculosis. World Health Organization. World Health Organization; 2023. Available from: https://www.who.int/news-room/fact-sheets/detail/tuberculosis.

[2] Lee N. Kyrgyzstan Leads in Terms of Tuberculosis Incidence in Central Asia [Internet]. Central Asian Bureau for Analytical Reporting. 2023. Available from: https://cabar.asia/en/kyrgyzstan-leads-in-terms-of-tuberculosis-central -asia

[3] USAID TB CARE I Program | Fact Sheet | Kyrgyz Republic. U.S. Agency for International Development. 2021 [cited 2024 Mar 8]. Available from: https://www.usaid.gov/kyrgyz-republic/fact-sheet/usaid-tb-care-i-program

[4] Gamtesa DF, Tola HH, Mehamed Z, Tesfaye E, Alemu A. Health care seeking behavior among presumptive tuberculosis patients in Ethiopia: a systematic review and meta-analysis. BMC Health Services Research. 2020 May 19;20(1).

[5] Lungu P, Kerkhoff AD, Kasapo CC, Mzyece J, Nyimbili S, Chimzizi R, et al. Tuberculosis care cascade in Zambia - identifying the gaps in order to improve outcomes: a population-based analysis. BMJ Open. 2021 Aug;11(8):e044867.

[6] Samal J. Health Seeking Behaviour among Tuberculosis Patients in India: A Systematic Review. JOURNAL OF CLINICAL AND DIAGNOSTIC RESEARCH. 2016;

[7] Samal J. Health Seeking Behaviour among Tuberculosis Patients in India: A Systematic Review. JOURNAL OF CLINICAL AND DIAGNOSTIC RESEARCH. 2016;

[8] Reid MJA, Goosby E. Improving quality is necessary to building a TB-free world: Lancet Commission on Tuberculosis. Journal of Clinical Tuberculosis and Other Mycobacterial Diseases. 2020 May;19:100156.

[9] Ehsanul Huq KATM, Moriyama M, Zaman K, Chisti MJ, Long J, Islam A, et al. Health seeking behaviour and delayed management of tuberculosis patients in rural Bangladesh. BMC Infectious Diseases. 2018 Oct 12;18(1).

[10] Asres A, Jerene D, Deressa W. Delays to treatment initiation is associated with tuberculosis treatment outcomes among patients on directly observed treatment short course in Southwest Ethiopia: a follow-up study. BMC Pulmonary Medicine. 2018 May 2;18(1).

[11] Khan A, Shaikh BT, Baig MA. Knowledge, Awareness, and Health-Seeking Behaviour regarding Tuberculosis in a Rural District of Khyber Pakhtunkhwa, Pakistan. BioMed Research International. 2020 Apr 21;2020. Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7193271/

[12] Mesfin MM, Tasew TW, Tareke IG, Kifle YT, Karen WH, Richard MJ. Delays and care seeking behavior among tuberculosis patients in Tigray of Northern Ethiopia. Ethiopian Journal of Health Development. 2006 Apr 2019(4).

[13] Goncharova O, Denisiuk O, Zachariah R, Davtyan K, Nabirova D, Acosta C, et al. Tuberculosis among migrants in Bishkek, the capital of the Kyrgyz Republic. Public Health Action. 2017 Sep 21 [cited 2023 May 12];7(3):218–23. Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5676998/#i2220-8372-7-3-218-b4

[14] Badane AA, Dedefo MG, Genamo ES, Bekele NA. Knowledge and Healthcare Seeking Behavior of Tuberculosis Patients attending Gimbi General Hospital, West Ethiopia. Ethiopian Journal of Health Sciences. 1970 Jan 1;28(5).

[15] Anaam MS, Alshammari M, Alfadly S, Alsahali S, Almutairi A, Alanazi I, et al. Knowledge, Attitude and Practice towards Tuberculosis and its Treatment in Qassim Region, Saudi Arabia: A Cross-sectional Study. The Open Public Health Journal [Internet]. 2023 Oct 26 [cited 2024 Mar 8];16(1).

[16] Grover A, Kumar R, Jindal S. Socio-demographic Determinants of Treatment-Seeking Behavior among Chest Symptomatics. DOAJ (DOAJ: Directory of Open Access Journals). 2006 Jan 1;

[17] G. Fochsen, Deshpande K, Diwan V, Mishra A, Diwan VK, Thorson A. Health care seeking among individuals with cough and tuberculosis: a population-based study from rural India. PubMed. 2006 Sep 1;10(9):995–1000

[18] Liefooghe R, Baliddawa JB, Kipruto EM, Vermeire C, De Munynck AO. From their own perspective. A Kenyan community's perception of tuberculosis. Tropical Medicine and International Health. 1997 Aug;2(8):809–21.

[19] Arifin, V. N. The Relationship of Social Support with Medication Adherence Pulmonary Tuberculosis, 2019; https://iopscience.iop.org/article/10.1088/1757-899X/469/1/012055/pdf.

[20] Thomas BE, Thiruvengadam K, S. R, Kadam D, Ovung S, Sivakumar S, et al. Smoking, alcohol use disorder and tuberculosis treatment outcomes: A dual co-morbidity burden that cannot be ignored. Glantz SA, editor. PLOS ONE. 2019 Jul 31;14(7):e0220507.

[21] van der Werf MJ, Chechulin Y, Yegorova OB, Marcinuk T, Stopolyanskiy A, Voloschuk V, et al. Health care seeking behaviour for tuberculosis symptoms in Kiev City, Ukraine. The International Journal of Tuberculosis and Lung Disease:

International Journal of Research Publication and Reviews

A Study to Assess Knowledge, Attitude and Practice of Parents towards Immunization and its Associated Factors in Jalalabad, Kyrgyzstan

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ABSTRACT

Vaccine preventable diseases (VPD) are considered as one of the main causes of mortality and morbidity among children all over the world. Adequate and accurate knowledge as well as positive attitude behavior regarding vaccination may increase parents' compliance with their children's vaccination. The objective of this study was to assess parents, knowledge, attitude and level of practices regarding immunization to their children and the factors that are associated with immunization.

Methods: This is a descriptive cross-sectional study. A convienent sampling technique was used to approach this study subjects. All the variables were computerized and entered into the Statistical Package for social sciences (SPSS) version 22. The analysis result with variables with a p-value of less than 0.05 were considered to be significant association with parental knowledge, attitude and practice.

Result: A total of 220 respondents were included for the study. A significant proportion of the participants were aged 26-30 (44.1%) where most respondents were identified as mothers (92.3%) to provide information regarding their child immunization.The good knowledge score was 65.5%, the favourable attitude score was found to be 65% and good practices was 69.5% among the

respondents. Regarding level of knowledge, Attitude & Practice of immunization, statistically significant correlation was found among respondents with Higher level of education, Housewife mother & respondent of urban areas. In addition, age groups 26-30 was significantly associated with good level of knowledge towards their children immunization.

Conclusion: Parental knowledge, attitude and practice towards their children immunization was found to be satisfactory. However more work needs to be done inthe area of awareness, education and accessibility to healthcare for further improvement.

Keywords: Knowledge, Attitude, Practice, Parents, Mothers, Childhood Immunization, Vaccination

Introduction

For centuries, vaccination (immunization) has been a vital public health measure that helps prevent and manage infectious diseases. It's estimated that immunizations save two to three million lives annually. (1)

The idea behind vaccination is to strengthen immunity to certain pathogens, such bacteria or viruses, so the body can fight them off without actually causing the illness. Numerous lives have been saved by this protective mechanism, which is the mainstay of global disease prevention initiatives. The World Health Organization (WHO) has devised the Global Vaccine Action Plan, a framework with the objective of eliminating vaccine-preventable diseases by 2020. Regrettably, the majority of children worldwide—particularly those in developing nations—have not attained the intended global immunization coverage of 90%. (2)

According to a number of reports, VPDs continue to be accountable for over 25% of all pediatric deaths that occur each year.(3) VPDs place people, families, and communities at large in the midst of a serious economic and social catastrophe. Children exposed to these avoidable illnesses typically have many delays in their growth and development. (4)

Some diseases, like smallpox, have almost completely disappeared because of immunization campaigns, while the prevalence of numerous other illnesses, such as polio, measles, and influenza, has drastically decreased(5). It is estimated that vaccines against childhood diseases save 4 million lives annually worldwide. The creation and distribution of COVID-19 vaccinations in recent years have highlighted the significance of vaccines in resolving international health emergencies.(6) To combat new and emerging disease risks and guarantee a healthy future for everybody, continued research and innovation in vaccine development and distribution are crucial.(7)

More parents are beginning to doubt the need and safety of regular children vaccinations. In a research, parents demonstrated strong attitudes and good understanding on certain elements of kid immunization, while older parents, town dwellers, and highly educated people revealed gaps in their knowledge and increased concerns about the efficacy of vaccines. (8)

The uptake of the primary plus booster immunization is lower than that of the primary course alone for MMR, diphtheria, tetanus, and polio. The worldwide literature identifies a number of causes for insufficient uptake. These offer perceptions into the decision-making process of parents and possible obstacles to vaccination that would need to be overcome in an initiative to raise coverage rates. (9)

About vaccination, some parents have concerns regarding the necessity and safety of immunizations. Parents'

worries range from partial reluctance to outright rejection of all vaccinations. This clinical study offers advice on how to handle vaccine-related concerns raised by parents.(10)

Kyrgyzstan has exceptionally high vaccination rates. Despite this high coverage rate, there is an increasing tendency of refusals and pockets of poorer immunization coverage in certain districts. Similarly, moms in the Jalalabad and Osh region identified improved cleanliness as a better means of preventing vaccine-preventable infections than immunization.(11)

Methods and methodology

A cross sectional study with convenient sampling technique involving 220 mothers with children aged less than 2 years, conducted in Jalalabad region for the duration of 3month, 1st of December 2023 to 30th February 2024. A self-administered questionnaire in the regional where Kyrgyz language was utilized to evaluate the parents' vaccination-related knowledge, attitudes, and practices. The study employed descriptive statistics and the chi-square test to evaluate the correlation between sociodemographic factors and KAP.

Result

A total of 220 respondents were included for the study. Age distribution indicates diverse representation, with a significant proportion aged 26-30 (44.1%). Most respondents were identified as mothers (92.3%) as respondents while the rest 7.7% were father, residing evenly between urban (39.1%) and rural (60.9%) areas. Educational attainment ranged from primary (3.2%) to bachelor's or higher (70%). Occupationally, respondents included students (10.9%), employees (31.8%), housewives (50.9%), and business professionals (6.4%). Family composition predominantly consisted of those with one child (69.1%). The age of the youngest child showed a concentration in the 0–5-month (80.9%). (Table 1)

Table 1: Socio-demographic information of the respondents

Characteristics	Frequency (n=220)	Percentage
Respondent Age		
18-20	41	**18.6**
21-25	69	**31.4**
26-30	97	**44.1**
31-40	13	**5.9**
Relation with child		
Father	17	**7.7**
Mother	203	**92.3**
Area the respondent from		
Urban	86	**39.1**
Rural	134	**60.9**
Sex of your youngest child		
Male	101	**45.9**
Female	119	**54.1**
Level of education of Guardian		
Primary	7	**3.2**
Secondary	6	**2.7**
High School	53	**24.1**
Bachelor or higher	154	**70**
Occupation		
Student	24	**10.9**
Employee	70	**31.8**
Housewife	112	**50.9**
Business	14	**6.4**
Number of children you have		
1 child	152	**69.1**
2-3 children	58	**26.4**
More than 3 children	10	**4.5**
Age of your younger child		
0-5 months	178	**80.9**
6-10 months	33	**15**
11-15 months	5	**2.3**
16-24 months	**4**	**1.8**

Table 2: Distribution of respondents according to the knowledge of parents regarding their children immunization (n=220)

Knowledge Factors	Responses	
	Yes	No
Vaccination prevents infectious disease	212(96.4)	**8(3.6)**
Infants should start a vaccination program just after birth	206(93.6)	**14(6.4)**
Is it necessary to vaccinate a breastfeeding infant	200(90.9)	**20(9.1)**
Is vaccination harmful	194(88.2)	**26(11.8)**
Are you agreeing to immunize your baby's full dose	204(92.7)	**16(7.3)**
Do you know about the side-effects of EPI vaccines	163(74.1)	**57(25.9)**
Do you know when the next vaccination date for your infants?	**210(95.5)**	**10(4.5)**

Table 2 provides insights into parent's knowledge regarding children immunization. The majority of respondents acknowledge the preventive nature of vaccination against infectious diseases, with 96.4% answering affirmatively. Similarly, 93.6% recognize the importance of initiating a vaccination program for infants just after birth. A significant portion (90.9%) acknowledges the necessity of vaccinating breastfeeding infants. Notably, 88.2% believe that vaccination is not harmful. Regarding commitment to completing the immunization schedule, 92.7% express agreement. However, a smaller proportion (74.1%) is familiar with the potential side effects of EPI vaccines. Impressively, 95.5% of respondents are aware of their infants' next vaccination date.

Table 3: Distribution according to the attitude of respondents towards Infants immunization

Attitude Factors	Responses		
	Agree	Disagree	**I don't know**
Do you think compliance with the immunization schedule is important	193(87.7)	19(8.6)	**8(3.6)**
Do you think vaccination side effects are dangerous	193(87.7)	20(9.1)	**7(3.2)**
Do you think vaccination important only for non-serious disease	132(60)	73(33.2)	**15(6.8)**
Do you think vaccination makes infants sick	182(82.7)	27(12.3)	**11(5)**
Do you think all children should be vaccinated?	191(86.8)	21(9.5)	**8(3.6)**
Do you think vaccination makes infants for death	139(63.2)	69(31.4)	**12(5.5)**
Do you know about vaccination benefits	194(88.2)	14(6.4)	**12(5.5)**
Do you think Infants are taking too many vaccines?	14 (6.4)	200(90.9)	**6(2.7)**
Have you recommended the use of vaccines to others?	**181(82.3)**	**29(13.2)**	**10(4.5)**

Table 3: The analysis of attitude factors among respondents regarding infant immunization (n=220) reveals a positive inclination towards vaccination. A significant majority, 87.7%, acknowledges the importance of compliance with the immunization schedule, emphasizing its significance. 87.7% were concerns about the danger of vaccination side effects to their childrens. Notably, 86.8% believe in the necessity of vaccinating all children. However, only 60% believe vaccination is crucial only for non-serious diseases. Encouragingly, 88.2% are aware of vaccination benefits and a substantial majority, 90.9%, believes that infants are not receiving an excessive number of vaccines. Around 82.3% who recommended vaccines to others to promote immunization.

Table 4: Distribution of respondents according to the Practice of infant immunization

Practice Factors	Responses		
	Yes		No
Has your child received the mandatory childhood vaccines?	209(95)		**11(5)**
Do you follow the compulsory vaccination programs listed in thevaccination schedule?	208(94.5)		**12(5.5)**
Do you look for other vaccines available to your child?	202(91.8)		**18(8.2)**
Do you use pain relievers to relieve swelling and pain after having yourchild vaccinated?	202(91.8)		**18(8.2)**
Are you happy when your infant got a vaccine?	201(91.4)		**19(8.6)**
Are you given the information about the current vaccine?	170(77.3)		**50(22.7)**
How many times do you visit the health facility?	1 Time 109(49.5)	2-3 96(43.6)	**4-5** **15(6.8)**
Problem you face with Vaccination of your infant?	**Waiting Time 12 (78.2)**	**Travelig Time 41(18.6)**	**Time for Immunization 7(3.2)**

Table 4: The practice factors regarding infant immunization among respondents (n=220) shows 95% confirm that their child has received mandatory childhood vaccines, and 94.5% diligently follow the compulsory vaccination programs outlined in the schedule. With 91.8% are actively seeking other vaccines for their child and using pain relievers post-vaccination for alleviating swelling and pain. Positive emotional responses are prevalent, as 91.4%express happiness when their infant receives a vaccine. However, 77.3% report receiving information about the current vaccine from health care center. In terms of health facility visits, 49.5% visit once, 43.6% visit 2-3 times, and 6.8% visit 4-5 times. Challenges primarily revolve around waiting times (78.2%), with a smaller percentage facing issues related to traveling time (18.6%) and the time required for immunization (3.2%).

Table 5: Distribution of respondents according to their level of knowledge

Knowledge level	Frequency(n=220)	Percentage (%)
Good Knowledge	144	**65.5**
Poor Knowledge	**76**	**34.5**

Table 5: The survey of 220 respondents indicates that 65.5% have good knowledge, while 34.5% exhibit poor knowledge.

Table 6: Distribution of respondents according to their level of attitude

Attitude level	**Frequency(n=220)**	**Percentage (%)**
Favorable	143	**65**
Unfavorable	**77**	**35**

Table 6: The data reveals the distribution of respondents' attitudes, with 65% holding a favorable stance and 35% expressing an unfavorable attitude among the 220 participants.

Table 7: Distribution of respondents according to their level of Practice

Practice level	**Frequency(n=220)**	**Percentage (%)**
Good	153	**69.5**
Poor	**67**	**30.5**

Above table shows the data demonstrates the distribution of respondents' practice levels, with 69.5% exhibiting good practices and 30.5% showing poorpractices among the total 220 participants.

Table 8: Correlation between socio demographic information and level of Knowledge of Respondents

Characteristics	Level of Knowledge		P-value
	Good	Poor	
Age			0.035
18-20	29	12	
21-25	53	16	
26-30	54	43	
31-40	8	5	
Education			0.003
Primary	3	4	
Secondary	3	3	

High School	31	22	
Bachelor or High	116	38	
Location			0.001
Rural	69	17	
Urban	75	59	
Relationship			0.021
Mother	136	51	
Father	8	25	

The correlation analysis examining the interplay between socio-demographic factors and respondents' knowledge levels which reveals, a statistically significant (p = 0.035) between age groups is evident, particularly among participants aged 26-30, exhibit good knowledge. Furthermore, educational background emerges as a crucial factor (p = 0.003), with respondents holding a Bachelor's degree or higher displaying a markedly higher proportion of good knowledge (116) compared to counterparts with lower educational levels. Lastly, birth order demonstrates significance (p = 0.021), with first children (136) exhibiting a higher proportion of good knowledge might be they are more concerned for their first child in comparision to 2nd born child.

Table 9: Correlation between socio-demographic information and attitude of respondents towards their children vaccination

Characteristics	**Attitude**		**P-Value**
	Favorable	**Unfavorable**	
Education			**0.003**
Primary	1	6	
Secondary	3	3	
Higher secondary	29	24	
Bachelor or higher	110	44	
Occupation			**0.005**
Student	16	8	
Job/Service	47	23	
Housewife	**80**	**46**	

Above table shows that the correlation analysis reveals the associations between socio-demographic factors and respondents' attitudes toward their children's vaccination. A significant relationship with education levels plays a crucial role has (p=0.003), with individuals holding a Bachelor's degree or higher had favorable attitudes. Occupation is also influential with (p=0.005), as housewives (80) show more favorable attitudes compared to students and those in job/service might be mothers who are housewives are the primary caregivers who prioritize their children's health and well being including ensuring they receive necessary vaccinations to prevent disease

Table 10: Correlation between socio demographic and respondents Practices towards vaccination of their children

Characteristics	Practices		P-value
	Good	Poor	
Living area			**0.031**
Rural	67	19	
Urban	86	48	
Education			**0.003**
Primary	3	4	
Secondary	3	3	
Higher secondary	31	31	
Bachelor or Higher	116	38	
Occupation			**0.047**
Student	19	5	
Job/Service	50	20	
Housewife	84	42	
Relationship			**0.001**
Mother	139	48	
Father	**14**	**19**	

Above table shows the correlation analysis shows about associations between socio-demographic factors and respondents' vaccination practices for their children. Urban residents exhibit a higher proportion of good practices than those in rural areas (p=0.031). Education plays a significant role, with individuals holding a Bachelor's degree or higher showing better practices (p=0.003). Occupation influences practices, as housewives demonstrate higher rates of good practices compared to students and job/service individuals (p=0.047). The order of the child is also significant, with first children displaying better practices than other children (p=0.001).

Discussion

In terms of the parent age distribution, the majority of parents (44.1%) in our survey fell between the ages of 26 and 30, with 31.4% falling between the ages of 21 and 25. Regarding the parents' greatest educational attainment, the majority (70.1%) had a bachelor's degree or above, while 24.1% had just completed secondary school. This result was consistent with a research conducted in Saudi Arabia, where 91.0% of the population held a university degree.

The majority of research participants (90.9%) stated that vaccinations are important for breastfed children, and 88.2% felt they are safe. A study conducted in North East Ethiopia yielded similar results: 87.1% of respondents believed that nursing is crucial for baby immunization, and 75.8% thought that vaccinations are safe.(12)

Mothers made up the majority of respondents (92.3%) while fathers made up the remaining 7.7% of those who submitted information for our survey. This was comparable to a study of parents in Jeddah City, Saudi

Arabia, where moms made up the majority (68.1%) and fathers made up the remaining 31.9% (13). A substantial percentage (90.9%) agrees that immunizing nursing infants is essential. Interestingly, 88.2% of people think vaccinations are safe.

While 71.7% of respondents in a Bishkek study were unsure, parents strongly disagreed that their children should have less vaccines for benefits. In our survey, 88.2% of respondents stated that it is beneficial for their children to receive all the immunizations (14).

Knowledge

According to this study, 65.5% of parents have an excellent level of information regarding the vaccinations that their children have received. Our study's results are consistent with a study carried out in Wadla Woreda, North East Ethiopia, where 65.1% of parents showed proficiency in their knowledge of baby immunization.

According to our research, having more education is positively correlated with knowing more about vaccinations. This may be because having greater education makes it possible to communicate with medical professionals more effectively and reduces the likelihood of developing false views about vaccinations.(15)

Parents who live in urban areas are more likely to be knowledgeable than those who live in rural areas, according to this study. This conclusion aligns with research done in Malaysia (16) and India (17). It is likely that this is due to a difference in the health services offered in terms of availability and accessibility of immunization service, or it could be because parents in urban areas were more likely to be educated than parents in rural areas, which may have increased their knowledge about the benefits of infant immunization uptake.

The results of our study showed that mothers of the kid had a higher likelihood than fathers of having a strong understanding of their child's immunization.

Attitude

This study shows that, on average, 65% of respondents had positive attitudes. However, in an Indian study, a majority of the observations , 85.4% of parents expressed positive opinions regarding immunization of their children. Furthermore, our research indicates that a greater educational attainment is strongly linked to superior knowledge and a more positive attitude.This supports the findings of another study, which revealed that parents with greater levels of education had more positive attitudes regarding vaccinations mostly because they recognized the importance of vaccinations. (18)

Practices

Moreover, our study's analysis shows that 69.5% of parents followed sensible immunization procedures for their kids. Whereas 87.2% of parents reported following appropriate vaccination practices in a Saudi Arabian research, the rate is higher there. Our study demonstrates a statistically significant correlation between vaccine coverage and education level, and other research supports this finding by showing a positive relationship between education level and vaccination uptake.(19)

In the same way, children with illiterate mothers had less immunization practices than those with educated mothers, according to a 2018 study conducted in Lebanon to assess vaccine coverage in children.(20) The results of our study showed that mothers of the kid had better vaccination practices than fathers.

Conclusion and Recommendation

Parental Knowledge,Attitude and Practice towards their children immunization was 65-70%. Although these numbers are somewhat encouraging, more needs to be done to promote public awareness, education, and healthcare accessibility in order to achieve higher vaccination rates and better community health overall.

References

1. Delany I, Rappuoli R, De Gregorio E. Vaccines for the 21st century. EMBO Mol Med. 2014;6(6):708–20

2. World Health Organization. Global Health Observatory (GHO) data. 2018. Available from: http://www.who.int/gho/immunization/en/

3. Yenit MK, Assegid S, Abrha H. Factors associated with incomplete childhood vaccination among children 12–23 months of age in Machakel Woreda, East Gojjam Zone: a case-control Study. J Pregnancy and Child Health. 2015;2(4). doi: 10.4172/2376-127X.1000180

4. Sharma S, Kohli C, Sharma N, Mehra D. Incomplete immunization coverage in Delhi: reasons and Solutions. Prim Health Care. 2016;6(4). doi: 10.4172/2167-1079.1000240

5. Pezzotti P, Bellino S, Prestinaci F, Iacchini S, Lucaroni F, Camoni L, et al. The impact of immunization programs on 10 vaccine preventable diseasesin Italy: 1900–2015. Vaccine. 2018 Mar;36(11):1435–43.

6. Causey K, Fullman N, Sorensen RJD, Galles NC, Zheng P, Aravkin A, et al. Estimating global and regional disruptions to routine childhood vaccine coverage during the COVID-19 pandemic in 2020: a modelling study. The Lancet. 2021 Jul;398(10299)

7. Brisse M, Vrba SM, Kirk N, Liang Y, Ly H. Emerging Concepts and Technologies in Vaccine Development. Frontiers in Immunology. 2020 Sep 30;11.

8. ALAmri, E.S.; Horaib, Y.F.; Rafa, A.W. Knowledge and Attitudes of Parents on Childhood Immunization in Riyadh, Saudi Arabia. Egypt. J. Hosp. Med. 2018, 70, 251–256.

9. Tickner S, Leman PJ, Woodcock A. Factors underlying suboptimal childhood immunisation. Vaccine. 2006;24(49–50):7030–6

10. Edwards KM, Hackell JM, Committee On Infectious Diseases TCOP, Ambulatory M. Countering Vaccine Hesitancy. Pediatrics. 2016;138(3):e20162146

11. Knowledge, attitudes, & practices towards immunization in kyrgyzstan ministry of health of the kyrgyz republic 2024 Feb 23]. Available from: https://www.unicef.org/kyrgyzstan/media/4796/file/

12. GebreEyesus FA, Tarekegn TT, Amlak BT, Shiferaw BZ, Emeria MS, Geleta OT, et al. Knowledge, Attitude, and Practices of Parents About Immunization of Infants and Its Associated Factors in Wadla Woreda, North East Ethiopia, 2019. Pediatric Health, Medicine and Therapeutics. 2021 May;Volume 12:223–38.

13. Alghamdi A, Alghamdi HA. Knowledge, Attitude, and Practice of Vaccination Among Parents in Jeddah City, Saudi Arabia. Cureus [Internet]. 2023 Jul 11; Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10414797/

14. Parents' Attitudes Regarding Childhood Vaccination With Focus On Rotavirus Vaccination in Bishkek, Kyrgyzstan | PDF | Vaccines | Diarrhea [Internet]. Scribd. [cited 2024 Mar 10]. Available from:

https://www.scribd.com/document/706010850/2371-PARENTS-ATTITUDES-REGARDING- CHILDHOOD-VACCINATION-WITH-FOCUS-ON-ROTAVIRUS-VACCINATION-IN-BISHKEK-KYRGYZSTAN

15. Krishna D, Mohd Zulkefli NA, Md Said S, Mahmud A. Sociodemographic and health care factors in determining immunization defaulters among preschool children in Petaling District, Selangor: a cross-sectional study in Malaysia. BMC Public Health. 2019;19(1):1275.

16. Awadh AI, Hassali MA, Al-Lela OQ, et al. Immunization knowledge and practice among Malaysian parents: a questionnaire development and pilot- testing. BMC Public Health. 2014;14(1):1107.

17. Mugada V, Chandrabhotla S, Kaja DS, SG Machara. Knowledge towards childhood immunization among mothers & reasons for incomplete immunization. J App Pharm Sci. 2017;7(10):157–161.

18. Napolitano F, Della Polla G, Angelillo IF. Knowledge, Attitudes, and Behaviors of Parents towards Recommended Adult Vaccinations: An Explanatory Survey in the Geographic Area of Naples, Italy. Int J Environ Res Public Health. 2019;16(12):2070.

19. Alghamdi A, Alghamdi HA. Knowledge, Attitude, and Practice of Vaccination Among Parents in Jeddah City, Saudi Arabia. Cureus [Internet]. 2023 Jul 11; Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10414797/

20. Kmeid M, Azouri H, Aaraj R, Bechara E, Antonios D. Vaccine coverage for Lebanese citizens and Syrian refugees in Lebanon. International Health. 2019 May 15;11(6):568–79

(RESEARCH ARTICLE)

World Journal of Advanced Research and Reviews
eISSN: 2581-9615 CODEN (USA): WJARAI
Cross Ref DOI: 10.30574/wjarr
Journal homepage: https://wjarr.com/

The impact of alcohol consumption on employee job performance

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Publication history: Received on 27 January 2024; revised on 03 March 2024; accepted on 06 March 2024Article DOI:

Abstract

Background: Most people know that job performance generally refers to how well an employee is accomplishing his or her tasks and achieve the target, but there are number of factors that determine the level and quality of employee job performance.

Objective: The purpose of this study was to examine the impact of Alcohol consumption on the self-reported work performance among the people of Jalalabad, Kyrgystan.

Materials and Methods: A descriptive cross-sectional study was done through online Google forms for a period of 3 months from September to November 2023 among 160 local people. Various dimensions of work performance are compared across different levels of alcohol consumption in the study.

Result: In this study the respondents age range was 20-40 years with mean age of 30±1 years. Out of 160 respondents, male predominance was found over females with 68.1%. The largest percentage 67.5% of them consume alcohol due the stress they have in their Job. Most respondents 67.5% were found to have no family history of drinking alcohol. Regarding the impact of their job performance, only 23.9%(n=28) respondents experiences a significant impact on their job performance.

Conclusion: Our study into the impact of alcohol drinking among Jalalabad residents revealed a concerning prevalence of 73% of the 160 respondents. This emphasizes the importance of targeted interventions, community education, and support networks in addressing alcohol's influence on the local population's well-being. Understanding and tackling the underlying causes of alcohol misuse in Jalalabad will be critical to building a better and more resilient community.

Keywords: Alcohol; Consumption; Job Performance; Ethical; Statistical

1. Introduction

Effect of alcohol consumption might occur quickly. Drinking excessively can have a number of negative outcomes and increase your risk of developing a variety of diseases. Globally, among the population aged 25-59 years, the core of theworking age population determined alcohol to be the highest risk factor for mortality and disability. (1). The WHO estimates that hazardous alcohol use causes around 3 million deaths globally each year (2). Alcohol can impair focus and coordination in an employee's work performance. Excessive alcohol intake is a substantial risk factor for disease, disability, and mortality, and has been linked to over 200 diseases and injuries.(3) Older persons struggle more than younger people with their job performance. According to the 2023 poll, Zimbabwe ranks first in alcohol consumption, with 62.8 liters per capita (4).The World Health Organization (WHO) defines a drug as any chemical compound that, when ingested, can alter one or more of the body's processes. Alcohol, a legalized narcotic, is one of the most often abused substances in the world. The World Drug Report (2013) recognizes alcohol consumption as a global concern with major consequences for people's health, security, socioeconomic standing, and cultural welfare (5). Alcohol intake can affect activity performance in a range of settings,

including the workplace. Frone's integrative model of employee substance use and productivity suggests that off-the-job drinking leads to absenteeism and tardiness, while on-the-jobdrinking leads to early departure and poor performance (6). Alcohol intake has been linked to an increased risk of illness, disability, and death (7). People who were content with their working environment and working hours were more likely to routinely drink (8), as alcohol is one of the most affordable forms of addiction; this explains why alcoholism is so prevalent (9). Hierarchical multiple regression analyses indicated that gender, friends alcohol consumption, coping, and social motives for drinking were significant predictors of study participants alcohol consumption (10).

2. Material and Methods

It was a cross-sectional study among 160 respondents, which was done online through Google forms from September to November 2023 in Jalalabad, Kyrgystan. Out of 160 respondents were selected from one areas through convienent sampling techneque from where only 117 were included in the study group. Of the 160 surveyed participants only 117 reported having tried and consumed alcohol in their lifetime. Data were collected through specifically developed structured questionnaire, which was developed based on the literature review. The questionnaire had four sections. First section was dealing with socio-demographic information of respondents. The second section was regarding the knowledge on alcohol consumption, third section was on habit they have regarding alcohol consumption. In fourth section, there were questions related to the impact on their job performance.

3. Results

A total of 160 respondent from different working area of Jalalabad were selected from the sampling size where as the age range was 20-40 years with mean age of 30±1 years. Out of 160 respondents, male predominance was found over females with 68.1%. Similarly out of 160 respondents 43 respondents they have never consumed alcohol so they werenot included in the study.

Table 1 Socio Demographic Information of the respondents

S.No	Variables	Frequency(f) N=160	Percentage (%)
1	RELIGION		
	Muslim	104	65.0
	Christian	50	31.3
	Other	6	3.8
2	MARITAL STATUS		
	Married	111	69.4
	Unmarried	44	27.5
	Prefer not say	5	3.1
3	OCCUPATION		
	Private Job holder	111	69.4
	Gov Job Holder	34	21.3
	Small Business	9	5.6
	Retired	6	3.8
4	Nationality		
	Kyrgyzstan	155	96.9
	Uzbekistan	5	3.1

It shows the distribution of respondents according to their socio-demographic information where it shows that majority of respondents 65% are Muslims. Almost 69.4% respondents reported to be married. Majority of respondents are engaged in

Private Job whereas 3.8 % indicated that they were retired. Where 97% respondents were from Kyrgyzstan and remaining 3.1% were from Uzbekistan. (Table 1)

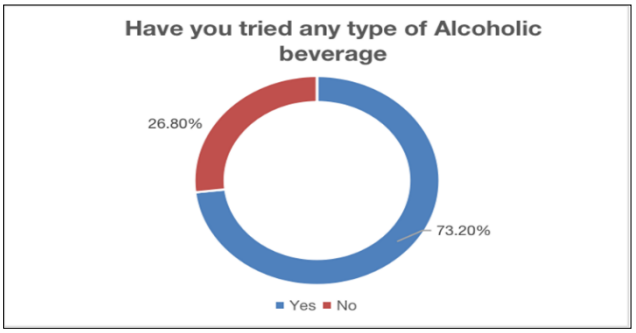

Figure 1 Distribution on the basis of whether they have tried any type of alcoholic beverage or not?

In the study it shows out of 160 respondents (117)73.20% of respondents have consumed alcohol in some form while the remaining 26.80% have abstained from trying it.

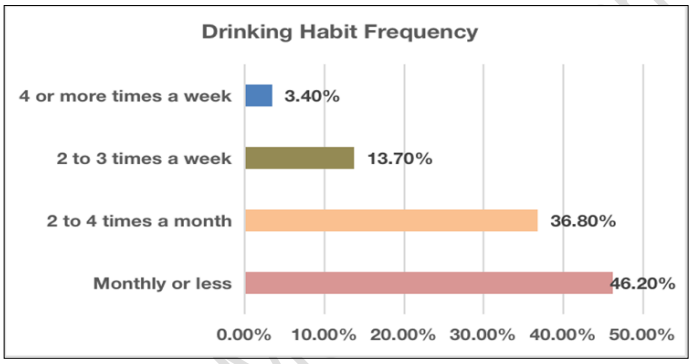

Figure 2 Distribution of respondents according to their drinking habit

Above figure shows that: 46.2% of the respondents reported drinking alcohol on a monthly or less, 36.8% of respondents indicated drinking alcholo 2 to 4 times a month, 13.7% of the respondents reported drinking alcohol 2 yo3 times a week where as 3.4% stated drinking alcohol 4 or more times a week. This provides insight into the frequency of alcohol consumption among surveyed individuals.

Table 2 Distribution of respondents according to the reason of their drinking habit

SN	Responses	Frequency	Percentage
1	Relaxation	28	23.9
2	Job Stress	79	67.5
3	Social Reason	10	8.5
4	Total	117	100.0

Above table shows that majority 67.5% of the respondents consume alcohol due to Job stress followed by 23.9 % respondents consume for relaxation and remaining 8.5% started to consume due to social gathering.

Table 3 Distribution of respondents according to their preferred timing for drinking

SN	Responses	Frequency	Percentage
1	Any Day	19	16.2

2	Week Days	21	17.9
3	Week end only	77	65.8
4	Total	117	100.0

Above table shows that the respondents prefer to drink alcohol during weekends only that is 65.8% whereas 16.2% consume any day which means they don't have any specific day for them to drink.

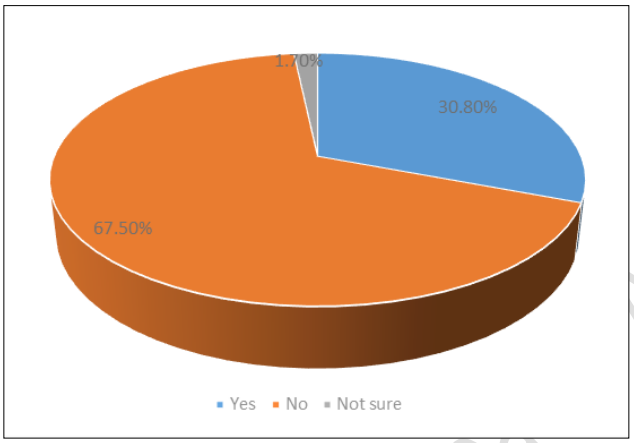

Figure 3 Distribution of respondents according to the family history of alcohol

Above figure shows that out of 117 respondents 30.8% respondents had family history of drinking alcohol whereas amajority of 67.5% respondents were found to have a no family history of drinking alcohol.

Table 4 Distribution of respondent according to their willingness to quit drinking habit

SN	Responses	Frequency	Percentage
1	Yes	46	39.3
2	No	71	60.6
	Total	117	100.0

Of 117 participants, 39.3% attempted to quit their drinking habit while the remaining 60.6% did not make any attempt to quit. (Table 4)

Table 5 Distribution of respondents according to the impact on thier job performance

SN	Options	Frequency	Percentage
1	Highly Impact	28	23.9
2	Lesser Impact	89	76.1
	Total	117	100.0

Above table shows that only 23.9%(n=28) respondents experiences a significant impact on thier job performance meanwhile, the remaining 76.1% reported a lesser impact on their job performance.

Table 6 Distribution of respondents according to their job effect after having alcohol

SN	Responses	Frequency (n=117)	Percentage(%)	P-value
1	Concentrate on work			*0.038
	Yes	22	18.80%	
	No	95	81.19%	

2	Taken leave or absent at work			
	Yes	27	23.1	
	No	90	76.9	
3	Have you ever been hospitalized			
	Yes	15	12.8	
	No	102	87.2	
4	Traffic accident			*0.043
	Yes	74	63.2	
	No	43	36.8	
5	Irritated with colleague			*0.025
	Yes	86	73.5	
	No	31	26.5	
6	Warning from Manager			
	Yes	49	41.9	
	No	68	58.1	
7	Completed task on time			
	Yes	50	42.7	
	No	67	57.3	

*Statistically Significant

Regarding affect in job after having alcohol lack of concentration was found to be statistically significant correlation with p-value 0.038. Similarly different form of accident and getting irritated with working collegue at work environment with p-value 0.043 and p-value 0.025 respectively were also found to statistically significant. Remaing effects like taking leave or being absent at work due to drinking alcohol, getting warning from manager, not completing task on time were not found significant.

1. Discussion

It is critical to understand that, while moderate alcohol intake may not constitute a substantial risk to many people, excessive or reckless drinking can result in health problems, addiction, and societal implications. Many people drink in social contexts to connect with others and improve social relationships. Some civilizations use alcohol into their rituals, celebrations, and religious activities. Some people drink alcohol to deal with stress or to unwind after a long day. To highlight the same issue, this study evaluated the practices of alcohol drinking and its impact on job performance among local residents of middle age in Jalalabad.

A total of 160 respondents from various working areas in Jalal-abad were chosen from the sampling size, with the majority 73.1% (117) classified as having a drinking habit, while 43 respondents had never taken alcohol and were thus removed from further study. In addition, males outnumbered females by 68.1%. Historically, there has been a cultural misconception that males consume more alcohol. Social standards, cultural influences, and individual actions all have an impact on alcohol consumption trends across genders.

In this study, respondents were asked about their family history of alcohol consumption, which revealed that 30.8% of the 117 respondents had a family history of alcohol consumption, while the majority, 67.5%, had no family history of drinking. This finding does not indicate a probable family influence on alcohol use. A comparable study conducted in Ciudad de Carmen Campeche, Mexico, discovered that 57.6% of adolescents reported that persons living with them use alcoholic beverages (11).

According to the findings of this study, 69.4% of respondents worked in the private sector, while 21.3% worked for the government. Similarly, a study conducted in the United Kingdom examined people's experiences in both the public and private sectors. People working in the private sector were 38% more likely than government employees to report drinking alcohol at work (12).

In our study, 63.2% of respondents were involved in an RTA or traffic collision and tested positive for alcohol usage. According to earlier studies conducted by the University of Athens, Greece (2011-2017), alcohol use was responsible for 40.7% of RTA deaths (13).

This study discovered that 23.1% of respondents who consume alcohol may be missing from the workforce, but Mezuk's study on Job Stress and Depressive Symptoms stated that workers who drink excessively may be away from the workplace. (14)

Our study has shown statistically significant correlation between alcohol consumption and decreased concentration. As because alcohol affects the central nervous system, leading to impairments in cognitive function, including attention, memory and concentration. Similarly different form of accident and getting irritated with working collegue at work environment with p-value 0.043 and p-value 0.025 respectively were also found to statistically significant. Alcohol canaffect mood regulation and exacerbate feeling of irribality whichh may lead to conflicts with coworkers. Additionally alcohol use can impaire judgement and decision making as well as potentially influencing interpersonal interactions atworking place.

1. Conclusion

This study's findings show a considerable prevalence of alcohol consumption among Jalalabad locals, with 117 out of 160 claiming to be affected. The implications extend beyond personal health, with known consequences for job performance and an increased risk of traffic accidents.Many workers reported difficulty concentrating at work, which can affect productivity and job satisfaction. Furthermore, alcohol-related irritability among coworkers worsens workplace dynamics, potentially leading to strained relationships and low morale.

Limitations

Because the number of participants were relatively small and restricted to urban areas, the prevalence of alcoholism may not accurately represent the jalalabad region. The study of the association between job performance and drinking has been very restricted in academic studies. As a result, there may be gaps in our understanding of the potential relationship between job performance and alcoholism, emphasizing the need for additional study to explicate these dynamics and their implications for individuals, businesses, and public health.

Recommendation

By implementing complete solutions that include education, legislation, and support services, Jalalabad could reduce these negative outcomes and create a healthier and more enjoyable work environment for its inhabitants.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

References

[1] Griswold MG, Fullman N, Hawley C, et al.. Alcohol use and burden for 195 countries and territories, 1990-2016: a systematic analysis for the Global Burden of Disease Study 2016. Lancet 2018; 392:1015–35. 10.1016/S0140-6736(18)31310-2

[2] World Health Organization. Global status report on alcohol and health 2018. Geneva, Switzerland: World Health Organization, 2018.

[3] Lim SS, Vos T, Flaxman AD, et al.. A comparative risk assessment of burden of disease and injury attributable to 67 risk

factors and risk factor clusters in 21 regions, 1990-2010: a systematic analysis for the Global Burden of Disease Study 2010. Lancet 2012; 380:2224–60. 10.1016/S0140-6736(12)61766-8

[4] Khan S. Zimbabwe Emerges as the Country with the Highest Per Capita Alcohol Consumption Globally. 2023. Available from: https://bnnbreaking.com/world/zimbabwe/zimbabwe-emerges-as-the-country-with-the- highest-per-capita-alcohol-consumption-globally/

[5] Konchellah, Ruth M. "Effects of Alcohol Abuse on Employee Performance and Absenteeism in Kenya Ports Authority." Erepository.uonbi.ac.ke, 2016, erepository.uonbi.ac.ke/handle/11295/99451.

[6] Frone MR. Alcohol, drugs, and workplace safety outcomes: A view from a general model of employee substance use and productivity: Barling J, Frone MR, The psychology of workplace safety. Washington, DC: American Psychological Association, 2004:127–56

[7] Rehm, Jürgen. "The Risks Associated with Alcohol Use and Alcoholism." Alcohol Research & Health : The Journalof the National Institute on Alcohol Abuse and Alcoholism, vol. 34, no. 2, 2011, pp. 135–43, www.ncbi.nlm.nih.gov/pmc/articles/PMC3307043/.

[8] Ma, Yuna, et al. "Job Satisfaction and Alcohol Consumption: Empirical Evidence from China." International Journal of Environmental Research and Public Health, vol. 19, no. 2, 1 Jan. 2022, p. 933, www.mdpi.com/1660- 4601/19/2/933, https://doi.org/10.3390/ijerph19020933.

[9] Varghese, Jerin, and Sarika Dakhode. "Effects of Alcohol Consumption on Various Systems of the Human Body: A Systematic Review." Cureus, vol. 14, no. 10, 8 Oct. 2022, https://doi.org/10.7759/cureus.30057

[10] Subbaraman MS, Barnett SB, Karriker-Jaffe KJ. Risks Associated with Mid level Cannabis Use Among People Treated for Alcohol Use Disorder. Alcoholism: Clinical and Experimental Research. 2019 Mar 4;43(4):690–4

[11] TELUMBRE-TERRERO, JUAN YOVANI, et al. "Family History and Alcohol Consumption in Adolescents." Revista Salud Uninorte, vol. 35, no. 1, 2019, pp. 72–83, www.scielo.org.co/scielo.php?script=sci_abstract&pid=S0120-55522019000100072. Accessed 11 Feb. 2024.

[12] Kenkel DS. Drinking, Driving, and Deterrence: The Effectiveness and Social Costs of Alternative Policies. The Journal of Law and Economics. 1993 Oct;36(2):877–913.

[13] Papalimperi A, Athanaselis S, Mina A, Papoutsis I, Spiliopoulou C, Papadodima S. Incidence of fatalities of road traffic accidents associated with alcohol consumption and the use of psychoactive drugs: A 7-year survey(2011-2017). Experimental and Therapeutic Medicine. 2019 Jul 17;18(3).

[14] Mezuk B, Bohnert ASB, Ratliff S, Zivin K. Job Strain, Depressive Symptoms, and Drinking Behavior Among Older Adults: Results From the Health and Retirement Study. The Journals of Gerontology: Series B. 2011 Mar 22;66B(4):426–34.

International Journal for Multidisciplinary Research (IJFMR)

Pregnancy Induced Hypertension and It's Associated Factors Among Women Attending Delivery Center

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Abstract

Background: Pregnancy-induced hypertension (PIH) is a dangerous condition that can arise during pregnancy and has been associated with a number of negative outcomes for both the mother and the fetus. According to estimates from the World Health Organization, the effects of hypertensive diseases during pregnancy claim the lives of at least one woman every seven minutes. Examining pregnancy- induced hypertension and associated risk factors in women receiving prenatal treatment at Jalalabad Hospital is the aim of this study.

Method: During two months, from October 1 to November 30, 2023, a cross-sectional survey was conducted in the maternity hospitals located in Jalalabad. The hospital provided a proportionate amount of the total sample size (620). Using a systematic sampling procedure, study participants were chosen. Ap-value of less than 0.05 was deemed statistically noteworthy.

Result: Out of a total of 620 pregnant women, only 8% (50/620) of pregnant women had Hypertensive Disorders in Pregnancy (HDP). The average age of the respondent who visited outpatient department ofa maternity hospital in Jalalabad was 27.5± 2 years with the majority 42% in years 25-30. The findings from our study indicate that hypertensive disorder in pregnancy has a significant relationship with risk factors such as increasing maternal age ($p<0.041$), body mass index (BMI) ($P<0.007$), and family history of hypertension in pregnancy ($p<0.026$). Whereas other risk factors assessed in our study had no significant association with HDP.

Conclusion: The findings of our study highlight the importance of factors including obesity, advancing pregnancy age, and a family history of hypertension as risk factors for HDP. It also emphasizes the necessity of appropriate preconceptional counseling, regular ANC monitoring, and HDP treatment in order to minimize morbidity and death associated with this condition.

Keywords: Pregnancy induced hypertension, associated factors, Pregnancy

Introduction

The term "pregnancy" refers to the time when a fetus develops inside a woman's uterus, during whichtime significant physiological changes occur in women's bodies. Nevertheless, some have issues as theydevelop, endangering the health of the moms and the fetus.(1) While the origin of hypertension during pregnancy is unknown, gestational hypertension is a prevalent cause of maternal morbidity. The chance of having gestational hypertension may increase due to certain conditions, such as pre-existing hypertension, a family history of hypertension, or any type of kidney illness.. One of the leading causes of maternal death, especially in developing nations, is still hypertensive disorders during pregnancy. TheWorld Health Organization (WHO) describes hemorrhage, HDP, and infection as the deadly trifecta of pregnancy. These conditions greatly increase maternal mortality and morbidity, taking the lives of atleast one woman every seven minutes (2).

The incidence of HDP increased from 16.30 million to 18.08 million worldwide between 1990 and 2019,a total increase of 10.9% over 20 years. Pre-eclampsia and other pregnancy-related hypertension disorders fall under

the umbrella term "PIH." Pre-eclampsia is more common in women with antiphospholipid antibodies, pre-existing diabetes, multiple pregnancies, nulliparity, familial history, high blood pressure, and a high body mass index (4). There are several known risk factors for a developing of PIH. Pregnancy-induced hypertension was found to be connected with a number of factorsincluding living in a rural area, being illiterate, having a history of renal illness, having a family history of hypertension, and not eating enough vegetables.(5) Another study found a clear correlation between racial and ethnic differences and the prevalence of maternal hypertensive disorders, with risk variables including obesity, gestational diabetes, education level, and maternal age.(6) Other major risk factors forPIH include extremes in mother age, passive and active smoking, primigravida and multipara (≥5), aidedvaginal delivery, elective cesarean section, interval between pregnancies ≥ 4 years, and specific contraceptive methods.(7)

According to a meta-analysis carried out in Ethiopia, women who have hypertension during pregnancy had 3.89 times higher risks of giving birth to infants with low birth weights than women who do not have hypertension. Women who developed pregnancy-induced hypertension gave birth to low-birth- weight babies in excess of one-third of their babies.(8)

The mother is more likely to experience heart attacks, heart failure, kidney failure, and cerebral vascular accidents if she has severe hypertension. Furthermore, problems like inadequate placental oxygentransfer, growth limitation, premature birth, placental abruption, stillbirth, and neonatal death put the fetus at higher risk. (9)

Materials and Methods

Among women receiving antenatal care at Jalalabad Hospital over a three-month period, a descriptive cross-sectional study was carried out to evaluate pregnancy-induced hypertension and its associated variables. This study took place between October 1, 2023, and December 31, 2023. Directinterviews utilizing a series of standardized questionnaires were used to collect the data. A prior studyon hypertension during pregnancy served as the basis for the questionnaire.

Study Population:

Our study concentrated on pregnant patients who visited the outpatient department of the maternity hospital in Jalalabad for consultation and whose pregnancy was verified by ultrasound or biological test.
Inclusion and exclusion criteria:

Inclusion criteria: All pregnant women at maternity hospitals who were diagnosed with hypertensive disorder (HDP) and whose gestational age was greater than 28 weeks for an ANC checkup were eligible to participate in the study.

Exclusion Criteria: Study participants who had eclampsia, were critically unwell, or were known to have persistent hypertension were not excluded

Sample size:

The sample size was determined by: $n=t^2 *p*(1-p)/m^2$n = Minimum sample size for significant results

t = Confidence level = 95% will be 1.96

p = Estimated proportion of population with the characteristic (10%)m = Margin of error 3%

n= 1.96x1.96x0.1x(1-0.1)/0.0236x0.0236 = 620

Result

Out of total 620 pregnant women from maternity hospitals of Jalalabad for three month period of timeonly 8% (50/620) of pregnant women had Hypertensive Disorders in Pregnancy (HDP).

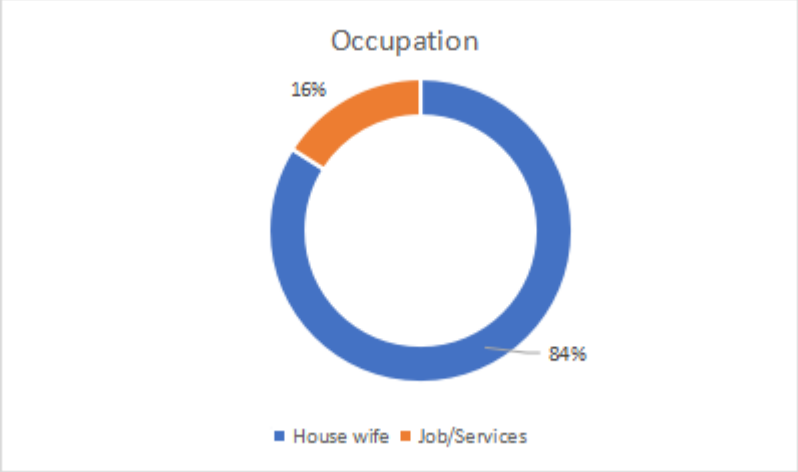
Socio-demographic Information

Table 1: Distribution of respondents according to their socio-demographic information

Responses	Frequency (n=50)	Percentage(%)
Age		
<20	2	4
20-24	9	18
25-30	21	42
>30	18	36
Marital Status		
Married	47	94
Divorced	3	6
Educational Status		
Primary	29	58
Secondary	17	34
University Level	4	8

The average age of the respondent who visited out patient department of maternity hospital in Jalalabad was 27.5±2 year with majority 42% in year 25-30 years. Majority of respondent 94% were married and remaining 6% were leaving single as being divorced. Majority of respondents 58% have only completed their primary level education whereas only 8% have done their Univerisity level higher education. (Table1)

Figure 1: Distribution of respondents according to their occupation



Almost 84% respondents were house wife and remaing 16% were engaged in certain types of job.(Figure 1)

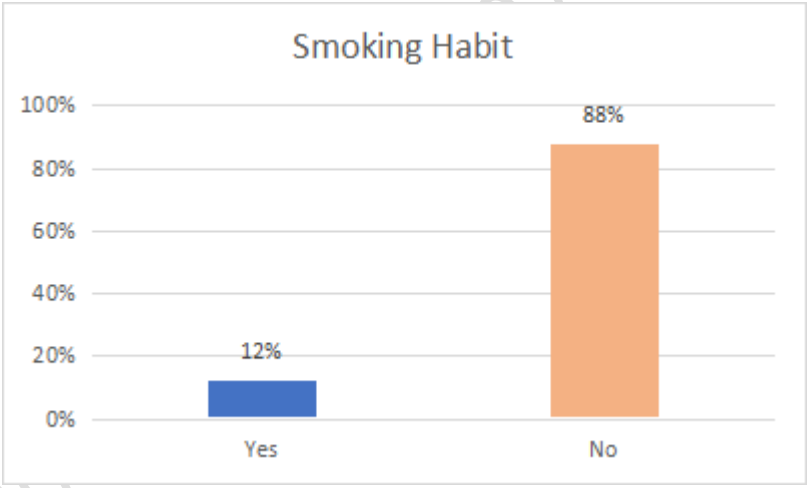
Table2: Distribution of respondents according to the present pregnancy status

Responses	Frequency(50)	Percentage(%)
BMI		
<19	11	22
19-25	16	32
25-30	6	12
>30	17	34
Wanted pregnancy		

Yes	45	90
No	5	10
Gravida		
Primi	8	16
Multi	42	84
Number of ANC visit		
2 ANC Visit	2	4
3 ANC Visit	30	60
=>4 ANC Visit	18	36

Out of 50 HDP patients, 34% of the respondents were having BMI more that 30 (Obesity) similarly 32%of respondents were found to have normal BMI i.e 19-25. Regarding the status of pregancy 90%pregnant women said they have planned for their pregancy whereas remaining 10% said they havent planned for this current pregnancy. Out of 50 respondents, 16% were in primi gravida where as majority 84% of the pregnant women were with multi Gravida status. Most of the pregnant women 60% had donetheir three ANC visit similarly 36% have done for at least or more than 4 ANC visit as a follow up for their pregnancy. This shows that majority of women in Jalalabad were aware about the importance of having proper regular ANC check-up as per recommeded by WHO for early detection of any abnormality during pregancy. (Table 2)

Figure:2 Distribution of respondents according to their smoking habit



Above figure shows respondents regarding their smoking habit, where majority 88% said they dont smoke.

Table 3: Distribution of respondents according to their past obsteric history

Responses	Frequency(n=50)	Percentage(%)
Previous PIH		
Yes	5	10
No	44	88
I dont know	1	2
Gestational Diabetes		
Yes	2	4
No	46	92
I dont know	2	4

A proportion of 10% of the pregnant women had history of previous PIH and similarly only 4% of the

pregnant women said they had gestational diabetes during her previous pregnancy. (Table 3)

Table 4: Distribution of respondents according to their family history of chronic disorders and habits

Family History	Frequency(n=50)	Percentage(%)
Hypertension		
Yes	22	44
No	28	56
Kidney Disease		
Yes	2	4
No	48	96
Diabetes		
Yes	6	12
No	41	82
Smoking Habit		
Yes	22	44
No	28	56

Out of 50 respondents, almost fifty percentage of the respondents family had history of hypertension whereas 96% of respondents said they didnt have any kidney diseases in their family regarding diabetes also only 12% of the resondents said they had family members who are affected with diabetes. Similarly 44% of the respondents said someone in their family members they smokes.(Table 4)

Table 5: Factors associated with Hypertensive Disorders of Pregnant women with socio demographic information

	Total (n=620)	HDP		p-value
Age		Yes (n=50)	Percentage(%)	***0.041**
<20	52	2	4	
20-24	153	9	18	
25-30	181	21	42	
>30	234	18	36	
BMI				***0.007**
<19	150	11	22	
19-25	157	16	32	
25-30	98	6	12	
>30	215	17	34	
Family History of Hypertension				***0.026**
yes	246	22	44	
No	374	28	56	
Family history of Diabetes				**0.060**
yes	24	6	12	
No	576	41	82	
I dont know	20	3	6	

Smoking habit				**0.095**
Yes	31	6	12	
No	589	44	88	

* Statistically significant

The variables linked to Hypertensive Disorders in Pregnancy (HDP) in our research study's pregnant participants are shown in this table.The p-value, which indicates the statistical significance of the association, is displayed in the table along with the number and percentage of pregnant women withHDP for each factor. Age, BMI, family history of hypertension in relation with HDP were found to be associated with p-values of 0.041, 0.007, and 0.026, respectively, indicating a statistically significant relationship.There is no statistically significant relationship of family history of diabetes and smoking habits with HDP according to the p-values of 0.060 and 0.095.

Discussion

One of the main causes of maternal morbidity and mortality during pregnancy is hypertensive disorders. According to our study, 8% (50/620) of pregnant women attending delivery services in Jalalabad, Kyrgystan, had hypertensive disorders in pregnancy (HDP). The prevalence of HDP in this study was 7.8%, which was comparable to the study done in India (10). The low prevalence of hypertensivedisease during pregnancy in these studies may be attributed to the short study duration and small sample size.

The majority of participants in our study who had pregnancy-induced hypertension (PIH) were over 25 (78%). Comparably, a case-control research conducted in an Indian hospital found that pregnant women in the age group of 25 had a greater prevalence of hypertension (74.6%).(11)

The majority of patients with PIH of those in this study were housewives (42/50) In the same way 43.2%of cases in a study conducted in Public Hospitals in the Wolaita Zone of South Ethiopia were housewives (41/95), which is inconsistent with our research.(12)

About 10% of the respondents reported having prior experience with pregnancy-induced hypertension (PIH), compared to over 88% who had no prior history of the condition. 92% of those surveyed had no prior history of gestational diabetes. Similarly, 98% of participants in a research conducted at a teaching hospital in Bangladesh had no prior history of pregnancy-induced hypertension, which is consistent withthe findings of this study. 96% of those surveyed had no prior history of gestational diabetes. (13)

In the present study, 34% (17/50) of patients with hypertension problems during pregnancy had BMIs more than 30. This is consistent with an Indian study that discovered the majority of HDP individuals also had BMIs above thirty.(14) Similar findings have been reported by a few other research, which point to obesity as a risk factor for pregnancy-induced hypertension (15). Therefore, obese and overweight women should lose weight before getting pregnant as there may be an increased risk of gestational hypertension.

Of the 50 participants in the research, 4% had a history of kidney disease. This is in line with findings from Ethiopia, where 7.7% of patients with PIH also had a history of kidney disease.(16).

Factors linked to HDP (10%) included a previous history of preeclampsia or gestational hypertension. This finding is consistent with a study conducted in the city of Parakou, which discovered a similar finding following a review of the literature on preeclampsia risk factors during pregnancy. In our research, a family history of hypertension was found to be statistically linked with HDP ($p < 0.026$). In his research, M. V. Vodouhe1 reported a similar outcome, which supported the notion that a family history of hypertension poses a risk for developing arterial hypertension during pregnancy (17).

The study revealed that the incidence of HDP was correlated with the age, BMI, and family history of hypertension of the participants. The p-values for these factors were 0.041, 0.007, and 0.026, respectively, suggesting a statistically significant link. Obesity raised the incidence of PIH by ten times, according to a prospective research by Bener and Saleh (18). Likewise, additional research has demonstrated that obesity increases the chance of having PIH (19). Consequently if such women were tobecome pregnant, they would be at higher risk of developing PIH. But in contrast there were no statistically significant relationship of with other variables like, family history of diabetes and smoking habits etc according to the p-values of 0.060 and 0.095.

Limitations

The short study period, small sample size, and single center study were possible limitations. Additional limitations included recall bias, which was inevitable given that risk factors were assessed at the time of diagnosis.

Conclusion and Recommendation

The prevalence of pregnancy induced hypertension among women attending delivery service was 8%. The results of our study demonstrate the number of variables as significant risk factors for hypertensive disorders in pregnancy, such as obesity,increasing pregnancy age, and a family history of hypertension.Itis therefore imperative that weight loss be prioritized, and that appropriate preventative measures be followed to manage hypertensive disorders in families. Early detection and treatment of chronic conditions such as hypertension have also been identified as critical interventions.

Reference

1. Chaim SRP, Oliveira SMJV, Kimura AF (2008) Pregnancy-induced hypertension and the neonatal outcome. Acta Paul Enferm 21(1): 53- 58.
2. Maternal health; World health organization; Available from: www.who.int/health-topics/maternal- health
3. Wang, X. Xie, T. Yuan, et al.Epidemiological trends of maternal hypertensive disorders of pregnancy at the global, regional, and national levels: a population-based study BMC Pregnancy Childbirth, 21 (1) (2021), p. 364, 10.1186/s12884-021-03809-2
4. Gudeta TA, Regassa TM. Pregnancy induced hypertension and associated factors among women attending delivery service at Mizan-Tepi University Teaching Hospital, tepi general hospital and Gebretsadik Shawo Hospital, Southwest, Ethiopia. Ethiopian Journal of Health Sciences. 1970 Jan 1;29(1). doi:10.4314/ejhs.v29i1.4
5. Belayhun, Y. et al. (2021) 'Determinants of pregnancy-induced hypertension among mothers attending public hospitals in Wolaita Zone, South Ethiopia: Findings from unmatched case-control study', International Journal of Hypertension, 2021, pp. 1–9. doi:10.1155/2021/6947499.
6. Orós M, Siscart J, Perejón D, Serna MC, Godoy P, Roca B-S. Ethnic Disparities and Obesity Risk Factors in Pregnant Women: A Retrospective Observational Cohort Study. Nutrients. 2023 Feb;15(4):926.
7. Hammodi F Al-jumaily, Y. T. (2017). Risk Factors of Pregnancy-Induced Hypertension in Falluja city. Falluja city: Al Anbar Medical Journal. Retrieved from https://www.iasj.net/iasj/download/b5aabe59c2ab20b3
8. Getaneh, T. et al. (2020) 'The impact of pregnancy induced hypertension on low birth weight in Ethiopia: Systematic review and meta-analysis', Italian Journal of Pediatrics, 46(1). doi:10.1186/s13052-020-00926-0.
9. Paola Aghajanian P, Ainbinder S, Andrew E, Vicki VB, Heather B, Helene B, et al. Current Diagnosis and Treatment in Obstetrics and Gynecology. the McGraw-Hill; 2006.
10. SAJITH, M. (2014). Incidence of pregnancy induced hypertension and prescription pattern of antihypertensive drugs in pregnancy. Retrieved from / International Journal of Pharma Sciences and Research (IJPSR): https://www.ijpsr.info/docs/IJPSR14-05-04-002.pdf

11. Lamba, D. S. (2019). Assessment of risk factors of pregnancy induced hypertension in a hospital: A case control study. Retrieved from International Journal of Clinical Obstetrics and Gynaecology

: https://doi.org/10.33545/gynae.2019.v3.i4a.283

12. Regassa, T. A. (2019, January). Pregnancy Induced Hypertension and Associated Factors among Women Attending Delivery Services at Mizan-Tepi University Teaching Hospital, Tepi General Hospital, and Gebretsadik Shawo Hospital, Southwest, Ethiopia. Retrieved from National Library of Medicine: 10.4314/ejhs.v29i1.4
13. Sultana, N. (2017). Pregnancy induced hypertension and associated factors among pregnant women. Journal of Gynecology and Womens Health, 3(5). https://doi.org/10.19080/jgwh.2017.03.555623
14. Rachel Mathew, B. P. (2023, june). Prevalence of hypertensive disorders of pregnancy, associated factors and pregnancy complications in a primigravida population. Retrieved from Gynecology and Obstetrics Clinical Medicine: https://doi.org/10.1016/j.gocm.2023.01.002
15. Robinson HE, O'Connell CM, Joseph KS, McLeod NL (2005) Outcomes in Pregnancies Complicated by Obesity. Obstet Gynecol 106: 1357-1364.
16. Yitagesu Belayhun, 1. K. (2021). Determinants of Pregnancy-Induced Hypertension among Mothers Attending Public Hospitals in Wolaita Zone, South Ethiopia: Findings from Unmatched Case- Control Study. hindawi doi:https://doi.org/10.1155/2021/6947499
17. M.V. Vodouhe1*, A. A. (2021). Factors Associated with Hypertensive Disorders of Pregnancy in Public Maternities of the City of Parakou In 2019. parakou: scientific research. doi:10.4236/ojog.2021.117081
18. Bener A, Saleh NM (2013) The impact of socioeconomic, lifestyle habits and obesity in developing of pregnancy induced hypertension in fast growing country: Global comparisons. Clin Exp Obstet Gynaecol 40(1): 52-57.

Ministry of Health & Child Welfare (2005) National Survey Zimbabwe Non-Communicable DiseaseRisk Factors - (ZiNCoDs) Preliminary Report. Harare, Zimbabwe, East Africa, pp. 6

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

A Cross Sectional, Descriptive Study: Assessment on Knowledge andPractices of the Uses and Resistance of Antibiotic Use

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ABSTRACT

Background

Antimicrobial resistance (AMR) is one of the most serious global public health threats in this century. As we know medical students are going to be primary care giver / physicians to serve the community and there knowledge and practices regarding the uses of antibiotic plays a vital role. The study aimed to assess the knowledge and practices of antibiotic use and its resistance among undergraduate medical students at the Jalal-Abad State Medical University.

Materials and Methods:

A descriptive cross-sectional study was done through online Google forms for a period of 3 months from September to November 2023. A structured questionnaire was administered to 120 randomly selected Undergraduate Medical students which containing a three-point scale. The variables were assessed using a ten points scale, whose responses were “Yes” or “No” and level of Knowledge on antibiotics was assessed using the scale correct answer above 6 as good knowledge, correct answer below 5 as poor level of knowledge. Similarly for practice was assessed using scale correct answer above 5 as good practice and below 4 as poor practice.

Data were analyzed using Statistical Package for Social Sciences (SPSS) version 22.0. Associations between dependent and independent variables were done using a Chi-square test. The statistical significance was done at 95% confidence level ($p<0.05$). Ethical approval was taken by the University. The questionnaire was adopted from previously conducted similar studies and modified to fit with the current setup.

Result: In total, 120 medical students from 3rd year were selected for the study where the age range was 17-22 years with mean age of 20±1 years. Majority (89.2%) of the participants were found to have good knowledge on antibiotics uses and its resistance while the majority of respondents had poor practices on the uses of antibiotic (50.8%)specially reuse of same antibiotics for similar kind of symptoms. Majority of students who has good knowledge and also had good practices where as students with poor knowledge has poor practices (p value=0.022). Personality traits were found to be a contributing factor in students' tendency to use antibiotics without a prescription.

Conclusion: Most of the students were aware of the antibiotic resistance and its consequences. However, their practices were found to be a matter of concern. An educational intervention can be introduced to bring about behaviour changes regarding antibiotics practices among students.

Key words: *Knowledge; Practice; Antibiotic use and resistance, Medical students*

Introduction

One of the biggest risks to global public health is antimicrobial resistance (AMR). According to estimates, bacterial AMR contributed 4.95 million fatalities worldwide in 2019 and was directly responsible for 1.27 million of those deaths (1) . The primary cause of the emergence of drug-resistant infections is the overuse and misuse of antibiotics in humans, animals, and plants. Common antibiotics' ability to effectively treat common bacterial infections is being threatened by the global growth of antibiotic resistance. (2).

Modern medicine relies on antimicrobial medications to treat bacterial infections. Drug-resistant microorganisms are becoming more prevalent, endangering our capacity to treat common illnesses and carry out life-saving operations including organ transplants, hip replacements and other routine procedures. Antibiotics are the most commonly administered medications in developing nations with high rates of infectious disease, such as Bangladesh, Pakistan, and India. This is why the worrisome rise in antimicrobial resistance (AMR) has been seen (3).

Irrational use of antibiotics has created a havoc of antibiotic resistance. (4) One of the major contributing reasons to the development and spread of resistance is the improper and unnecessary use of antibiotics. A number of complex factors, including prescription knowledge and expertise and uncertain diagnosis, might interact to cause inappropriate administration of antibiotics. Furthermore, patients' expectations, experiences with antibiotics, knowledge, attitudes, and beliefs about self-medication are additional determinants. (5)

Medical students are going to be primary care physicians to serve the community. There is enough data to conclude that physicians and prescribers who have just obtained their licenses lack the necessary training to write prescriptions safely (6). One of the possible causes of this could be inadequate training received during the medical degree program. Thus, the goal of the current study is to evaluate the MBBS students' current antibiotic knowledge and practices.

Subjects and Methods

The cross-sectional study was conducted between September and November of 2023 using Google Forms. A structured questionnaire that was specially created and created based on the literature study was used to collect the data.

There were three sections on the questionnaire. The first section deal with the sociodemographic data of

medical students, whereas the second section of questions were knowledge-based and had ten distinct statements. Practice-related questions are found in the third part. The knowledge and practices of the respondents regarding antibiotics were measured using a scoring system. The participant's total number of right answers to ten items was added up to determine their antibiotic knowledge score, which was computed as a continuous variable. For every right response, one point was given, and for every incorrect response- zero, with a maximum possible score of 10 for each respondent on the correct answers. The knowledge score was divided into two categories: poor knowledge (0–5), good knowledge (scoring >6). Using a shared Google link, the questionnaire was distributed to third-year medical students at the university.

Result

A total of 120 medical students from 3rd year where as the age range was 17-22 years with mean age of 20±1 years. Male (67.5 %) predominance was found over females (32.5%). Where as majority of the students (48.3%) were from India and (44.2%) were from Pakistan followed by (7.5%) from Bangladesh. Regarding marital status majority 94.2% respondents said that they were single whereas remaining 5.8% were married. Similarly on the assessment of their family type majority 70% they were from single family background. And regarding the distribution of students based on their religion maximum 68.3% were from Muslim religion followed by 28.3% Hindu and remaining 2.5% and .8% were from Christian and Jew religion respectively.

Assessment of participants' knowledge of antibiotics use and resistance.

Table1: shows the frequency and distribution of respondents knowledge to questions regarding antibiotics.

SN	Statements	Yes	No
1.	Excessive use of antibiotic can reduce the risk of antibiotic resistance	14(11.7)	106 (88.3%)
2.	Antibiotic should be only taken when prescribed by doctors	102(85%)	18(15%)
3.	Can antibiotic be shared with others with similar symptoms	97(80%)	23(19.2%)
4.	All types of antibiotic are safe to take during pregnancy and breastfeeding	10(8.3%)	110(91.7%)
5.	Taking antibiotic regular can make you more addictive?	63(52.5%)	57(47.5%)
6.	Antibiotic are used to treat infection caused by bacteria.	107(89.2%)	13(10.8%)
7.	Is it possible for antibiotics to cause allergic reaction for some people.	97(80%)	23(19.2%)
8.	Antibiotics are not effective drugs for the treatment of fever	106(88.3%)	14(11.7%)
9.	Antibiotic kills both good and bad organisms.	92(76.7%)	28(23.3%)
10.	The body can usually fight mild infection on its own without antibiotics.	60(50%)	60(50%)

Table 1 shows that the majority of the participants 102 of 120 (85%) agreed that the antibiotic should be only taken after prescribed by doctors. The participants also agreed that antibiotics are not effective drugs for the treatment of fever, as well as 107 (89.2%) believed antibiotics are used to treat infection caused by bacteria. Majority of them (80%) believed that antibiotic might cause allergic reaction for some people.

Assessment of participants' practices on the uses of antibiotics use.

Table: 2 shows the frequency and distribution of respondents to questions on practices regarding antibiotics usage.

SN	Practices related questions	Responses	
		Yes	No
1.	Do you think taking antibiotics regularly can make you more addictive?	59 (49.2%)	61 (50.8%)
2.	Do you save the remaining antibiotic for next time you get sick?	102 (85%)	18 (15%)
3.	Do you stop taking the further treatment once you start feeling better?	23 (19.2%)	97 (80.8%)
4.	Have you share your antibiotics with others?	34 (28.3%)	86 (71.7%)
5.	Do you consult doctor before starting antibiotic?	107 (89.2%)	13 (10.8%)
6.	Do you prefer to take an antibiotic for simple cough and sore throat?	47 (39.2%)	73 (60.8%)
7.	Do you check the expired date of antibiotics before use?	112 (93.3%)	8 (6.7%)

From the study it observed that more than 80% students save the remaining antibiotics for next time. It was satisfying to observe that more than 97% said they don't stop taking full course of antibiotics once they start to get better. Majority (89.2) of students believed in consulting doctor before starting antibiotics. Almost all of them (93.3%) always check expiry date of antibiotic before using it. Similarly, majority of students who find it normal to ask doctor to prescribe antibiotics for them when they catch common cold or cough.

Table 3: Showing the level of knowledge of respondents on uses and resistance of antibiotic

SN	Statement	Responses	
		Frequency	Percentage(%)
1.	Good Knowledge	107	89.2
2.	Poor Knowledge	13	10.8
	Total	120	100

In accordance with the grading scale devised majority 89.2% of the participants were found to have good knowledge and 10.8% to have poor knowledge on antibiotics and resistance of its usages. (see table 3)

Table 4: Showing the Level of Practices of respondents on uses and resistance of antibiotic

SN	Statement	Responses	
		Frequency	Percentage(%)
3.	Good Practice	59	49.2
4.	Poor Practice	61	50.8
	Total	120	100

Above table shows that 50.8% of the respondents had poor practices on the uses of antibiotic where as remaining 49.25% had poor practices of use of antibiotics.

Table 5: Correlation between participants' level of knowledge on antibiotic resistance and their gender

SN	Level of Knowledge	Gender		Total
		Male	Female	
1	Good Knowledge	70*	37	107
2	Poor Knowledge	11	2	13
	Total	81	39	120
Note: p-value=0.034 (Statistically significant)				

Above table shows that more male respondents had better knowledge of antibiotic use and resistance than their female counter partners which was statistically significant, p-value = 0.034)

Table:6: Correlation between participants' level of Practices on antibiotic use and their gender

SN	Level of Knowledge	Gender		Total
		Male	Female	
1	Good Practice	38	21	59
2	Poor Practice	43	18	61
	Total	81	39	120
Note: p-value=0.065 (Statistically not significant)				

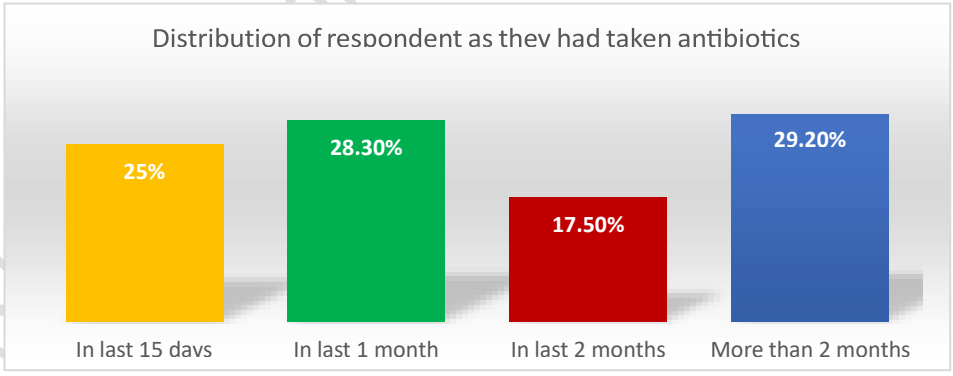
Above table shows that more female respondents had good practices of use of than than in comparison to male respondents. (21 vs 38).

Table 7: Correlation between participants' knowledge on antibiotic resistance and practices regarding antibiotic usage

SN	Level of Knowledge	Level of Practices		Total
		Good Practice	Poor Practice	
1	Good Knowledge	64*	43	107
2	Poor Knowledge	4	9	13
	Total	59	61	120
Note: p-value=0.022 (Statistically Significant)				

The correlation between knowledge and practices from above table show that those majority of students who has good knowledge and also had good practices where as students with poor knowledge has poor practices and that statistically significant (p-value=0.022)

Figure:1 Distribution of respondents as per the antibiotics they have taken recently



Above figure shows that almost 70% of the respondents had taken antibiotics in last 2 months where as remaining 29.20% of them had taken their antibiotics for more than 2 months.

Discussion

Inappropriate use of antibiotics leads to antibiotic resistance, which has several clinical and financial ramifications as well as a progressive loss of sensitivity to antibiotics(7). However, the issue of antibiotic overuse with no justification has also been brought up by the WHO. "Combat AMR: No Action Today, No Cure Tomorrow" is the theme for World Health Day.(8,9)

Similar to a study conducted among students at the International University of Africa, where 70.9% of the respondents were male and the remaining
29.15 percent were female, the majority of respondents in this study (65.5%) were male (10). In contrast, 63.7% of study participants in a study conducted in Nepal were female, while 36.3% were male.(11)

Knowledge about antibiotics and its usages

In this study, the majority of students (85%) agreed that antibiotics should only be taken as prescribed by doctors. The level of knowledge regarding the usefulness of antibiotics for bacterial infections was relatively high (89.2%). A study conducted in India found that a similar percentage of participants knew that antibiotics are useful for treating bacterial infections (95.2%) (12). A high degree of understanding on the efficacy of antibiotics in treating bacterial infections was also revealed by another Indian study. One possible explanation for their right response could be that they encountered the content in their course on pharmacology, microbiology, etc.

In line with a study conducted among second-year medical students in Mysore, India, 75.8% of respondents agreed that antibiotics might kill healthy bacteria(13). Our survey found that 76.7% of respondents agreed that antibiotics can kill good bacteria.

Practices related discussion about antibiotics resistance and its usages

According to a study conducted in Sudan, 70.4% of participants agreed with the assertion that they do not share antibiotics with others, but 71.71% of participants in our study disagreed with this statement (14). Only 52.8% of participants in our study agreed that using antibiotics on a regular basis can make them more addictive; in contrast, 93.1% of participants in a similar study conducted in Zimbabwe agreed with this statement (15).

In our study,85.2% of the students sought medical advice before taking antibiotics, compared to 69.6% of students in a Nigerian research who occasionally seek medical advice before using antibiotics. According to our research, roughly 80.8% of participants stated they typically discontinued taking antibiotics once they felt better. This percentage is comparable to an 82.6% study conducted in Nigeria (16).

In the present study, the majority of medical students (80.8%) disagreed that an antibiotic treatment should be stopped as soon as the illness's symptoms disappear. Our research's results are consistent with those of Bharath et al., who found that 75% of medical students knew how important it is to finish an antibiotic course (17). Approximately 85 percent of students regularly stored unused antibiotics for later use. Among medical students from the southern region of India, this practice was comparatively lower (less than 50%) (18).

Up to 28.3% of students in our study shared antibiotic leftovers with friends and family. According to a similar survey conducted in Nigeria, 17.7% of students give their friends, family, or roommates their leftover antibiotics when they're unwell without first consulting a doctor (19). While most students in our study disagreed, a small percentage (37.2%) thought that antibiotics were used to treat common colds and sore throats. Similar findings were found in a research conducted in western China, where over 10% of students had the false impression that ordinary colds should be treated with antibiotics (20).

When asked if students check the expiration dates of antibiotics before using them, the majority of respondents (93.3%) indicated that they do, which is consistent with a survey conducted in Lebanon that found 84.4% of respondents thought that students check the dates (21).

The correlation between knowledge and practices in our study shows that those majority of students who has good knowledge and also had good practices where as students with poor knowledge has poor practices (p-value=0.022) and our findings were consistent with study done Cypriot university (22)

Limitations

A primary constraint is that our sample consisted solely of medical faculty members from a single institution in Jalal-Abad, Kyrgyzstan (JASU). A more realistic representation of the knowledge and practices among the local student population would have been obtained by include students from other programs offered by the institution as well as from universities around the nation.

Secondly, the sample was limited to third-year students who had recently begun their clinical studies. There's a chance that these students haven't learned the practical application of antibiotics. The current sample may not have adequately illustrated the impact of education; a larger sample, with students from more advanced classes, might have done so.

Conclusion

According to our survey most of the medical students were generally well informed on the usage of antibiotic. In terms of practices, a significant deal of improvement is required.

Recommendation

The antibiotics should be prescribed rationally, and medical curricula should include proper guidelines on this topic as medical students are going to be primary care physicians in near future.

Reference

1. Antimicrobial Resistance Collaborators. (2022). Global burden of bacterial antimicrobial resistance in 2019: a systematic analysis. The Lancet; 399(10325): P629-655. DOI: https://doi.org/10.1016/S0140-6736(21)02724-0
2. World Health Organization (WHO);Antimicrobial resistance; Fact Sheets https://www.who.int/news-room/fact-sheets/detail/antimicrobial- resistance
3. World health organization. Prevention and containment of antimicrobial resistance. Available at http://www.ino.searo.who.int/ LinkFiles/Other_Content_WHD11-Seminar_Presentation-WRpdf.Accessed15 February 2016.
4. WHO. WHO Global Strategy for Containment of Antimicrobial Resistance [Internet]. WHO. [cited 2019 Feb 01]. Available from: http://www.who.int/drug resistance/WHO_Global_Strategy.htm/en/
5. Davey P, Pagliari C, Hayes A (2002) The patient's role in the spread and control of bacterial resistance to antibiotics. Clin Microbiol Infect 8: 43– 68. PMID: 12427207
6. Petrov A. Skills of Bulgarian medical students to prescribe antibacterial drugs rationally: A pilot study. IMAB – Annu Proceeding Sci Pap. 2018;24:2020–3
7. Khajuria K, Kaur S, Sadiq S, Khajuria V. KAP on antibiotic usage and resistance among second professional medical students. Int J Basic Clin Pharmacol 2019;8:68-73.
8. Maragakis LL, Perencevich EN, Cosgrove SE. Clinical and economic burden of antimicrobial resistance. Expert Rev Anti Infect Ther 2008;6:751- 63.
9. World Health Organization. The Evolving Threat of Antimicrobial Resistance Options for Action. Geneva: World Health Organization; 2012. Available from: http://whqlibdoc. who.int/publications/2012/9789241 503181_eng.pdf
10. Lawan Saadatu Sunusi, Mousnad Mohamed Awad, Njelekela Hassan, Chiroma Abubakar Isa: Assessment of Knowledge and

Attitude towards Antibioti Use and Resistance among students of International Univeristy of Africa, Medical Complex Sudan: Open Access Text:DOI: 10.15761/GDT.1000171:

11. Shah P, Shrestha R, Mao Z, Chen Y, Chen Y, Koju P, et al. Knowledge, Attitude, and Practice Associated with Antibiotic Use among UniversityStudents: A Survey in Nepal. Int J Environ Res Public Health. 2019;16:3996.

12. Gupta MK, Vohra C, Raghav P. Assessment of knowledge, attitudes, and practices about antibiotic resistance among medical students in India. J Family Med Prim Care. 2019;8:2864-9.

13. Mohan, Kishore, Hemanth. Knowledge, attitude, and practice toward antibiotic use and antibiotic resistance among 2nd-year medical students: Across-sectional study. Natl J Physiol Pharm Pharmacol [Internet]. 2024;(0):1.

14. Sa'adatu Sunusi L, Mohamed Awad M, Makinga Hassan N, Abubakar Isa C. Assessment of knowledge and attitude toward antibiotic use and resistance among students of international university of Africa, medical complex, Sudan. Glob Drugs Ther [Internet]. 2019;4(2).

15. Zulu A, Matafwali SK, Banda M, Mudenda S. Assessment of knowledge, attitude and practices on antibiotic resistance among undergraduate medical students in the school of medicine at the University of Zambia. Int J Basic Clin Pharmacol [Internet]. 2020 Jan. 24 [cited 2023 Dec. 29];9(2):263-70.

16. Alex IO. Knowledge of antibiotic use and resistance among students of a medical school in Nigeria. Malawi Med J [Internet]. 2019;31(2):133.

17. Bharath Kumar VD ,Monika N ,Kalpana L ,Veena RM. Assessment of awareness about antibiotic resistance among first year medical undergraduates in a medical college. International Journal of Clinical Pharmacology Research. 2015 Nov;5(5):239–42.

18. Afzal Khan A K,Gausia Banu,Reshma K K. Antibiotic resistance and usage—A survey on the knowledge, attitude, perceptions and practices among the medical students of a southern Indian teaching hospital. J Clin Diagn Res [Internet]. 2013;

19. Ajibola O, Omisakin O, Eze A, Omoleke S. Self-medication with antibiotics, attitude and knowledge of antibiotic resistance among community residents and undergraduate students in northwest Nigeria. Diseases [Internet]. 2018;6(2):32.

20. Lv B, Zhou Z, Xu G, Yang D, Wu L, Shen Q, et al. Knowledge, attitudes and practices concerning self-medication with antibiotics among university students in western China. Trop Med Int Health [Internet]. 2014;19(7):769–79.

21. Sakr S, Ghaddar A, Hamam B, Sheet I. Antibiotic use and resistance: an unprecedented assessment of university students' knowledge, attitude and practices (KAP) in Lebanon. BMC Public Health [Internet]. 2020;20(1).

22. Baddal B, Lajunen TJ, Sullman MJM. Knowledge, attitudes and behaviours regarding antibiotics use among Cypriot university students: a multi-disciplinary survey. BMC Med Educ [Internet]. 2022;22(1)

International Journal for Multidisciplinary Research (IJFMR)
E-ISSN: 2582-2160 ● Website: www.ijfmr.com ● Email: editor@ijfmr.com

RISK FACTORS FOR CORONARY ARTERY DISEASES: A STUDY AMONG PATIENTS WITH ATHEROSCLEROSIS IN JALAL-ABAD

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ABSTRACT

Background: Cardiovascular Disease (CVD) became threat to the world-wide populations. In our day-to-day life my people are losing their life just because of Cardiovascular problems. Cardiovascular diseases (CVDs) are the leading cause of death globally, taking an estimated 17.9 million lives each year [1]. It causes the most significant rate of mortality among the population. Unhealthy lifestyle and some other factors have been found the leading causes for death due to cardiovascular disease in the Kyrgyzstan. This research is done to find out the main causes of coronary artery disease (CAD) among the population. The Main objective of the research is to study the risk factors coronary artery diseases and amount of the effects each factor contributes towards the disease.

Method: The cross-sectional survey was conducted in the cardiology hospital located in Jalalabad, Kyrgystan, during the time period of one and half month. The hospital provided a proportionate amount of the total sample size (106). Using a systematic sampling procedure, study participants were chosen. A p-value of less than 0.05 was deemed statistically noteworthy.

Result: Totally 106 patients' data has been collected. Smoking, drinking alcohol, family history, diabetes, hypertension and hypercholesterolemia are the six risk factors. Among these risk factors, hypertension (30.3%) was major cause for coronary diseases. Hypercholesterolemia (26.8%) comes the second major risk factor. Family history of heart disease (12.7%), Diabetes (11.3%), smoking (10.6%) and drinking alcohol (8.5%) are the factors in the next four places.

Conclusion: The major risk factor was found to be the Hypertension and Hyperlipidemia. Along with these, smoking, drinking alcohol, diabetes obesity and family history also contributes in causing the CAD. Lifestyle and food habits modifications are must advisable to prevent the CAD.

Keywords:

Coronary artery disease, risk factors, Kyrgyzstan, Chronic ischemic heart disease.

INTRODUCTION

The most significant cause of mortality is Cardiac Diseases. One among such diseases is the Coronary artery disease (CAD). Coronary artery disease (CAD) is a condition that develops due to accumulation of atherosclerotic plaque in the epicardial coronary artery, leading to myocardial ischemia [2]. Although the risk factors of this disease are well known, the strength of these factors varies in different populations and needs to be investigated. Cardiovascular diseases are the most common cause of death in the world and the most important cause of disability and decreased the quality of life. According to the latest statistics, cardiac problems became alarming condition in the Modern society.

Millions of individuals worldwide, in both industrialized and developing nations, suffer from cardiovascular disease. Even though the disease's death rate has decreased in industrialized nations over the last several decades, it is still the world's top cause of death and has a significant negative social and economic impact. The percentage of the population that is unwell and has a medium to low income has sharply grown.

According to statistics, about 50% of deaths (5 million out of 12 million deaths) in developed countries are caused by cardiovascular diseases [3]. There have been many risk factors introduced for cardiovascular diseases, especially CAD. The major risk factors are linked with changes of lifestyle from normal traditional life to the modern Machinery life, nutrition, occupation, industrialization. In general, change in the life format became one of the major causes to the Cardiac Diseases.

Cardiovascular disease is the main cause of mortality in Kyrgyzstan, accounting for more than 50 percent of all deaths. More than 18,000 people die of cardiovascular conditions every year, equivalent to 50 deaths a day [4]. About 25% of these deaths occur in people under 64 years of age; most of these deaths are considered avoidable. Other contributing factors include a high prevalence of tobacco and alcohol use, physical inactivity, and unhealthy dietary choices. This underscores the need for strong primary care and prevention services, coupled with effective patient education and outreach programs particularly for children and adolescents.

The food habit of human race plays a major role in the Coronary artery disease (CAD). The dietary factors imposing cardiovascular diseases or related risk factors include high-fat diets, high-sodium foods, foods with saturated fats, refined carbohydrates, low levels of fatty acids, processed foods, fast foods, and fried foods as well as low consumption of fruits, vegetables, and high-fiber foods [5]. CAD is closely related to lifestyle and modifiable physiological factors, and risk factor modification has been shown to reduce cardiovascular morbidity and mortality.

The aim of the present study was to assess risk factors for coronary artery disease (CAD) among the population of Jalal-Abad, a state in the Kyrgyzstan. Results from this study could elucidate the contribution of modifiable lifestyle factors to the burden of CAD, and hence pave the road for effective preventive measures relevant to the region.

METHOD AND METHODOLOGY

The cross-sectional study was conducted at the Cardiology Centre, a tertiary Hospital in Jalal-Abad, state located in the southwestern part of the country Kyrgyzstan. The hospitals were selected from the other hospitals due to their high frequent visits and it is the government hospital, where in-patients' flows were quiet high for the research to be done. Ethical clearance was obtained from the Institutional Ethics Committee.

The convenience sampling technique was used to collect the total sample size (106) patients, admitted to the Department of Cardiology in the hospital during the time period of one and half months (January-February). SPSS software version 27 was used to do the analysis of the result from the data they were collected. P value less than 0.05 was considered as statistically significant.

The study met the inclusion and exclusion criteria.

The inclusion criteria were:

- Patient with Acute coronary syndrome (diagnosed with CAD currently or years ago).
- Patients with suspicion of coronary artery disease (stable angina, ischemia heart disease, chest pain, Abnormal ECG, suspicion in the Electrocardiogram, etc.,)
- Chronic ischemic heart disease - evidence from coronary angiogram or from a positive stress test.
- Post-myocardial infarction state - with history of coronary bypass graft or percutaneous coronary intervention with or without stenting or with history of medical management either with fibrinolytics or with heparins.

The Exclusion criteria were:

- Out patients came for general check-up was not included in the research.
- Patients who came for test such as ECG and Echocardiogram tests were not included in the research.

The study group consisted of all patients admitted in the Cardiology Department of hospitals, and who met the Inclusion criteria. The data for the study was collected from the patients and their past medical history from the medical center with proper concern. The Socio-demographic data were collected from individual patient. Patient's addiction like smoking such as cigarettes, hookah, vapors and alcoholic habits were also included in the data.

RESULTS:

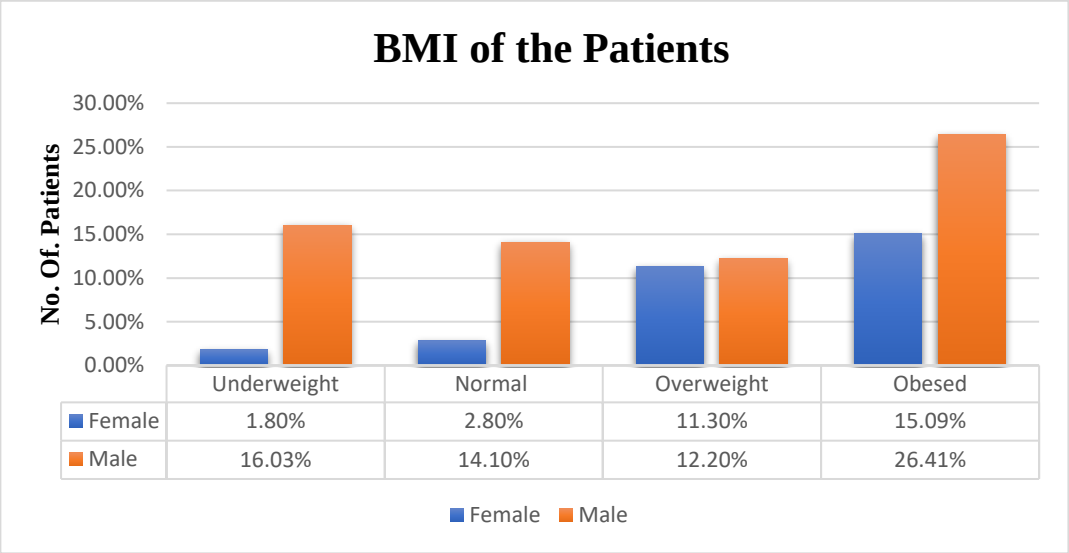
A total of 106 patients admitted to the Cardiac Specialty hospital during the study period were analyzed according to the study parameter. The results are displayed in the tabular format.

Table 1: Distribution of respondents according to their socio demographic imformation

Responses	Frequency	Percentage
Respondent's Gender		
Female	33	31.1
Male	73	68.9
Respondent's Age		
35-45 year	16	15.1
46-55	53	50.0
56-65	17	16.0
Above 65	20	18.9
Respondent's Marital Status		
Married	58	54.7
Unmarried	40	37.7
Widow	8	7.5
Respondent's Educational Status		
Illiterate	14	13.2
Primary	43	40.6
Secondary	40	37.7
Degree	9	8.5
Respondent's Occupation		
Unemployed	40	37.7
Private sector	58	54.7
Public sector	7	6.6
Self-employment	1	0.9
Respondent's Income		
Below 1,00,000 Soms	32	30.2
1,00,000-4,00,000 Soms	70	66.0

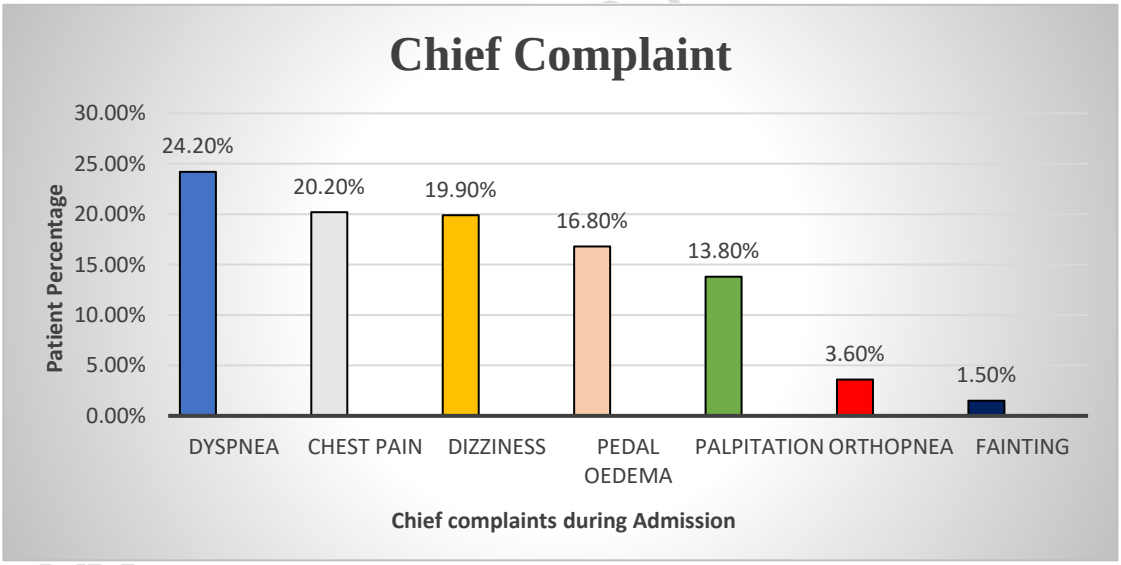
Of the total number of patients included in the study, 73 (68.9%) were males and 33 (31.1%) were females. The above table shows the percentage of married (54.7%), unmarried (37.7%) and widower (7.5%) patient admitted in the hospital. The frequency of married and unmarried were higher comparing to widower category. The data shows that out of 106 patients, 13.3% patients were illiterate, 40.6% patients completed their primary schooling, 37.7% patients completed their higher secondary and 8.5% patients completed Degree. From the above data it shows, 54.7% were employed in private sector, 37.7% were unemployed, 6.6% works under public sector and 0.9% were self-employed. When looking into patients' economic status, most of patients falls under lower- and middle-class level of economic status. Of the patients age group, 16(15.1%) were under the age group of 35-45, 53(50%) were in the age group 46-55, 17(16%) were in the age group 56-65 and 20(18.9%) were above the age of 65. (Table 1)

Figure1: Distribution of the respondents according to their BMI.



When patients BMI was taken into the account, four categories were categorized such as underweight (≤18.4), Normal (18.5-24.9), Overweight (25.0-39.9) and Obese (≥40.0). Majority (65.1%) of the patients falls under the category overweight (23.6%) and obese (41.5%). (Figure 1)

Figure 2: Distribution of respondents according to their chief complaints.



Above figure shows that the chief complaints for admitting into the hospital were chest pain, dyspnea, palpitation, Orthopnea, Pedal oedema, Dizziness and Fainting. Dyspnea (Shortness of Breath) was the chief complaint for the majority of the patients. 24.2% of patients have experienced Dyspnea. Out of 106 patients 20.2% experienced chest pain. Many have chest pain accompanied by dyspnea and palpitations (13.8%). Others experienced complaints such as Dizziness (19.9%) and pedal oedema (16.8%). And few patients have fainted (1.5%) during the chest pain. Few patients, 3.6% had Orthopnea (Shortness of breath while lying down). Many patients have combinations of complaints.

Table 2: This table contains the information regarding patient's Past medical Condition.

Medical condition	Frequency	Percent
Arrhythmia	53	20.2%
Stenting	48	18.3%
Pacemaker	45	17.1%
Surgery	34	12.9%
Post MI patient	32	12.2%
Chronic Ischemic Heart Failure	29	11.0%
Acute Coronary Syndrome	22	8.4%

*Multiple responses

The Past medical conditions differ from patient to patient. This category includes Arrhythmias, Stenting, Pacemaker, Surgery, Post MI, Chronic Ischemic Heart Failure and Acute Coronary Syndrome. Many had the condition called Arrhythmia (irregular heartbeat and problem in the rhythm of heartbeat). Nearly 20.2% of patients had Arrhythmia. Some patients got it treated with installation of Artificial Pacemaker (17.1%). Of the total number of patients, 18.3% have experienced stenting procedure done. 12.9% experienced Surgery such as By-pass surgery, Mitral valve replacement and Artificial pacemaker fixation. 12.2% had Myocardial Infarction in their past. Chronic Ischemic Heart failure (11%) and Acute coronary syndrome (8.4%) patients who had such disease in their past were also treated. (Table 2)

Table 3: This table shows the Drugs administered to the patient during their treatment in past as well as present.

Drugs	Frequency	Percent
Anti-coagulant	96	30.8%
Diuretics	62	19.9%
Beta-blockers	60	19.2%
ACE-i	30	9.6%
Ca2+ channel blocker	30	9.6%
Statins	20	6.4%
Warfarin	14	4.5%

**Multiple responses*

Of the total number of patients, 30.8% were administered with anti-coagulant to prevent the blood clots. 19.9% were given Diuretics to prevent excess accumulation of unwanted water and salt which helps in hypertension patient to prevent heart failure. 19.2% were administered with Beta-blockers to control the irregular heart rhythm in patients with atrial fibrillation. 9.6% were treated with ACE-i to decrease the formation of angiotensin II, thereby decreasing both arteriolar and venous resistance. 9.6% were administered with ca2+ channel blockers to treat with hypertension. 6.4% patients took Statin to reduce the levels of blood cholesterol. 4.5% were given Warfarin which is also an anti-coagulant that helps in reduction of blood clots.

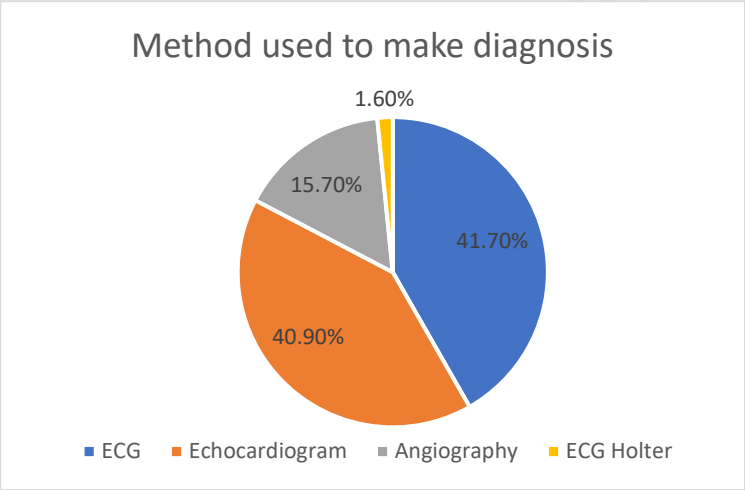
Table 4: Distribution of respondent according to their family history

Family History	Frequency	Percent
Hypertension patient	86	50.0%
Diabetic Patient	32	18.6%
Heart disease at young age	26	15.1%
Genetic condition	24	14.0%
Sudden cardiac death	4	2.3%

*Multiple responses

When we look into patient's Family History, Hypertension (50.0%) plays a major role. Out of 106 data 86 patient's family had a history of Hypertension. Next comes Diabetes with 18.6%. Heart disease at young age (15.1%), Genetic condition (14.0%) and Sudden cardiac death (2.3%) were other conditions that patient's Family suffer from.

Figure 3: This table shows diagnosis method used during the examination.



Multiple responses

Above figure shows the diagnosis method used by respondents, majorly used ECG 106(41.7%) and Echocardiogram104(40.9%) in the hospital to make the diagnosis, whereas 15.70% cases were diagnosed with the help of Angiography. Only few cases 4(1.6%) were monitored using the ECG Holter.

Table 5: This table contains information regarding the treatment given to the patients.

Treatment	Frequency	Percent
Medications	100	44.6%
Life style change	96	42.9%
Surgery procedure	24	10.7%
Devices installed	4	1.8%

Multiple responses

Regarding management given to the patients who came for the treatment were, Medication 100(44.6%) patient were given certain types of medicine and 96 (42.9%) of the patient were suggested for the changes in their life style modification. On severe cases 24(10.7%) surgery was done as a management. Device Installment (1.8%) such as artificial pacemaker installation and stenting was done on needful conditions.

Table 6: Distribution risk factors according to the patient's response.

Risk Factors	Frequency	Percentage
Hypertension Patient	86	30.3%
Hyperlipidemia Patient	76	26.8%
Family history of cardiac disease	36	12.7%
Diabetes Patient	32	11.3%
Habit of Smoking	30	10.6%
Habit of Drinking Alcohol	24	8.5%

**Multiple responses*

Hypertension is found to be highly diagnosed disease among the patients. Majority of the patients (30.3%) were found to have Hypertension. Men had a higher prevalence of hypertension (62 out of 106 patients) than women (24 out of 106 patients). Hyperlipidemia comes as the second major risk causing factor with 26.8% prevalence. We included all the 3 sub-categories (hypercholesterolemia, combined hyperlipidemia and hypertriglyceridemia) under hyperlipidemia and data were collected. When the family history of the patients was collected, we see that 12.7% of patient's family previous or present cardiac related problems. Diabetes Mellitus have the prevalence percentage of 11.3% under the risk factors. Habit of smoking and drinking have 10.6% and 8.5% of prevalence respectively and stand least among the other risk factors.

Table 7: Correlation between different socio-demographic information among respondents

Characteristics	Age				P-Value
	35-45 year	46-55 year	56-65 year	Above 65 years	
Occupation					
Unemployed	3	8	12	17	<.001*
Private	11	43	2	2	
Public	1	2	3	1	
Self-employment	1	0	0	0	
Income status					
Below 1,00,000 soms	4	20	6	2	0.013*
1,00,000-4,00,000 soms	12	32	8	18	
Above 4,00,000 soms	0	1	1	0	
BMI					
Underweight	3	16	0	0	0.003*
Normal weight	4	7	2	5	
Over weight	3	7	7	8	
Obesity	6	23	8	7	

* Statistically Significant

Based on the provided data there is a statistically significant association was found between age and occupation of the patients (p = <.001). The age under 46-55 years group with the private occupation status were found to statistically significant. Similarly the association between the respondents age group 46-55 years were found to be significant with patient who had the annual income ranging from 1,00,0000-4,00,000 soms. There is a statistically significant association between age 46-55years and among patients whose BMI was found to be obesity (p=0.003)

DISCUSSION:

When we conducted the research to know risk factors causing CAD, we came across lots of information regarding the CAD. The gender of the patients has significant role in the causes of CAD. In our research, out of the total patient counts, male (68.9%) was affected, which is more comparing to the female (31.1%) patients. When we look into the similar researches done in the different countries, we are almost getting the similar results. In the research done in Jazan Region, Saudi Arabia, out of the 498 patients with CAD, 100 (20.1%) were female and 398 (79.9%) were male [6]. In the research done in India, the incidence of CAD in males was higher as compared to that in females in the age group 35-45 [7]. This because that Men prone to develop heart disease earlier than women, and this may be due to the fact that women are somewhat protected by estrogen and progesterone until they pass through menopause.

While these hormones are largely responsible for reproductive duties, they also strengthen blood vessel health [8]. The age group getting affected more is between 46-55 years old. Half of the total number of patient's count i.e., 50% of the patients were (39.62% males and 10.37% females) affected in our study. Similarly in a country like Jordan also similar results was obtained where the majority of the people getting affected who were between the age group of 45-54 years old with the percentage of 32.9% [9]. There are several facts why heart diseases are more common in some age groups than others. Genetic predisposition, Lifestyle Modifications, and Underlying Health Conditions Play a Significant Role in determining an individual's risk of experiencing a heart disease. Other reasons for the heart diseases maybe even family and social status of an individual. In our research we found that unemployed and private sector worker are more prone to the diseases. The reason behind this is found be the stress that leads to the heart disease. Due to stress, the hormone Cortisol is released in the body. Studies suggest that the high levels of cortisol from long-term stress can increase blood cholesterol, triglycerides, blood sugar, and blood pressure. These are common risk factors for heart disease. This stress can also cause changes that promote the buildup of plaque deposits in the arteries [10]. The poor economic status also shows a linked relation between the stress and CHD. The research shows that people on the below and middle level of income range have been affected more.

Hypertension is considered to be the most common and higher percentage of risk factor causing Cardiac Problems in the population. The overall prevalence of hypertension for all years was 30.30% in our study. From a study found that hypertension prevalence was highest throughout central and eastern Europe, central Asia, Oceania, Southern Africa, and some countries in Latin America and the Caribbean [11].

Hyperlipidemia is found to be the second most affecting risk factor 26.8% of CAD patient. Similar studies done in Columbia shows that 33.8% of the population presented any of the forms of hyperlipidemias, being more frequent in men (50.6%) than in women (28.8%) [12]. Likewise, our results also shows that 50% and 21.69% of men and women respectively are affected by hyperlipidemia.

The third most prevalent risk factor is family history related to heart diseases with 12.7%. Many cardiac disorders can be inherited, including arrhythmias, congenital heart disease, cardiomyopathy and high blood cholesterol. In the results of the research, we found majority of patients with such conditions. Some studies indicate that positive family history is a predictor of impaired endothelium-dependent coronary blood flow regulation in humans [13]. Intricate interactions of genes and environment dictate the outcomes of CAD [14]. The prevalence is higher in male as compared to female. 21.6% and 12.26% respectively.

Morbidity and mortality are increased in patients with myocardial infarction that also have co-existing diabetes mellitus (DM) making it an important risk factor for coronary artery disease (CAD) [15]. According to the Ministry of Health, about 75 000 people in country suffer from diabetes and there has been an increase in the incidence; the number of Kyrgyz with diabetes has increased twofold in 10 years [16]. Likewise, in the past decade, the number of people with diabetes in India increased from 32 million to 50 million [17].

The prevalence of smoking among the other risk factor is 10.6%. In 1960, results of the Framingham Heart Study proved that smoking increases the risk of heart disease [18]. From there onwards, smoking has been considered a major risk factor for CAD. The smoking prevalence among the female is 0%, whereas for male it is 28.3%. For males, age-standardized smoking prevalence was almost 50% in the Southeast Asia, East Asia, and Oceania region, with the next highest levels in the Central Europe, Eastern Europe, and Central Asia region (39.5%), and the lowest observed in the Sub-Saharan Africa region (17.5%) and Latin America and Caribbean region (17.1%) [19]. Smoking increases the risk factor of getting CAD and decreases the life span by causing early death. Carbon monoxide, nicotine, and other substances in tobacco smoke promotes the Atherosclerosis and causes CAD.

In a review of five case-control studies, seven prospective studies, two international comparisons, and one time-trend report published in 1984, it was concluded that moderate alcohol intake was associated with lower risks of CHD mortality, but that heavy drinking was associated with higher mortality compared with non-drinkers [20]. The prevalence of drinking alcohol is 8.5% in our study which is considered to be least prevalence risk factor among others. The distribution of habit of drinking alcohol among the male and female is 20.75% and 1.88% respectively. In 97% of countries (198 out of 204) males consumed more alcohol per day than females [21]. Likewise, we get similar ratios with neighboring countries such as Kazakhstan, Tajikistan, Uzbekistan and Turkmenistan [22] which shows the statistical data of alcohol consumption among some of the Central Asian countries. Excessive consumption of alcohol has association with cardiovascular disorders, including coronary artery disease, cardiomyopathy, hypertension, and stroke. However, studies on the recent day suggests that moderate amount of alcohol intake can actually improve the cardio protection, particularly against ischemia-reperfusion injury and coronary heart disease.

CONCLUSION AND RECOMMENDATIONS:

In conclusion, the primary risk factors identified for coronary artery disease (CAD) include hypertension and hyperlipidemia. In addition to these factors, behaviors such as smoking and alcohol consumption, as well as conditions like diabetes, obesity, and a family history of CAD, also play significant roles in the development of the disease. Lifestyle modification along with the healthy habit are the major step to be taken to prevent the CAD in the earlier stages of diagnosis.

REFERENCES:

1. WHO. Cardiovascular Diseases [Internet]. www.who.int. 2022. Available from: https://www.who.int/health-topics/cardiovascular-diseases

2. Kopelman P. Health risks associated with overweight and obesity. Obesity Reviews

3. Khajedaluee M, Dadgar Moghaddam M, Khajedaluee A, Sharebiani H, Bahrami Taghanaki H, Ziadi Lotfabadi M, et al. Comparison of Framingham Risk Score and Native Model of Cardiovascular Risk Prediction Among Residents of Mashhad Metropolis, Iran, 2015. Iranian Journal of Epidemiology

4. Kydyralieva RB. The State of Cardiovascular Disease in the Kyrgyz Republic. Central Asian Journal of Global Health [Internet]. 2013 May 21 [cited 2021 Apr 18];2(1).

5. Mendy V, Vargas R, Cannon-Smith G, Payton M, Enkhmaa B, Zhang L. Food Insecurity and Cardiovascular Disease Risk Factors among Mississippi Adults. International Journal of Environmental Research and Public Health [Internet]. 2018 Sep 15;15(9):2016

6.Cureus. 2022 Oct; 14(10): e30239. Published online 2022 Oct 12. doi: 10.7759/cureus.30239 PMCID: PMC9652277 Gender Differences in Coronary Artery Disease, Clinical Characteristics, and Angiographic Features in the Jazan Region, Saudi Arabia Monitoring Editor: Alexander Muacevic and John R Adler

7.James C, Attacheril TV, Balakrishnan N, Gaydarova DK, Stancheva NY, Gerchev IP, et al. Risk Factors for Coronary Artery Diseases: A Study Among Patients With Ischemic Heart Disease in India (Kerala). Journal of Biomedical & Clinical Research. 2013 Dec 1;6(2):118–24.

8.https://www.louisianaheart.org/blog/do-men-have-a-higher-risk-for-heart-disease

9.Al-Shudifat AE, Johannessen A, Azab M, Al-Shdaifat A, AbuMweis SS, Agraib LM, et al. Risk factors for coronary artery disease in patients undergoing elective coronary angiography in Jordan. BMC Cardiovascular Disorders. 2017 Jul 11;17(1).

10.https://www.urmc.rochester.edu/encyclopedia/content.aspx?ContentTypeID=1&ContentID=2171

11.NCD Risk Factor Collaboration (NCD-RisC). Trends in adult body-mass index in 200 countries from 1975 to 2014: a pooled analysis of 1698 population-based measurement studies with 19·2 million participants. The Lancet [Internet]. 2016 Apr;387(10026):1377–96.

12.Álvarez Ramírez AA, Peláez JL, Bermúdez IM, Gordon Botero JY. Prevalence of hyperlipidemia and its associated factors in university students in Colombia. Heliyon. 2020 Nov;6(11):e05417.

13.SchachingerV, Britten MB, Elsner M, Walter DH, Scharrer I, Zeiher AM. A Positive Family History of Premature Coronary Artery Disease Is Associated With Impaired Endothelium-Dependent Coronary Blood Flow Regulation. Circulation. 1999 Oct 5;100(14):1502–8.

14. Sasidhar MV, Reddy S, Naik A, Naik S. Genetics of coronary artery disease – A clinician's perspective. Indian Heart Journal. 2014 Nov;66(6):663–71

15. Diakonikolaou S, Styliou T, Christou V, Eid O, Eid R, Karataraki F, et al. Diabetes mellitus in coronary artery disease. European Journal of Preventive Cardiology. 2022 May 1;29

16. Improving the care for patients with diabetic retinopathy in Kyrgyzstan [Internet]. www.who.int.

17. Mohan V, Sandeep S, Deepa R, Shah B, Varghese C. Epidemiology of type 2 diabetes: Indian scenario. The Indian Journal of Medical Research [Internet]. 2007 Mar 1;125(3):217–30.

18. KANNEL WB. Risk Factors in Coronary Heart Disease: An Evaluation of Several Serum Lipids as Predictors of Coronary Heart Disease: The Framingham Study. Annals of Internal Medicine. 1964 Nov 1;61(5_Part_1):888

19. World Heart Federation. WORLD HEART REPORT 2023 CONFRONTING THE WORLD'S NUMBER ONE KILLER [Internet]. 2023. Available from: https://world-heart-federation.org/wp-content/uploads/World-Heart-Report-2023.pdf

20. Emberson JR, Bennett DA. Effect of alcohol on risk of coronary heart disease and stroke: causality, bias, or a bit of both? Vascular Health and Risk Management [Internet]. 2006 Aug [cited 2019 Nov 12];2(3):239–49.

21. World heart report 2023 — Part 2: Global Burden of Cardiovascular Diseases Mortality – Health Transformation Journal [Internet]. [cited 2024 Apr 29].

22. Paulone S, Ivlevs A. Emigration and alcohol consumption among migrant household members staying behind: Evidence from Kyrgyzstan. Social Science & Medicine. 2019 Jan;221:40–8

Pregnancy characteristics and delivery outcomes of Individualmother Hospitalized at Jalalabad, Kyrgyzstan

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ABSTRACT:

Background: "Maternal morbidity is a silent struggle, echoing the untold stories of resilience and strength in the face of adversity. Women of childbearing age are faced with extreme uncertainties, hence the purpose of this study was to analyze fertility trend and maternal complications including the possible high-risk factors connected tomaternal morbidity. Maternal morbidity could be prevented through early detection, including the period preceding pregnancy.

Methods and methodology: This is a retrospective cross-sectional study using data from hospital database describes trends of fertility and with immediate post delivery maternal complication. The data was collected just from month January in 2023 froma Regional Maternity Hospital in Jalalabad, Kyrgyzstan. Total of 260 sample were drawn from the data base for the study.

Objective: The study intended to find the trend of fertility and condition of maternal morbidity in Jalalabad, Kyrgyzstan. Additionally, we settled for this topic because it isone of the significant cause of death among reproductive age group women around the world.

Result: In Jalalabad, around 6652 delivery-related hospitalizations has been recorded in the year of 2023 at a Regional Maternity Hospital. Out of them 1852 had gone through C-section and remaining 4800 had normal vaginal deliveries. Regardingmaternal mortality only 5 recorded cases have been recorded as maternal death in the hospital in the year 2023. (Table 7)

Conclusion: The fertility trends within the study population appear to be high, yet the delivery outcomes were found to be satisfactory. Moreover, the pregnancy characteristics exhibited diverse statuses, each resulting in varying delivery outcomes.

Keywords: Trend, Fertility, Morbidity, Postpartum, Early

Introduction

Maternal morbidity is not just a health crisis; it's a call for societies to prioritize and safeguard the wellbeing of the women who bring life into the world. World health organization **(WHO)** has defined maternal morbidity as "Any health condition attributed to and/or complicating pregnancy, and childbirth that has a negative impact on the woman's well-being and/or functioning" **[1]**. There are ongoing efforts to develop and validate tools to measure maternal morbidity

About 140 million births take place every year and the proportion attended by skilled health personnel has increased: from 58% in 1990 to 81% in 2019. This is mostly due to larger numbers of births taking place at a health facility. Deaths from complicationsduring pregnancy, childbirth, and the postnatal period have declined by 38% in the last two decades, but at an average reduction of just under 3% per year, this pace of progress is far too slow**. [1]**

Potential risk factors of maternal mortality or morbidity, includes pulmonary hypertension, placenta previa, sickle cell disease, gestational hypertension, mild or unspecified preeclampsia, severe preeclampsia, chronic kidney disease, preexisting hypertension, chronic ischemic heart disease, congenital heart disease, systemic lupus erythematosus, HIV, multiple gestation, substance use disorder, alcohol abuse, tobacco use, cardiac valvular disease, chronic congestive heart failure, asthma, preexisting diabetes, gestational diabetes, obesity, cystic fibrosis, and previous cesarean delivery. These causes are largely preventable and treatable but certain regions lack the necessary access to high quality healthcare. **[2]**

Preventing maternal morbidity is crucial for ensuring the well-being of pregnant women and reducing adverse health outcomes. Access to quality antenatal care playsa pivotal role in early detection and management of potential complications. Timely and skilled obstetric care, including safe delivery practices, can significantly reduce the risk of maternal morbidity.

'The Sustainable Development Goals (SDGs) offers an opportunity for the international community to work together and accelerate progress to improve maternal health for all women, in all countries, under all circumstances. SDG targets for maternal health include 3.1, aiming for an average global ratio of less than 70 deaths per 100 000 births by 2030, and 3.8, calling for the achievement of universal health coverage. These cannot be achieved without reproductive, maternal, newborn and child health coverage for all' **[3]**

Methods and Methodology:

A total of 260 sample were drawn from the data base of just a month- January, 2023 for the study. Information of the respondent were collected by the record file of patient from the hospital. It was a retrospective cross-sectional study using data from hospital database describes trends of fertility and with immediate post delivery maternal complication.

Result:

There were total 260 delivery cases that had occured for the month of January, 2023. The data that we have collected from the maternity hospitals consists of both working and non working women. The results of the data collected for our study are as follows:

Table 1: Distribution of respondent according their Age

Responses	Frequency (n=260)	Percentage(%)
15 - 20 Year	35	**13.5**
21-25 Year	146	**56.2**
26 - 30 Year	53	**20.4**
31 - 35 Year	19	**7.3**
36 - 40 year	**7**	**2.7**

Above table shows that majority 56.2% of the women were from age group 21 - 25 years followed by 20.4% of them were in age group 26-30 years. Remaining 13.5% and 7.3% were in between age group 15-20 years and 31-35 years respectively. The mean age was 23±2 years. (Table 1)

Table 2: Distribution of respondent according their occupation

Responses	Frequency (n=260)	Percentage (%)
Teacher	14	**5.4**
Doctor	32	**12.3**
House wife	199	**76.5**
Others	**15**	**5.8**

Above table shows that majority 76.5% (199) of respondents were housewife remaining 12.3% were doctors and 5.4% were working as a teachers. similarly out of remaining 5.8% said some of them they were layer and others work in a departmental store.

Table 3: Distribution of respondents according to the number of pregnancy (Gravida)

Responses	Frequency	Percentage
1-3	178	**68.5**
4-6	59	**22.7**
7	**23**	**8.8**

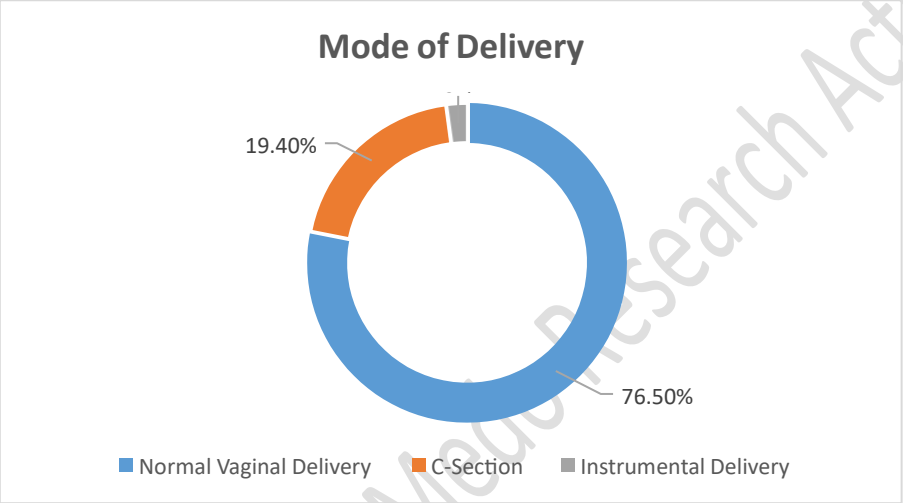
Above table shows that 63% of the women were pregnancy for 1-3 times, 22.7% said they were pregnant for 4-6 times, remaining 8.8% were pregnant for 7 times. (Table 3)

Table 4: Distribution of respondents according to the number of live children they have (Para)

Respon ses	Frequency	Percentage
1-3	180	**69.2**
4-6	61	**23.5**
7	**19**	**7.3**

Above table shows the distribution of respondents accoring to their living children in current time, majority of respondets 69.2% had 1-3 babies followed by 23.5% had 4- 6 living baby in current time where as remaining 7.3% said they had 7 living children living with in present . (Table 4)

Figure 1: Distribution of respondents according to the mode of delivery of recent pregnancy



The mode of delivery for 76.5% of the pregnancies was normal vaginal delivery followed by 19.4% were C-sections and about 2% were instrumental deliveries.(Figure 1)

Table 5: Distribution of respondents according to the APGAR score of their new bornchild

Respon ses	Frequency	Percentage
0-3	17	**6.6**
4-7	23	**8.8**
8-10	**220**	**84.6**

Above table shows that, majority 83.7% of the fetus had their APGAR score from 8- 10, 7.1% of fetus had their APGAR score from 4-7 and remaining 5.1% had APGAR score from 0-3.

Table 6: Distribution of respondents according to their present pregnancy status

Responses	Frequency	Percentage
Normal	63	**24.2%**
Twin Pregnancy	36	**13.8%**
Gestational Hypertension	24	**9.2%**
Anaemia (1 degree)	45	**17.3%**
Placenta previa	6	**2.3%**
Pre-eclampsia	42	**16.1%**
Severe Pre eclampsia	15	**5.7%**
Vericose veins of the lower extremities and external genitalia	15	**5.7%**
Partial abruption of the normally located placenta	**14**	**5.3%**

Above table shows 63 respondents have a normal pregnancy status. 36 respondents, accounting for 13.8% of the total, are experiencing a twin pregnancies. 24 respondents (9.2%) are facing gestational hypertension. Anemia (1 degree), 45 respondents (17.3%) are dealing with first-degree anemia during their pregnancy. 6 respondents (2.3%) have placenta previa. 42 respondents (16.1%) are diagnosed with pre-eclampsia. 15 respondents (5.7%) have a severe form of pre-eclampsia. 15 respondents (5.7%) are experiencing varicose veins in the lower extremities and external genitalia.Partial Abruption of the Normally Located Placenta: 14 respondents(5.3%) are dealing with partial abruption of the normally located placenta.

Table 7: Distribution of respondents according to maternal complication related to pregnancy

Responses	Frequency	Percentage
Presentation/Lie of fetus		
Cephalic presentation	244	**93.8%**
Breech presentation of 1st fetus,	8	**3.1%**
Foot presentation of the fetus,	7	**2.7%**
Shoulder dystocia	**1**	**0.4%**

The most common presentation is cephalic presentation which is 244 in terms of frequency which makes it 93.8% of the total but it serves as a baseline for comparison. 8 respondents (3.1%) are experiencing a breech presentation for theirfirst fetus. 7 respondents (2.7%) have a situation where the fetus is presenting with thefeet first. 1 respondent (0.4%) is facing the complication of shoulder dystocia during pregnancy.

Table 8; Distribution of respondents according to complication during labour and immediated post partum period

Responses	Frequency	Percentage
Fetal Outcome		
Normal	213	81.9%
Fetal weight more than 4300gram	40	15.3%
Fetal distress	7	2.6%
Maternal Condition		
Normal	161	61.9%
Perineal tear 1 degree	12	4.6%
Entwining of the umbilical cordaround the fetus	60	23.0%
Hemorrhage (Atony)	39	15%

This table describes about the, Fetal Outcome: 213 respondents (81.9%) experienced normal fetal outcome whereas 40 respondents (15.3%) experienced a fetal weight exceeding 4300 grams. 7 respondents (2.6%) faced fetal distress during labor and delivery.

Maternal Condition: 161 respondents (61.9%) had normal maternal conditions. 60 respondents (23.0%) dealt with the umbilical cord being entwined around the fetus. 39respondents (15%) experienced PPH due to Atony but 12 respondents (4.6%) experienced PPH due to a first-degree perineal tear.

Table 9: Distribution of respondents according to the comorbid and risk factors of pregnant women

Risk factors	Frequency	Percentage
Normal	146	56.1%
Pre exiting hypertension	25	9.6%
Alcohol Abuse	21	8.0%
Tobacco Use	18	6.9%
Asthma	12	4.6%
Pre-exiting diabetes	12	4.6%
Obesity	26	10%

This table shows that 25 respondents (9.6%) have pre-existing hypertension as a risk factor during pregnancy. 21 respondents (8.0%) are identified with alcohol abuse as a risk factor. 18 respondents (6.9%) engage in tobacco use during their pregnancy. 12 respondents (4.6%) have asthma as a comorbid condition. 12 respondents (4.6%) are dealing with pre-existing diabetes as a risk factor. 26 respondents (10%) are categorized as obese, representing a risk factor during pregnancy.

Table 10: According to the database the cause of maternal death were due followingreason

SN	Cause of Maternal Death	Week of gestation	Fetus Outcome
1.	Cirrhosis of Liver Gastrointestinal bleeding (alcoholism)	26 weeks	Still Birth
2.	Amniotic fluid embolism	37 weeks	Alive, Female Child
3.	Hepatitis	35weeks	Alive, Female Child
4.	Cerebral aneurysm (after an attack of eclampsia)	36 weeks	Still Birth
5.	Sepsis	39 weeks	Still Birth

In the above table the cirrhosis of Liver and Gastrointestinal bleeding was the leading cause of maternal death at 26th week and the fetal outcome was still birth. The second leading cause was Amniotic fluid embolism at 37 weeks and the fetal outcome was Alive, Female Child, followed by hepatitis at 35 weeks and fetal come was Alive, Female Child. Cerebral aneurysm (after an attack of eclampsia) had occurred at 36th week and the fetal outcome was Still Birth . Lastly sepsis 39th week and fetal outcome was Still Birth.

Discussion

In a study from Norway, women over 35 years old had a risk of ectopic pregnancy eight times greater than women between the ages of 15–19 years. Nybo Andersen et alreported similar results. This may be explained by the accumulation of ectopic pregnancy risk factors over time **[11]** where as in our research there were no cases of risk of ectopic pregnancy because most of the respondents about 181 were young and belonged to <25 age group and very few about 26 respondents were of >35 years of age out of 260 respondents.

From 1998 to 2016 in France, women who were not working during pregnancy, particularly housewives, had a less adequate preventive behaviour and higher risk of adverse perinatal outcomes than pregnant women working with high or intermediate PC, even after taking into account maternal characteristics. Over time, most of the differences persisted. Thus, maternal occupational status may be a relevant determinant of the social situation of women and a risk factor of unfavourable perinatal outcomes **[12]** but according to the data collected from the respondents indicated that maximum women about 199 out of 260 were housewives and were healthy enough to deliver the fetus by normal vaginal deliveries (76.5%).

According to a prospective cohort study, complications suffered by women were mostfrequently related to moderate or severe anaemia and haemorrhage. These conditions are related to anaemia and its consequences and imply the need to address it as a priority during the immediate postpartum period **[13]** similarly in our research 39 respondents (15%) experienced PPH due to Atony but 12 respondents (4.6%) experienced PPH due to a first-degree perineal tear.

According to an analysis of individual level data from 140,000 mothers from 20 RCTs-preterm birth, small-for-gestational age (SGA), low birthweight (LBW) and newborn mortality followed a U-shaped trend in which prevalence was highest amongthe youngest mothers (10–14 years) and then reduced gradually, but increased again for older mothers (40+ years) **[14]** but in our research area no cases of adolescent pregnancy were reported and all the respondents were over 15 years of age.

According to a research of pregnant Women of Shiraz in 2016, The mean age of the pregnant women participating in the study was 29 ± 5.7 years. A total of 2003 pregnant women (50.8%) decided to give birth through cesarean section (C-section), 1849 (46.9%) through standard vaginal delivery, and 68 (1.7%) in water**[15]** where as among our respondents the mode of delivery for 76.5% of the pregnancies was normal vaginal delivery followed by 19.4% were C-sections and about 2% were instrumental deliveries. (Figure 1)

Conclusion

The study population showed a notable trend of high fertility rates, indicating a propensity for increased reproductive activity within the community. Despite this heightened fertility, the delivery outcomes were observed to be satisfactory, suggesting that the healthcare system or interventions in place effectively managed the pregnancies to successful conclusions.

Furthermore, the analysis of pregnancy characteristics revealed a diversity of statuses,encompassing a range of conditions and circumstances surrounding the pregnancies. These varied pregnancy statuses likely encompassed factors such as maternal age, medical history, prenatal care, and socio-economic factors, among others. Despite thisdiversity, the delivery outcomes varied, indicating that each pregnancy status had its own unique impact on the eventual outcome of delivery. This complexity underscoresthe importance of considering various factors in assessing pregnancy outcomes and highlights the need for tailored approaches to prenatal care and management.

References:

1) World Health Organization (WHO) on Maternal health.
2) Dorothy A. Fink, MD; Deborah Kilday, MSN; Zhun Cao, PhD; et alKelly. Assessment on trends in Maternal Mortality and Severe Maternal Morbidity During Delivery-Related Hospitalizations in the United States, 2008 to 2021.
3) WHO, UNICEF, UNFPA, The World Bank Group and the United Nations Population Division, Trends in Maternal Mortality: 2000 to 2020 WHO, Geneva, 2023.
4) Marge Koblinsky, Mahbub Elahi Chowdhury, Allisyn Moran, and Carine Ronsmans. Assessment on Maternal Morbidity and Disability and Their Consequences: Neglected Agenda in Maternal Health.
5) Meaghan A Leddy,*,† Michael L Power, PhD,* and Jay Schulkin, PhD*. Assessment on the Impact of Maternal Obesity on Maternal and Fetal Health.
6) Hagos Godefay, Peter Byass, Wendy J. Graham, John Kinsman, Afework Mulugeta. Assessment on risk Factors for Maternal Mortality in Rural Tigray, Northern Ethiopia: A Case-Control Study.
7) Louis J. Muglia, corresponding author1,2 Katrien Benhalima,3 Stephen Tong,4,5 and Susan Ozanne. Assessment on maternal factors during pregnancy influencing maternal, fetal, and childhood outcomes.
8) Journal of the American Heart Association, originally published11 Jan 2022 puts spotlight on Pregnancy and Its Impact on Maternal and Offspring Cardiovascular Health.
9) Paola Ayala-Ramírez, Natalia Serrano, Viviana Barrera, Juan Pablo Bejarano, Jaime Luis Silva, Rodolfo Martínez, Fabian Gil, Mercedes Olaya-C, Reggie García-Robles. Assessment on risk factors and fetal outcomes for preeclampsia in a Colombian cohort.
10) Eamon Fitzgerald, Kaylee Hor, Amanda J. Drake. Assessment on maternal influences on fetal brain development: The role of nutrition, infection and stress, and the potential for intergenerational consequences.
11) Isamar Glick, Ela Kadish, and Misgav Rottenstreich. Assessment on management of Pregnancy in Women of Advanced Maternal Age: Improving Outcomes for Mother and Baby

12) Solène Vigoureux, Elsa Lorthe, Béatrice Blondel, Virginie Ringa, Marie- Josèphe Saurel-Cubizolles. Assessment on women's occupational status during pregnancy and preventive behaviour and health outcomes between 1998 and 2016 in France.
13) Kirti Iyengar, corresponding author Ranjana Yadav, and Swapnaleen Sen. Assessment on consequences of Maternal Complications in Women's Lives in the First Postpartum Year: A Prospective Cohort Study.
14) Nadia Akseer, Emily Catherine Keats, Pravheen Thurairajah, Simon Cousens, Ana Pilar Bétran, Brietta M. Oaks f, David Osrin, Ellen Piwoz, Exnevia Gomo, Faruk Ahmed, Henrik Friis, José Belizán, Kathryn Dewey, Keith West, Lieven Huybregts, Lingxia Zeng, Michael J. Dibley, Noel Zagre, Parul Christian, Patrick Wilfried Kolsteren, Zulfiqar Ahmed Bhutta. Assessment on characteristics and birth outcomes of pregnant adolescents compared to older women: An analysis of individual level data from 140,000 mothers from 20 RCTs.
15) Seyyed Taghi Heydari, Yaser Sarikhani, Nasrin Asadi, Maryam Kazemi, Ahmad Kalateh Sadati, Shaghayagh Zarei, Zeynab Mansuri, Fatemeh Keshvarz, Reyhane Jabbari, Arezoo Mohtashami, Kamran Bagheri Lankarani. Assessment on selection of Delivery Method and Its Related Factors in Pregnant Women of Shiraz in 2016.

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

International Journal of Research Publication and Reviews, Vol 4, no 2, pp 1752-1763, February 2023

Perception and Experience of COVID 19 Vaccine Side Effect amongForeign Medical Students in JASU

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ABSTRACT

Background

In the study we have considered the perception and experience about the side effects of the COVID-19vaccineamong foreign medical students after their vaccination period in Jalal-Abad State University, Kyrgyzstan.

Methods

A cross- sectional study was conducted in which semi structured close ended questionnaire was distributed to collect data from the foreign students that were selected on the basis of a convenient sampling technique. After collecting data, they will enter in SPSS software,descriptive evaluation was made on the basis of result.

Results

Majority 48.1 % respondent perceive that COVID-19 vaccine will have pain at site of injection, followed by 31.4% headache and fatigue, 28% problem with diarrhea and vomiting. Majority 42% of respondent reported they had mild side effect after receiving COVID-19 vaccine. Where 32.1% of them reported that they have experienced pain at the site of injection after receiving the vaccine followed by headache and fatigue (28.4%), fever (15.2%) diarrhea and vomiting (10.3%).

Conclusion

While the perception of most of the students reported that they were worried regarding the side-effects of the COVID-19 vaccine, a significant proportion of the study participants have

reported that they perceive COVID-19 vaccine will have life-threatening side-effects. Such fears have also played a role in affecting vaccine uptake. Therefore, the Ministry of Health, and other concerned government bodies should create further awareness on COVID-19 vaccine and related safety issues Majority 55.6% of the respondent reported that they were worried about side effect of COVID-19 vaccine75.3% of respondent perceive that COVID-19 vaccine does not cause infection.

Keywords: COVID-19, perception, side-effect, vaccine

Main text

As it was not less than a war against SARS-CoV19 virus which took lives. Globally60million, USA with 970K, India with516K and Brazil with 657K are top 3countries who became victim of COVID-19. So it was an urgent need to find solution for this pandemic. Therefore, on 2nd December 2020, UK medicines and healthcare products regulatory agency (MHRA) gave temporary regulatory approval for Pfizer bio n tech vaccine and became first country to approve a vaccine.[1]

Slowly, many countries not only approved but also developed vaccine of their own like India got Covishield and Covaxin, Russiagot sputnik, America got AstraZeneca and China got Sino pharm. Though, we got vaccines still our fight was tough, dealing with perception of people who denied vaccine, some saw it as threat and others didn't cared, some experienced harsh conditions after getting it. While there were some side effects of it too, then curious to know what exactly was their view and experience, this research state the mentality and behavior of people towards COVID19vaccine. [2]

In south Asian countries near about 2/3rd of respondents were willing to take COVID 19vaccine, and for now south Asia shares 15%fully vaccinated and 22.6% partially vaccinated population in the world. Recently, according to research, more than10 billion doses of COVID vaccine has been administered globally. Many nations began rolling out vaccines in late 2020 and early2021, andsince then more than 60% of world's population-4.8 billion people have received at least 1 dose of one of more than20 different COVID 19 vaccines that has been approved by the nations for use around the world.[3]

Considering a country like India who was2nd victim for most death by COVID got its2 vaccine whichIndia administered nearly181 corer doses to people, India came a long way before reaching this rank. India faced many challenges from all sides including superstition, poverty and illiteracy approach to vaccine.[4]

Taking a country like Pakistan who administered 218 million doses to its people. They faced same problems as India, the religion, superstition; poverty and illiteracy are among top problems for it. Though, the country also suffered a lot to get vaccine but got it in time to tackle the problem. This small and beautifully developing country in sector of health has 28 lakh doses administered to its people. Though, lacking in many treatments yet country was able to tackle this problem, but faced many problems like lack of vaccine, lack of doctors and the false perception of people towards COVID vaccine.[5]

All countries faced same problem for vaccine administration like African and Asian countries were challenged for affording it, while countries like Europe and America were little unsure of sid effects. Many countries were lacking in health care sector and there were not enough doctors and proper treatment available.

Methodology:

Study design: This study was designed as descriptive study. The questionnaire is prepared from a previous study and modified to meet the objective of this study. The questionnaire is comprised of 3 section, where the 1stsection includes demographic data, 2ndsection includes perception related to COVID 19 vaccine side effect and 3rdsection includes experience related to COVID 19 vaccine side effects. The questionnaire was both in English and Russian languages.

Data collection procedure: The researcher will visit individual respondent personally and handover the questionnaire and they will fill it themselves. The questionnaire comprised of a consent form which the

respondent are expected to read and accept or reject to participate in the research study.

Socio-demographic: The socio-demographic section of questionnaire consists of 11 questionsincluding personal information of the respondents.

Perception related to COVID 19 vaccine side effect: To evaluate the perception towards the COVID 19 vaccine side effect, 22 questions were asked. The answering is based on individual thinking and perception.

Experience related to COVID 19 vaccine side effect: This is to evaluate experience toward COVID 19 vaccine side effect, 18 questions were asked. The answering is based on individual thinking and experience.

Inclusion and Exclusion criteria

Inclusion

A. Only those who are interested are selected as respondent.

B. Those who have received vaccine for COVID 19

C. Only students of JAGU

Exclusion

A. Who are not willing to participate in the study?

B. Who has not received the vaccine?

Ethical consideration: The researchers obtained ethical approval from administrative bodies before conducting the study. The respondent was informed about the purpose of the study. The respondent was also informed that their participation was voluntary and they could step their participation at any stage in case they felt uncomfortable. The confidentiality of the information obtained was kept and respondent names were not recorded.

Data processing and analysis: Data were recorded and entered in the software using SPSS version 26 per analysis, frequency, means, standard deviation calculation.

RESULTS OF THE STUDY

The result of study is based on the response provide to us by the respondent who we revaccinated with COVID 19 vaccine, and who have perception of vaccine, and had also experienced its side effect after receiving it, aiming at what age group, religion, nationality, and family class, and family type we tried to seek perception of each type by asking them these personal question which are categorized into socio-demographic section. The curiosity about knowing the perception of each vaccine, about knowing which is consider as best, effective, cheapest, available vaccine for respondent, knowing about their experience with that vaccine, and also their concern over COVID 19 and its vaccine, we proceed to present the organized and collected data before you.

Table:1: Distribution of respondent byage

Age	Frequency(n)	Percentage(%)
Below 20	14	**17.3**
20- 30	66	**81.5**
30-40	1	**1.2**
	81	**100**

Above table shows 17.5% of respondent were below age 20, 81.5 % were between 20-30 years of age,1 % were between 30-40 years of age.

Table.2. Distribution of respondent by gender

GENDER	FREQUENCY	PERCENTAGE
Male	30	**37.0**
Female	51	**63.0**
	81	**100.0**

Above table shows in study 37 % of respondent were female, 63 % of respondent were male. It was noted among respondent that father of 32% were literate, approx. 65% were having qualification, and only 3.7 % were ill literate. 31 % of respondent mother were literate, 58 % approx. were having qualification, and 9.9 % were literate. 9.9 % of respondent father were private employee, 35.8 % were business owner, 30.9 % were government employee, 9.9 % were in agriculture, 2.5 % were house- husband, and 11.1 % were having other jobs. 27 % of respondent were having income below 1 lakh, 29.6% below 5 lakh, 17.3 % below 10 lakh, 7.4 % below 20 lakh, others were in 18.5 %.75 % respondent having nuclear family, 3.7 % have single parent, 7.4 % have guardian, and 13.6 % are in others.

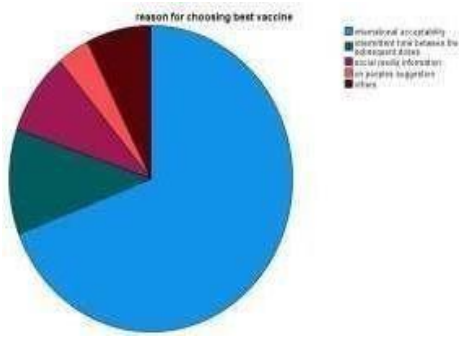
Table.3. Distribution of respondent according to the number

Doses of COVID-19 vaccine	Frequency	Percentage
1	--	----
2	81	100
Booster dose	0	0

Above table shows 100 percent of respondent took 2 dose of vaccine.

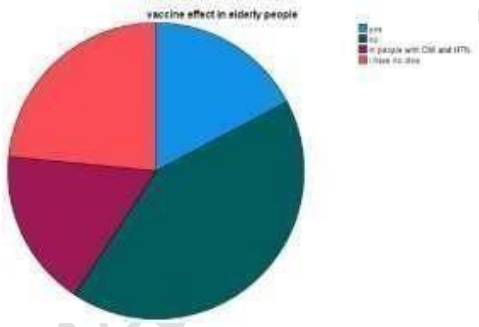
Figure.1.Respondent reason for choosing best vaccine

Above figure shows 69.1 % of respondent choose best vaccine because of international



acceptability,
11.1 % for intermittent time between the subsequent doses, 8.6 % choose best vaccine by social mediainformation, 3.7% by peoples suggestion, 7.4 % by other mean.

Figure.2.View of respondent about vaccine effect in elderly people



Above figure shows17.3% agreed on effect of vaccine on elderly people, 42% said no, 17.3 % said yesfor old people having DM and HTN, 23.5 % people had no idea scale.

Table.4.Knowledge of respondents toward vaccine side effect

Responses	Frequency	Percentage
Good	61	75.3
Bad	9	11.1
dont know	11	13.6
Total	81	100.0

In above table 75.3% people were having good knowledge about COVID vaccine , 11.1 % were havebad knowledge on it , 13.6 % were not sure of their knowledge.

Table.6.Does vaccine cause serious life threat

	Frequency	Percentage
Yes	12	14.8
No	54	66.7
Don't know	15	18.5
	81	100.0

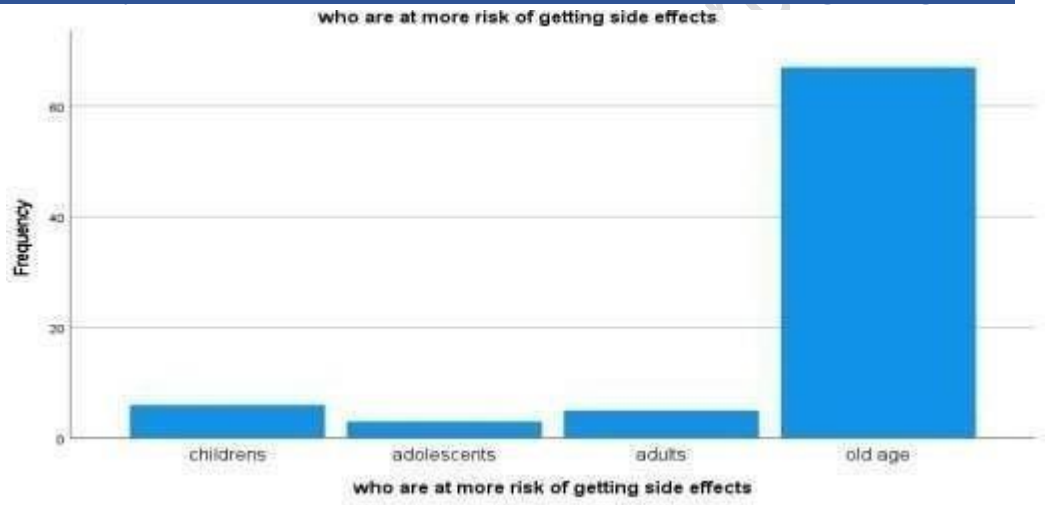
In above table 14.8% people have thought vaccine can cause life threat, 66.7 % denied, 18.5%

Table.7.Thought of getting covid infection after vaccination:- view of respondents

	Frequency	Percentage
Yes	32	39.5
No	40	49.4
don't know	9	11.1
	81	100.0

In above table 39.5 % thought that they can get infection even after vaccination, 49.4% people denied ,
11.1 % were not sure

Figure.4.Respondent view on who are at more risk of getting side



Effect

In above figure 7.4% of respondent had view as vaccine is risky for children ,3.7 % voted for adolescents , 6.2% for adult , 82.7% for old people.

Table.8.Covid vaccine is haram?;-view of respondents

	Frequency	Percentage
Yes	4	4.9
No	77	95.1
	81	100.0

In above table 4.9 % people thought vaccine is haram, 95.1% thought it is not.

Table.9 Were respondents were covid positive after 1st dose

	Frequency	Percentage
Yes	5	6.2
No	76	93.8
	81	100.0

In above table 6.2 % people got Covid positive after 1stdose , 93.8% were uninfected ,

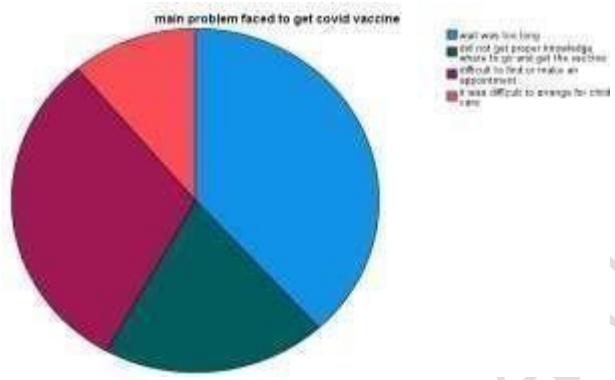


Figure.5.Main problem faced to get covid vaccine by respondent

In above figure 38.3% faced problem to get vaccine as their wait was too long , 19.8% haven't got information to get vaccine , 30.9% marked that it was difficult for them to make appointment for vaccine , 11.1% said it was difficult to make vaccine available for children.

Table11.Were respondent concerned whendidn't get any side effect

	Frequency	Percentage
Yes	11	13.6
No	70	86.4
	81	100.0

In above table 13.6 % respondent was concerned when they haven't got side effect after being vaccinated.

Table.12.Was the vaccine safe?:-view of respondents

	Frequency	Percentage
Yes	77	95.1
No	4	4.9
	81	100

In above table 95.1% of respondent agreed for statement of vaccine being safe

Discussion

Research 1st of our literature review , that is study done in Egyptian university hospital , the people over there took 3 vaccine namely, AstraZeneca , Sinopharm , Sinovac were as in our research study , it was noted that majority student took Covishield , almost 74% student were vaccinated with it , on 2nd rank it was Pfizer vaccine which our study respondent were vaccinated with, almost 8.6% medical student were vaccinated with it , as notable point that Asian countries are in influence of Russia , AstraZeneca was less commonly seen , the 3rd vaccine with which our medical student were vaccinated with was covaxin it is also Indian made vaccine as Covishield and was taken by 7.4% medical student in our research study.[7]

Vaccination and discussion on cost and knowledge about vaccine. In research 2 of our literature review , 33% people said that their friends encouraged them to take vaccine and 33.1% said media affectedthem to take vaccine were as in our research 54% said vaccine was taken by their own concern for their health and only 2.5 % were encouraged by others and 4.9% were affected by social media.[8]

The perception of vaccine cost was noted in research done by them and 33% people agreed as cost of vaccine affected their decision to take vaccine , were as in our research it was proved the same as 93.8% medical student who were our respondent took vaccine free of cost.[9] Talking about the knowledge of student about COVID 19 vaccine in their research study was 49.6% student were knowing about , were as in our research study 75 % of respondent were having good knowledge about vaccine .[10]

Hence it was direct finding in both little related research that medical student were concern for their health and also for their daily lifestyle which includes travelling , but keeping in mind that vaccine was to be available at moderate rate and easy excess, knowing half of medical students were holdinga good knowledge on COVID 19 vaccine and other half were holding partially but sufficient knowledge over COVID 19 vaccine and only few in percentage of 10 were not aware of vaccine and knowledge about COVID 19 virus.[11] Perception on taking vaccine, fear , and selection on basis of approval from some authority 3rd research of our literature review , the study the done in Oakland university, USA, on medical student, supported that more than 98 %student were agreed with importance of developing a COVID 19 vaccine ,only 53% agreed for participating in vaccine trial and23% denied openly with concerned for being exposed to vaccine without any international approval were it was noted same in our research done on medical student of Jalalabad State University that student choosing best vaccine was on basis of international acceptability and almost 69.1% student agreed for choosing best vaccine on that basis.[12]

The fear was noted among medical student for taking vaccine in our research , 24 % student agreed that they ignored vaccine due fear of side effect only, and 55% were concerned about the side effect which will be by vaccine after its administration.[13]

In 4th research of our literature review, the perception of people from south Ethiopia for effectivenessof vaccine was 41.1% people consider vaccine as effective,were as 28 % were denying and 30.4 % were not sure , were as our study suggest the medical student in university of Jalalabad state , Kyrgyzstan , 64.2% medical student over here have perception that vaccine is effective while though medical student 23.5% student disagreed for vaccine being effective and 12.3% were not sure.[14]

Most of respondent in research done Ethiopia were vaccinated with AstraZeneca were as student whowere our study respondent were vaccinated with many different vaccine like Covaxin, Covishield, Pfizer, sinopharm , as we choose respondent from many nations studying here. [15]

Talking about vaccine side effect 71.2% of people of study in Ethiopia were worried for vaccine causing side effect were as our study suggest 55.6%, while 55.4% respondent from south Ethiopian study were having trust on vaccine that it will not cause any side effect, while from our study 66.7% student were sure that vaccine will not cause any side effect. Most notable point from both study was that elderly people were at high risk was perception in majority 87 % people agree from south Ethiopian study and 82 % from our study. [16]

From our 5th of our literature review , it was noted family with higher education were better at accepting vaccine as research contain 18-65 years age group criteria, were as involvement of medical student in our study it was obvious that acceptance would be high in proximity of 90% were as 69% were those respondent who were not concern and had no fear for vaccine side effect indeed side effectcan be cure and they can be safe from the actual COVID virus which can cause even death. Though taking vaccine would prevent Covid 19 virus it could not ensure about not getting Covid 19 infection ,so to take other preventive measure is also essential ,88.82% people of study from Bangladesh , were considering other preventive major as important , were as 9.18% consider it as non necessary , and 2% were not sure , in our study from Jalalabad State University , 81.5% medical student were in favour of taking other preventive major ,were as 7.4% were considering it as not necessary , and 11.1% were not sure about. [17] .

On view of like if vaccine can cause infertility , 62.47% people of study from Bangladesh agreed that vaccine can cause infertility , were 37.53% people denied this concept , were as in our study as all were medical student only 7.4% medical student consider vaccine as a threat to their fertility, and 92.6% medical student among them were considering vaccine safe and as no threat to their fertility. [18]

In study from Bangladesh 59.41% people consider vaccine as effective were as 35.9% consider vaccine as not effective and 5.5 % people were not sure about , in our research study conducted on medical student of Jalalabad State University , 64.8% medical student consider vaccine as effective , were as 23.5% medical student consider vaccine as not effective and 12.3% medical student were not sure about vaccine effectiveness.[18]

Vaccine preferred in our research was predominately Covishield , 74% respondent took Covishield followed by Pfizer and covaxin like vaccine were on 2nd and 3rd number of being administered respectively, it was also notated that respondent choose Covishield as best vaccine followed by Pfizerand covaxin. Although it was noted all took 2 dose of vaccine, it's in general that vaccine 2 dose are enough to be called as vaccinated. Our 81.5% respondent agreed for other preventive measures being important even after vaccination. [19]

As per finding vaccine was took by our respondent for their concern over their health 54% took fortheir self protection and 38% respondent were those who took for assuming social status and veryfew student were there who need to get encouraged by others to get vaccinated.

It was noted knowledge of respondent in our research conducted on medical student was high , almost 75% student were having good knowledge, vaccine being effective was agreed by 64.2% of respondent . It was seen vaccination trusted more between 50-75 scale range, 35.8% respondent were those whoselected this range and 23 percent people were those who agree vaccine being effective in range 75-100. Vaccine causing serious life threatening side effect perception was noted only in 14% of candidates participated in our research and other participants denied this perception ,avoidance ofvaccine due fear was noted only in 24% of respondent

Our 84% respondent agrees that old people are vulnerable to get side effect of vaccine easily , but can it cause mortality in them easily? 42% medical student disagreed for this statement, and other suggested they are at risk only if they got Hypertension or Diabetes like complication, were as 23 % of respondent had no idea.

Perception of vaccine self causing infection was also seen very less among medical student in general public , as 74% of medical student denied this perception.In majority there was no major side effect noted in our respondent exception most them got side effect, 32.1 % had pain at si te of injection , 7.4% had headache and fatigue , 8.6% felt sick , 38.3% got pain headache and fatigue with sickness , 13.6 % got no side effect. 72.8% student shared their experience of getting well within 1-2 days, onlyfor 3.7% student it lasted for month. And only 4.8% of our respondent got severe side effect, majority respondent for dealing with side effect did nothing but to rest took medicine and rarely consulted doctors. 37% of our respondent shared their experience of getting Covid 19 infections evenafter getting fully

vaccinated. 86% of our respondent were able to do daily task and were able to accomplish their routine regard less of getting vaccine side effect. And only few got little complication 3.7% of respondent also shared their experience of getting allergy after being vaccinated

It was noted 88% of our respondent were ready to recommend other people for getting vaccinated, and 95% of our respondent agreed that vaccine was totally safe. 93% of population took vaccine free cost were as it was noted that 86 days was the common gap between 1st and 2nd dose for half of the respondent 30 % took between 28 days and only 12% took it in 14 days . It was noted in routine of respondent that they were not measuring BP and temperature after getting vaccinated only 24.7% respondent were checking these parameter daily.

CONCLUSION

While the perception of most of the students reported that they were worried regarding the side-effects of the COVID-19 vaccine, a significant proportion of the study participants have reported that they perceive COVID-19 vaccine will have life-threatening side-effects. Such fears have also played a rolein affecting vaccine uptake. Therefore, the Ministry of Health, and other concerned government bodies should create further awareness on COVID-19 vaccine and related safety issues.

Majority 55.6% of the respondent reported that they were worried about side effect of COVID-19 vaccine75.3% of respondent perceive that COVID-19 vaccine does not cause infection

RECOMMENDATION

1. Such research should be done in large scale .
2. It should be made comparison between local and international students.
3. There should be more training and awareness about COVID-19 among medical students.

REFERENCE

1. Hisham Ahmed Orebi, H. E. (2022). Perceptions and experiences of COVID-19 vaccines' side effects among healthcare workers at an Egyptian UniversityHospital: a cross-sectional study. egypt:Tropical Medicine and Health. Retrieved from https://tropmedhealth.biomedcentral.com/articles/10.1186/s41182- 022-00427-2

2. Norio Sugawara, 1. N.-F. (2021). Attitudes of Medical Students toward COVID-19 Vaccination: Who Is Willing to Receive a Third Dose of the Vaccine? japan: Multidisciplinary Digital Publishing Institute(MDPI). Retrievedfrom https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8621301/

3. Victoria C Lucia, 1. A. (2020). COVID-19 vaccine hesitancy among medical students. Michigan:Oxford University Press on behalf of Faculty of Public Health. Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7799040/

4. Zewude B, H. T. (2021). Perceptions and Experiences of COVID-19 Vaccine Side-Effects Among Healthcare Workers in Southern Ethiopia: A Cross-Sectional Study. (P. D. Price, Ed.) Southern Ethiopia: Dove press. doi:https://doi.org/10.2147/POR.S344848

5. Md. Saiful Islam, A. B. (2021). Knowledge, attitudes and perceptions towards COVID-19 vaccinations: a cross-sectional community survey in Bangladesh. bangladesh: bmcpublichealth.doi:https://doi.org/10.1186/s12889-021-11880-9

6. M.Lee, S. A. (2021). Social norms and vaccine uptake: College students' COVID vaccination intentions, attitudes, and estimated peer norms and comparisons with influenza vaccine. sciencedire

7. Abanoub Riad 1, 2. P. (2021). Prevalence and Drivers of COVID-19 Vaccine Hesitancy amongCzech University Students: National CrossSectional Study. czech: MDPI. doi:https://doi.org/10.3390/vaccines9090948

8. Hamza Jan, A. W.-M. (2022). COVID-19 Vaccine Perception and Hesitancy Among Patients With Sickle Cell Disease in the Western Region of Saudi Arabia. SAUDI ARABIA: CUREUS.doi:10.7759/cureus.21026

9. Sabrina K. Syan, M. R. (2021). COVID-19 Vaccine Perceptions and Differences by Sex, Age, andEducation in 1,367 Community Adults in Ontario. ontario: frontiersin. doi:https://doi.org/10.3389/fpubh.2021.719665

10. Yulan Lin, Z. H. (2020). Understanding COVID-19 vaccine demand and hesitancy: A nationwide online survey in China. (U. o. Ernesto T. A. Marques, Ed.) China: journals plos.doi:(https://dataverse.harvard.edu/dataset.xhtml?persistentId=doi:10.7910/DVN/AC89XZ).c t. doi:https://doi.org/10.1016/j.vaccine.2021.03.018

11. View ORCID ProfileMeg L. Small, V. O. (2021). College Students' COVID-19 VaccineBelief sand Intentions: Implications for interventions. medrxiv.doi:https://doi.org/10.1101/2021.05.28.21258008

12. Dhir Galaa Department of Clinical Science, A. U. (2021). Factors impacting COVID-19vaccination intention among medical students. Caribbean: taylor fransis. Retrieved from https://www.tandfonline.com/doi/full/10.1080/21645515.2022.2025733

13. Bilal Mahmood Beg, T. H.-u.-A. (2022). Perceived risk and perceptions of COVID-19 vaccine: A survey among general public in Pakistan. pakistan: plus one. Retrieved from https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0266028

14. Ning JiangORCID Icon, P. G. (2022). Acceptance of COVID-19 vaccines among collegestudents: a study of the attitudes, knowledge, and willingness of students t vaccinate. china: taylorfrancis. Retrieved from https://www.tandfonline.com/doi/full/10.1080/21645515.2021.2013077?scroll=top&needAccess=true

15. Nizam,iqbal,mashood. (2021). Analyzing COVID-19 Vaccine Hesitancy among University Students in UAE: A Cross-Sectional Study. uae: karger. Retrieved from https://www.karger.com/Article/FullText/523993

16. jaideep Chakladar, Anthony D,joseph. (2022). Medical student's perception of the COVID-19 pandemic effect on their education and well-being: a cross-sectionalsurvey in the United States. us: BMC Medical Education. Retrieved fromhttps://bmcmededuc.biomedcentral.com/articles/10.1186/s12909-022-03197-x

17. Bartosz Szmyd, 1. A. (2021). *Medical Students and SARS-CoV-2 Vaccination: Attitudeand Behaviors.* poland: pmc. Retrieved from*https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7915119/*

18. Madeline Paton, M. G. (2020). *Medical Student Experience During the COVID-19Pandemic: A Qualitative Study.* usa: hmsr. Retrieved from https://www.hmsreview.org/covid/medical-student-experience

19. Miwa Sekine, M. W. (2022). Effects of COVID-19 on Japanese medical students'knowledgeand attitudes toward e-learning in relation to performance on achievement tests. japan: plus one. Retrieved from https://journals.plos.org/plosone/article?id=10.

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FEMALE MEDICAL STUDENTS AWARNESS, ATTITUDES AND KNOWLEDGE ABOUT EARLY RECOGNITION OF BREAST CANCER IN JASU.

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ABSTRACT

BACKGROUND: Breast cancer is the principal cause of cancer death among woman worldwide. In recent years, the incidence of BC has been increasing, and most cases are diagnosed at late stages, making treatment more difficult. More and better early detection couldhelp more women to survive. Female students in the medical field can have a positive impact on the attitudes, beliefs and practices of general public. Therefore, it is important that the femalemedical students themselves have adequate knowledge and positive attitudes.

OBJECTIVE: The aim of this study was to identify the current knowledge, attitude and awareness about early detection of BC among the female students in JASU.

METHODS: A cross sectional study was carried in a group of female medical students in Jasuto determine the attitude, awareness and knowledge about early recognition of breast cancer among female students. The study area contained students from the background of medical sciences. The researcher used descriptive research design. We collected the data from differentliterature reviews from different articles. Data was recorded and entered in the software using SPSS version 26 per analysis.

RESULTS: About 70% of the respondents had overall knowledge and awareness whereas 50%had partial knowledge and awareness towards early detection of breast cancer. Awareness of

BC was associated with social media, family history of BC and socio-economic status. About 50% had fear of hospitals due to lack of awareness. More than 70% of the respondents were having positive attitude regarding early detection of breast cancer.

Conclusion: This study showed a lack of awareness among medical students. Perhaps the most important reason is the lack of awareness programs that must include all strata of society, especially students of medical colleges and doctors for their important role in spreading awareness to avoid this danger that surrounds our ladies.

Keywords: Acknowledge; Awareness; Breast cancer; Medical students; Public health; health.

INTRODUCTION : Breast cancer is the most frequent cancer among women, affecting 2.1 million women each year, and causes the greatest number of cancerrelated deaths among women. In 2018, it is estimated that 627,000 women died from breast cancer – that is approximately 15% of all cancer deaths among women. While breast cancer rates are higher among women in more developed regions, rates are increasing in nearly every region globally [1]. Breast cancer comprises ~16% of all cases of cancer in women [2]. Early diagnosis strategies focus on providing timely access to cancer treatment by reducing barriers to care and/or improving access to effective diagnosis services. The goal is to increase the proportion of breast cancers identified at an early stage, allowing more effective treatment to be used and reducing the risks of death from breast cancer. World Health Organization Package of essentialno communicable (PEN) disease interventions for primary health care in low-resource settingshas guidance on the approach to assessment and referral for women with suspected breast cancerin the primary care setting [3]. The incidence of breast cancer is increasing in the developing world due to increasing life expectancy, increase urbanization and adoption of western lifestyles[4]. Although some risk reduction might be achieved with the prevention, these strategies cannot eliminate the majority of breast cancers that According to the latest WHO data publishedin 2018 BC deaths in Kyrgyzstan reached 269 or 0.78% of total deaths. The age adjusted deathrate is 11.07 per 100,000 of population ranks Kyrgyzstan #143 in the world. Ergene is a nonprofit organization founded in august 2006 in the republic of Kyrgyzstan. they deliver BC control programs in collaboration with the ministry of health and other government departments.in order to increase awareness and support patients, Ergene developed an evidence-based MBC patient information booklet in plain and simple language, which was approved bythe Kyrgyz ministry of health. Furthermore, as a result of their advocacy work 3 medicines have been added to the Kyrgyzstan essential medicines' list [5].

METHODOLOGY: A cross sectional study was carried in a group of female medicaL students injasu to determine the attitude, awareness and knowledge about early recognition of breast canceramong female students. The study area contained students from the background of medical sciences. The researcher used descriptive research design. We collected the data from differentliterature reviews from DIFFERENT ARTICLES.

TECHNIQUES AND TOOLS OF DATA COLLECTION: A structured and pretested questionnaire was adopted and used consisting of close – ended questions. The research datas were collected through questionnaire method. The main domains of the study were socio- demographic characteristics, IEC related to breast cancer, knowledge related to breast cancer, attitudes and behavior towards breast cancer. And the sub domains of knowledge related to breast cancer were symptoms related to breast cancer, risk factors related to breast cancer and diagnosis and treatment related to breast cancer.

The questionnaire was both in English and Russian language

DATA COLLECTION PROCEDURE: The researcher will visit individual respondent personally and handover the questionnaire and they will fill it themselves. The questionnaire comprised of a consent form which the respondent are expected to read and accept or reject to participate in the research study.

SOCIO-DEMOGRAPHIC CHARECTERISTICS: This section of the questionnaire includes 12 questions, about the basic information about the respondents**.**

KNOWLEDGE RELATED TO BREAST CANCER: This section of questionnaire consists of 26 questions including 3 sub-sections, Symptoms relatedto BC, Risk factors related to BC, Diagnosis and treatment related to breast cancer. These questions have one correct option/answer which carries one mark. The overall scoring system ranges from 0-26

Where: -

Total score under 10 - low knowledge and understanding

11-15 – moderate level of knowledge and understanding

ATTITUDES AND BEHAVIOR TOWARDS BREAST CANCER: To evaluate the attitudes and behavior towards breast cancer of the respondent 12 questions were provided in this section. These questions have one correct option/answer which carries one mark. The overall scoring system ranges from 0-12

Where: -

Total score under 4 - low knowledge and understanding

5 - 7– moderate level of knowledge and understanding

8 and above -high level of knowledge and understanding

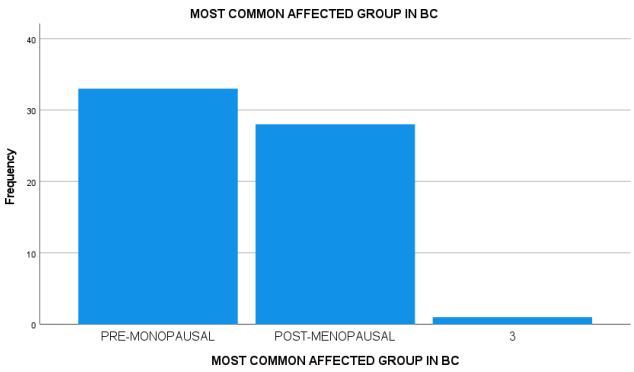
DATA PROCESSING AND ANALYSIS: Data were recorded and were entered in the softwareusing SPSS version 26 per analysis, Frequency, means, standard deviation will be calculated. knowledge score calculation:in this study, a knowledge score calculation was used to calculatequestions in the questionnaire, which contain the respondents' knowledge of different aspects of bc

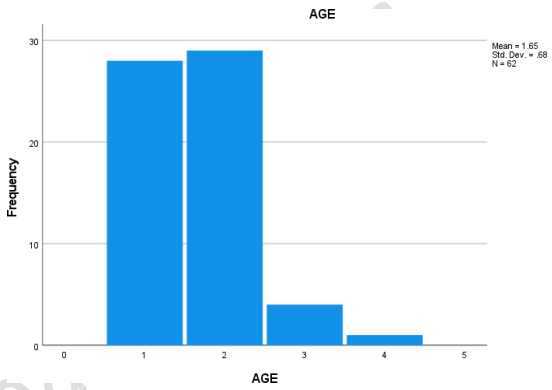
ETHICAL CONSIDERATION: The researchers obtained ethical approval from administrativebodies before conducting the study. The respondents were informed about the purpose of the study. The respondents were also informed that their participation was voluntary and they could stop their participation at any stage in case they felt uncomfortable. The confidentiality of the information obtained was kept and respondent names were not recorded.

RESUL OF THE SOCIO-DEMOGRAPHIC

The choice of country frequency of India was 29 and 46.8%, of Pakistan was 17 and 27.4%, of Kyrgyzstan was 10 and 16.1% and frequency of other countries was 6 and 9.7%.

KNOWLEDGE RELATED TO BREAST CANCER.





The frequency of most common affected group in BC at “PRE-MENOPAUSAL” was 33 and53.2% and at “POST-MENOPAUSAL” was 28 and 45.2%.

Symptoms related to BC

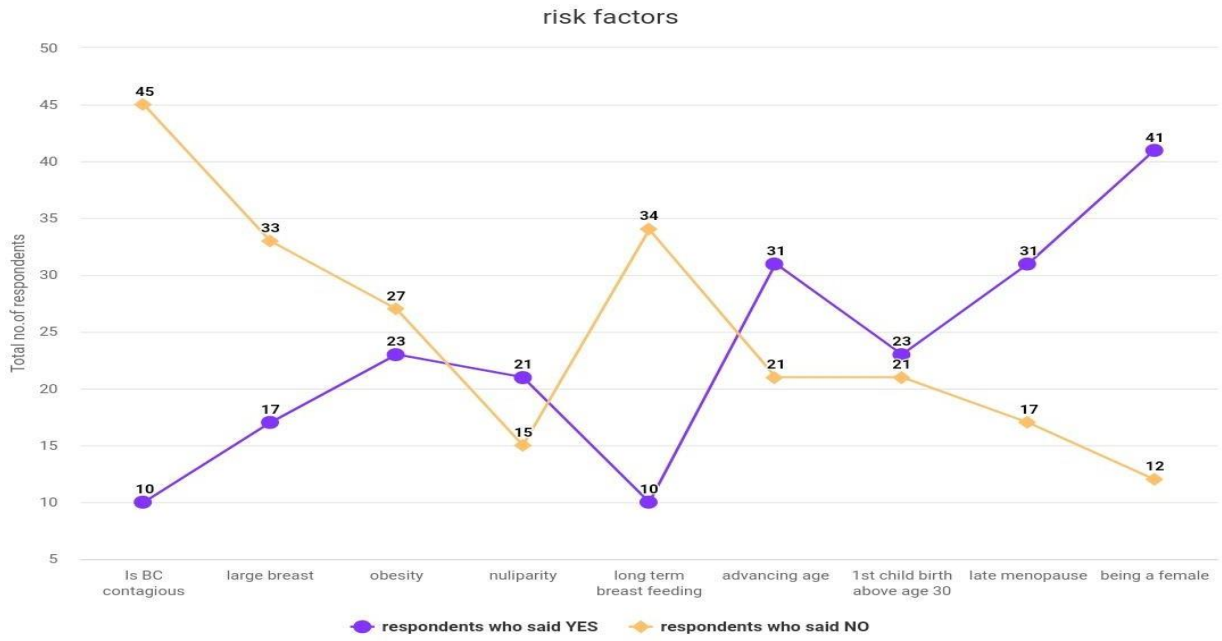
Responses	YES	NO	DON'T KNOW
CHANGE IN NIPPLE POSITION	54.8 %	37.1 %	8.1%
NIPPLE RETRACTION	62.9 %	32.3 %	4.8%
PAIN IN ONE OF THE BREASTS OR ARMPITS	74.2 %	21.0 %	4.8%
DIMPLING OF BREAST SKIN	59.7 %	19.4 %	21.0%
BLEEDING NIPPLE DISCHARGE	43.5 %	40.3 %	16.1%
LUMP OR THICKENING IN BREAST AND ARMPIT	64.5 %	11.3 %	24.2%
REDNESS OF BREAST SKIN	75.8 %	12.9 %	11.3%
CHANGE IN SIZE OR SHAPE OF BREAST	71.0 %	22.6 %	4.8%

The frequency of students who said "YES" to change in nipple position as a symptom was 34 and 54.8%, "NO" was 23 and 37.1% and "DON'T KNOW" was 5 and 8.1%.The frequency ofstudents who said "YES" to nipple retraction as a symptom was 39 and 62.9%, "NO" was 20 and 32.3% and "DON'T KNOW" was 3 and 4.8%.The frequency of students who said "YES"to pain in one of the breast or armpits as a symptom was 46 and 74.2%, "NO" was 13 and 21.0%and "DON'T KNOW" was 3 and 4.8%.The frequency of students who said "YES" to dimplingof breast skin as a symptom was 37 and 59.7%, "NO" was 12 and 19.4% and "DON'T KNOW"

was 13 and 21.0%.The frequency of students who said "YES" to bleeding nipple discharge as a symptom was 27 and 43.5%, "NO" was 25 and 40.3% and "DON'T KNOW" was 10 and 16.1%.The frequency of students who said "YES" to lump or thickening in breast or armpit asa symptom was 40 and 64.5%, "NO" was 7 and 11.3% and "DON'T KNOW" was 15 and 24.2%.The frequency of students who said "YES" to redness of the breast as a symptom was 47 and 75.8%, "NO" was 8 and 12.9% and "DON'T KNOW" was 7 and 11.3%.The frequencyof students who said "YES" to change

in size and shape of breast as a symptom was 44 and 71.0%, “NO” was 14 and 22.6% and “DON’T KNOW” was 3 and 4.8%.

RISK FACTORS RELATED TO BC.



The frequency of students who said “YES” to women with large breast as a risk factor was 17 and 27.4%, “NO” was 33 and 53.2% and “DON’T KNOW” was 12 and 19.4%.The frequency of students who said “YES” to obesity as a risk factor was 23 and 37.1%, “NO” was 27 and 43.5% and “DON’T KNOW” was 12 and 19.4%.The frequency of students who said “YES” tonuliparity as a risk factor was 21 and 33.9%, “NO” was 15 and 24.2% and “DON’T KNOW” was 26 and 41.9%.The frequency of students who said “YES” to long term breast feeding as arisk factor was 10 and 16.1%, “NO” was 34 and 54.8% and “DON’T KNOW” was 18 and 29.0%.The frequency of students who said “YES” to advancing age as a risk factor was 31 and50.0%, “NO” was 21 and 33.9% and “DON’T KNOW” was 10 and 16.1%.

The frequency of students who said “YES” to 1st child birth at the age above 30 years as a risk factor was 23 and 37.1%, “NO” was 21 and 33.9% and “DON’T KNOW” was 18 and 29.0%.The frequency of students who said “YES” to late menopause as a risk factor was 31 and50.0%, “NO” was 17 and 27.4% and “DON’T KNOW” was 14 and 22.6%.The frequency of students who said “YES” to being a female as a risk factor was 41 and 66.1%, “NO” was 12 and 19.4% and “DON’T KNOW” was 9 and 14.5%.

DIAGNOSIS AND TREATMENT RELATED TO BREAST CANCER

SCREENING IS HELPFUL FOREARLY DETECTION	**YES**	**71.0%**
	NO	**8.1%**
	DON'T KNOW	**21.0%**
MOST COMMON INVESTIGATION	MAMMOGRAPHY	**83.9%**
	BLOOD TEST	**9.7%**
	FULL BODY X-RAY	**4.8%**
METHOD USED IN DIAGNOSIS	BIOPSY	**64.5%**
	TRIPLE ASSESSME NT	**22.6%**
	ULTRASOUND	**11.3%**

The frequency of students who said "YES" to screening is helpful for early detection of BC was 44 and 71.0%, "NO" was 5 and 8.1% and "DON'T KNOW" was 13 and 21.0%.The frequency of students who said "MAMMOGRAPHY" to most common investigation of BC was 52 and 83.9%, "BLOOD TEST" was 6 and 9.7% and "FULL BODY X-RAY" was 3 and 4.8%.The frequency of students who said "BIOPSY" to method used in diagnosis of BC was 40 and 64.5%, "TRIPLE ASSESSMENT" was 14 and 22.6% and "ULTRA SOUND" was 7 and 11.3%.

ATTITUDES AND BEHAVIOR TOWARDS BREAST CANCER.

RESPONSES	YES	NO	DON'T KNOW
EMBARRASSING TO TELL PEOPLE	22.6%	61.3%	14.5%
FEELING SHY YO UNCOVER BREAST	41.9%	37.15	21%
FEAR OF HOSPITALS	38.7%	50%	11.3%
FEELING WORRIED ABOUT WHAT DOCTORMIGHT FIND	51.6%	38.7%	9.7%
DIFFICULTY TO TALK TO DOCTOR	30.6%	50%	19.4%
AFRAID OF HAVING MAMMOGRAPHY	33.9%	50%	16.1%
DOES SELF EXAMINATION OF BREAST	50%	29%	16.1%

The frequency of students who said "YES" to embarrassing to tell people as a attitude and behavior towards BC was 14 and 22.6%, "NO" was 38 and 61.3% and "DON'T KNOW" was 9 and 14.5%.The frequency of students who said "YES" to feeling shy to uncover breast as a attitude and behavior towards BC was 26 and 41.9%, "NO" was 23 and 37.1% and "DON'T KNOW" was 13 and 21.0%.The frequency of students who said "YES" to fear of hospitals andhealth facilities as a attitude and behavior towards BC was 24 and 38.7%, "NO" was 31 and 50.0% and "DON'T KNOW" was 7 and 11.3%.The frequency of students who said "YES" to feeling worried about what doctor might find as a attitude and behavior towards BC was 32 and 51.6%, "NO" was 24 and 38.7% and "DON'T KNOW" was 6 and 9.7%.The frequency ofstudents who said "YES" to difficulty to talk to doctor about BC as a attitude and behavior towards BC was 19 and 30.6%, "NO" was 31 and 50.0% and "DON'T KNOW" was 12 and 19.4%.The frequency of students who said "YES" to afraid of having mammography as a attitude and behavior towards BC was 21 and 33.9%, "NO" was 31 and 50.0% and "DON'T KNOW" was 10 and 16.1%.The frequency of students who said "YES" to does self examinationof breast as a attitude and behavior towards BC was 31 and 50.0%, "NO" was 18 and 29.0% and "DON'T KNOW" was 10 and 16.1%.

DISCUSSION

Awareness and Education: The data highlights the importance of education and awareness in promoting breast health. It suggests that comprehensive education campaigns are needed to address knowledge gaps and promote healthy behaviors related to breast health.

Barriers to Screening and Healthcare Access: Fear, embarrassment, and other barriers can prevent individuals from seeking necessary healthcare services, including breast cancer screening. Overcoming these barriers requires targeted interventions and community support.

Empowerment through Knowledge: Empowering individuals with knowledge about breasthealth and screening options is crucial for promoting proactive health behaviors. When peopleunderstand the importance of early detection and feel confident in accessing healthcare services,they are more likely to take control of their health.[6]

In summary, addressing breast health awareness, breastfeeding practices, and attitudes towardsbreast cancer screening requires a multifaceted approach that includes education, cultural sensitivity, and empowerment. By fostering open dialogue, providing accurate information, andaddressing barriers to healthcare access, we can work towards improving breast health outcomes for all individuals. [7]

Population-based cancer screening is a much more complex public health undertaking than early diagnosis and is usually cost-effective when done in the context of high-standard programs thattarget all the population at risk in a given geographical area with high specific cancer burden, with everyone who takes part being offered the same level of screening, diagnosis and treatmentservices. Also, big role falls on doctors, nurses and medical students. The main goal of this study was to assess breast cancer awareness and knowledge among university students. The present study showed that (71%) of students said they know about early detection methods of breast cancer while (70%) of them did not know mammography, such confusion, shows that medical students know about tools of diagnosis just theoretically, similar results in a study in Saudi Arabia that presented (78%) do not know mammography [8]. (72%) of the sample said that tight bra can cause breast cancer. In medical literature, no aspect of wearing a bra, including cup size, the average number of hours/day worn, wearing a bra with an underwire, or the first time she began regularly wearing a bra, was associated with risks of either intraductal carcinoma)IDC or (intralobular carcinoma) ILC. Results of another study did not support an association between bra wearing and increased breast cancer risk among postmenopausal women [9]. The present review demonstrates insufficient evidence to establish a positive association between the duration and type of brassiere wearing and breast cancer [10]. Therefore, this point must beclear in the mind of medical students because it is a common question among women in every community. A majority (81%) of participants in this study considered that pain is an important symptom of breast cancer. This, as reported by Powe et al [11], is a widespread misconception as most people associate pain with the occurrence of cancer. In fact, pain is not necessarily an early symptom of breast cancer. Our result was agreed with a study among university students in Angola by Sambanje et al [12] that shows 80 % of students thought that lumps in the breast which are cancerous would be painful. Perhaps that is a big problem for us is that the sample quality included future doctors. While the average knowledge of risk factors is (57 %), it is still

considered a low rate among medical students, but that is similar to many studies in Angola [13], Saudi Arabia [14]. The students (66%) did not know the precocious puberty can lead to cancer and (51%) did not believe the delayed menopause is a risk factor. Overweight was not identified as a risk factor by (51%) of participants. This was reported; too by Sambanje et al [15] that (57%) did not consider being overweight could cause breast cancer

Conclusion

Overall, the knowledge attitudes and practices of the medical students related to breast cancer at jasu were found to be pretty good which was expected to be excellent. In order to make the results excellent there is a need for well-planned and comprehensive educational programs forthe medical students. Knowledgeable medical students with good communication skills and well-planned educational campaigns could make difference in helping women overcome their fears and hesitations.

References

1. Khan NH, D. S. (2020). *Better Reporting and Awareness Campaigns Needed for Breast Cancer in Pakistani Women.* CHINA: DOVE PRESS.LTD. doi:https://doi.org/10.2147/CMAR.S270671

2. Sabyrbekova, T. (2017). *Strengthening national policies for advanced breast cancer patients in Kyrgyzstan.* Kyrgyzstan: UICC. Retrieved from https://www.uicc.org/case-studies/strengthening-national-policies-advanced-breast-cancer-patients-kyrgyzstan

3. Ramya Ahmad Sindi, A. A. (2019). *Awareness Level, Knowledge and Attitude towards Breast Cancer between Medical and Non-Medical University Students in Makkah Region: A Cross Sectional Study.* Makkah: International Journal of. doi:10.23937/2378-3419/1410106

4. Humariya Heena, S. D.-S. (2019). *Knowledge, attitudes, and practices related to breast cancer screening among female health care professionals: a cross sectional study.* Saudi Arabia: Springer Nature. Retrieved from

5. Okwuokei, S. A. (2013). *Knowledge, Attitude and Practices of Women Towards Breast Cancer in Benin City, Nigeria.* BENIN: Wolters Kluwer -- Medknow Publications. Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3728854/

OseiBonsucd, A. B. (2019). *Breast cancer knowledge, beliefs, attitudes and screening efforts by micro-community of advanced breast cancer patients in Ghana.* GHANA:

International Journal of AfricaNursingSciences.Retrievedfrom https://www.sciencedirect.com/science/article/pii/S2214139118301343

6. Al-Mousa DS, A. M.-S.-H. (2020). *Knowledge, Attitude and Practice Around Breast Cancer and Mammography Screening Among Jordanian Women.* AUSTRALIA: Dove Press Ltd . Retrieved from https://www.dovepress.com/knowledge-attitude-and-practice-around- breast-cancer-and-mammography-s-peer-reviewed-fulltext-article-BCTT

7. Alaudeen, S. R. (2014). *Knowledge, attitude, and practice of malaysian medical students towards breast cancer: A cross-sectional study.* MALAYSIA: OPEN ACCESS TEXT.

8. Hesam Adin Atashi, M. E. (2020). *Knowledge, Attitudes, and Practices toward Breast Cancer among Midwives in a Breast Cancer Educational Seminar.* Tehran: Far name Inc. Doi: https://doi.org/10.32768/abc.20207129-36

9. Al-Mohaimeed, K. F. (2007). *Knowledge, Attitudes, and Practices Surrounding Breast Cancer and Screening in Female Teachers of Buraidah, Saudi Arabia.* Buraidah: International Journal of Health Science

10. Hlma Ismail, 1. M. (2021). *Knowledge of breast cancer among medical students in SyrianPrivate University, Syria: a cross-sectional study.* Syria: BMC Medical Education .

11. Shapiro S, Venet W, Strax P, et al. Ten-to-fourteen year effect of screening on breast cancermortality. *J Natl Cancer Inst* 1982; 69: 349-55.

12. Women's knowledge, attitudes and practice about breast cancer screening in the region ofMonastir (Tunisia)

13. Practice of breast self-examination and knowledge of breast cancer among female university students in Korea

14. Breast Cancer Knowledge and Related Behaviors Among Women in Abha City, Southwestern Saudi Arabia

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

A study on Impacts of Insomnia among the Medical Students of Jalal-abad, Kyrgystan

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Abstract:

Insomnia is a sleep disorder which the person will have difficulty in falling asleep, staying asleep or maintaining sleep which can relatively influence their daily functioning leads to fatigue, irritability and less concentration

Sleep is a essential thing for a person as it might affect the productivity resulting in loss of performance. If a person is not getting enough sleep he might suffer from irregularities in neural development, learning memory, metabolic and cardiovascular functions.

The People having high workload like students, people working for long period of time in a day are most likely to get affected by Insomnia. Insomnia is a common sleep disorder. With Insomnia, Person may have trouble falling asleep, staying asleep, or getting good quality sleep. This happens even if you have the time and the right environment to sleep well. Insomnia can get in the way of your daily activities and may make you feel sleepy during the day.

Methods: A cross-sectional study was conducted to investigate the prevalance of insomnia among medical students over a period of one month, in the month of January in Jalal-abad State university, Kyrgyzstan. The questionnaire in the study was used an online survey platform. The Athens Insomnia Scale (AIS-8) and socio-demographic information were used to collect the information of the respondents.

Result: In the study, majority of the respondents 48.3% were from 3rd year. Regarding age groups, those aged 21-25 make up the largest portion (55.2%) in our study. In terms of gender, male slightly outnumber females (51.7% vs. 48.3%).

The prevalence of insomnia was 27.6% (32/116) indicated that their sleep patterns were not normal, suggesting symptoms of insomnia. age (p=0.021), sex (p=0.017) was found to have correlation with insomnia.

Conlusion: Approximately one-third of the medical students experience insomnia. There should be more awareness of this association as early recognition and treatment may have a favorable inuence on academic performance. The sleep problem in the respondents reported more often in students who experience daily stress which might affect their academic activities.

Keywords: Insomnia, medical students, quality of sleep, exams, academic activities

Introduction

Insomnia can be caused by many factors mainly stress, anxiety, genetic conditions, routine & sleep habits, eating too much late in the evening, Medications, Hormonal Changes. You may have Insomnia if you regularly have the Symptoms like, Having a hard time falling asleep at night,Waking up during the night,Waking up too early, Feeling tired or sleepy during the day ,feeling cranky, depressed or anxious,having a hard time paying attention, focusing on tasks or remembering,making more errors or having more accidents, having ongoing worries about sleep. The factors that increase the risk of Insomnia have been identified, and include Being 60 or Older Rates of insomnia increase as people age, as sleep patterns and health status tend to change as you age[1].

Being a Woman For reasons that aren't clear, women are more prone to insomnia than men, Drinking too much caffeine or too close to bedtime, drinking alcohol too close to bedtime. Spending too much time in front of a cell phone, computer, or other bright screen before bed. Using digital devices before bed can also be problematic because the bright light they produce can suppress melatonin, a hormone your body produces that tells it when it's time to go to sleep and wake up. Instead of your body getting the signal that it's time to get sleepy, it gets the signal to feel more alert and awake[2],

Stress and anxiety, hormonal changes, Medications Some over-the-counter and easily available drugs can cause insomnia. According to Stanford Medicine, "Sleep deprivation increases the likelihood teens will suffer myriad negative consequences, including an inability to concentrate, poor grades, drowsy-driving incidents, anxiety, depression, thoughts of suicide and even suicide attempts.[3]

There is no main cause of insomnia. However, research suggests that in many people insomnia likely results from certain types of physiological arousal at unwanted times, disrupting normal patterns of sleep. Examples of such arousal can include a heightened heart rate, a higher body temperature, and increased levels of specific hormones, like cortisol. [4]

Insomnia can cause daytime sleepiness and a lack of energy. It also can make you feel anxious, depressed, or irritable. You may have trouble focusing on tasks, paying attention, learning, and remembering. Insomnia also can cause other serious problems. For example, it could make you may feel drowsy while driving. This could cause you get into a car accident [5] .

Erratic schedules and lifestyle adjustments coupled with the strain of daily occupation are partly to blame for the general dissatisfaction with sleep quality and duration, because work obligations reduce hours of sleep among college students. Adequate sleep contributes to a student's overall health and well-being. Students should get the proper amount of sleep at night to help stay focused, improve concentration, and improve academic performance.[6] Sleep deprivation has a negative impact on physical and mental health, affecting the quality of life.

It may result in decreased work effectiveness, poor academic performance, psychiatric disorders, impaired immune function, and stress in students.[7]

Rational

There is no acknowledgement of Insomnia in the society. People doesn't know the seriousness of the Insomnia and take it lightly. As our seniors are also being affected by Insomnia and it is getting in the way of their academic performance. It is a major health concern and should be studied closely. So, we would like to address the concerns in our best way possible.

Methods and methodology:

A cross sectional online survey was used to find out the number of medical students suffering from insomnia. Students who were interested for the study were selected from 1st year to 5th year academic year.

The study was conducted with 3 parts of questionnaire. The first one is the socio-demographic information of the respondents. The second section includes the questions from Athens Insomnia Scale (AIS-8) questionnaire were the respondents have to give the information about their sleep on that basis we can estimate the prevelance of insomnia. The third section presented impact of insomnia among the respondents where they were asked 5 questions about the informations about the classes, their moods, concentration and time taken to fall asleep.

Result:

The target populations for the study were the students of Jalal-Abad state university from 1st to 5th year, a structured questionnaire was used for the research. A total of 116 valid responses were included in the present study.

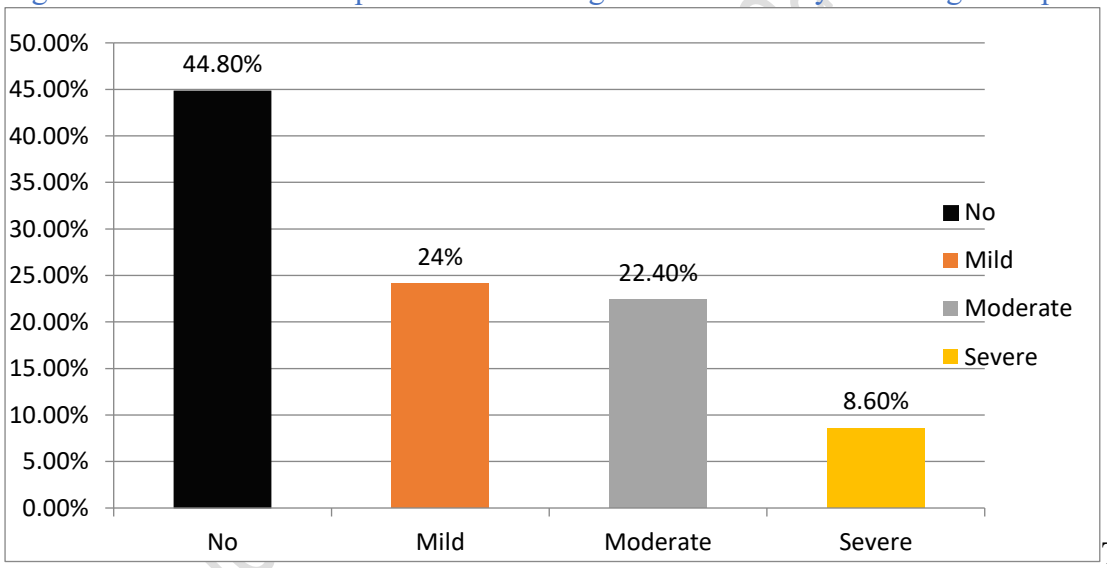
Table: 1 Socio-demographic profile of the respondent

Variables	Frequency(f) (N=116)	Percentage (%)
Academic Year		
1st Year	8	6.9
2nd Year	40	34.5
3rd Year	56	48.3
4th Year	10	8.6
5th Year	2	1.7
Age Group		
18-20	52	44.8
21-25	64	55.2
Sex		
Male	60	51.7
Female	56	48.3
Nationality		
India	56	48.3
Pakistan	30	25.9
Kyrgyzstan	18	15.5
Bangladesh	10	8.6
Uzbekistan	2	1.7
Marital Status		
Unmarried	96	82.8
Married	20	17.2

Type of Family		
Nuclear	64	55.2
Joint	52	44.8
Parent Education		
Educated	96	82.8
Not well Educated	20	17.2
Family genetic condition		
With genetic condition	16	13.8
Without any	100	86.2

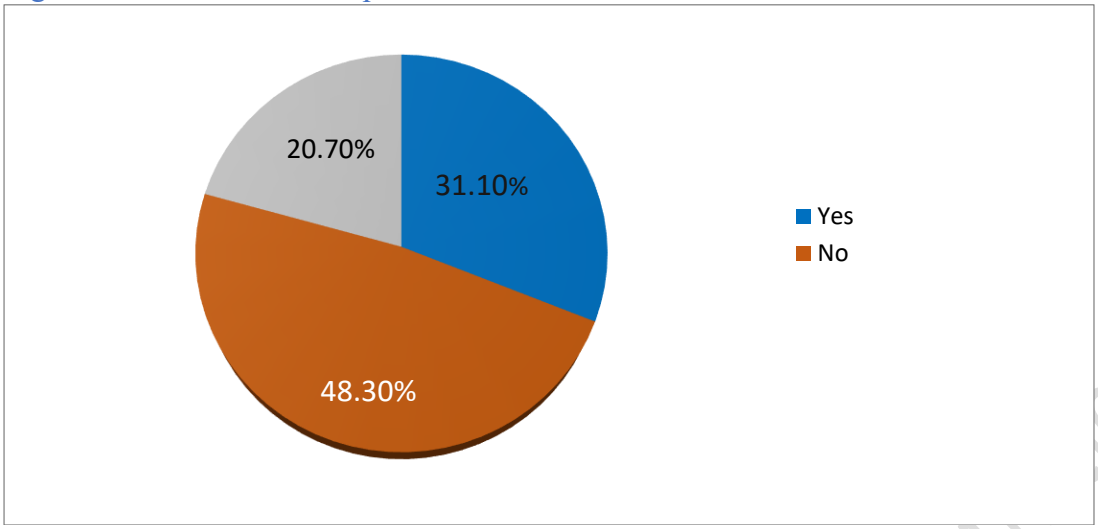
Above table shows the data presents a distribution of variables among 116 respondents. In terms of academic year, the majority are in their 3rd year (48.3%), followed by the 2nd year (34.5%). Regarding age groups, those aged 21-25 make up the largest portion (55.2%). In terms of gender, male slightly outnumber females (51.7% vs. 48.3%), while in nationality, Indian respondents dominate (48.3%). Most of the respondents are unmarried (82.8%) and come from nuclear families (55.2%). Additionally, the majority of the parents are educated (82.8%) and most of the families do not have a genetic condition (86.2%).

Figure.1 Distribution of respondents according to their difficulty in Falling Asleep



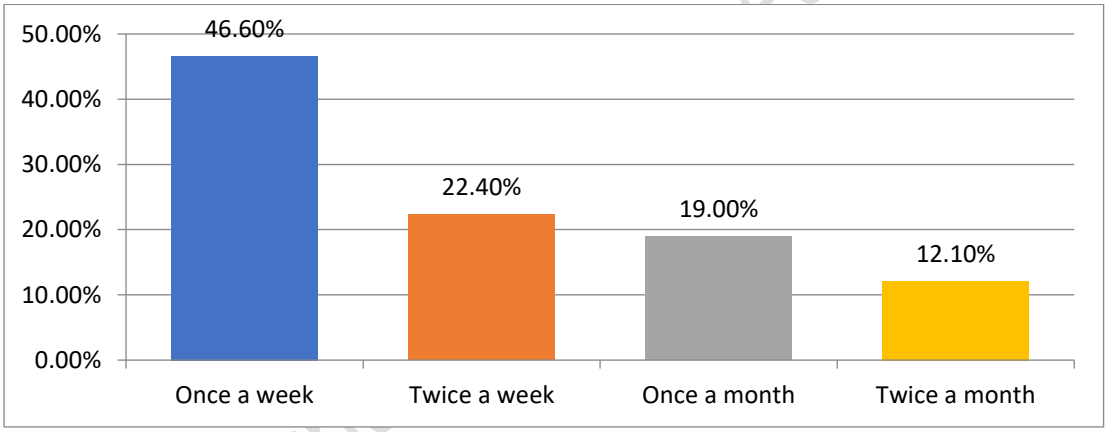
The data suggests that 44.8% (52 individuals) reported no difficulty falling asleep, while 24.1% (28 individuals) experienced mild difficulty, 22.4% (26 individuals) faced moderate difficulty, and 8.6% (10 individuals) reported severe difficulty.

Figure.2: Distribution of respondents based on their overload of studies & Activities.



The pie chart indicates that out of 116 respondents 31.1.% of respondents feel overloaded by studies and other extracurricular activities, while 48.3% do not. Additionally, 20.7% feel very much overloaded.

Figure.3: Distribution of respondents according to their feeling of Homesickness



For those respondents who experience homesickness, the frequency varies. Approximately 46.6% feel homesick once a week, 22.4% twice a week, 19.0% once a month, and 12.1% twice a month.

Table 2: Distribution of respondents based on impact of insomnia

Variables	Frequency(f) N=116 (84/32)	Percentage (%)
Feeling exhausted about class		
Always	20	17.2
Only when the class starts before 9:00 AM	12	10.3
Rarely	50	43.1
Never I always make sure to get plenty of sleep	34	29.4
Feeling sad for no reason		
No	66	56.9
I feel sad less than half the time in a day	18	15.5

Feel sad more than half of the time	24	20.7
I feel sad nearly all the time	8	6.9
Feeling irritable		
No	54	46.6
I feel irritable less than half of the time	30	25.8
I feel irritable more than half the time	20	17.3
I feel extremely irritable near all the time	12	10.3
Changes in ability of concentration and decision making		
My normal ability to work has not changed	32	27.6
I occasionally feel indecisive or find their attention wandering	52	44.8
Struggle to focus most of the time	19	16.4
I cannot concentrate well enough to read or make minor decisions	13	11.2
Time taken to fall asleep		
15 min	44	37.9
30 min	40	34.5
1 Hour	20	17.3
>1 Hour	12	10.3

The responses reflect varying levels of emotional and cognitive experiences among the 116 respondents. Regarding exhaustion, an equal portion (27.5%) feel exhausted either always or only when the classes start early, while a considerable portion feel sad more than half the time in a day(20.7%) and nearly all the time(6.9%). Additionally, about half the respondents (46.6%) report not feeling irritable,(25.8%) feel irritable less than half the time in a day, while (27.6%) experience major degrees of irritability. In terms of changes in concentration and decision making abilities, the majority (44.8%) occasionally feel indecisive or find their attention wandering,and the others (27.6%) have severe problems in concentration . Lastly there is diversity in the time taken to fall asleep, with a significant number (37.9%) reporting 15 minutes, followed by (34.5)% reporting 30 minutes, and total of (27.6%) percentages for longer durations as an impact of Insomnia.

Table 3: Distribution of Responders on the basis of their sleep cycle and their activity during day (n=116)

Variables	None	Mild	Moderate	Severe
Sleep induction	93/80.2%	23/19.8%	-	-
Awakening during Night	39/33.6%	51/44.0%	17/14.7%	9/7.8%
Final awakening earlier than desire	49/42.2%	55/47.4%	2/1.7%	10/8.6%
Total sleep Duration	43/37.1	59/50.9	9/7.8	5/4/3
Overall Quality of sleep	34/29.3	62/53.4	13/11.2	7/6.0
Sense of wellbeing during the day	36/31.0	61/52.6	13/11.2	6/5.2
Functioning during the day	46/39.7	54/46.6	15/12.9	1/0.9
Sleepiness during the day	38/32.8	60/51.7	10/8.6	8/6.9

Regarding sleep induction, the majority (80.2%) reported none, indicating successful sleep initiation, while 19.8% reported Mild difficulties. In terms of nighttime awakenings, a significant portion (33.6%) experienced none, while 44.0% reported Mild occurrences, 14.7% Moderate, and 7.8% severe awakenings. Similarly, for instances of final awakening earlier than desired, 42.2% reported none, 47.4% they woke up a little earlier, 1.7% markedly earlier, and 8.6% much earlier. When assessing total sleep duration, 37.1% experienced no problems, 50.9% reported Mild deviations from desired duration, 7.8% Moderate, and 4.3% severe deviations.

Overall sleep quality was predominantly reported as satisfactory (29.3%), with 53.4% reporting Mild issues, 11.2% Moderate, and 6.0% Severe. During the day, sense of wellbeing was reported as normal by 31.0%, with 52.6% reporting mild issues, 11.2% Moderate, and 5.2% Severe.

Functioning during the day saw 39.7% reporting normal, 46.6% reporting Mild issues, 12.9% Moderate, and 0.9% severe difficulties. Finally, sleepiness during the day was reported as none by 32.8%, with 51.7% reporting Mild sleepiness, 8.6% Moderate, and 6.9% severe sleepiness. This data highlights a range of sleep-related challenges and their impact on daytime functioning, providing valuable insights into the prevalence and severity of sleep disturbances within the surveyed population.

Table 4: Distribution of respondents according their condition on Insomnia

Responses	Frequency(n=116)	Percentage (%)
Normal	84	72.4%
Not Normal (Insomnia)	32	27.6%

Out of a total of 116 responses, the majority, comprising 84 individuals (72.4%), reported experiencing normal sleep patterns. However, 32 respondents (27.6%) indicated that their sleep patterns were not normal, suggesting symptoms of insomnia. This data indicates that while a significant portion of the population surveyed perceives their sleep as normal, a notable proportion experiences disruptions to their sleep that align with characteristics of insomnia. Understanding this distribution sheds light on the prevalence of sleep disturbances within the sample and underscores the importance of addressing sleep disorders for overall well-being and health maintenance.

Table 5: Correlation between socio-demographic and state of insomnia

Characteristic	Prevalence of Insomnia(n=116)		P-value
	Normal	Not Normal (insomnia)	
Sex			0.021
Male	44	40	
Female	16	16	
Age			0.017
18-20	72	27	
21-25	12	5	
Family Type			0.028
Nuclear Family	58	23	
Joint Family	26	9	

The data indicates statistically significant associations between sex, age, family type, and the occurrence of insomnia, as denoted by the respective P-value. In terms of sex, the prevalence of insomnia differed significantly between males and females, with a P-value of 0.021. Specifically, 44 males and 16 females reported normal sleep, while 40 males and 16 females experienced insomnia. Similarly, age showed a significant correlation with insomnia, with a P-value of 0.017. Within the age groups surveyed, those between 18-20 years old exhibited a higher prevalence of insomnia (27 individuals) compared to those aged 21-25 (5 individuals). Moreover, family type demonstrated a statistically significant association with insomnia, with a P-value of 0.028. Among respondents from nuclear families, 58 reported normal sleep patterns, while 23 experienced insomnia. In contrast, among those from joint families, 26 reported normal sleep, while 9 experienced insomnia. These findings underscore the influence of socio-demographic factors on the prevalence of insomnia within the population studied, providing valuable insights for further exploration and targeted intervention strategies.

Discussion

The research on Insomnia and it's impact doesn't not have the attention it's need in the world, there are some research studies conduct in few places about this, so we have compared some of them for you. Our findings help fills a gap in our understanding of insomnia and it's impact among medical students .

Sleep patterns can negatively impact the academic performance, attention span and memory. Various emotional factors like worry about studies, homesickness, stress can significantly affect the sleep quality of students. Moreover other socio-demographic factors and lifestyle are also having a notable correlation between Insomnia. The research presents a comprehensive overview of the sleep patterns, habits and perceptions of students of Jalal-abad state university.

A total of 116 respondents of Jalal-abad state university were chosen, 84 participants (72.4%) reported regular sleep habits. Meanwhile, 32 individuals (27.6%) described experiencing sleep issues, possibly pointing to insomnia. A previous study conducted in majmaah university results showed that nearly half of the students had subthreshold insomnia, 17.4% had moderate clinical insomnia, and 3.7% had severe insomnia[8]

In our study around 45% reported no difficulty in falling asleep or staying asleep conveys 55% have difficulty in both. The majority sleep from 12 to 2 am (48.3%) and wake up without disturbances. Similarly a study conducted in Germany examined people's experience 59.3% in difficulties initiating sleep and 59.3 % had difficulties in maintaining sleep. [9]

According to the findings of our study about 55.2% of students are from (21-25 years) age group while 44.8% from (18-20 years) age group are suffering from insomnia. And based on an earlier study conducted in Karachi, Pakistan 49.9% of students are from (21-25 years) and 50.1% falls under (17-20 years) age group which is almost similar with our study [10]

This study discovered that out of 84 males 47.6% have insomnia and from 32 females 50% of them are having insomnia which shows a slight increase of insomnia for female students. And the prevalence of karachi insomnia was found to be 31.3% of whole population among 40% were female students and 32.8% male students [12] . Similarly in another study prevalence of

insomnia was compared between females and males population, results gives a significant high prevalence among female population[11].

In a Research study conducted in China to find the Prevalence and factors associated with insomnia among medical students during the COVID-19 pandemic, 34.0% were male and 66.0% were female among 2289 participants With Pvalue 0.801 .In our Research study, males slightly outnumbered females with 51.7% males and 48.3% females among 116 respondents with Pvalue 0.021. [12]

The study underscores the importance of addressing sleep issues among the university students, existing literature, highlighting the widespread nature of sleep problems among students.

Conclusion: Insomnia, affecting approximately one-third of medical students, represents a significant concern within this population. The implications of this prevalence extend beyond mere sleep disturbances, as insomnia can profoundly impact academic performance and overall well-being. Therefore, there is a critical need for heightened awareness of this association among medical students, faculty, and healthcare professionals.

Early recognition and intervention are essential components in addressing insomnia among medical students. By identifying and addressing sleep issues promptly, educators and healthcare providers can potentially mitigate the negative consequences on academic performance. Moreover, implementing strategies for promoting healthy sleep habits and stress management techniques can be beneficial in alleviating insomnia symptoms and improving overall student well-being.

Furthermore, it is noteworthy that insomnia appears to be more prevalent among medical students experiencing daily stressors. This correlation underscores the intricate interplay between psychological factors and sleep disturbances. Chronic stress can disrupt sleep patterns, exacerbating insomnia symptoms and further compromising academic activities.

References

1. Mayo Clinic. Insomnia treatment: Cognitive behavioral therapy instead of sleeping pills [Internet]. Mayo Clinic. 2016. Available from: https://www.mayoclinic.org/diseases-conditions/insomnia/in-depth/insomnia-treatment/art-20046677

2.Insomnia Causes, From Anxiety to Lifestyle [Internet]. EverydayHealth.com. Available from: https://www.everydayhealth.com/insomnia/what-causes-insomnia-your-genes-medical-history-mental-health-lifestyle-all-play-role/

3.Risk factors and causes of insomnia [Internet]. www.vinmec.com. [cited 2024 May 1]. Available from: https://www.vinmec.com/en/news/health-news/general-health-check/risk-factors-and-causes-of-insomnia/

4. Suni E, Rehman A. Insomnia [Internet]. Sleep Foundation. 2024. Available from: https://www.sleepfoundation.org/insomnia

5. Mayo Clinic. Insomnia - Symptoms and causes [Internet]. Mayo Clinic. 2016. Available from: https://www.mayoclinic.org/diseases-conditions/insomnia/symptoms-causes/syc-20355167

6.Mbous YPV, Nili M, Mohamed R, Dwibedi N. Psychosocial Correlates of Insomnia Among College Students. Preventing Chronic Disease [Internet]. 2022 Sep 15;19(19). Available from: https://www.cdc.gov/pcd/issues/2022/22_0060.htm

7.Michael Vanderlind W, Beevers CG, Sherman SM, Trujillo LT, McGeary JE, Matthews MD, et al. Sleep and sadness: exploring the relation among sleep, cognitive control, and depressive symptoms in young adults. Sleep Medicine. 2014 Jan;15(1):144–9.

8. Azuri J, Ackshota N, Vinker S. Reassuring the medical students' disease – Health related anxiety among medical students. Medical Teacher. 2010 Jul;32(7):e270–5.

9 Schlarb A, Friedrich A, Claßen M. Sleep problems in university students – an intervention. Neuropsychiatric Disease and Treatment [Internet]. 2017 Jul 26;13(13):1989–2001. Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5536318/

10. Dubey S, Biswas P, Ghosh R, Chatterjee S, Dubey MJ, Chatterjee S, et al. Psychosocial Impact of COVID-19. Diabetes & Metabolic Syndrome: Clinical Research & Reviews. 2020 Sep;14(5):779–88.

11.Zeng LN, Zong QQ, Yang Y, Zhang L, Xiang YF, Ng CH, et al. Gender difference in the prevalence of insomnia: A meta-analysis of observational studies. Frontiers in Psychiatry [Internet]. 2020 Nov 20;11. Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7714764/

12.Zhang M, Qin L, Zhang D, Tao M, Han K, Chi C, et al. Prevalence and factors associated with insomnia among medical students in China during the COVID-19 pandemic: characterization and associated factors. BMC Psychiatry. 2023 Mar 7;23(1).

PUBLICATIONS OF 2024 - 2025 SESSION

BY JALAL-ABAD STATE UNIVERSITY

UNDERSTANDING THE IMPACT, PREVENTION, AND CO-MORBIDITIES OF MEASLES: A CROSS-SECTIONAL STUDY AT CITY HOSPITAL, JALALABAD, KYRGYZSTAN

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Abstract
Measles, a highly contagious viral infection, remains a significant public health challenge despite the availability of an effective vaccine. This cross-sectional study, conducted at City Hospital in Jalalabad, Kyrgyzstan, from December 10, 2023, to March 30, 2024, investigated a measles resurgence among 50 hospitalized children aged 1 month to 14 years. The study aimed to identify risk factors, evaluate vaccine effectiveness, assess complications, and propose control strategies. Findings revealed that 60% of cases were infants under 2 years, with 86% unvaccinated due to religious beliefs and misinformation. Malnutrition was prevalent, with 56% of children underweight and 60% stunted. Pneumonia (80%), anemia (34%), and parasitic infections (18%) emerged as significant co-morbidities. Transmission was associated with low herd immunity and direct contact (40%). These results underscore the urgent need for enhanced vaccination campaigns, nutritional interventions, and community education to reduce measles morbidity in Jalalabad.

Keywords: Measles, Infectious disease, Pediatrics, Kyrgyzstan

ПОНИМАНИЕ ВЛИЯНИЯ, ПРОФИЛАКТИКИ И СОПУТСТВУЮЩИХ ЗАБОЛЕВАНИЙ КОРИ: ПОПЕРЕЧНОЕ ИССЛЕДОВАНИЕ В ГОРОДСКОЙ БОЛЬНИЦЕ, ДЖАЛАЛ-АБАД, КЫРГЫЗСТАН

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Аннотация
Корь, высококонтагиозная вирусная инфекция, остается серьезной проблемой общественного здравоохранения, несмотря на наличие эффективной вакцины. Это поперечное исследование, проведенное в городской больнице в Джалал-Абаде, Кыргызстан, с 10 декабря 2023 года по 30 марта 2024 года, изучало повторную вспышку кори среди 50 госпитализированных детей в возрасте от 1 месяца до 14 лет. Целью исследования было выявление факторов риска, оценка эффективности вакцины, оценка осложнений и предложение стратегий контроля. Результаты показали, что 60% случаев были у младенцев в возрасте до 2 лет, 86% из которых не были вакцинированы из-за религиозных убеждений и дезинформации. Распространенным было недоедание, 56% детей имели недостаточный вес и 60% отставали в росте. Пневмония (80%), анемия (34%) и паразитарные инфекции (18%) стали значительными сопутствующими заболеваниями. Передача была связана с низким коллективным иммунитетом и прямым контактом (40%). Эти результаты подчеркивают острую необходимость в усиленных кампаниях вакцинации, вмешательствах в питание и просвещении населения для снижения заболеваемости корью в Джалал-Абаде.

Ключевые слова: Корь, Инфекционные заболевания, Педиатрия, Кыргызстан

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Introduction

Measles, caused by the measles virus (genus Morbillivirus, family Paramyxoviridae), is a highly contagious disease transmitted through respiratory droplets, infecting approximately 90% of non-immune individuals in close proximity [1]. The virus remains viable in air or on surfaces for up to two hours, facilitating its rapid spread [2]. Following a 10–14-day incubation period, measles manifests with a prodromal phase characterized by high fever, cough, conjunctivitis, coryza, and Koplik spots, progressing to a maculopapular rash with cephalocaudal spread [3]. Recovery typically occurs within 10–14 days; however, complications such as pneumonia, diarrhea, encephalitis, and immune suppression elevate morbidity, particularly among unvaccinated populations [4]. A rare but severe long-term sequela, subacute sclerosing panencephalitis (SSPE), may develop 7–10 years post-infection, especially in children under 2 years [5].

Globally, measles persists as a leading cause of childhood mortality in regions with suboptimal vaccination coverage [6]. In Jalalabad, Kyrgyzstan, a notable increase in measles cases despite vaccination efforts highlights critical gaps in prevention strategies, necessitating a comprehensive analysis of its epidemiology, risk factors, and co-morbidities.

Objectives

1. To investigate the resurgence of measles in Jalalabad.
2. To identify associated risk factors and complications.
3. To assess vaccine effectiveness and barriers to uptake.
4. To propose evidence-based strategies for measles control.

Rationale

Hospital records at City Hospital indicate a year-on-year rise in measles cases in Jalalabad, reflecting deficiencies in current prevention measures and the need for targeted interventions.

Methodology

Study Design

A cross-sectional study was conducted to evaluate the resurgence of measles and its health impacts.

Study Setting

The study was carried out at the Infectious Disease Department of City Hospital, Jalalabad, Kyrgyzstan.

Study Duration

Data were collected from December 10, 2023, to March 30, 2024.

Participants

Inclusion Criteria: Children aged 1 month to 14 years hospitalized with laboratory-confirmed measles.

Exclusion Criteria: Children without a confirmed measles diagnosis or aged over 14 years.

Sample Size: From 573 eligible cases, 50 participants were selected via random sampling.

Data Collection

A structured questionnaire captured demographic details, vaccination status, clinical symptoms, and complications. Anthropometric measurements (weight and height) assessed nutritional status. Data were analyzed using SPSS version 25.

Ethical Considerations

Ethical approval was obtained from the Department of Research Activities, Jalalabad State University, and the Infectious Disease Department of City Hospital. Informed consent was secured from guardians, ensuring confidentiality and adherence to ethical standards.

Results

The resurgence of measles has brought to light the complex interplay of factors influencing disease transmission, including vaccine access, misinformation, complacency towards preventable illnesses and demographic factors. According to data, Children less than 2 years old are more prone to measles and in this range of one month to two years old, children less than 9 months of age are more suffered from measles.

In total 50 respondents, 30 respondents have age between 1 month to 2 years (60%), 9 respondents have age between 2 years to 4 years (18%), 6 respondents have age between 4 years to 8 years (12%) and 5 respondents have age above from 8 years old (10%).

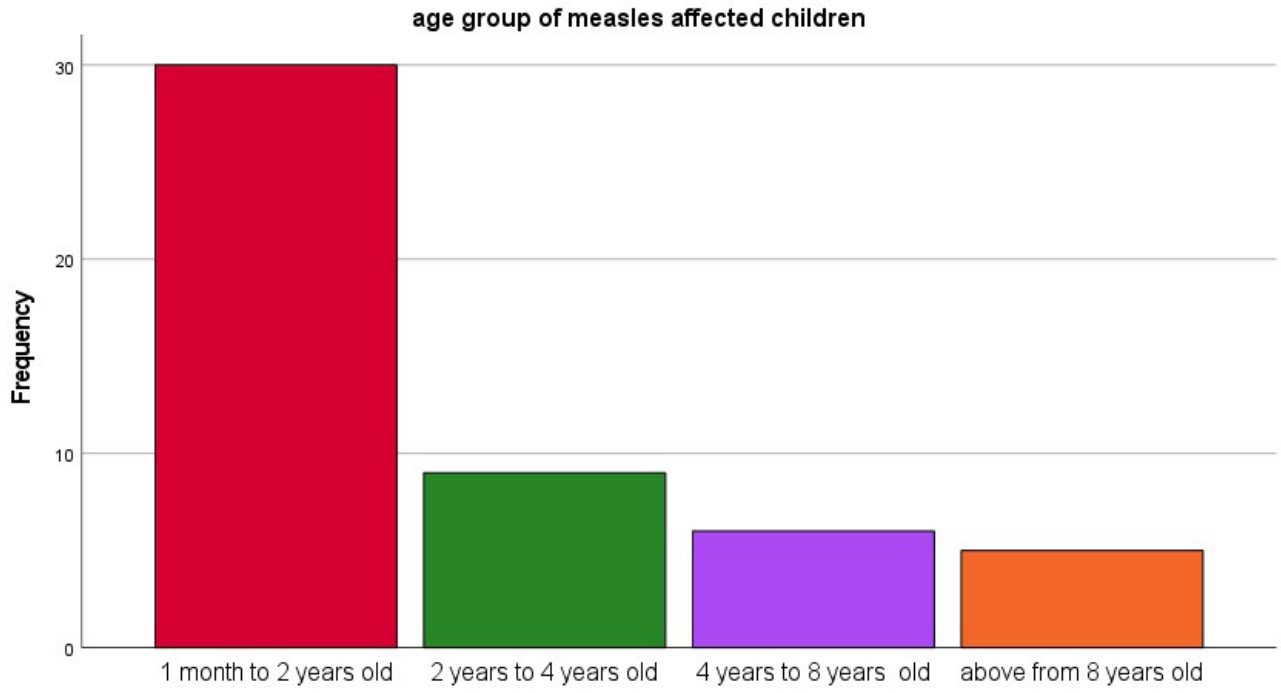

Figure 1: Distribution of Respondents according to Age

According to data, out of 50 respondents; there are 30 males and 20 female children suffered from measles.

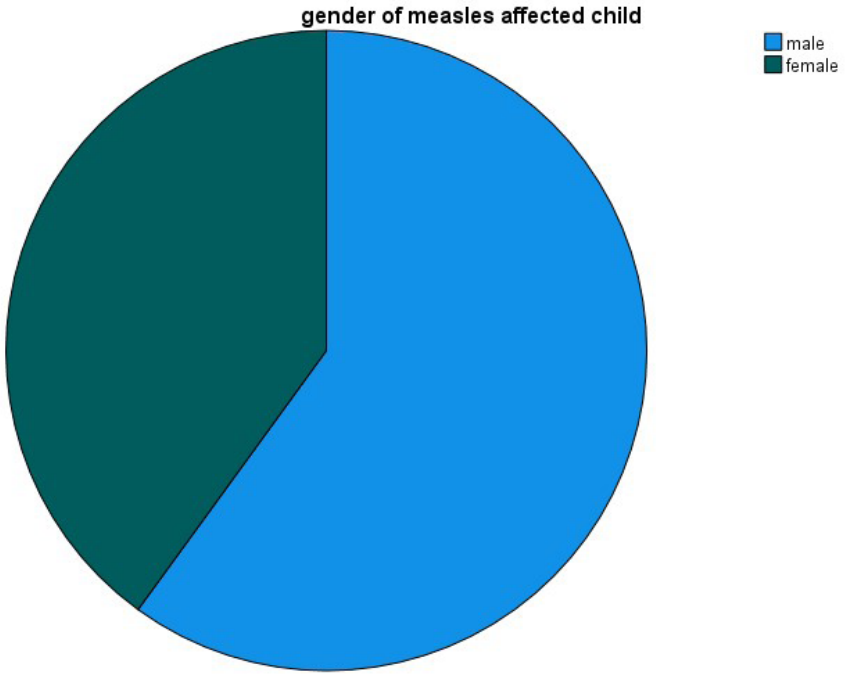

Figure 2: Distribution of Respondents according to Gender

The severity of disease, healthy response of immune system and recovery can be evaluated by the days of hospitalization of patient. According to evaluation of data, 58% respondents take rest for 5 to 7 days, 24% respondents take rest for 2 to 4 days, 12% take rest for 8 to 10 days and 6% take rest for 11 to 13 days in hospital to recover from measles.

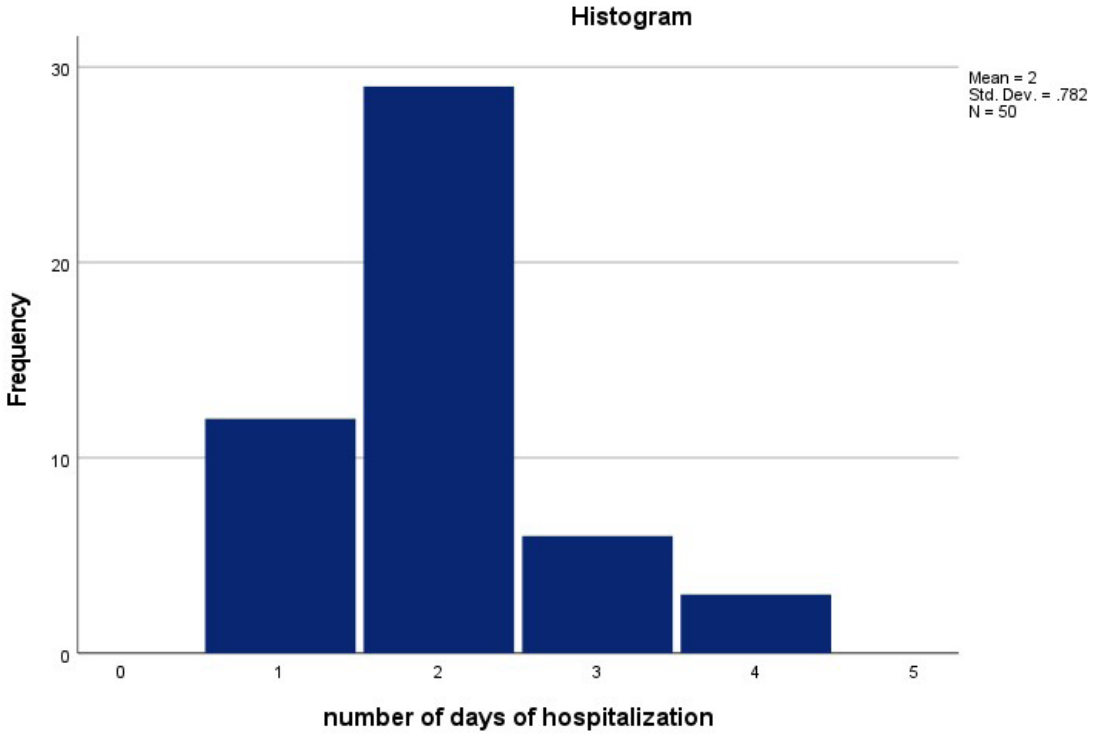

Figure 3: Distribution of Respondents according to days of Hospitalization

For nutrition assessment, we cross tabulate between weight and height with gender and age of respondents. Comparison of weight with age of children gives indication of malnutrition because out of 30 Respondents (age between 1 month to 2 years) having weight less than 10 kg; if we investigate individual about weight of this age group these 28 children have less weight according to standard and also 2 respondents have weight less than 10 kg having age between 2 to 4 years old. There are 7 respondents of age between 2 to 4 years old and 2 respondents of age between 4 to 8 years old have weight less than 14 kg. There is also 1 respondent age above from 8 years old having weight less than 20 kg; these all results clearly indicate the malnutrition

There is following table shows the cross tabulation between age and weight of children.

• *Table 1: age group of measles affected children weight of child Crosstabulation*

		weight of child				
		2 kg to 10 kg	10 kg to 14 kg	14 kg to 20 kg	more than 20 kg	Total
age group of measles affected children	1 month to 2 years old	28	1	1	0	30
	2 years to 4 years old	2	7	0	0	9
	4 years to 8 years old	0	2	4	0	6
	above from 8 years old	0	0	1	4	5
Total		30	10	6	4	50

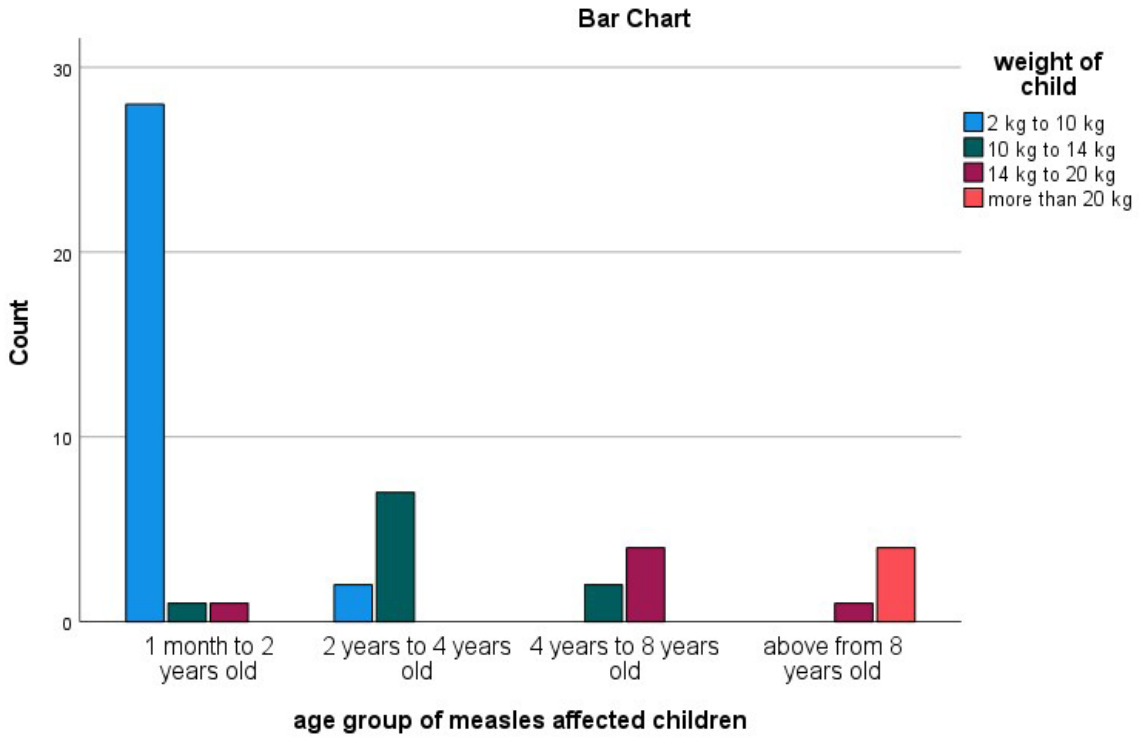

Figure 4: Cross tabulation between age and weight of respondents

If we compare gender with weight of respondents, it's revealed that 63% male and 55% females having low weight than normal.

• *Table 2 : gender of measles affected child weight of child Crosstabulation*

		weight of child				
		2 kg to 10 kg	10 kg to 14 kg	14 kg to 20 kg	more than 20 kg	Total
gender of measles affected child	male	19	5	3	3	30
	female	11	5	3	1	20
Total	30	10	6	4	50	

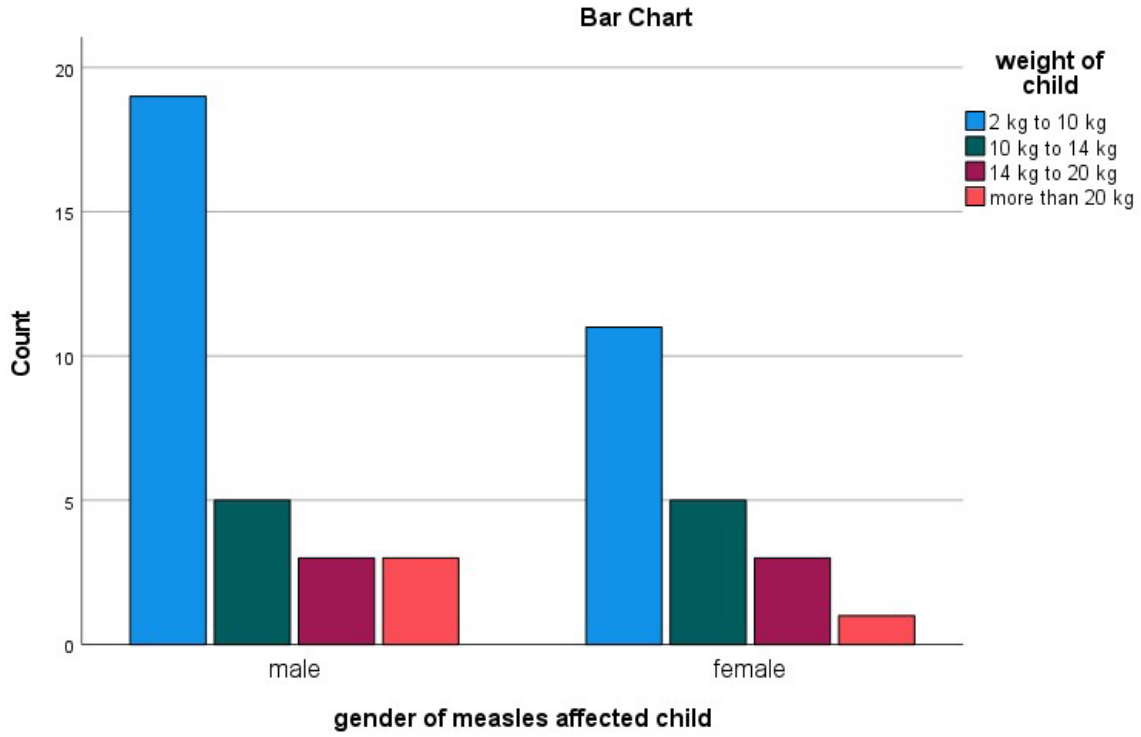

Figure 5; Cross tabulation of height and age is also a indicator to access nutrition status , according to analysis, 28 children having age between 1 month to ,2 years old have height less than 80cm and 7 children age of 2 years have height less than 96 cm ; 2 children age 4 to 8 years old also have height less than 96 cm .

There is following table distribute number of respondent respective to Height and weight of children.

• *Table 3 :age group of measles affected children height of child Crosstabulation*

		height of child				
		47 to 80 cm	80 to 96 cm	96 to 119 cm	more than 119 cm	Total
age group of measles affected children	1 month to 2 years old	28	1	1	0	30
	2 years to 4 years old	2	7	0	0	9
	4 years to 8 years old	0	2	4	0	6
	above from 8 years old	0	0	1	4	5
Total	30	10	6	4	50	

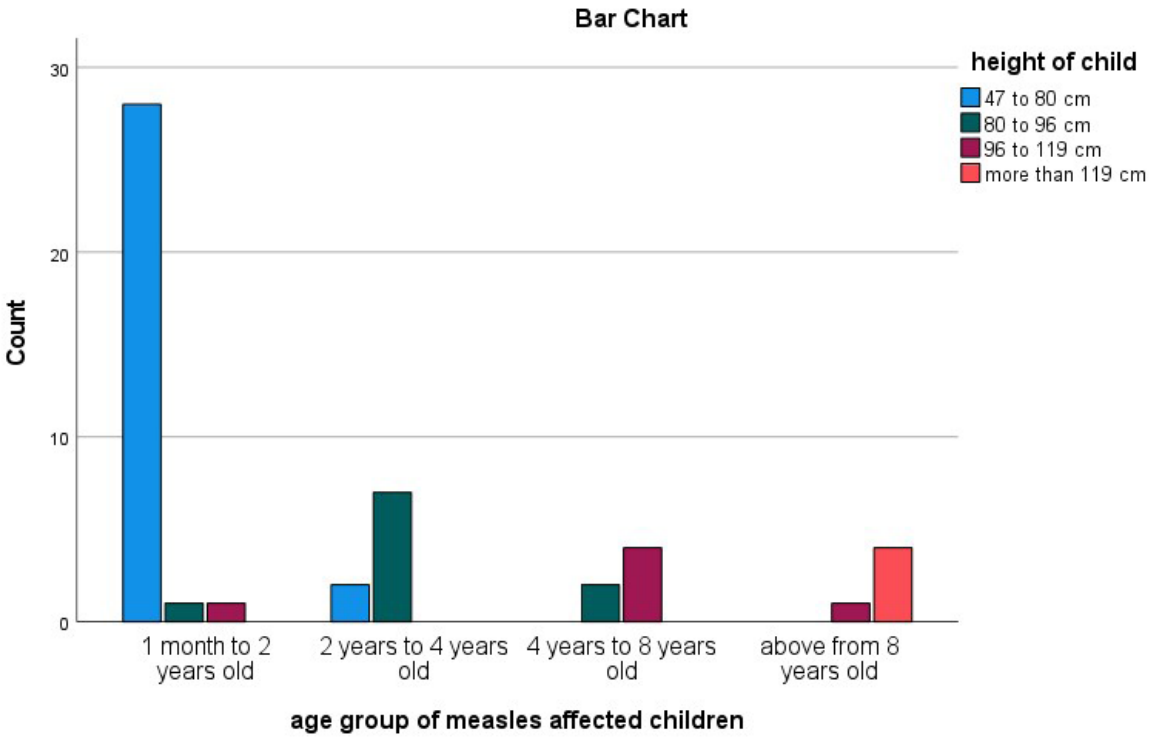

Figure 6: The correlation of height with gender explain that 63% males and 55% females are shorter from their height. Out of 30 male respondents, 19 children have height less than 80cm and in females out of 20 respondents, 11 are having height less than 80 cm.

• *Table 4: gender of measles affected child height of child Crosstabulation*

		height of child				
		47 to 80 cm	80 to 96 cm	96 to 119 cm	more than 119 cm	Total
gender of measles affected child	male	19	5	3	3	30
	female	11	5	3	1	20
Total		30	10	6	4	50

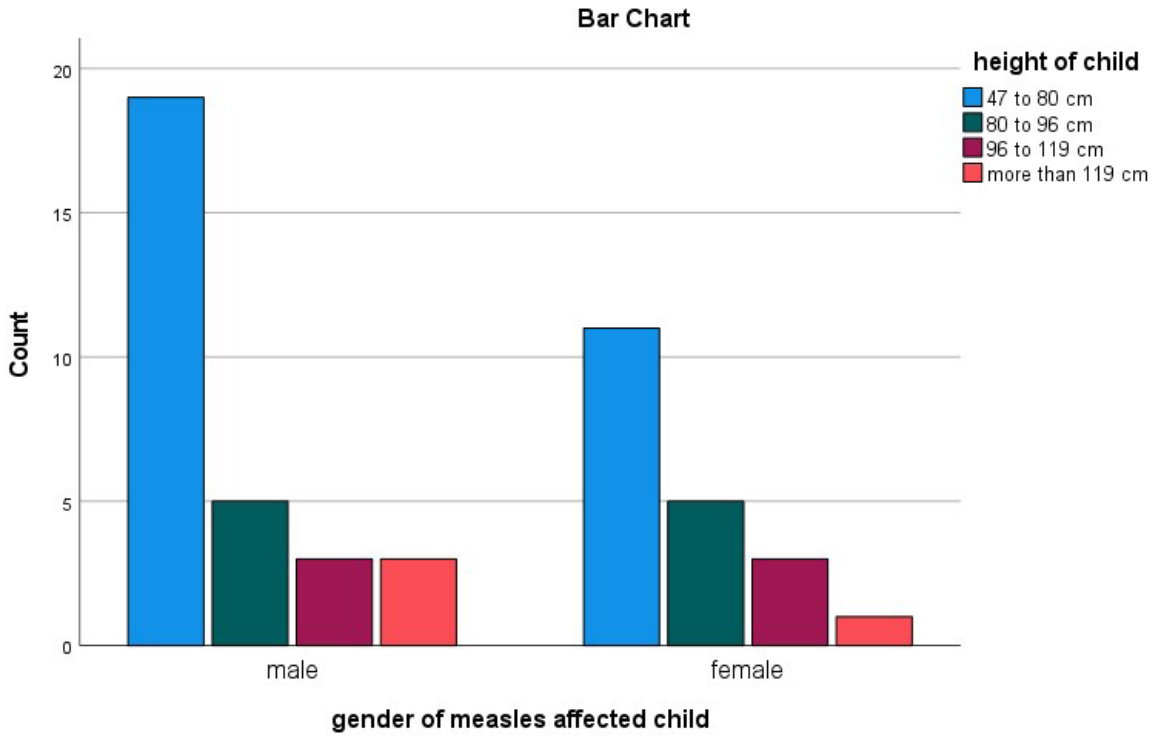

Figure 7: indicates correlation between height and gender

Out of 50 respondents, 4 mothers are working women and 46 of them are non-working according to Data, that indicates that mothers stay most of time with their children. There graph indicating the ratio of working and non-working mothers.

Figure 8: Distribution of Respondents Parents on the basis of work

Out of 50 responses, 43 of them are non-vaccinated (86%) due to mainly religious issues and illiteracy about vaccination. 7 of them due to older age didn't know they vaccinate their child with measles vaccine. This graph clearly show that non-vaccinated children are on high risk to catch measles and 86% of respondent are non-vaccinated, out of these most of children infected with measles before age of vaccination due to inadequate breast feeding and contact to measles patients.

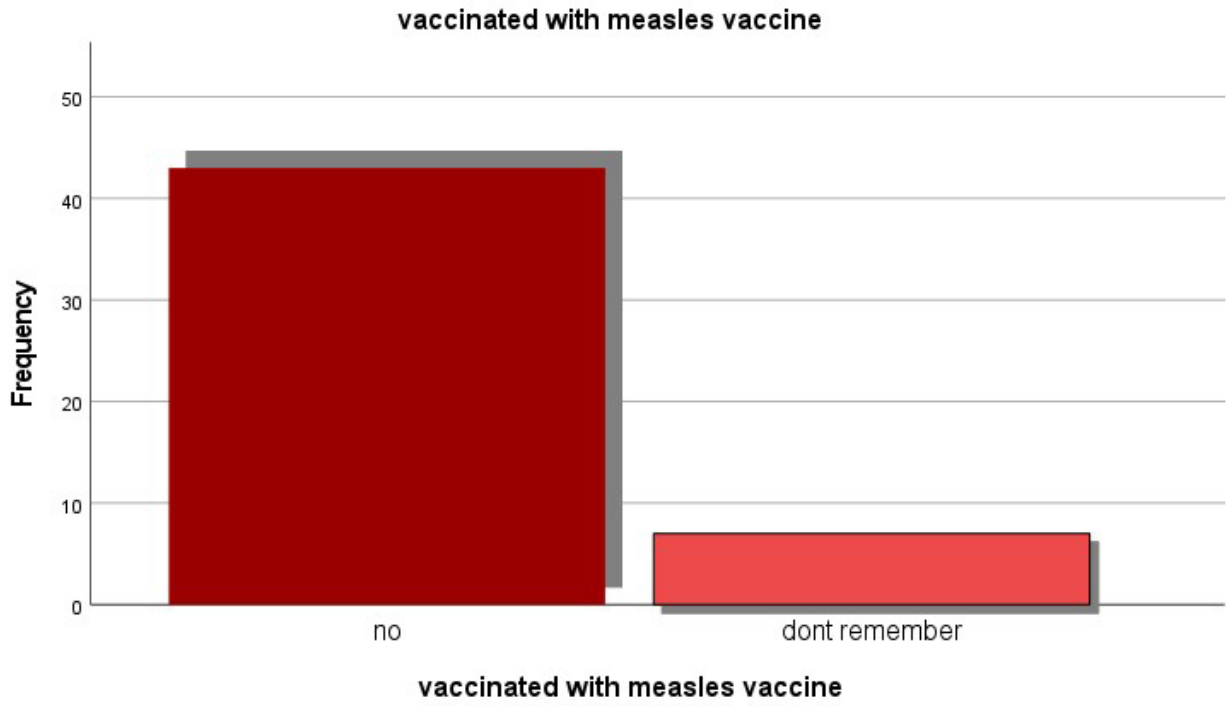

Figure 9: Distribution of Respondents on the status of Vaccination

According to data, there are some symptomatic information regarding measles, complications and factors that influence the resurgence of disease. Firstly, we collect data about dehydration and lost of water-soluble vitamins and minerals due to loose stool, diuresis and vomiting. According to our data collection 60% respondents having loose stool, diuresis and vomiting and 40% didn't have association with these symptoms.

The following histogram showing the ratio of fluid loose symptoms in measles patients according to Data collection with standard deviation of 0.495 . Due to this fluid lose , doctors prescribe IV fluid in severe condition and water intake in moderate condition of symptoms and also prescribe vitamin A doses on daily basis.

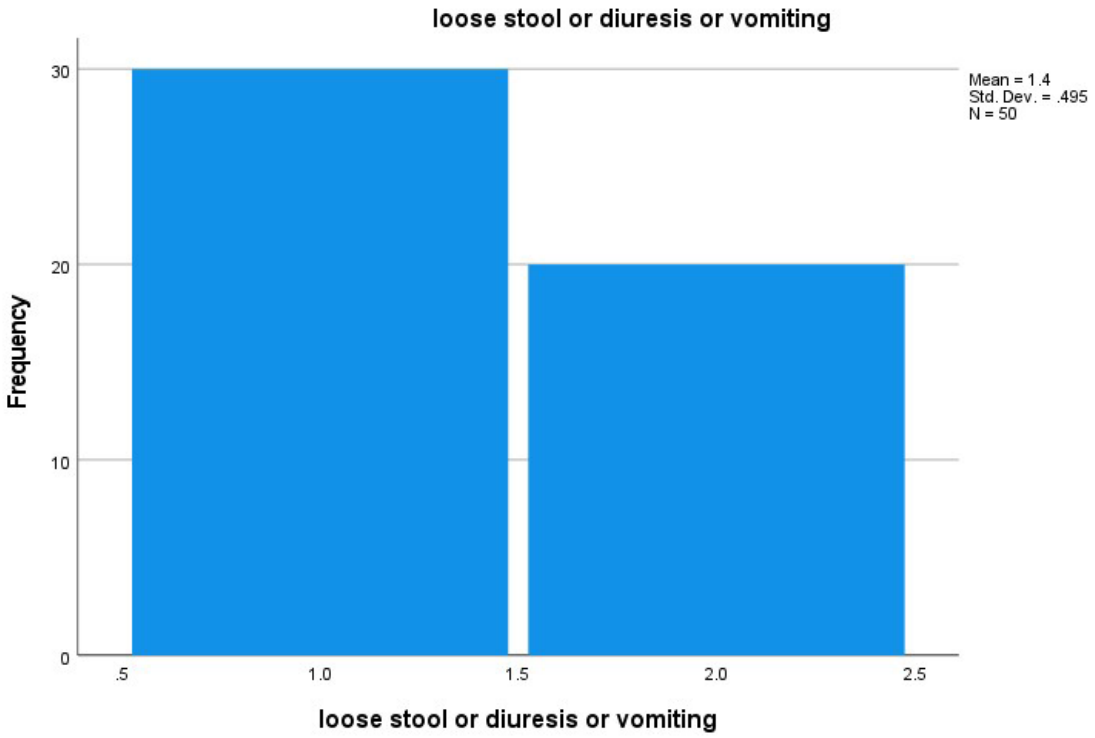

Figure 10: Distribution of Respondents on the status of symptoms (loose stool /Diuresis/ Vomiting)

Out of 50 respondents, 28% respondents measles is associated with moderate anemia , 6% have severe anemia and 66% measles patients have not any association with anemia. There is following table the demonstrate the numbers:

• *Table 5: showing 14 of them have moderate anemia , 3 have severe anemia and 33 have no association with anemia*

Response	Frequency
No	33
Yes , Moderate	14
Yes Severe	3

Transmission of vector is important point ; according to Data , 20 of respondents have direct contact with measles patient and 30 of them didn't sure about this information .Pie graph is showing that 40 percent of children contact with measles patients and 60% of children parents didn't know exactly.

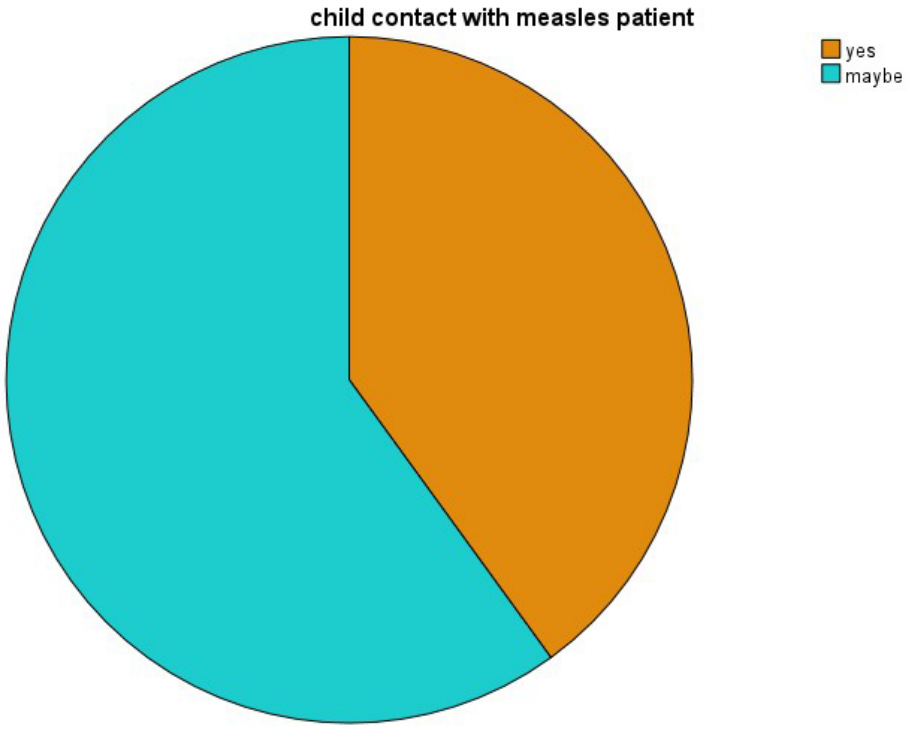

Figure 11: Distribution of Respondents according to Contact with measles patients

According to Data regarding complication of measles in children, there is 80% of children suffering from pneumonia, 10% of children have otitis media, 4% children tainted with intestinal infection , 4% children distressed with residual encephalopathy, meningitis, seizures and 2% of children don't have any associated complication.

• *Table 6: Distribution of Respondents according to associated complications*

	Frequency	Percent
Pneumonia	40	80.0
otitis Media	5	10.0
Intestinal infection (unspecified)	2	4.0
residual Encephalopathy	2	4.0
no associated disease	1	2.0
Total	50	100.0

This following graph below plotting complications in x-axis and frequency in y-axis . It describes that pneumonia is most common complication with measles among our respondents. These complications results in further symptoms in patients like cough , breathing disorder due to pneumonia , ear discharge due to otitis media, diarrhea due to intestinal infection, seizures due to encephalopathy etc .

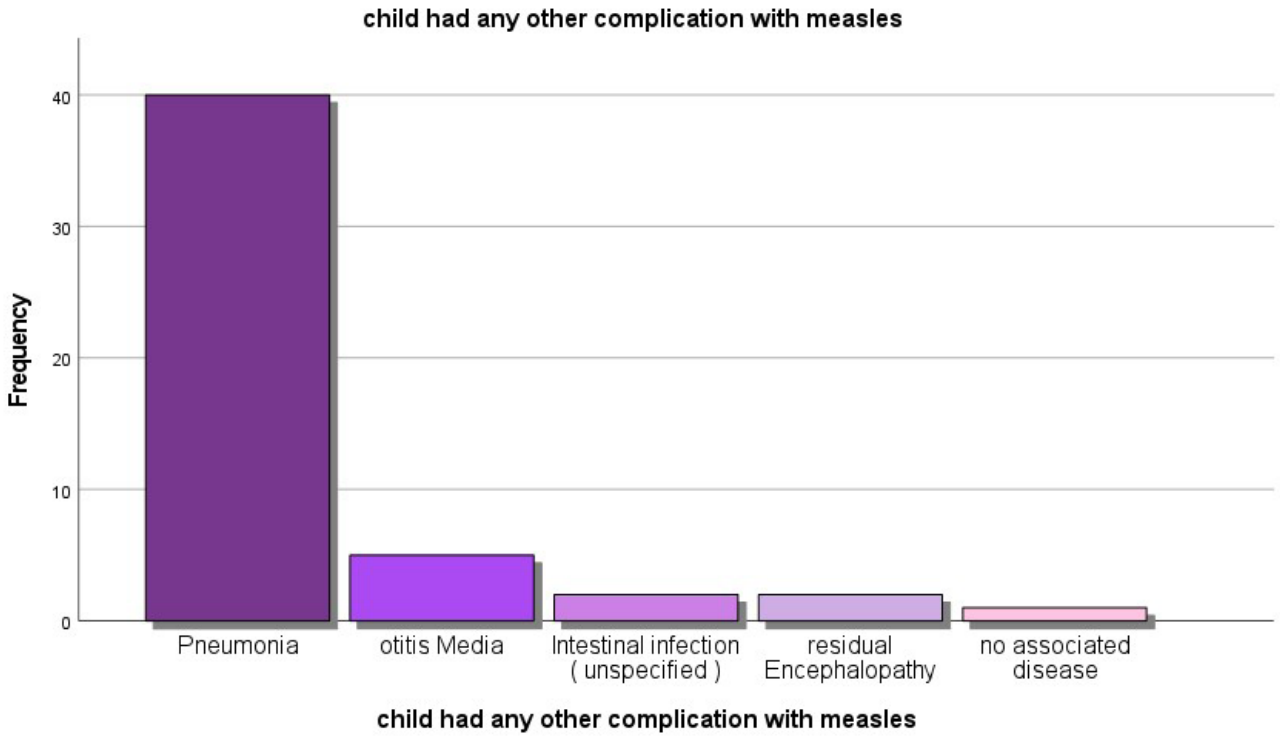

Figure 12: Distribution of Respondents according to associated complications

There is 94% of children agony with measles have maculopapular rashes behind ear and neck and 6% patients didn't observer prominent rashes behind neck and ear .

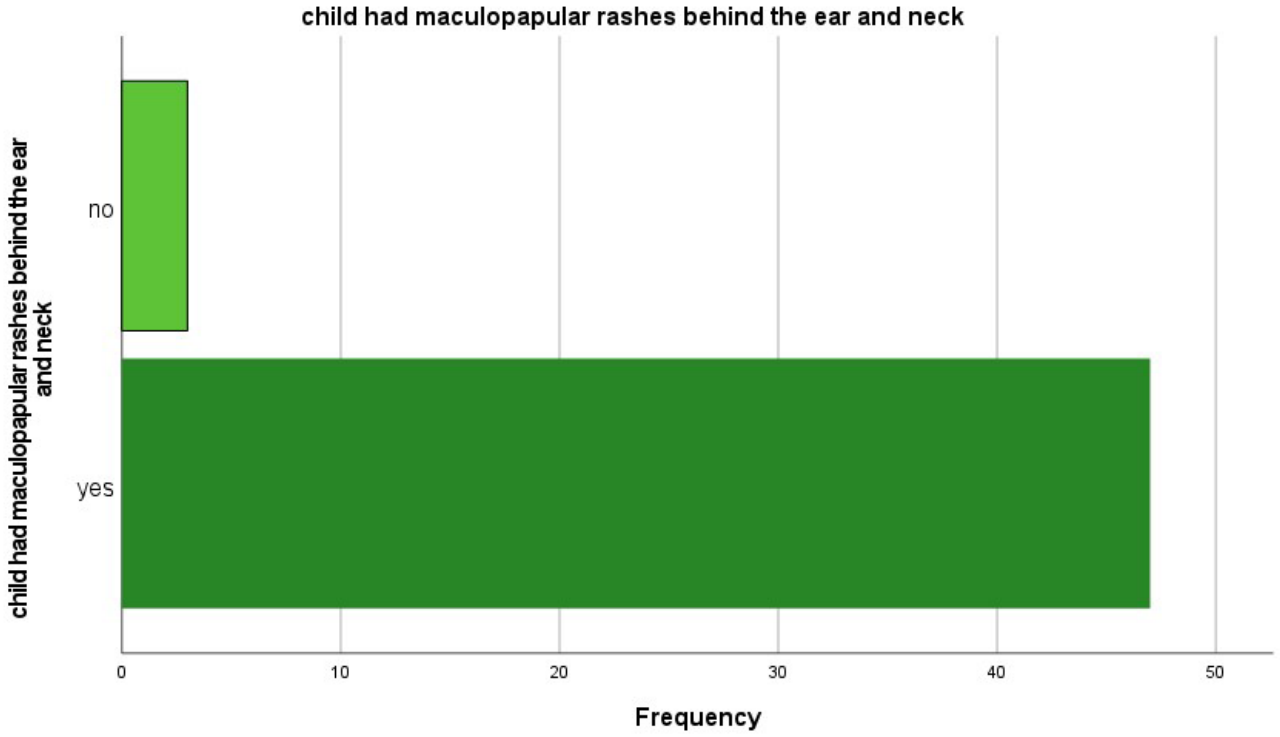

Figure 13: Distribution of Respondents on appearance of Maculopapular rashes

Loss of consciousness indicates the severity of measles , according to evaluation; 92% percent children are clearly unconscious and 8% didn't observe unconscious. According to observation The reason behind unconsciousness is hyperthermia , malnutrition, lost of fluid and carelessness of parents because they didn't approach the doctor on time prescribe the medicine to their children at home that lead to severity of disease.

• *Table 7 : Distribution of Respondents on Consciousness*

Response	Frequency
Yes	46
No	04
Total	50

In 38% children , we observed pus discharge from ear or eye and 62% children didn't report any discharge of pus from ear and eyes . It most commonly observer when mealses is complicated with otitis media.There is graphically representation regarding discharge of pus from ear or eye in measles patients.

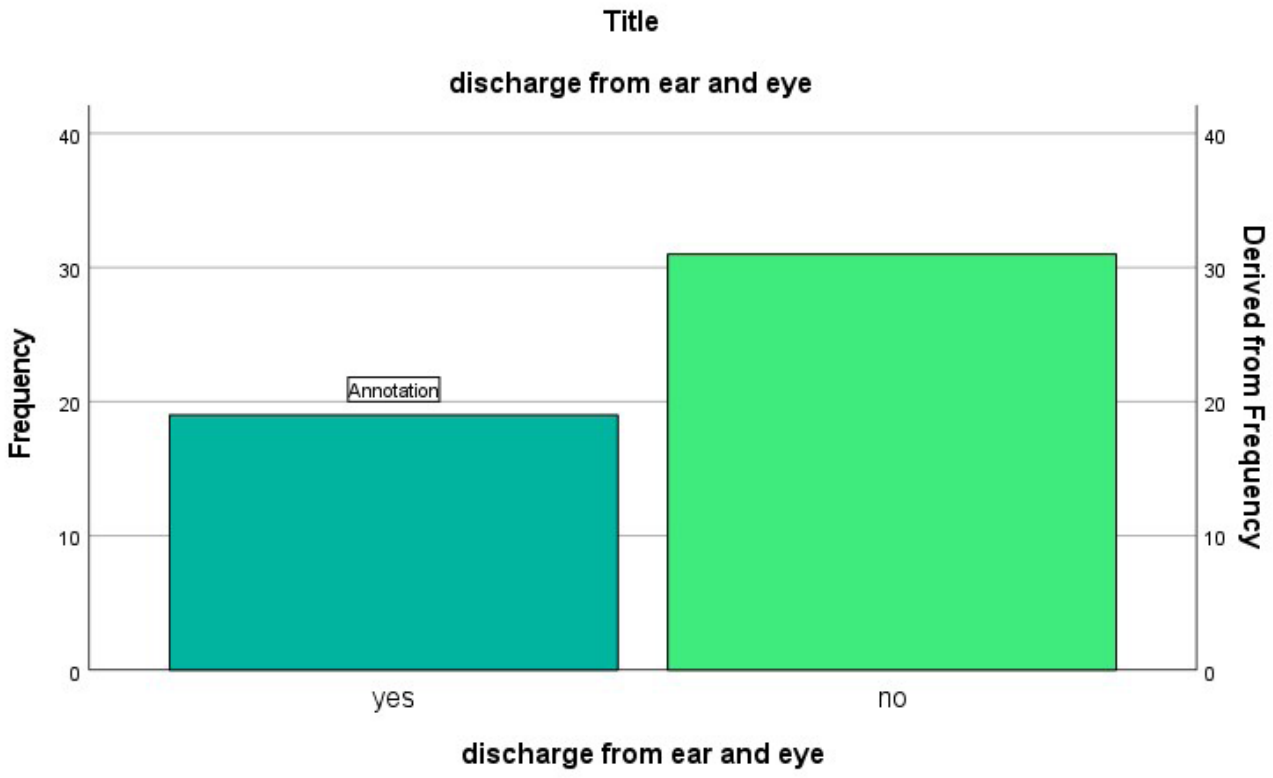

Figure 14: Distribution of Respondents on discharge from ear or eye

According to observation and data , 82% children have cough in measles due to complications of pneumonia. There is histogram explaining 41 respondents have cough and 9 of them didn't complain for cough .

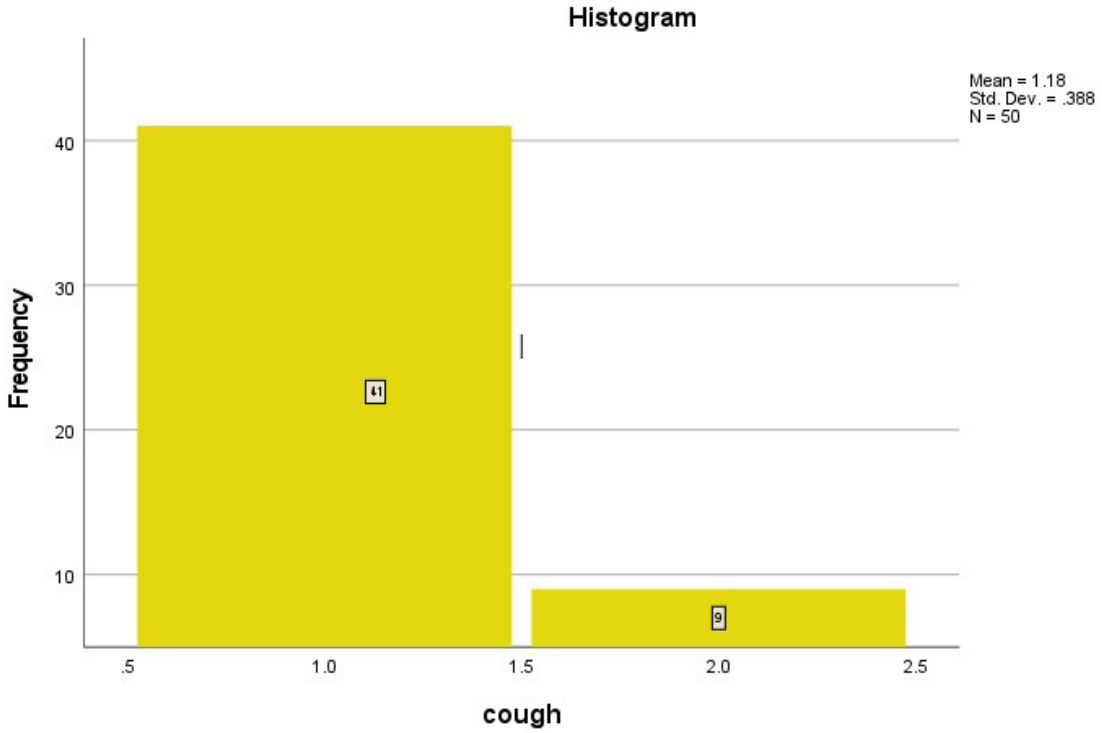

Figure 15: Distribution of Respondents on symptoms of Cough

90 % of respondents loss their appetite and 10% didn't have much effect on appetite.

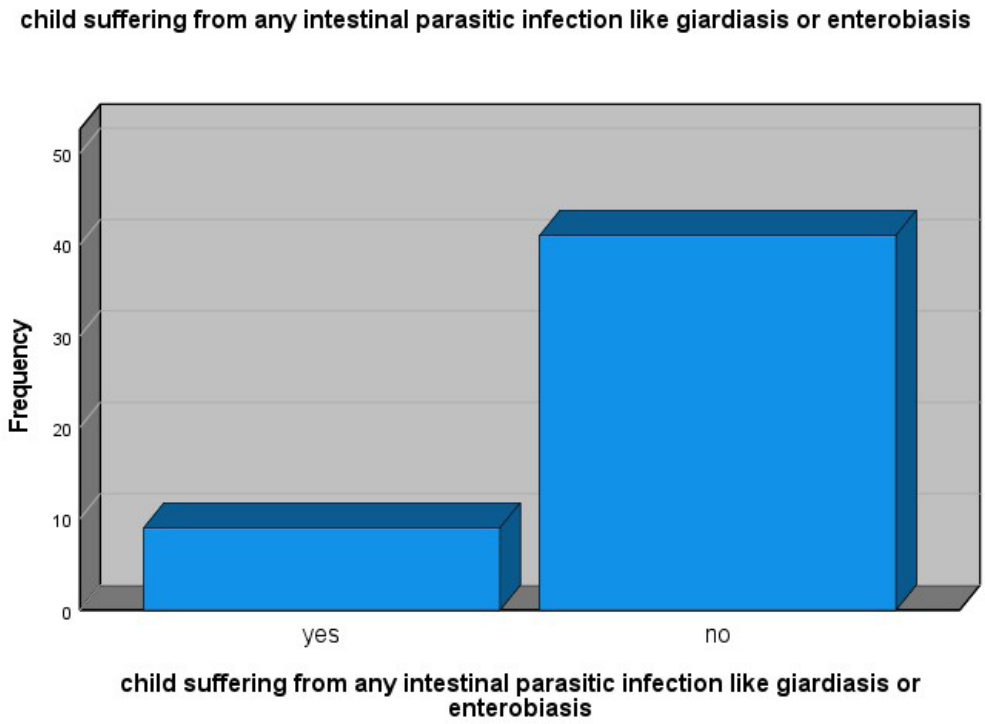

Figure 16: Distribution of Respondents on association with intestinal parasitic infection

• *Table 8 : Distribution of Respondents on appetite*

Response	Frequency
Yes	45
No	05
Total	50

There are 18% of children have parasitic infection like giardiasis or enterobiasis that cause the deficiency of Vitamin A that increase the chance of child to effect with measles. There is 3D graph representation of parasitic infection increase the chance for measles infection .

Due fluid imbalance, loss of vitamin, malnutrition because intestinal parasitic infection lead to diarrhea, malabsorption.

Due to pneumonia and COPD related to measles cause difficulty in breathing , about 86% children have shortness of breath in measles , during observation, nasal flaring , involvement of intercoastal muscles clearly observed.

	Frequency	Percent
yes	43	86.0
no	7	14.0
Total	50	100.0

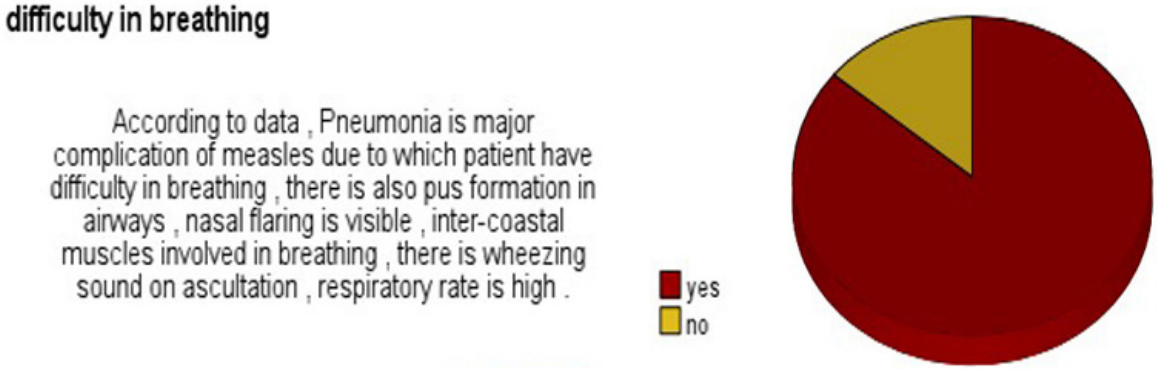

Figure 17 : Distribution of Respondents on difficulty in breathing

There is 2% association of congenital heart disease with measles , out of 50 there is one respondent having tetralogy of Fallot suffered from measles that is complicated with pneumonia.

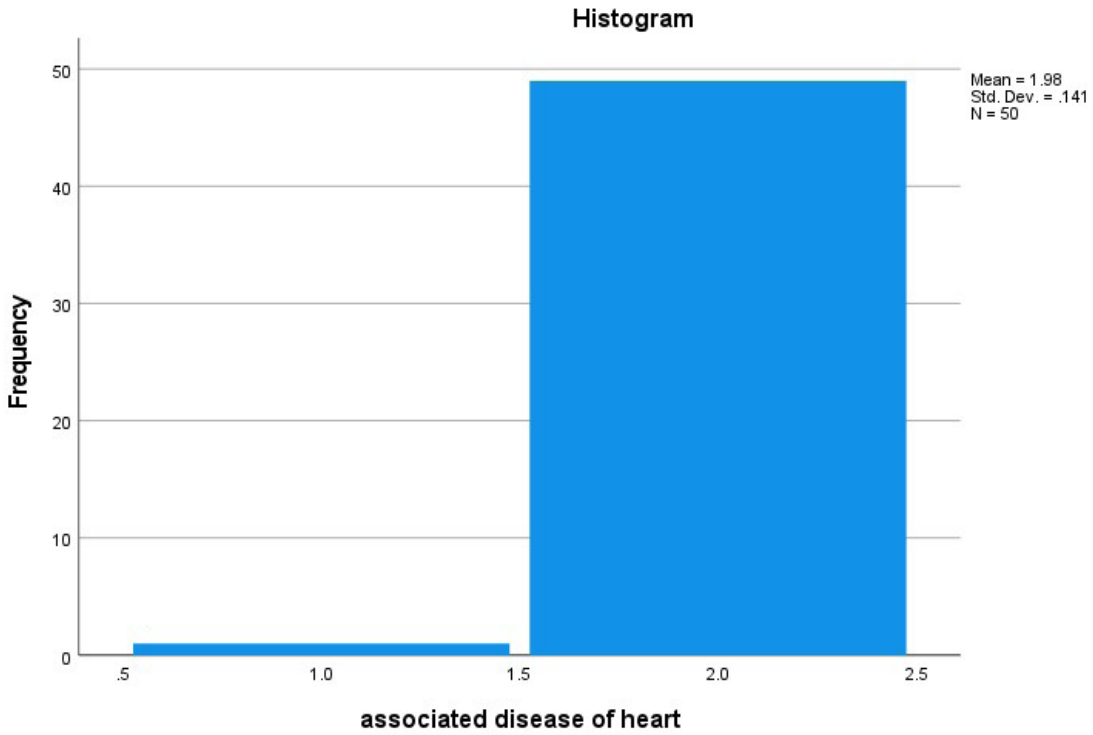

Figure 18: Distribution of Respondents according to association with heart diseases

Discussion

The study elucidated the multifactorial drivers of measles resurgence in Jalalabad, including vaccine hesitancy, misinformation, and demographic vulnerabilities. Of the 50 respondents, 60% (n=30) were infants aged 1 month to 2 years, 18% (n=9) were 2–4 years, 12% (n=6) were 4–8 years, and 10% (n=5) were over 8 years. Gender distribution showed 60% males (n=30) and 40% females (n=20). Hospitalization duration varied, with 58% (n=29) recovering in 5–7 days, 24% (n=12) in 2–4 days, 12% (n=6) in 8–10 days, and 6% (n=3) in 11–13 days. Malnutrition was a significant risk factor, with 56% (n=28) of children underweight and 60% (n=30) stunted. Among infants aged 1 month to 2 years, 93% (n=28/30) had weights below 10 kg, indicating severe malnutrition. Cross-tabulation of weight and height with age and gender revealed that 63% of males (n=19/30) and 55% of females (n=11/20) were underweight or stunted, reflecting widespread nutritional deficits.

A striking 86% (n=43) of respondents were unvaccinated, primarily due to religious beliefs and misinformation. Among the unvaccinated, many were infected before the recommended vaccination age, exacerbated by inadequate breastfeeding and contact with measles patients. Common symptoms included maculopapular rashes (94%, n=47), fluid loss via loose stools, diuresis, or vomiting (60%, n=30), cough (82%, n=41), loss of appetite (90%, n=45), and shortness of breath (86%, n=43). Pneumonia was the predominant complication (80%, n=40), followed by otitis media (10%, n=5), intestinal infections (4%, n=2), and residual encephalopathy (4%, n=2). Anemia affected 34% (n=17), with 28% (n=14) moderate and 6% (n=3) severe cases.

Parasitic infections (e.g., giardiasis, enterobiasis) were present in 18% (n=9), contributing to vitamin A deficiency and increased measles susceptibility. Direct contact with measles patients was reported in 40% (n=20) of cases, while 60% (n=30) of parents were uncertain of exposure sources, suggesting low herd immunity as a key driver of transmission.

The resurgence of measles in Jalalabad aligns with global trends of declining vaccination coverage [6]. Infants under 2 years (60%) were disproportionately affected, likely due to suboptimal breastfeeding and delayed vaccination [7]. The high prevalence of pneumonia (80%) as a complication corroborates its role in measles-related morbidity [4]. Malnutrition, affecting over half the cohort, amplified disease severity, consistent with evidence linking nutritional deficits to adverse outcomes [8].

Vaccine hesitancy, driven by religious beliefs and misinformation, reflects broader cultural barriers to immunization [9]. The 86% unvaccinated rate underscores the failure to achieve herd immunity, as evidenced by 40% direct transmission [6]. Co-morbidities such as parasitic infections (18%) and anemia (34%) highlight the need for integrated health interventions [10]. Gender disparities (60% male) may suggest differential healthcare access, warranting further exploration [11].

Study limitations include Berkson bias, as only hospitalized cases were included, and recall bias among parents of older children regarding vaccination history. These factors may limit generalizability but do not undermine the urgency of the findings.

Conclusion

This study highlights the critical determinants of measles resurgence in Jalalabad, with 573 cases reported between December 2023 and March 2024. Infants aged 1 month to 2 years (60%) were most vulnerable, driven by inadequate vaccination (86% unvaccinated), religious barriers, and malnutrition (56% underweight, 60% stunted). Pneumonia (80%) dominated complications, compounded by anemia (34%) and parasitic infections (18%). Gender disparities (60% male) and low herd immunity (40% direct transmission) further exacerbate the outbreak.

These findings emphasize the need for urgent, multifaceted interventions, including intensified vaccination campaigns, nutritional support, and community education to address misinformation and cultural barriers. Without such measures, measles will continue to impose a significant health burden in Jalalabad.

References

1. Centers for Disease Control and Prevention. (n.d.). Signs and symptoms of measles. Available at: https://www.cdc.gov/measles/signs-symptoms/index.html
2. World Health Organization. (n.d.). Measles fact sheet. Available at: https://www.who.int/news-room/fact-sheets/detail/measles
3. Perry RT, Halsey NA. The clinical significance of measles: A review. Journal of Infectious Diseases. 2004;189(Suppl 1):S4–S16. doi:10.1086/377712
4. Inkaya AÇ, Bozkurt I, Yildiz H. Severe measles pneumonia in adults with respiratory failure: Role of ribavirin and high-dose vitamin A. Clinical Infectious Diseases. 2020;72(3):447–454. doi:10.1093/cid/ciaa142
5. Emedicine.medscape.com. (n.d.). Measles overview. Available at: https://emedicine.medscape.com/article/966220-overview
6. World Health Organization. Global progress against measles threatened amidst COVID-19 pandemic. 2021 Nov 10. Available at: https://www.who.int/news/item/10-11-2021-global-progress-against-measles-threatened-amidst-covid-19-pandemic
7. Victora CG, Bahl R, Barros AJD. Breastfeeding in the 21st century: Epidemiology, mechanisms, and lifelong effect. The Lancet. 2021;387(10017):475–490. doi:10.1016/S0140-6736(15)01024-7
8. Bhutta ZA, Berkley JA, Bandsma RHJ. Nutritional interventions in infectious diseases. medRxiv. 2023. doi:10.1101/2023.01.21.23284872
9. Larson HJ, Gakidou E, Murray CJL. The vaccine-hesitant moment. New England Journal of Medicine. 2022;387(1):58–65. doi:10.1056/NEJMra2106441

Received / Получено 18.01.2025
Revised / Пересмотрено 18.02.2025
Accepted / Принято 20.03.2025

ASSESSMENT OF PERCEIVED SOCIAL SUPPORT AND ITS RELATIONSHIP WITH HEALTH-RELATED QUALITY OF LIFE IN HIV/AIDS PATIENTS VISITING A TEACHING HOSPITAL IN PAKISTAN

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Abstract
HIV/AIDS is one of the most devastating diseases humanities has ever faced. AIDS patients not only require effective treatment for physical discomfort but also require social support to help them address difficulties in life and relieve their psychological anxiety and uneasiness. This study aims to analyze the status of perceived social support and health quality among AIDS patients in medical institutes of Lahore, Pakistan.

It was cross sectional study, in which 101 patients of age ⩾18 years, presenting with AIDS to Jinnah Hospital, confirmed on serology and fulfilling the selection criteria, were enrolled, using informed consent, through non probability convenience sampling. A questionnaire comprising all study variables was designed to collect data. The collected data was analyzed using SPSS version 24 and $p<0.05$ was considered statistically significant.

The total number of participants included in our study were 101 in which 77(76.2%) were males and 24(23.8) were females. The most frequent age group was found to be 30 to 39 years with 48(47.5%) participants. 47(46.5%) participants belonged to rural areas while 54(53.5%) belonged to urban areas. The mean scores calculated for social support and physical and mental components of SF12v2 were MSPSS=53.84+15.47, PCS=40.41+10.52 and MCS=40.30+10.01, respectively. Both the MCS and PCS show a positive correlation with perceived social support. Perceived social support was more strongly positively related to physical health (PCS), $r= .271$, $p< .01$ than to mental health (MCS), $r=.159$, $p< .01$.

This study revealed that the social support level among people living with HIV/AIDS was generally low. It was found that there is a positive association between perceived social support, and physical and mental aspects of health of PLWHA. It was also identified that perceived social support was more strongly related to physical health of PLWHA than mental health. These findings suggest the need for better social support system for PLWHA.

Key words: perceived social support, health quality, cross sectional study, MSPSS

ОЦЕНКА ВОСПРИНИМАЕМОЙ СОЦИАЛЬНОЙ ПОДДЕРЖКИ И ЕЕ СВЯЗИ С КАЧЕСТВОМ ЖИЗНИ, СВЯЗАННЫМ СО ЗДОРОВЬЕМ, У ПАЦИЕНТОВ С ВИЧ/СПИДОМ, ПОСЕЩАЮЩИХ УЧЕБНУЮ БОЛЬНИЦУ В ПАКИСТАНЕ

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Аннотация
ВИЧ/СПИД — одно из самых разрушительных заболеваний, с которыми когда-либо сталкивалось человечество. Больным СПИДом требуется не только эффективное лечение физического дискомфорта, но и социальная поддержка, которая поможет им

справиться с трудностями в жизни и снять психологическую тревогу и беспокойство. Целью данного исследования является анализ статуса воспринимаемой социальной поддержки и качества здоровья среди больных СПИДом в медицинских институтах Лахора, Пакистан.

Это было поперечное исследование, в котором 101 пациент в возрасте ⩾18 лет, поступивший со СПИДом в больницу Джинна, подтвержденный серологически и отвечающий критериям отбора, был включен с использованием информированного согласия посредством невероятностной удобной выборки. Для сбора данных была разработана анкета, включающая все переменные исследования. Собранные данные были проанализированы с помощью SPSS версии 24, и $p < 0,05$ считалось статистически значимым.

Общее количество участников, включенных в наше исследование, составило 101, из которых 77 (76,2%) были мужчинами и 24 (23,8) были женщинами. Наиболее частой возрастной группой оказались 30–39 лет с 48 (47,5%) участниками. 47 (46,5%) участников были из сельской местности, а 54 (53,5%) — из городской. Средние баллы, рассчитанные для социальной поддержки и физических и психических компонентов SF12v2, составили MSPSS=53,84+15,47, PCS=40,41+10,52 и MCS=40,30+10,01 соответственно. Как MCS, так и PCS показывают положительную корреляцию с воспринимаемой социальной поддержкой. Воспринимаемая социальная поддержка была сильнее положительно связана с физическим здоровьем (PCS), r=.271, p<.01, чем с психическим здоровьем (MCS), r=.159, p<.01. Это исследование показало, что уровень социальной поддержки среди людей, живущих с ВИЧ/СПИДом, в целом был низким. Было обнаружено, что существует положительная связь между воспринимаемой социальной поддержкой и физическими и психическими аспектами здоровья ЛЖВС. Также было выявлено, что воспринимаемая социальная поддержка была сильнее связана с физическим здоровьем ЛЖВС, чем с психическим здоровьем. Эти результаты указывают на необходимость лучшей системы социальной поддержки для ЛЖВС.

Ключевые слова: воспринимаемая социальная поддержка, качество здоровья, поперечное исследование, MSP

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Introduction

AIDS is a major global public health issue [1]. Approximately one century ago in South-Eastern Cameroon, cross-species transmission of Simian Immunodeficiency virus (SIV) in chimpanzees gave rise to HIV-1 group M(main), the principal cause of AIDS pandemic in humans [2]. Social support enables AIDS patients to better cope with stress associated to the disease [3]. The quality and quantity of individuals' social relationships has been linked not only to mental health but also to both morbidity and mortality [4]. In recent years, social support to marginalized populations within AIDS epidemic has been served, highlighting specific needs of LGBTQ+ and transgender communities [5].

Acquired Immunodeficiency Syndrome (AIDS) of humans is caused by two lentiviruses, human immunodeficiency viruses, types 1 and 2 (HIV-1 and HIV-2) [6]. Numerous studies

indicate that people with spouses, friends and family members who provide psychological and material resources are in better health than those with fewer supportive social contacts [7].

In Pakistan, as of June 2019, 24,331 AIDS patients were registered with National Aids control program (NACP) but estimated number of people living with infection is estimated to be 165,000. Prevalence percentage in Pakistan is estimated to be less than 0.1% with incidence rate of 3.1 per 1000 [8]. The percentages of vulnerable population to HIV in Pakistan are concentrated as; People with injected drugs=38.4%, Transgender sex workers=7.5%, trans people=7.1%, Male Sex workers=5.6%, homosexual men=5.4%, Female Sex workers=2.2% [8]. Till June 2023, NACP has registered 60,439 HIV cases. HIV has affected over 75 million people globally [8].

According to a study conducted in South Eastern United States in 2013, depressive symptoms among PLWHA (People living with HIV/AIDS) were 56.7% which negatively impact health outcomes [9]. Another research is on perceived stigma, social support and QOL (Quality of Life) set in May 2015 in Hunan China, the scores reflecting findings were perceived stigma (104.31), Social support (53.63), and QOL (61.97) [10].

The first case in Pakistan was documented in 1988 of HIV in 4 members of a family in Karachi, via a drug abuser husband who transmitted it to his wife (heterosexually) and subsequently, his children [11]. In a study, it was found that only 42% of Pakistani women have heard about HIV/AIDS among who the majority (68%) have good overall knowledge of HIV/AIDS and more than 55% have positive attitudes towards people living with AIDS [12]. Between April 24, and July 15, 2019, around 31, 239 individuals underwent HIV testing, of whom 930 (3%) tested positive for HIV. Of these, 763 (82%) were younger than 16 years and 604 (79%) of these were aged 5 years and below. Estimated HIV prevalence was 3% overall [13].

Previous researches on social support for AIDS patients has shown significant progress in understanding the importance of emotional, psychological, and practical assistance in managing the challenges of the disease. However, these studies have often lacked a comprehensive exploration of the nuanced cultural, socioeconomic, and gender-specific dimensions that can deeply influence the nature and effectiveness of social support. Additionally, many earlier investigations focused primarily on the immediate circle of family and friends, neglecting the broader community networks and online platforms that now play a pivotal role in shaping the support landscape. Addressing these limitations would lead to a more holistic understanding of how social support systems can be optimally tailored to the diverse needs of AIDS patients, promoting their well-being and enhancing their quality of life.

Methods

It was a cross-sectional study which was conducted at AIDS clinic (room no.34) of Jinnah Hospital, Lahore which took place over a period of 2 months after approval. The study population was comprised of individuals who were present at AIDS clinic of Jinnah Hospital Lahore during the specified period. These individuals were AIDS patients seeking medical treatment. Convenient sampling technique was used to select participants as they present themselves to the hospital. Sample size was calculated through single population proportion based on the following assumption; the proportion of low perceived social support (p) of 50%, with a 95% level of confidence and 5% margins of error considering non-response rate 10%, the final sample size became 423. [20] Quantitative data was collected using a structured questionnaire that includes validated scales to assess perceived social support and health quality. The questionnaire was pretested before data collection to ensure clarity and validity.

Participants were approached in the AIDS clinic of Jinnah Hospital during their visit for medical care. After obtaining consent, participants were given a brief overview of the study's objectives, the nature of the questions to be asked, and the anticipated time required for participation. Quantitative data were entered into a software tool (e.g., SPSS) to facilitate analysis.

Ethical issues were addressed by obtaining informed consent from participants before data collection. Confidentiality was maintained by using participant codes instead of names, and all data will be stored securely. Permission to conduct the study was obtained from relevant authorities. The participants have a right to withdraw from the study.

Data were analyzed using descriptive statistics (mean, median, standard deviation) and inferential statistics (correlation, regression). Relationships between variables was calculated using appropriate statistical tests (e.g., Pearson correlation).

Results

The total number of participants included in our study were 101 in which 77 (76.2%) were males and 24 (23.8%) were females, as shown in Table 1. Four age groups were made and the most frequent age group was 30 to 39 years with 48 (47.5%) participants in it.The marital status of participants was found to be married for a majority of 63 participants (62.4%). Also, 47 (46.5%) participants belonged to rural areas while 54 (53.5%) belonged to urban areas.

The social support of the sample was assessed by using The Multidimensional Scale of Perceived Social Support (MSPSS) and Health Quality of Life was assessed by using SF12v2 consisting of PCS (Physical Component Summary) and MCS (Mental Component Summary) sub classes. The calculation of mean scores along with standard deviations gave MSPSS=53.84 +15.47, PCS=40.41+10.52 and MCS=40.30 +10.01, as presented in Table 5 below.

A Pearson product-moment correlation was conducted to examine the relationships between perceived social support, physical and mental health of AIDS patients. Both the MCS and PCS show a positive correlation with perceived social support. Perceived social support was more strongly positively related to physical health(PCS), r= .271, p< .01 than to mental health(MCS), r=.159, p< .01.

A complete list of correlations is presented in Table 6.

• *Table 1: Frequency Distribution of the Gender (n=101)*

Gender	Frequency	Percent
Male	77	76.2
Female	24	23.8
Total	101	100.0

• *Table 2: Frequency Distribution of Age Groups (n=101)*

Age Groups	Frequency	Percent
18 to 29	29	28.7
30 to 39	48	47.5
40 to 49	17	16.8
50 to 59	6	5.9
60 to high	1	1.0
Total	101	100.0

• *Table 3: Frequency Distribution of Marital Status (n=101)*

Marital Status	Frequency	Percent
Married	63	62.4
Unmarried	36	35.6
Widow	2	2.0
Total	101	100.0

• *Table 4: Frequency Distribution of Residential Area (n=101)*

Residential Area	Frequency	Percent
Rural	47	46.5
Urban	54	53.5
Total	101	100.0

• *Table 5: Relationship of total MSPSS score with PCS score and MCS score*

	Total MSPSS	PCS score	MCS score
Mean	53.8416	40.4122	40.3088
Std. Deviation	15.47497	10.52500	10.01747
Range	85.00	47.74	47.06
Minimum	20.00	16.96	16.04
Maximum	105.00	64.71	63.10

• *Table 6: Pearson correlation of PCS score and MCS score with MSPSS score*

	Pearson Correlation	Sig. (2-tailed)
PCS score with MSPSS	0.271	0.006
MCS score with MSPSS	0.159	0.111

Discussion

A total of 101 participants (PLWHA) were studied to assess perceived social support and health related quality of life (HRQOL). Our findings suggest that there is a positive Pearson correlation between perceived social support and the health (both physical and mental domains) of PLWHA. However, Physical health (PCS) is more strongly associated with perceive social support than mental health (MCS).

Our study results highlight the importance of enhancing social support to enhance mental and physical health outcomes in vulnerable population of PLWHA. Less social support due to stigma, low social economic status and many other causes, affects health related quality of life (HRQOL) badly [4]. These results are consistent with prior literature. Social support to vulnerable population (PLWHA) plays important role in preventing complication of AIDS. We found that PLWHA are receiving lower level of perceived social support than ideal one. This badly affects health care team efforts to combat the disease. Having a significant other, healthy family relations and helping friends increase will power of patients to fight against hardships, thus increasing health output in PLWHA[15]. Our study covers both genders using same questionnaire. Recent relevant studies only focused on male population of relevant area due to majority of male patients in the area and lesser stigma to research work in male patients. We used universal measure of health related quality of life (HRQOL) rather than an HIV-specific measure that includes illness symptomatically. Moreover, sample size was less

in our study. Also, prospective studies are needed to identify further correlations separately among female patients affected with AIDS.

Interestingly, our study suggests that perceived social support is more strongly positively related to Physical health(PCS), (r=0.271), than to mental health(MCS), (r=0.159). This result is a renovation to the concept of strong association of social support and mental health. This result drills attention to the importance of social support input for health output.

According to our study, the mean score for MSPSS is 53.84 +-15.47, for PCS is 40.41 +-10.52 and for MCS is 40.30 +-10.01 i.e. both MCS and PCS show positive correlation with perceived social support. It suggests that having an active social support network for PLWHA can contribute to positive physical and mental health outcomes.

Perceived social support was more strongly positively related to physical health(PCS), r= 0.271, p< .01 than to mental health(MCS), r=0.159, p< .01. It implies that the physical health status of PLWHA is more affected by the level of perceived social support as compared to mental health status, which is a quite distinct observation in comparison to similar researches.

In relation to perceived social support, the mean score of family support network was more than the mean score of non-family support network i.e. the main sources of social support were spouse and family members. There was relatively less involvement and social support for PLWHA from their friends which might be due to stigmas associated with HIV/AIDS.

The current research could be better conducted by having relatively larger sample size and population diversity to ensure accuracy of results. Future studies can be guided by applying theoretical frameworks and technical innovations. Future researchers can broaden the prospects by exploring various factors associated with social support in PLWHA and how this association might be affected during different stages of disease and by socio-cultural characteristics of population under study. Furthermore, there's need for evaluation studies to carry out preventive interventions for population at risk.t of PLWHA (people living with HIV/AIDS).

Conclusion

This study revealed that the social support level among people living with HIV/AIDS was generally low. It was found that there is positive association between perceived social support and physical and mental aspects of health of PLWHA. It was also identified that perceived social support was more strongly related to physical health of PLWHA than mental health. These findings suggest the need for better social support system for PLWHA.

Reference

1. Brown, Theodore M., Marcos Cueto, and Elizabeth Fee. "The World Health Organization and the transition from “international” to “global” public health." American journal of public health 96.1 (2006): 62-72.
2. Murphey-Corb, Michael, et al. "Isolation of an HTLV-III-related retrovirus from macaques with simian AIDS and its possible origin in asymptomatic mangabeys." Nature 321.6068 (1986): 435-437.
3. Cohen, Sheldon, and S. Leonard Syme. "Issues in the study and application of social support." Social support and health 3 (1985): 3-22.
4. Holt-Lunstad, Julianne, Timothy B. Smith, and J. Bradley Layton. "Social relationships and mortality risk: a meta-analytic review." PLoS medicine 7.7 (2010): e1000316.
5. Silva-Santisteban, Alfonso, et al. "Understanding the HIV/AIDS epidemic in transgender women of Lima, Peru: results from a sero-epidemiologic study using respondent driven sampling." AIDS and Behavior 16 (2012): 872-881.
6. Barré-Sinoussi, F. (1996). HIV as the cause of AIDS. The Lancet, 348(9019), 31-35.

7. Barrera Jr M. Distinctions between social support concepts, measures, and models.American journal of community psychology. 1986 Aug;14(4):413-45.
8. Marfani, Wajeeha Bilal, et al. "The rise in HIV cases in Pakistan: Prospective implications and approaches." Annals of Medicine and Surgery 81 (2022).
9. Idler, Ellen L., ed. Religion as a social determinant of public health. Oxford University Press, USA, 2014.
10. Wu X, Chen J, Huang H, Liu Z, Li X, Wang H. Perceived stigma, medical social support and quality of life among people living with HIV/AIDS in Hunan, China. Applied Nursing Research. 2015 May 1;28(2):169-74.
11. Khanani RM, Hafeez A, Rab SM, Rasheed S. Human immunodeficiency virus-associated disorders in Pakistan. AIDS research and human retroviruses. 1988;4(2):149-54.
12. Iqbal S, Maqsood S, Zafar A, Zakar R, Zakar MZ, Fischer F. Determinants of overall knowledge of and attitudes towards HIV/AIDS transmission among ever-married women in Pakistan: evidence from the Demographic and Health Survey 2012–13. BMC public health. 2019 Dec;19(1):1-4.
13. Mir F, Mahmood F, Siddiqui AR, Baqi S, Abidi SH, Kazi AM, Nathwani AA, Ladhani A, Qamar FN, Soofi SB, Memon SA. HIV infection predominantly affecting children in Sindh, Pakistan, 2019: a cross-sectional study of an outbreak. The Lancet Infectious Diseases. 2020 Mar 1;20(3):362-70.
14. Su, X., Lau, J.T., Mak, W.W., Chen, L., Choi, K., Song, J., Zhang, Y., Zhao, G., Feng, T., Chen, X., Liu, C., Liu, J., Liu, D., & Cheng, J. (2013). Perceived discrimination, social support, and perceived stress among people living with HIV/AIDS in China. AIDS Care, 25, 239 - 248.
15. Mitchell, M.M., Nguyen, T.Q., Isenberg, S.R., Maragh-Bass, A.C., Keruly, J.C., & Knowlton, A.R. (2017). Psychosocial and Service Use Correlates of Health-Related Quality of Life Among a Vulnerable Population Living with HIV/AIDS. AIDS and Behavior, 21, 1580-1587.
16. Moreno-Montoya, J., Barragán, A. M., Martínez, M., Rodríguez, A., & González, Á. C. (2018). Quality of life and perceived social support in people with HIV in Bogotá, Colombia.
17. Bekele, T., Rourke, S.B., Tucker, R., Greene, S., Sobota, M., Koornstra, J.J., Monette, L., Rueda, S., Bacon, J., Watson, J.R., Hwang, S.W., Dunn, J., Guenter, D., & Team, T.P. (2013). Direct and indirect effects of perceived social support on health-related quality of life in persons living with HIV/AIDS. AIDS Care, 25, 337-346.
18. Alford, K., Banerjee, S., Daley, S., Hamlyn, E., Trotman, D., & Vera, J. H. (2023). Health-Related Quality of Life in People Living With HIV With Cognitive Symptoms: Assessing Relevant Domains and Associations. Journal of the International Association of Providers of AIDS Care, 22, 23259582231164241.
19. Smith MY, Rapkin BD. Social support and barriers to family involvement in caregiving for persons with AIDS: implications for patient education. Patient Educ Couns. 1996 Jan;27(1):85-94.
20. Nie, Jingwei, et al. "Effect of participation in online HIV prevention intervention activities on psychological well-being among Chinese men who have sex with men." AIDS care 29.6 (2017): 725-731

Received / Получено 18.01.2025
Revised / Пересмотрено 18.02.2025
Accepted / Принято 20.03.2025

ANTIBIOTIC SENSITIVITY AND MICROBIOLOGICAL PATTERNS OF DIABETIC FOOT ULCERS

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Abstract
Introduction: Diabetes mellitus, characterized by chronic hyperglycemia due to defects in insulin secretion, action, or both, is a prevalent metabolic disorder with severe long-term complications, including nephropathy, retinopathy, peripheral neuropathy, and vasculopathy. These conditions predispose patients to diabetic foot ulcers (DFUs), chronic non-healing wounds associated with high risks of infection, amputation, and Charcot joint deformities. DFUs represent a significant cause of hospitalization among diabetic individuals.

Methods
A cross-sectional descriptive study was conducted involving 138 DFU patients across multiple hospitals in the Malakand Division, Pakistan. Data were collected from patient interviews, clinical observations, and hospital records. Of the 138 patients, 13 underwent amputation, and 3 required re-amputation.

Results
The mean age of participants was 45.7 ± 10 years, with a mean diabetes duration of 8.7 ± 3 years and ulceration duration of 4 ± 2 years. The study population comprised 65% males and 45% females. From 150 specimens, 455 aerobic bacteria were isolated (average of 3.03 isolates per specimen), with notable prevalence of multidrug-resistant (MDR) organisms and methicillin-resistant Staphylococcus aureus (MRSA). Among gram-positive aerobes, S. aureus (25.4%) was predominant, while Escherichia coli (16%) led among gram-negative isolates. Gram-positive isolates exhibited resistance to ciprofloxacin (54.5%), erythromycin (53.2%), and clarithromycin (52.56%), but were universally sensitive to vancomycin. Gram-negative isolates showed resistance to ciprofloxacin (75%), cefuroxime (85%), and cefotaxime (54.43%), with imipenem and sulbactam-cefoperazone demonstrating high sensitivity.

Conclusion
DFUs predominantly affect individuals around 50 years of age, with ulceration linked to diabetes duration, treatment adherence, and wound care. Males are more affected than females. Vancomycin exhibited 100% efficacy against gram-positive isolates, while linezolid was effective in 92% of cases, aiding recovery in many patients. The presence of MDR isolates underscores the need for tailored antibiotic therapy.

Keywords: Antibiotic sensitivity, diabetic foot ulcer, multidrug resistance, microbiological profile

ЧУВСТВИТЕЛЬНОСТЬ К АНТИБИОТИКАМ И МИКРОБИОЛОГИЧЕСКИЕ ЗАКОНОМЕРНОСТИ ДИАБЕТИЧЕСКИХ ЯЗВ СТОПЫ

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Аннотация
Введение: Сахарный диабет, характеризующийся хронической гипергликемией из-за дефектов секреции инсулина, действия или обоих факторов, является распространенным метаболическим расстройством с тяжелыми долгосрочными осложнениями, включая нефропатию, ретинопатию, периферическую нейропатию и васкулопатию. Эти состояния предрасполагают пациентов к диабетическим язвам стопы (ДЯС), хроническим незаживающим ранам, связанным с высоким риском инфекции, ампутации и деформациями суставов Шарко. ДЯС являются важной причиной госпитализации среди больных диабетом.

Методы
было проведено поперечное описательное исследование с участием 138 пациентов с DFU в нескольких больницах в округе Малаканд, Пакистан. Данные были собраны из интервью с пациентами, клинических наблюдений и больничных записей. Из 138 пациентов 13 перенесли ампутацию, а 3 потребовалась повторная ампутация.

Результаты
средний возраст участников составил 45,7 ± 10 лет, средняя продолжительность диабета составила 8,7 ± 3 года, а продолжительность язвы — 4 ± 2 года. Исследуемая популяция состояла из 65% мужчин и 45% женщин. Из 150 образцов было выделено 455 аэробных бактерий (в среднем 3,03 изолята на образец) с заметным преобладанием организмов с множественной лекарственной устойчивостью (МЛУ) и метициллин-резистентного золотистого стафилококка (MRSA). Среди грамположительных аэробов преобладал S. aureus (25,4%), в то время как среди грамотрицательных изолятов лидировала Escherichia coli (16%). Грамположительные изоляты проявили устойчивость к ципрофлоксацину (54,5%), эритромицину (53,2%) и кларитромицину (52,56%), но были универсально чувствительны к ванкомицину. Грамотрицательные изоляты проявили устойчивость к ципрофлоксацину (75%), цефуроксиму (85%) и цефотаксиму (54,43%), при этом имипенем и сульбактам-цефоперазон продемонстрировали высокую чувствительность.

Заключение
DFU преимущественно поражают людей в возрасте около 50 лет, при этом язвы связаны с длительностью диабета, приверженностью лечению и уходом за ранами. Мужчины страдают чаще, чем женщины. Ванкомицин продемонстрировал 100% эффективность против грамположительных изолятов, тогда как линезолид был эффективен в 92% случаев, способствуя выздоровлению многих пациентов. Наличие изолятов с множественной лекарственной устойчивостью подчеркивает необходимость индивидуальной антибактериальной терапии.

Ключевые слова: Чувствительность к антибиотикам, язва диабетической стопы, множественная лекарственная устойчивость, микробиологический профиль

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Introduction

Diabetes mellitus is a group of metabolic disorders defined by chronic hyperglycemia resulting from impaired insulin secretion, insulin action, or both [1]. Uncontrolled diabetes leads

to long-term complications, including nephropathy, retinopathy, peripheral neuropathy, microtubule dysfunction, and vasculopathy [2, 3]. Peripheral neuropathy and vasculopathy significantly increase the risk of developing diabetic foot ulcers (DFUs), chronic wounds prone to infection due to reduced blood supply [4]. These ulcers are associated with severe outcomes, such as amputations and Charcot joint deformities, and are a leading cause of hospitalization among diabetic patients [5].

Diabetes is classified into several types. Type 1 diabetes, often termed juvenile diabetes, arises from autoimmune destruction of pancreatic beta cells, primarily affecting children and young adults [6]. Secondary diabetes mimics Type 1 but results from pancreatic damage due to disease or injury rather than autoimmunity [7]. Type 2 diabetes, the most common form, is characterized by insulin resistance and typically affects middle-aged and older adults, though its incidence is rising among younger populations due to obesity [8]. Pharmacological management includes insulin, amylin analogs, oral agents, and GLP-1 receptor agonists [9].

DFUs are polymicrobial infections, often involving gram-positive and gram-negative bacteria, including MDR strains [10]. Common gram-negative isolates include E. coli, Klebsiella pneumoniae, and Proteus mirabilis, while Pseudomonas aeruginosa exhibits notable antibiotic resistance [11, 12]. Microbiological profiling and antibiotic sensitivity testing are critical for effective treatment and preventing progression to deeper tissues, which may necessitate amputation [13]. DFUs are graded from 1 (superficial) to 5 (extensive gangrene) per the Wagner classification, with higher grades linked to increased amputation risk [14]. Approximately 60% of non-traumatic lower limb amputations are attributed to DFUs [15], with re-amputation and mortality rates significantly impacting quality of life [16, 17].

This study investigates the microbiological patterns and antibiotic sensitivity profiles of DFUs in a cohort from the Malakand Division, Pakistan, to inform clinical management and reduce adverse outcomes.

Materials and Methods

A cross-sectional, descriptive study was conducted across multiple hospitals in the Malakand Division, Pakistan, including Saidu Teaching Hospital and Central Hospital, Saidu Sharif, Swat. Data were collected from 138 DFU patients and supplemented by hospital records of over 500 patients. Diagnostic, microbiological, and culture sensitivity tests were performed at Amreek Hospital and Anwar Hospital, Mingora, Swat.

Ulcer samples were obtained using sterile surgical tools, placed in saline within sterilized containers, and transported to the laboratory. Gram staining was followed by culturing on nutrient agar at 37°C for 24 hours. Primary growth was sub-cultured for purification, and antibiotic sensitivity was assessed using strips on agar plates incubated for an additional 24 hours. Sensitivity was categorized as resistant (R), sensitive (S), or intermediate (I) based on microbial growth inhibition. Microbial identification involved cultural characteristics (colony morphology, color, odor) and biochemical tests (e.g., catalase, coagulase, indole, TSI). Advanced identification was performed using Analytical Profile Indexing (API) strips processed by automated software. Blood cultures utilized a Bactec lytic machine. Protocols adhered to international standards (CLSI, EUCAST, FDA) [18].

Results

The study observed 138 patients over one year, with demographic data summarized in Table 1. The cohort comprised 65% males and 45% females, with a mean age of 45.7 ± 10 years,

diabetes duration of 8.7 ± 3 years, and ulceration duration of 4 ± 2 years. Type 2 diabetes predominated (97.83%), with only 2.17% having Type 1.

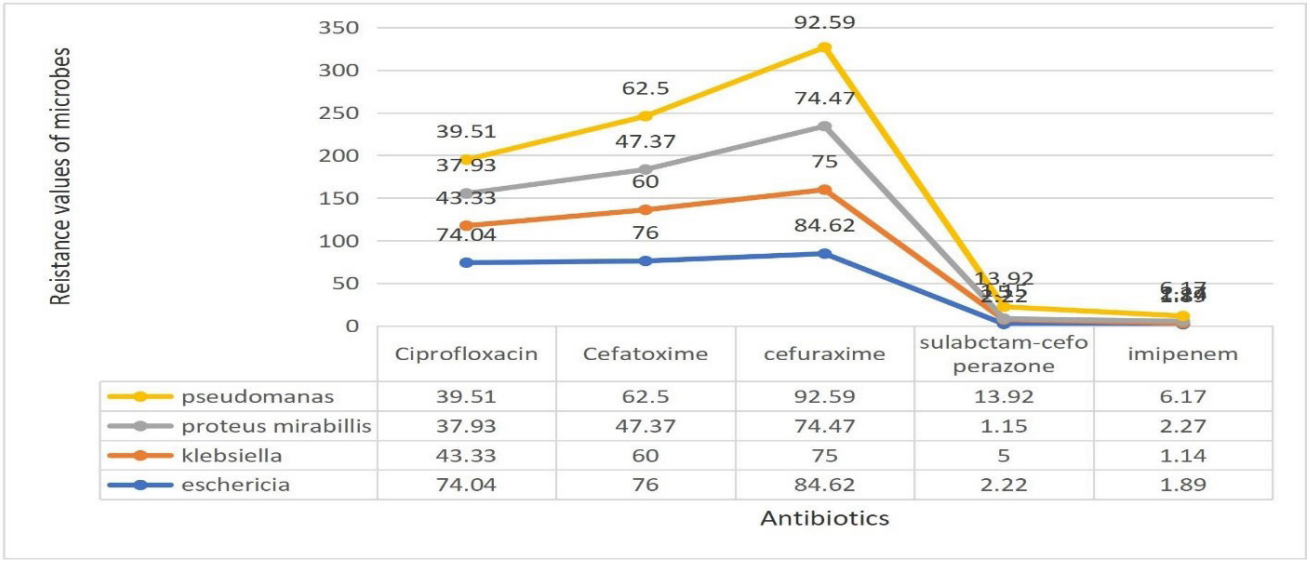
• *Table 1: Baseline Characteristics of Patients*

VARIABLES	MEAN ± S. D
Total patients	138
Age	45.7 ± 10
Duration of diabetes	8.7 ± 3
Duration of ulcer	4 ± 2
Gender	
Male	65%
Female	45%
Type 1 diabetes	3 (2.17%)
Type 2 diabetes	135 (97.83%)

From 150 specimens (92% pus, 8% blood), 455 aerobic bacteria were isolated, averaging 3.03 isolates per specimen. MDR and MRSA strains were prevalent. Among gram-positive isolates, S. aureus (25.4%) was most common, followed by Streptococcus, coagulase-negative staphylococci, and Enterococcus. Among gram-negative isolates, E. coli (16%) predominated, followed by K. pneumoniae, P. mirabilis, and P. aeruginosa. Antibiotic sensitivity patterns are presented in Table 2 and Table 3.

• *Table 2: Antibiotic Sensitivity of Gram-Positive Aerobes (%)*

Antibiotics	Staphylococcus Aureus	Streptococcus	Enterococcus
Amikacin	85	-	-
Clarithromycin	47	47.8	47.4
Linezolid	99	-	-
Vancomycin	99	100	100
Clindamycin	65	59	-
Ciprofloxacin	45	45.4	45.2
Levofloxacin	19	-	-
Erythromycin	45.8	47.8	46.8



• *Table 3: Antibiotic Resistance of Gram-Negative Isolates (%)*

Gram-positive isolates showed resistance to ciprofloxacin (54.5%), erythromycin (53.2%), and clarithromycin (52.56%), but were 100% sensitive to vancomycin. Gram-negative isolates exhibited high resistance to ciprofloxacin (75%), cefuroxime (85%), and cefotaxime (54.43%), with imipenem and sulbactam-cefoperazone being the most effective.

Of the 138 patients, 13 underwent amputation due to gangrene, and 3 required re-amputation due to ulcer progression.

Discussion

Diabetes mellitus, a disorder of insulin dynamics, predisposes patients to severe complications, including DFUs, driven by peripheral neuropathy and vasculopathy [1, 4, 5]. DFUs are a major public health concern, with 14–20% of patients requiring amputation and 35–40% facing re-amputation, reducing life expectancy by up to 60% [10, 16, 17]. This study confirms that DFUs are polymicrobial, with S. aureus and E. coli as dominant isolates, consistent with global findings [11, 12, 19]. Regional variations in microbial profiles may reflect differences in antibiotic use and environmental exposure [13, 20].

The cohort's baseline characteristics align with prior studies, though additional metrics like BMI and HbA1c could enhance risk profiling [10, 21]. Ulcer severity ranged from Grade 1 (superficial) to Grade 5 (extensive gangrene), with higher grades necessitating amputation due to delayed or inappropriate treatment [14]. Vancomycin's 100% efficacy against gram-positive isolates and linezolid's 92% success rate highlight their therapeutic value, corroborating other research [10, 21]. Gram-negative isolates showed significant resistance, with imipenem emerging as a key option [12].

Risk factors for amputation included gangrene, prior DFU history, osteomyelitis, smoking, and male sex, consistent with meta-analyses [17, 22]. Non-significant factors included hypertension and HbA1c levels [16]. These findings underscore the importance of early intervention and culture-guided therapy.

Conclusion

DFUs predominantly affect individuals around 50 years old, with males at higher risk. Ulceration correlates with diabetes duration, treatment adherence, and wound care. S. aureus and E. coli

are the leading pathogens, with MDR strains posing treatment challenges. Vancomycin and linezolid are highly effective against gram-positive isolates, while imipenem excels against gram-negative bacteria. Amputation risk escalates with delayed referral, improper antibiotic use, and poor diabetes control. These insights emphasize the need for timely, evidence-based management to improve outcomes.

References

1. American Diabetes Association. Diagnosis and classification of diabetes mellitus. Diabetes Care. 2014;37(Suppl 1):S81-S90. doi:10.2337/dc14-S081
2. Expert Committee on the Diagnosis and Classification of Diabetes Mellitus. Report of the Expert Committee on the Diagnosis and Classification of Diabetes Mellitus. Diabetes Care. 1997;20:1183-1197.
3. Genuth S, Alberti KG, Bennett P, et al. Follow-up report on the diagnosis of diabetes mellitus. Diabetes Care. 2003;26:3160-3167.
4. Cigna E, Fino P, Onesti MG, et al. Diabetic foot infection treatment and care. Int Wound J. 2016;13(2):238-242. doi:10.1111/iwj.12277
5. Gemechu FW, Seemant F, Curley CA. Diabetic foot infections. Am Fam Physician. 2013;88(3):177-184.
6. WebMD. Type 1 diabetes. Available at: https://www.webmd.com/diabetes/type-1-diabetes
7. WebMD. Diabetes overview. Available at: https://www.webmd.com/diabetes/default.htm
8. WebMD. Type 2 diabetes. Available at: https://www.webmd.com/diabetes/type-2-diabetes
9. Whale K, Field C, Radhakrishnan R. Lippincott Illustrated Reviews: Pharmacology. 7th ed. Wolters Kluwer; 2018.
10. Miyan Z, Fawwad A, Sabir R, et al. Microbiological pattern of diabetic foot infections at a tertiary care center in a developing country. J Pak Med Assoc. 2017;67(5):665-669.
11. Tiwari S, Pratyush DD, Dwivedi A, et al. Microbiological and clinical characteristics of diabetic foot infections in northern India. J Infect Dev Ctries. 2012;6:329-332.
12. Lister PD, Wolter DJ, Hanson ND. Antibacterial-resistant Pseudomonas aeruginosa: clinical impact and complex regulation of chromosomally encoded resistance mechanisms. Clin Microbiol Rev. 2009;22(4):582-610. doi:10.1128/CMR.00040-09
13. Abd-Al-Hamead H, Al-Metwally RI, Khaled MA, et al. Bacteriological study of diabetic foot infection in Egypt. J Arab Soc Med Res. 2013;8:26-32.
14. Wagner FW Jr. The dysvascular foot: a system for diagnosis and treatment. Foot Ankle. 1981;2(2):64-122. doi:10.1177/107110078100200202
15. Centers for Disease Control and Prevention. National diabetes fact sheet: general information and national estimates on diabetes in the United States, 2003. Atlanta: US CDC; 2003.
16. Rathnayake A, Saboo A, Malabu UH, et al. Lower extremity amputations and long-term outcomes in diabetic foot ulcers: a systematic review. World J Diabetes. 2020;11(9):391-399. doi:10.4239/wjd.v11.i9.391
17. Liu C, Sun H. Risk factors for lower extremity amputation in patients with diabetic foot ulcers: a meta-analysis. PLoS ONE. 2020;15(9):e0239236.
18. Food and Drug Administration (FDA). CFR Title 21, Volume 5, Part 460. 2005.
19. Akhi MT, Ghotaslou R, Asgharzadeh M, et al. Bacterial etiology and antibiotic susceptibility pattern of diabetic foot infections in Tabriz, Iran. GMS Hyg Infect Control. 2015;10:Doc02.
20. Siddiqui MA, Naeem H, Ali MM, et al. Microbiological and antimicrobial pattern of diabetic foot ulcers (DFUs) at a tertiary care center in North East, Punjab. J Pak Med Assoc. 2021;71(6):1566-1569. doi:10.47391/JPMA.1180
21. Anyim O, Okafor C, Young E, et al. Pattern and microbiological characteristics of diabetic foot ulcers in a Nigerian tertiary hospital. Afr Health Sci. 2019;19(1):1617-1627. doi:10.4314/ahs.v19i1.37
22. Rubio JA, Jiménez S, Lázaro-Martínez JL. Mortality in patients with diabetic foot ulcers: causes, risk factors, and their association with evolution and severity of ulcer. J Clin Med. 2020;9(9):3009.

Received / Получено 12.01.2025
Revised / Пересмотрено 20.02.2025
Accepted / Принято 20.03.2025

ASSESSING THE AWARENESS OF PREDIABETES AND ITS RISK FACTORS AMONG MEDICAL STUDENTS

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Abstract
Introduction: Prediabetes is a condition where blood glucose levels are elevated but not yet high enough to be classified as diabetes. It is typically identified through impaired fasting glucose (IFG) or impaired glucose tolerance (IGT), with specific blood sugar thresholds.

Methodology
A cross-sectional study was conducted between October 29 and November 26, 2024, involving medical students from the 2nd to 5th years. Data was gathered through a semi-structured questionnaire distributed via Google Forms. Statistical analysis was performed using SPSS software, and the results were expressed in percentages.

Results
Among the 213 respondents, the majority were in their 2nd year (42.7%) and aged between 20-25 years (61.5%), with a slightly higher proportion of males (53.1%). Most respondents were Muslim (53.1%) and from India (69%). While many students were aware of prediabetes (168 participants), only 53 had attended extra classes on the topic. Knowledge of prediabetes improved as students advanced in their studies. Fifth-year students demonstrated the best understanding of key topics, such as HbA1c levels (66.7%) and prediabetes complications (89.9%). Second-year students had a solid grasp of prediabetes, while third-year students showed relatively less knowledge.

Conclusion
This study reveals that medical students possess general knowledge about prediabetes, its risk factors, and symptoms, but there are areas that require improvement. Although many students were familiar with the definition of prediabetes, few had participated in additional educational sessions on the subject. Awareness of risk factors, such as gestational diabetes, was moderate, and some students were unaware that prediabetes can be asymptomatic. Clinical knowledge tended to improve with academic progression, with older students exhibiting a stronger understanding of diagnostic criteria and complications. Younger students, particularly those in the second and third years, had less comprehensive knowledge. These results emphasize the need for enhanced education, especially for students in the earlier years of their medical studies.

Key words: Prediabetes, Hypertension, medical students, JASU

ОЦЕНКА ОСВЕДОМЛЕННОСТИ О ПРЕДИАБЕТЕ И ЕГО ФАКТОРАХ РИСКА СРЕДИ СТУДЕНТОВ-МЕДИКОВ

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Аннотация
Введение. Предиабет — это состояние, при котором уровень глюкозы в крови повышен, но еще недостаточно высок, чтобы его можно было классифицировать как диабет.

Обычно его определяют по нарушенной глюкозе натощак (НГН) или нарушенной толерантности к глюкозе (НТГ) с определенными пороговыми значениями уровня сахара в крови.

Методология
поперечное исследование проводилось в период с 29 октября по 26 ноября 2024 года с участием студентов-медиков 2–5 курсов. Данные собирались с помощью полуструктурированной анкеты, распространяемой через Google Forms. Статистический анализ проводился с использованием программного обеспечения SPSS, а результаты выражались в процентах.

Результаты
среди 213 респондентов большинство были на 2-м курсе (42,7%) и в возрасте от 20 до 25 лет (61,5%), с немного большей долей мужчин (53,1%). Большинство респондентов были мусульманами (53,1%) и выходцами из Индии (69%). Хотя многие студенты знали о преддиабете (168 участников), только 53 посещали дополнительные занятия по этой теме. Знания о преддиабете улучшались по мере того, как студенты продвигались в учебе. Студенты пятого курса продемонстрировали лучшее понимание ключевых тем, таких как уровни HbA1c (66,7%) и осложнения преддиабета (89,9%). Студенты второго курса имели прочное понимание преддиабета, в то время как студенты третьего курса показали относительно меньшие знания.

Вывод
Это исследование показывает, что студенты-медики обладают общими знаниями о преддиабете, его факторах риска и симптомах, но есть области, которые требуют улучшения. Хотя многие студенты были знакомы с определением преддиабета, немногие участвовали в дополнительных образовательных сессиях по этой теме. Осведомленность о факторах риска, таких как гестационный диабет, была умеренной, и некоторые студенты не знали, что преддиабет может протекать бессимптомно. Клинические знания, как правило, улучшались с академическим прогрессом, при этом старшие студенты демонстрировали более глубокое понимание диагностических критериев и осложнений. Младшие студенты, особенно на втором и третьем курсах, имели менее всесторонние знания. Эти результаты подчеркивают необходимость улучшенного образования, особенно для студентов на ранних этапах их медицинского обучения.

Ключевые слова: преддиабет, гипертония, студенты-медики, JASU

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Introduction

The term 'pre-diabetes" refers to a situation where the blood glucose levels are higher than normal, but not high enough to warrant a diagnosis of diabetes. It is an intermediate stage used to describe a person with impaired blood glucose tolerance levels of fasting between 100 and 126 mg/dl of blood or whose 2-hour post-prandial blood glucose was between 140 and 200 mg/dl [1]. Prediabetes is associated with obesity (especially abdominal or visceral obesity), dyslipidemia with high triglycerides and/or low HDL cholesterol, and hypertension

[2]. Prediabetes consists of two entities viz. impaired fasting glucose (IFG) and impaired glucose tolerance (IGT). IGT tends to be characterized by insulin resistance in muscle and decreased glucose uptake, while IFG is generally driven by insulin resistance in the liver and excess hepatic glucose production [3].There is limited overlap between IGT and IFG; only 20–25% of people with IGT have IFG, and 30–45% of individuals with IFG have IGT. The diagnostic criteria for diabetes and prediabetes are summarized in Table 1[4]. According to National Diabetes Statistics Report of Centers for Disease Control and Prevention 97.6 million people aged 18 years or older have prediabetes (38.0% of the adult U.S. population) and 27.2 million people aged 65 years or older (48.8%) have prediabetes [5]. The pathophysiologic defects underlying prediabetes include insulin resistance, b-cell dysfunction, increased lipolysis, inflammation, suboptimal incretin effect, and hepatic glucose overproduction. These metabolic derangements associated with concomitant obesity cause endothelial vasodilator and fibrinolytic dysfunction, leading to increased risk of macrovascular and macrovascular complications like Stroke, endothelial dysfunction, peripheral vascular disease, myocardial infraction, congestive heart failure, pro-inflammatory cytokines. [6-9]. Risk factors include obesity, family history of diabetes mellitus, gestational diabetes, polycystic ovarian syndrome, and certain ethnic backgrounds, along with dyslipidemia and hypertension. Symptoms are often absent, but some individuals may experience increased appetite or thirst, weight changes, weakness, fatigue, sweating, blurry vision, bleeding gum and non-healing wounds [10]. Prediabetes represents the tip of the iceberg if untreated; prediabetes can lead to cardiovascular changes such as fatty depositions in coronary arteries and cells of heart. Other complications include diabetic retinopathy, neuropathy and nephropathy. Patients with IGT± IFG need strict Lifestyle modification. For treatment pharmacotherapy approach with metformin plus low-dose pioglitazone is an option. In high risk IGT individuals long-acting GLP-1 analogue use as well as diet plus exercise May be another option. Each component of this approach is effective in type 2 DM prevention and turning IGT back to normal [11]. Surgical measures such as bariatric surgery have been found to be beneficial in preventing T2DM in obesity and prediabetes [12-16]

• *Table 1. Diagnostic criteria for diabetes and prediabetes*

Parameters	Normoglycemia (mg/dl)		Prediabetes(mg/dl)		Diabetes
	WHO	ADA	WHO	ADA	
FPG	<110	<100	110-125(IFG)	100-125(IFG)	⩾ 126
2-h PG	< 140		140-199 (IGT)		⩾ 200
HbA1c	< 5.7%		5.7-6.4%		⩾ 6.5%
Random plasma glucose*					⩾ 200 (with symptoms of diabetes)

Individuals with random plasma glucose between 140-199mg/dl are recommended to undergo OGTT WHO - World Health Organization; ADA-American Diabetes Association; IFG - Impaired Fasting Glucose; IGT - Impaired Glucose tolerance; FPG - Fasting Plasma Glucose; 2-h PG-2 hour post load Glucose test (oral glucose tolerance test) plasma glucose; HbA1c – Glycosylated Hemoglobin

Source: ICMR guidelines for management of type 2 diabetes. 2018.

Methodology

This cross-sectional study utilized a semi-structured questionnaire administered to medical undergraduate students from the 2nd to 5th year at Jalalabad State University named after B. Osmonov in Jalalabad, Kyrgyzstan. The questionnaire was distributed via Google Forms, and students were requested to complete and submit their responses. The study was conducted from October 29, 2024, to November 26, 2024. The study population comprised medical students from the 2nd to 5th year who agreed to participate, resulting in a sample size of 213 students. Inclusion criteria were all consenting medical students from the 2nd to 5th year, while those who did not consent were excluded. Statistical analysis will be performed using SPSS (Statistical Package for the Social Sciences) software.

Results

Socio demographic information of respondents

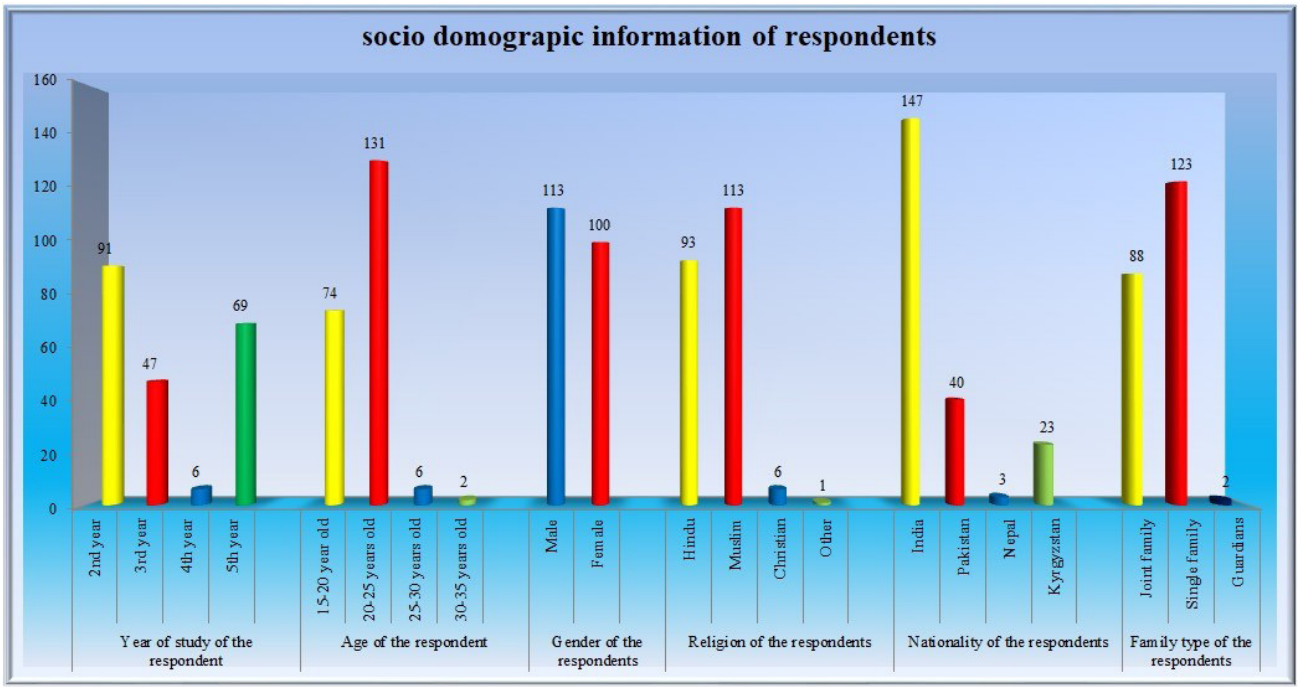

Fig.1. Distribution of respondents according to their socio demographic information

The socio-demographic characteristics of the 213 respondents provide insight into their backgrounds and diversity. Regarding the year of study, the majority of respondents were in their 2nd year (42.7%), followed by 5th-year students (32.4%), 3rd-year students (22.1%), and a small proportion in their 4th year (2.8%). The age distribution indicates that most respondents were between 20-25 years old (61.5%), with 34.7% aged 15-20 years, and smaller percentages in the 25-30 years (2.8%) and 30-35 years (0.9%) age brackets. Gender-wise, males constituted a slight majority at 53.1%, while females made up 46.9%. In terms of religion, the respondents were predominantly Muslim (53.1%), followed by Hindus (43.7%), Christians (2.8%), and others (0.5%). Nationality data reveals that a significant proportion were from India (69.0%), with smaller groups from Pakistan (18.8%), Kyrgyzstan (10.8%), and Nepal (1.4%). Lastly, most respondents lived in single-family households (57.7%), while 41.3% belonged to joint families, and a very small percentage (0.9%) lived with guardians. This diverse demographic data provides a solid foundation for analyzing the respondents' perspectives and behaviors in the context of the study.

Preclinical knowledge of respondents

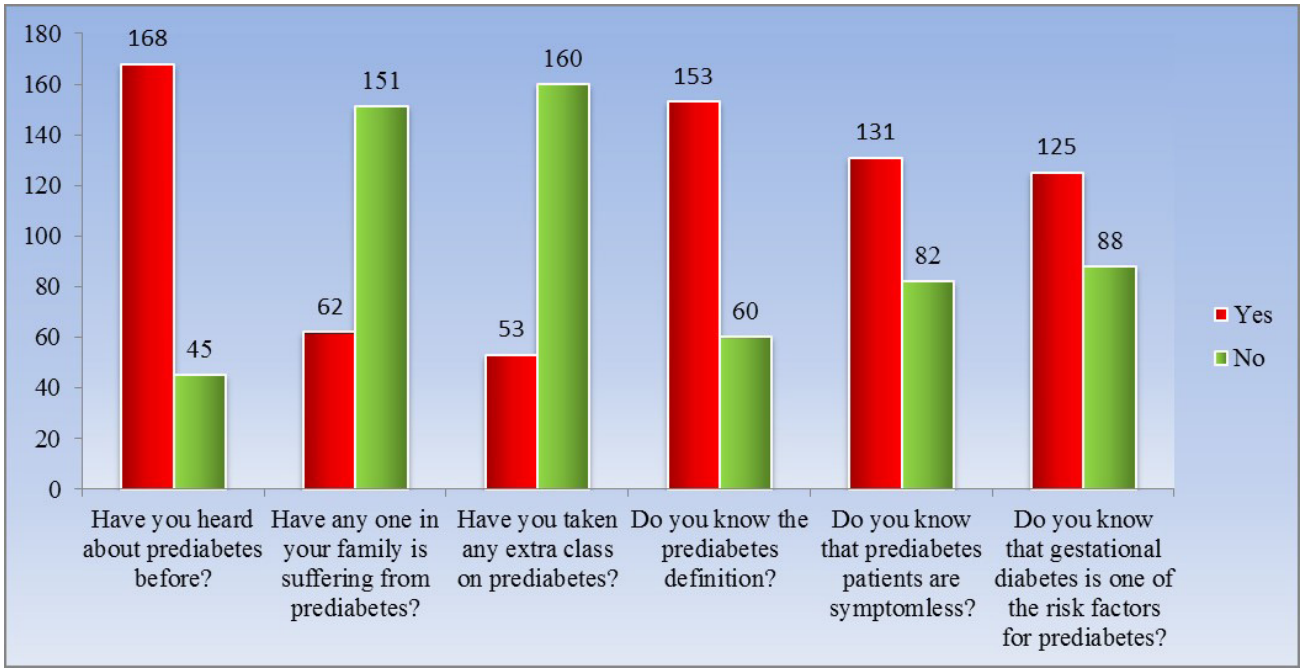

Fig.2. Distribution of respondents according to their answer to the pre-clinical question

A significant proportion of respondents were aware of prediabetes (168 respondents) and its definition (153 respondents). However, only few participants reported having taken extra classes on prediabetes (53 respondents). There is also a gap in understanding that prediabetic patients can be asymptomatic, with only 82 respondents acknowledging this. Awareness of gestational diabetes as a risk factor for prediabetes was moderate (125 respondents).

Clinical knowledge of respondents

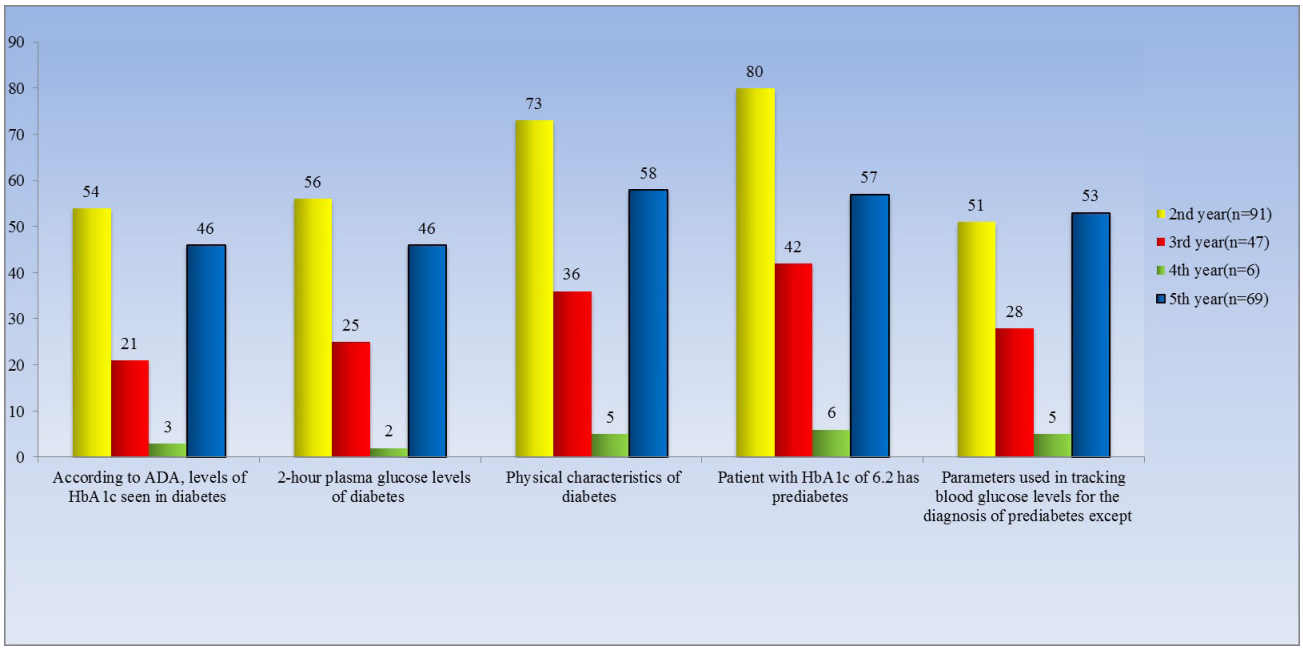

Fig.3.1.a Frequency of Participants Correctly Answering Prediabetes and Diabetes Clinical Knowledge Questions, by year in Medical School

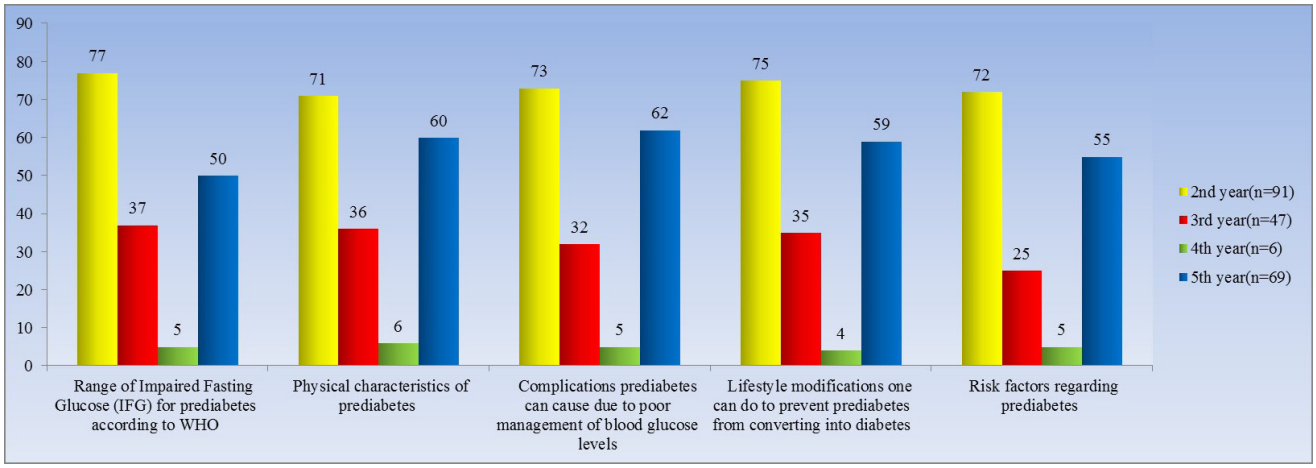

Fig.3.1.b Frequency of Participants Correctly Answering Prediabetes and Diabetes Clinical Knowledge Questions, by year in Medical School

The year-wise analysis of clinical knowledge revealed progressive improvement as students advanced through medical school. Fifth-year students exhibited the highest understanding in most areas, including HbA1c levels for diabetes (66.7%), 2-hour plasma glucose levels (66.7%), physical characteristics of diabetes (84%), and blood glucose tracking parameters (76.8%). They also demonstrated the strongest awareness of prediabetes characteristics (86.9%) and complications of poor management (89.9%). Second-year students showed strong awareness in specific areas, such as HbA1c thresholds for prediabetes (87.9%), impaired fasting glucose (IFG) ranges (84.6%), and risk factors for prediabetes (79.1%). However, they had lower overall knowledge compared to higher years. Third-year students scored lowest in key areas like HbA1c levels (44.7%) and risk factors for prediabetes (53.2%), while the small sample size of fourth-year students (n=6) limited conclusive results for this group. Across all years, knowledge of lifestyle modifications remained consistently high (⩾75%). These findings highlight the need for targeted interventions to address knowledge gaps, particularly among lower-year students

Discussion

The current cross-sectional study has found important deficiencies in medical students regarding their knowledge in the screening, diagnosis and treatment of prediabetes. It has come to light that majority of them were following the ADA and WHO guidelines for the same. We have not found statistical significance between students of various academic years regarding their knowledge on prediabetes. Literatures addressing the knowledge and existing practices of physicians regarding the diagnosis, screening and management of prediabetes, both local and international domains. Genetic inheritance, women with positive history of gestational diabetes, sedentary lifestyle and obesity are some of the predisposing factors of prediabetes and an individual is supposed to revert back to normal before it can result in diabetes and its impending complications in the body [10]. Majority of the participants were able to choose sedentary lifestyle and obesity as risk factors. According to ADA, the concern for prediabetes should arise at a BMI of more than 25 kg/m2: with 23kg/m2 being the threshold for Asian Americans, correlating with the overweight status [23]. Prediabetes or intermediate hyperglycemia is mostly asymptomatic until diagnosed by laboratory methods. The laboratory parameters used are HbA1C, IFG, IGT and 2hPG. For prediabetes, with HbA1C levels being 5.7 and 6.5%; IFG levels between 110-125 mg/dl and IGT between 140-199

mg/dl [4]. Majority of the participants were able to differentiate between Normoglycemia, intermediate hyperglycemia and diabetes through comparative analysis. In certain cases, prediabetes can be accompanied by symptoms such as blurring of vision, fatigue, increased appetite and delayed healing of cuts and wounds [10]. Complications of prediabetes, due to poor management of blood glucose levels include atherosclerotic changes in blood vessels, decreased nerve conduction velocity due to impaired axon transport, albumin permeability through the glomerular basement membrane and filtration slits due to podocyte injury, aneurysm of retinal vasculature resulting in retinal detachment [1]. Hyperglycemia-related microvascular complications, including retinopathy [21], neuropathy [20] and nephropathy [22], are frequently present among individuals with prediabetes. Students were informed about the complications but not much on its pathophysiology. Early and timely interventions in the management of prediabetes include lifestyle modifications such as a calorie and lipid deficit diet, lean protein and fiber-rich diet, regular exercise, effective weight loss of about 5-10% of body weight and administration of Metformin for patients requiring treatment. Metformin is a cheap and readily available medication which has proven benefit in preventing diabetes in the high-risk group [24]. Metformin is seldom used in daily practice, despite the ADA's recommendation to use it for prediabetes treatment. In 2010–2012, only 3.7% of prediabetes patients with United Healthcare insurance (one the largest private insurers in the United States) were prescribed the medication. In the 2013–2014 NHANES, metformin use among those with self-reported prediabetes was reported in only 8% of US adults [19]. These are the common interventions one can do to prevent or delay the development of prediabetes and its not so anticipated outcome. Regarding lifestyle modifications, majority of the students opted for regular exercise and dietary modifications such as low carb, low lipid diets. There are certain limitations to our study. Our study barely touches upon the perspective of the community because our sample is a representation of the population of medical students of Jalal-Abad University. The lack of information on prediabetes amongst the community is a limitation. Majority of the students when asked about prediabetes, called it "borderline diabetes". They were able to identify the predisposing factors, parametric levels, complications and lifestyle modifications of prediabetes. However, students were not able to identify the one factor that differentiates prediabetes from diabetes. Besides the parametric levels used in diagnosis, the factor which is of paramount importance is that prediabetes can be reversed, is timely and effective intervention in lifestyle are made, whereas diabetes once diagnosed cannot be reversed but only managed.

Conclusion

This study shows that medical students in general, have knowledge on prediabetes, its risk factors and symptoms but there were areas which needed improvement. Many students were familiar with the definition of prediabetes, but only a few had extra education on the concept. Knowledge about risk factors, like gestational diabetes, was moderate, and few students didn't know that prediabetes can be without symptoms. Clinical knowledge improved as students moved through medical school. Older students had a better understanding of key information like diagnostic criteria and complications, while younger students, especially second and third-year students, knew less about these domains.

Recommendation

This study suggests the need for better education, especially for students in earlier years, to ensure all future doctors are well-prepared to manage and prevent prediabetes.

References:

1. Muthunarayanan L, Ramraj B, Russel JK. Prevalence of prediabetes and its associated risk factors among rural adults in Tamil Nadu. Arch Med Health Sci. 2015;3(2):178-184.
2. Care D. Care in diabetes—2022. Diabetes Care. 2022 Jan 1;45:S17.
3. Rooney MR, Fang M, Ogurtsova K, et al. Global prevalence of prediabetes. Diabetes Care. 2023 Jul 1;46(7):1388-1394.
4. Tandon N, Mohan V. ICMR guidelines for management of type 2 diabetes. 2018.
5. Centers for Disease Control and Prevention. Available from: https://www.cdc.gov/diabetes/php/data-research/index.html.
6. Lawal Y, Bello F, Kaoje YS. Prediabetes deserves more attention: a review. Clin Diabetes. 2020 Oct 1;38(4):328-338.
7. Abdul-Ghani MA, DeFronzo RA. Pathophysiology of prediabetes. Curr Diabetes Rep. 2009 Jun;9(3):193-199.
8. Bacha F, Hannon TS, Tosur M, et al. Pathophysiology and treatment of prediabetes and type 2 diabetes in youth. Diabetes Care. 2024 Dec 1;47(12):2038-2049.
9. Brannick B, Dagogo-Jack S. Prediabetes and cardiovascular disease: pathophysiology and interventions for prevention and risk reduction. Endocrinol Metab Clin North Am. 2018 Mar 1;47(1):33-50.
10. Alvarez S, Coffey R, Algotar AM. Prediabetes.
11. Kanat M, DeFronzo RA, Abdul-Ghani MA. Treatment of prediabetes. World J Diabetes. 2015 Sep 9;6(12):1207.
12. Mulla IG, Anjankar A, Pratinidhi S, et al. Prediabetes: a benign intermediate stage or a risk factor in itself? Cureus. 2024 Jun 26;16(6):e63186.
13. Zand A, Ibrahim K, Patham B. Prediabetes: why should we care? Methodist Debakey Cardiovasc J. 2018 Oct;14(4):289-294.
14. Galaviz KI, Suvada K, Merchant R, et al. Interventions for reversing prediabetes: a systematic review and meta-analysis. Am J Prev Med. 2022 Apr 1;62(4):614-625.
15. Magge SN, Silverstein J, Elder D, et al. Evaluation and treatment of prediabetes in youth. J Pediatr. 2020 Apr 1;219:11-22.
16. Ping WX, Hu S, Su JQ, Ouyang SY. Metabolic disorders in prediabetes: from mechanisms to therapeutic management. World J Diabetes. 2024 Mar 3;15(3):361.
17. Saeed N, Jaffery T, Ansari FA, et al. Knowledge and perceptions about pre-diabetes amongst doctors, medical students, and patients in a tertiary care hospital of Islamabad. J Pak Med Assoc. 2019 Apr 1;69(4):527-532.
18. Liu C, Foti K, Grams ME, et al. Trends in self-reported prediabetes and metformin use in the USA: NHANES 2005-2014. J Gen Intern Med. 2020 Jan;35:95-101.
19. Moin T, Li J, Duru OK, et al. Metformin prescription for insured adults with prediabetes from 2010 to 2012: a retrospective cohort study. Ann Intern Med. 2015 Apr 21;162(8):542-548.
20. Katon JG, Reiber GE, Nelson KM. Peripheral neuropathy defined by monofilament insensitivity and diabetes status: NHANES 1999-2004. Diabetes Care. 2013 Jun 1;36(6):1604-1606.
21. Diabetes Prevention Program Research Group. The prevalence of retinopathy in impaired glucose tolerance and recent-onset diabetes in the Diabetes Prevention Program. Diabet Med. 2007 Feb;24(2):137-144.
22. Plantinga LC, Crews DC, Coresh J, et al. Prevalence of chronic kidney disease in US adults with undiagnosed diabetes or prediabetes. Clin J Am Soc Nephrol. 2010 Apr 1;5(4):673-682.
23. American Diabetes Association. 2. Classification and diagnosis of diabetes. Diabetes Care. 2017 Jan 1;40(Supplement_1):S11-S24.
24. Diabetes Prevention Program Research Group. Reduction in the incidence of type 2 diabetes with lifestyle intervention or metformin. N Engl J Med. 2002 Feb 7;346(6):393-403.

Received / Получено 16.01.2025
Revised / Пересмотрено 10.02.2025
Accepted / Принято 20.03.2025

KNOWLEDGE, AWARENESS, AND SELF-CARE PRACTICES OF HYPERTENSION AMONG CARDIAC HYPERTENSIVE PATIENTS LIVING IN JALAL-ABAD, KYRGYZSTAN

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Abstract
Introduction. This study investigates the knowledge, awareness, and self-care practices of hypertension among cardiac hypertensive patients living in Jalal-Abad, Kyrgyzstan, and students of Jalal-Abad State University, hypertension is an important global health challenge, leading to high risk of cardiac and chronic kidney diseases causing death and disabilities: obesity, physical inactivity, and inadequate nutrition.

Methodology
Among many hypertensive patients living in Jalal-Abad Kyrgyzstan, we gathered responses from about 120 patients with the help of a questionnaire method. We write a questionnaire of about 40 questions in English as well as in the Russian language. We also informed all the respondents about the ethical information that we will not use their names or other personal information in our study. All the respondents answer our questionnaire with their own knowledge.

Result and discussions
According to the results, some of the respondents know about their family history of hypertension, 55.0% of respondents think that family history plays a role in hypertension,73% respondents think that obesity is the cause of hypertension, many respondents think that smoking, aging, alcohol and junk food is the cause of hypertension.67.5% of respondents acknowledged that physical activity and 75% think that quitting smoking can help treat hypertension.

Conclusion
The study concludes that hypertension prevalence is increasing worldwide and an estimated 972 million people in the world are suffering from HTN. Incidence rates of hypertension range between 3% and 18% depending on the age, gender, ethnicity, and body size of the population. Mortality from stroke and ischemic heart disease doubles with each 20 mm Hg increase in systolic blood pressure from levels as low as 115mm Hg and with each 10 mm Hg increase in diastolic BP from levels as low as 75 mm Hg.

Keywords: Systolic blood pressure, hypertension, cardiac patients, outpatient department

ЗНАНИЯ, ОСВЕДОМЛЕННОСТЬ И ПРАКТИКА САМОПОМОЩИ В ОТНОШЕНИИ ГИПЕРТОНИИ СРЕДИ ПАЦИЕНТОВ С СЕРДЕЧНОЙ ГИПЕРТОНИЕЙ, ПРОЖИВАЮЩИХ В ДЖАЛАЛ-АБАДЕ, КЫРГЫЗСТАН

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Аннотация
Введение. В этом исследовании изучаются знания, осведомленность и практика самопомощи в отношении гипертонии среди пациентов с сердечной гипертонией,

проживающих в Джалал-Абаде, Кыргызстан, и студентов Джалал-Абадского государственного университета. Гипертония является важной глобальной проблемой здравоохранения, приводящей к высокому риску сердечных и хронических заболеваний почек, приводящих к смерти и инвалидности: ожирению, физической неактивности и неадекватному питанию.

Методология
Среди многих пациентов с гипертонией, проживающих в Джалал-Абаде, Кыргызстан, мы собрали ответы примерно у 120 пациентов с помощью метода анкетирования. Мы пишем анкету из примерно 40 вопросов на английском и русском языках. Мы также проинформировали всех респондентов об этической информации о том, что мы не будем использовать их имена или другую личную информацию в нашем исследовании. Все респонденты отвечают на нашу анкету, используя собственные знания.

Результаты и обсуждения
Согласно результатам, некоторые респонденты знают о наличии у них в семье гипертонии, 55,0% респондентов считают, что семейный анамнез играет роль в гипертонии, 73% респондентов считают, что ожирение является причиной гипертонии, многие респонденты считают, что курение, старение, алкоголь и нездоровая пища являются причиной гипертонии. 67,5% респондентов признали, что физическая активность и 75% считают, что отказ от курения может помочь в лечении гипертонии.

Вывод
Исследование пришло к выводу, что распространенность гипертонии растет во всем мире, и, по оценкам, 972 миллиона человек в мире страдают от гипертонии. Показатели заболеваемости гипертонией колеблются от 3% до 18% в зависимости от возраста, пола, этнической принадлежности и размеров тела населения. Смертность от инсульта и ишемической болезни сердца удваивается с каждым повышением систолического артериального давления на 20 мм рт. ст. с уровня всего 115 мм рт. ст. и с каждым повышением диастолического артериального давления на 10 мм рт. ст. с уровня всего 75 мм рт. ст.

Ключевыеслова:Систолическоеартериальноедавление,гипертония,кардиологические больные, амбулаторное отделение

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Introduction

Hypertension is an important global health challenge because of its high prevalence and resulting cardiovascular disease and chronic kidney disease. Hypertension is the leading preventable risk factor for premature death and disability worldwide [1]. Hypertension prevalence was decreasing; however, recent data suggest that it is again on the rise. In 1999–2002, 28.6% of the U.S. population had hypertension [2] Hypertension prevalence has also been increasing in other countries, and an estimated 972 million people in the world are suffering from this problem. Incidence rates of hypertension range between 3% and 18%, depending on the age, gender, ethnicity, and body size of the population studied [2]. Hypertension (HTN) is a prevalent condition worldwide and a major risk factor for cardiovascular disease. Mortality

from stroke and ischemic heart disease doubles with each 20-mm Hg increase in systolic blood pressure (SBP) from levels as low as 115 mm Hg and with each 10-mm Hg increase in diastolic BP (DBP) from levels as low as 75 mm Hg [3].

Some risk factors for cardiovascular disease such as hypertension have been increasingly prevalent among adolescents and follow the growing trend of cases of overweight, physical inactivity, and inadequate nutrition in this population. Hypertension is a disease related to different causes, in which blood pressure levels remain high for a certain period.

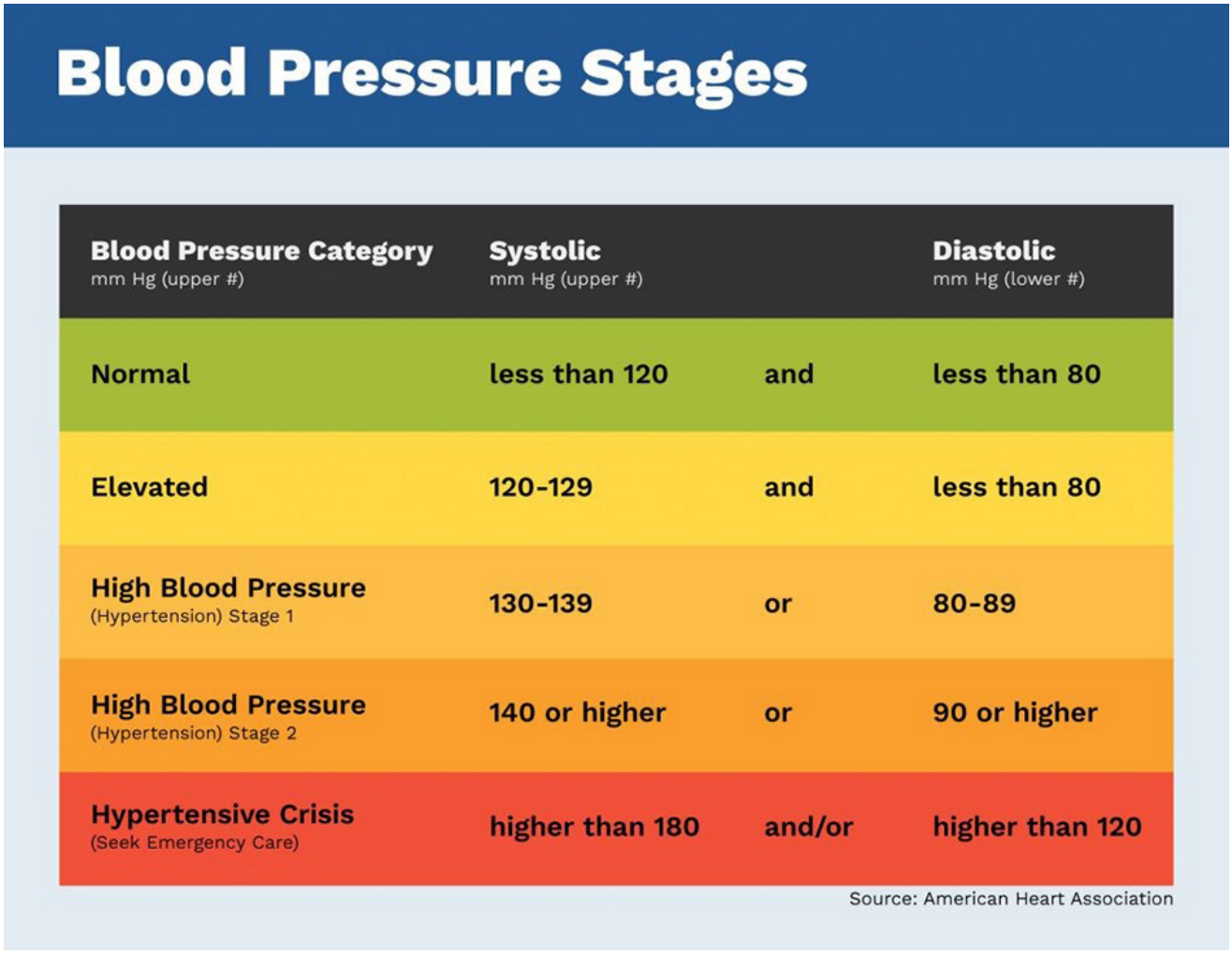
Organs such as the heart, brain, kidneys, and blood vessels are usually affected and undergo changes that may compromise their functions. This condition is also often related to metabolic changes and is one of the most common risk factors for cardiovascular disease. [4] Previous studies have shown that individuals with high blood pressure (BP) in childhood tend to have high BP in adulthood. Understanding the prevalence and risk factors of adolescent hypertension is important. The proportion of children and adolescents with hypertension has increased in the past few decades [5].

Obesity has been posited as the cause of hypertension, but the fact that there are metabolically obese normal-weight (MONW) people, as well as overweight and obese people who are metabolically normal, would argue that there may not be a simple cause-and-effect relationship between them. Moreover, the obesity and hypertension epidemics have arisen concurrently with significant changes in family structures that have resulted in increased consumption of fast foods and prepared foods, and therefore sodium, trans-fats, and high-fructose corn syrup, as well as more automation of activities that formerly required physical labour to accomplish, and a more fast-paced and deadline-driven environment in almost every facet of life [6].

Essential systemic arterial hypertension is a multi-factor disease, in which several different mechanisms are involved, leading to an increase in cardiac output and peripheral vascular resistance. Obesity is the principal risk factor for arterial hypertension. Reducing body mass index (BMI) results in significant reductions in blood pressure levels, and this is one of the pillars of non-pharmacological management of the disease. The prevalence of obesity and overweight has been increasing over the years among adolescents in many parts of the world.

Systemic arterial hypertension is considered a global public health problem, causing 9.4 million deaths every year worldwide. This disorder has a multifactorial aetiology, characterized by a persistent elevation of blood pressure and metabolic alterations, leading to the risk of cardiovascular complications. In adolescence, arterial pressure alterations constitute an important risk factor for the development of arterial hypertension. Moreover, young adults who manifest high-pressure levels tend to keep this condition as adults. Hence, it is important to evaluate the factors contributing to this situation and to promote subsidies for interventions. The investigation of risk factors for cardiovascular diseases, without involving laboratory analyses, can represent a useful method, mainly as an alternative in places with few resources. In this context, the early identification of altered pressure levels is found as an essential tool for reducing the development of these diseases [7].

Numerical findings of blood pressure ranges are given below in the table [8]



Blood Pressure Stages

Blood Pressure Category mm Hg (upper #)	Systolic mm Hg (upper #)		Diastolic mm Hg (lower #)
Normal	less than 120	and	less than 80
Elevated	120-129	and	less than 80
High Blood Pressure (Hypertension) Stage 1	130-139	or	80-89
High Blood Pressure (Hypertension) Stage 2	140 or higher	or	90 or higher
Hypertensive Crisis (Seek Emergency Care)	higher than 180	and/or	higher than 120

Source: American Heart Association

The rise in the prevalence of overweight children and the increased survival rate of subjects with a very low birth weight may predict that the progression of hypertension prevalence in paediatric subjects will continue to aggravate. In 2009 the European Society of Hypertension published recommendations for the management of hypertension in children and adolescents. Prevalence and new diagnoses of hypertension in children and adolescents are increasing. Numerous population studies indicate that a hypertensive condition in childhood raises the probability of being hypertensive in adulthood. In the first years of childhood secondary forms prevail whereas with increasing age primary forms of hypertension become most frequent. Blood pressure values increase progressively until the age of 17–18 years when adult values are reached. This increase is most rapid during the first weeks of life and puberty. Blood pressure values are correlated with gender, height, and body mass. Obesity represents a strong risk factor for the development of child hypertension [9].

Non-contagious diseases including cardiovascular diseases, brain attack, diabetes, cancer, and chronic respiratory diseases are the main causes of death and the burden of diseases in the world. Out of 58,000,000 deaths annually, nearly 35,000,000 cases are because of the mentioned diseases [10]. Among the non-contagious diseases, cardiovascular diseases are the most common ones, and they account for one-fourth of the deaths in the world. Today,

hypertension and its complications comprise a significant health problem in the modern world and are considered precursors to many diseases such as myocardial infarction, stroke, congestive heart failure, advanced chronic kidney disease, and peripheral vascular diseases.

Hypertension is caused by different factors; however, poor nutritional behaviours are among the main factors contributing to this condition. Furthermore, behavioural characteristics such as poor nutrition patterns formed in adolescence cause many complications, such as adulthood mortality. In other words, many healthy and unhealthy behaviours established during this stage manifest themselves as fixed patterns into adulthood. As an adolescent, the individual is now responsible for his nutrition patterns, attitudes, and behaviours, and attitudes tend to play a key role in maintaining a wide range of nutrition habits and behaviours. The physical and psychological changes developed in adolescence make up the adolescent's nutritional health; if these changes are ignored, they will cause adverse consequences such as anorexia and overeating, and the adolescent will become underweight or overweight as a result [10].

Methodology

In our research, we used a questionnaire to collect patient data. Our questionnaire contains various questions related to Socio-demographic characteristics, variables related to Hypertension, medical and family history, and knowledge about hypertension. Researchers visited respondents personally and handed over the questionnaire and they filled it by themselves. After collecting all whole data and responses from the patients, we gathered all the responses with the help of a software SPSS version 26 per analysis, frequencies, means, and standard deviations. We obtained ethical approval from administrative staff before conducting the study. The respondents were informed that their participation was voluntary and that they could stop their participation at any stage in case they felt uncomfortable. The confidentiality of the information obtained was kept and respondent names were not recorded.

Result

1: Information related to socio-demographic characteristics

-	Total Responces (N=120)	Percentages
Age Groups		
15-20	18	10-15%
20-25	23	15-20%
25-30	12	5-10%
30-35	56	40-50%
More than 35	11	5-10%
Marital Status		
Married	45	37.39%
Single	72	60.87%
Others	3	1.74%
Educational Status		
Illiterate	15	12.50%

Medium	54	45%
Literate	51	42.50%
Family Size		
Self	6	5-10%
2-3	12	10-15%
3-4	63	50-60%
More than 5	39	30-40%
Gender		
Male	75	62.50%
Female	44	36.70%
Other	1	0.80%

The age group study participants are 10-15% of 15-20 years, 15-20% of 20-25 years, 5-10% are 25-30 years, 40-50% are 30-35 years and 5-10% are above 35 years of age group. The majority of the participants are male (62.5%) and the rest are females (36.7%) and others (0.8%). According to marital status, 37.39% are married, 60.87% are single and 1.74% are others (widows or widowers). According to educational status, 12.5% are illiterate, 45% have education of middle standard and 42.5% are literate. According to family size, 5-10% are living alone, 10-15% have 2-3 family members, 50-60% have 3-4 family members and 30-40% have more than 5 family members as shown in Table 1.

2. Information Related To Causes, Risk factors, and Prevention of Hypertension

,	Total Responses (N=120)	Percentages
History of HTN		
Yes	38	30.80%
No	82	70.20%
Smoking Status		
Yes	28	23.50%
No	92	76.50%
Current Smoking Status		
Current smoker	10	8.30%
Former smoker	21	17.50%
Doesn't smoke	89	74.20%
History of Kidney disease		
Yes	17	14.20%
No	103	85.80%
Eating habit		
Healthy food	34	28.30%
Junk/ Fast food	10	8.30%

Mixed	76	63.30%
Alcohol use		
No	97	80.83%
Daily	2	1.67%
Sometime	10	8.33%
2-3 times per week	11	9.17%
Medication Routine		
Yes	36	30%
No	64	53.30%
Sometime	20	16.70%
Advancing age as a risk factor for HTN		
Yes	43	35.83%
No	77	64.17%

According to respondents' information related to causes, risk factors, and prevention of HTN, 30.8% of respondents said family history is a cause and risk factor of HTN and 70.2% of respondents said family history doesn't play any role in HTN. In this study, 23.5% of respondents are a smoker 76.5% of participants are non-smokers, 14.2% of participants have a history of kidney disease and 85.8% don't have any kind of history of kidney disease. According to the eating habits of respondents, 28.3% of participants take healthy food in their diet, 8.3% of respondents take fast/junk food in their daily meals and 63.3% of respondents take mixed food in their daily meals. 80.83% of our respondents don't take alcohol, 1.67% of respondents take alcohol daily, 8.33% of participants take alcohol sometime on some occasion and 9.17% of participants take alcohol 2-3 times per week. According to medication routine 30% of our respondents takes medicines daily, 53.3% of participants don't take any kind of medicines daily and 16.7% of participants takes medicines sometime in an emergency situation. According to respondents knowledge about advancing age as a risk factor or a cause og HTN, 35.83% of particopants said yes advancing age can cause HTN and 64.17% of respondents said no advancing age is not a risk factor or a cause of HTN as shown in Table 2.

3. Information Related To Information and Communication To Hypertension

,	Total Responses (N=120)	Percentages
Role of family history in HTN		
Yes	66	55%
No	54	45%
Role of obesity in HTN		
Yes	88	73.30%
No	32	26.70%
Role of smoking in HTN		
Yes	78	65%

No	42	35%
Role of stress in HTN		
Yes	93	77.50%
No	27	22.50%

As a result of respondents about information and communication to HTN, 55% of respondents said family history plays a role in HTN and 45% of participants said family history don't play any role in HTN. Now according to their knowledge about role of obesity in HTN, 73.3% respondents said obesity plays role in cause of HTN and 26.7% respondents said obesity don't play any role in HTN. 65% and 77.5% of respondents said smoking and taking stress respectively plays role in HTN but 35% and 22.5% of participants said smoking and taking stress don't play any role in HTN respectively as shown in Table 3.

4. Information Related To Attitude and Behaviour Towards Examination and Medications

,	Total Responses (N=120)	Percentages
Quitting Smoking		
Yes	90	75%
No	30	25%
Physical Exercise		
Yes	81	67.50%
No	39	32.50%
Good Mental Health		
Yes	83	69.17%
No	37	32.83%
Doctor's Guidance		
Yes	103	85.80%
No	17	14.20%

This study gives information related to attitude and behaviour towards examination and medication of HTN. 75% of respondents said quitting smoking is helpful in treating HTN but 25% of the respondents said quitting smoking is not helpful in treating HTN. 67.5% and 69.17% of respondents said physical exercise and good mental health plays role in treating HTN respectively and 32.5% and 32.83% of respondents said physical exercise and good mental health don't play any role in treating HTN respectively. In the end, 85.8% of respondents said Doctor's guidance is helpful in treating HTN and 14.2% respondents said Doctor's guidance is not helpful in treating HTN as shown in Table 4.

Discussion

By the result of all our study, we got data from 120 participants in which 62.5% are male, 36.7% are female and 0.8% others, but the study done by Muhammad Bilal, et al, 2015, they got data from 664 participants out of which 422 are male and 242 are female. The age group of our respondents are 10-15% of 15-20 years, 15-20% of 20-25 years, 5-10% of 25-30 years,

40-50% of 30-35 years an 5-10% of age more than 35 years, whereas, the study done by Muhammad Bilal, et al, 2015, the mean age of participants was 54.4±12.5 years. In our study, the educational status of the respondents is 12.5% are illiterate, 45% have education status of middle standard and 42.5% are literate, whereas, the study done by Muhammad Bilal, et al, 2015, 54.7% patients were either illiterate or with level of education less than Matriculation and 20% are labour by profession [11].

In our study, the family size of respondents is, 5-10% live alone, 10-15% have family size of 2-3 members, 50-60% have family size of 3-4 members and 30-40% have family size of more than 5 members while the study done by Geeta K Satyal, et al, 2020, 50.9% respondents have joint family and 49.1% respondents lives in a house with only one family. In our research, 30.8% respondents have history of HTN and 70.2% respondents don't have any history of HTN, while according to study done by Geeta K Satyal, et al, 2002, 48% of patients have family history of HTN and 53.3% respondents don't have any history of HTN. In our research, 23.5% of respondents are smokers in which 8.3% are current smokers, 17.5% are former smokers and 19.17% of respondent's intake alcohol daily or 2-3 times per week or only on some occasions, while the study done by Geeta K Satyal, et al, 2020, 29.2% of respondents are smokers, 30.7% of respondents uses alcohol [12].

In our study, 14.2% of the respondents have some kidney diseases associated with HTN and 85.8% of participants don't have any kidney disease associated with HTN. But according to the study done by Rmeya Kazancioglu, et al, 2013, 37.3% of their respondents have kidney diseases related to HTN and 72.7% don't have any kidney diseases associated by HTN. In our study, many respondents are obese due to their eating habit, 28.3% of the respondents take healthy food in their diet, 8.3% of respondents take junk/fast food in their meal and 63.3% take mixed (healthy/junk food) in their meal, but by the study of Rumeyza Kazancioglu, et al, 2013, two-third of respondents are obese and rest have normal BMI [13].

In our study, 55% of respondents have point of view that family history plays role in HTN, 73.3% respondents said obesity also plays a role in HTN, 65% of respondents said smoking and 77.5% said stress are the risk factors for HTN, but by the study done by Selladurai Pirasath, et al, 2021, 70.6% of respondents said obesity is a risk factor for HTN, 69.9% said smoking is a risk factor for HTN and 62.7% said stress also takes part in risk factor for HTN [14].

In our study, 75% of respondents have knowledge that quitting smoking can help to cure HTN, 67.5% have point of view that doing physical exercise regularly can help to cure HTN, 69.17% have opinion that good mental health can also cure HTN and 85.8% said Doctor's guidance can cure HTN, but from the study of Qianfeng Yang, et al, 2024, 77.4% of respondents said quitting smoking can help to reduce HTN, 89.3% of respondents have point of view that doing physical exercise daily can cure HTN, 94.5% said good mental health and almost all respondents said Doctor's guidance can help to cure HTN [15].

Conclusion

Study concludes that hypertension prevalence is increasing worldwide and an estimated 972 million people in the world are suffering from HTN. Incidence rates of hypertension range between 3% and 18% depending on the age, gender, ethnicity and body size of the population. Mortality from stroke and ischemic heart disease doubles with each 20 mm Hg increase in systolic blood pressure from levels as low as 115mm Hg, and with each 10 mm Hg increase in diastolic BP from levels as low as 75 mm Hg.

In our point of view, by doing physical exercise, eating healthy food, quitting smoking and alcohol can help many people to deal with HTN. Good and healthy environment helps to get rid of HTN.

References

1. Silva TS da, Neves Júnior MP. Overview of Morbidity and Mortality from Diabetes Mellitus and Systemic Arterial Hypertension in the State of Bahia, Brazil, between 2010-2022. Rev Bras Med Fam Comunidade. 2025 Feb.19(46):4458. https://doi.org/10.5712/rbmfc19(46)4458
2. Hajjar I, Kotchen JM, Kotchen TA. Hypertension: trends in prevalence, incidence, and control. Annu Rev Public Health. 2006;27:465-90. https://doi.org/10.1146/annurev.publhealth.27.021405.102132
3. Lee K, Kim BS, Jeon J, Shin DW, Lee JE, Huh W, Han KD, Jang HR. Resolution of hypertension after kidney transplantation is associated with improved kidney transplant outcomes: a nationwide cohort study. J Hypertension. 2025;43(3):529-537. https://doi.org/10.1097/HJH.0000000000003938
4. Drozdz D, Alvarez-Pitti J, Wójcik M, Borghi C, Gabbianelli R, Mazur A, Herceg-Čavrak V, Lopez-Valcarcel BG, Brzeziński M, Lurbe E, Wühl E. Obesity and cardiometabolic risk factors: from childhood to adulthood. Nutrients. 2021;13(11):4176. https://doi.org/10.3390/nu13114176
5. Jing G, Liu X, Shi J, Xue J, Peng H, Shi H. Joint trajectories of lifestyle indicators and their associations with blood pressure among Chinese middle school students. Nutrients. 2024;16(17):2994.https://doi.org/10.3390/nu16172994
6. Ewald DR, Haldeman LA. Risk factors in adolescent hypertension. Glob Pediatr Health. 2016;3:1-7. https://doi:10.1177/2333794X15625159
7. Moura IH, Vieira EES, Silva GRF, Carvalho RBN, Silva ARV. Prevalence of hypertension and its risk factors in adolescents. Acta Paulista De Enfermagem. 2015 Jan;28(1):81-6. https://doi.org/10.1590/1982-0194201500014
8. https://www.heart.org/en/health-topics/high-blood-pressure/understanding-blood-pressure-readings
9. Spagnolo A, Giussani M, Ambruzzi AM, et al. Focus on prevention, diagnosis and treatment of hypertension in children and adolescents. Italian Journal of Pediatrics. 2013;39:20 https://doi.org/10.1186/1824-7288-39-20
10. Matlabi M, Esmaeili R, Moshki M, et al. The status and predictors of hypertension preventive nutritional behaviors in adolescents based on the constructs of the Theory of Planned Behavior. Electron Physician. 2018;10(1):6223-6230 https://doi.org/10.19082/6223
11. Bilal M, Haseeb A, Lashkerwala SS, et al. Knowledge, awareness and self-care practices of hypertension among cardiac hypertensive patients. Glob J Health Sci. 2015 Jun 1;8(2):9-19. doi:10.5539/gjhs.v8n2p9.
12. Satyal GK, Rai L, Gautam R, Dangol BK, Shakya R. Knowledge and Self-Care Practice on Hypertension among Hypertensive Patients in a Tertiary Level Hospital of Kathmandu. Journal of Institute of Medicine. 2020 Aug. 31;42(2):10-5. https://nepjol.info/index.php/JIOM/article/view/37528
13. Kazancioğlu R. Risk factors for chronic kidney disease: an update. Kidney Int Suppl. 2013;3(4):368-371. https://doi.org/10.1038/kisup.2013.79.
14. Pirasath S, Sundaresan T. Descriptive cross-sectional study on knowledge, awareness and adherence to medication among hypertensive patients in a tertiary care center, Eastern Sri Lanka. SAGE Open Medicine. 2021;9. https://doi.org/10.1177/20503121211012497
15. Yang Q, Xu L, Gao Q, Gao Z. Control of pulse pressure and factors affecting it among the geriatric population suffering from hypertension within the community. Reviews in Cardiovascular Medicine. 2025;26(2):26156. https://doi.org/10.31083/RCM26156

Received / Получено 16.01.2025
Revised / Пересмотрено 10.02.2025
Accepted / Принято 20.03.2025

COMPREHENSIVE ANALYSIS OF URINARY TRACT INFECTIONS: ETIOLOGY, RISK FACTORS, ANTIBIOTIC RESISTANCE TRENDS, AND PREVENTIVE STRATEGIES FOR IMPROVED PATIENT OUTCOMES IN JALALABAD, KYRGYZSTAN

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Abstract
Urinary Tract Infection (UTI) is a common health issue, particularly among women, often leading to significant morbidity if left untreated. It presents a global health challenge, with substantial impacts on the quality of life and healthcare systems. The study aims to analyze the prevalence, risk factors, and clinical outcomes of Urinary tract infection, focusing on resistance and sensitivity of different drugs toward different causative agent.

Methods and methodology: This is a retrospective cross-sectional study using data from hospital records describing the prevalence of Urinary tract infection, it's causative agent and the drugs were sensitive and resistant to in the reported cases of UTI in Jalalabad Regional Clinical Hospital. Data was collected from March 2024 till November 2024.

Objective: The study intends to identify the risk factors, demographic trends, and focusing on resistance and sensitivity of different drugs toward different causative agent in the target population. This topic is vital as Urinary tract infection remains a leading cause of morbidity worldwide, affecting millions annually.

Results: The total of 156 data were collected from Jalalabad Regional Clinical Hospital which shows that the causative agent in most of the cases was found to be Escherichia. Coli, Klebsiella, Candida albicans, Pseudomonas and Staphylococcus aureus. Out of which Escherichia. coli has the highest prevalence rate. It was found that E. coli is resistive to Amoxicillin is the most and is highly sensitive to Meropenem in the patients of Jalalabad Regional Clinical Hospital.

Conclusion
This comprehensive analysis highlights the complexity of urinary tract infections in Jalalabad, Kyrgyzstan. The findings underscore the need for enhanced antibiotic stewardship, improved infection control practices, public awareness campaigns and good hygiene as personal hygiene is crucial in preventing Urinary tract infections, it prevents bacteria from entering the urinary tract, reduces bacterial growth, and minimizes irritation. Implementing preventive strategies and evidence-based guidelines can improve patient outcomes and combat antibiotic resistance. Effective management of UTIs requires a multi-faceted approach. By addressing these challenges, we can promote better health outcomes for the people of Jalalabad.

Keywords: Antibiotic resistance, UTI, antibiotic susceptibility, bacteria

КОМПЛЕКСНЫЙ АНАЛИЗ ИНФЕКЦИЙ МОЧЕВЫВОДЯЩИХ ПУТЕЙ: ЭТИОЛОГИЯ, ФАКТОРЫ РИСКА, ТЕНДЕНЦИИ УСТОЙЧИВОСТИ К АНТИБИОТИКАМ И ПРОФИЛАКТИЧЕСКИЕ СТРАТЕГИИ ДЛЯ УЛУЧШЕНИЯ РЕЗУЛЬТАТОВ ЛЕЧЕНИЯ ПАЦИЕНТОВ В ДЖАЛАЛ-АБАДЕ, КЫРГЫЗСТАН

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Аннотация
Инфекция мочевыводящих путей (ИМП) является распространенной проблемой здравоохранения, особенно среди женщин, часто приводящей к значительной заболеваемости, если ее не лечить. Она представляет собой глобальную проблему здравоохранения, оказывая существенное влияние на качество жизни и системы здравоохранения. Целью исследования является анализ распространенности, факторов риска и клинических результатов инфекции мочевыводящих путей, уделяя особое внимание резистентности и чувствительности различных препаратов к различным возбудителям.

Методы и методология
Это ретроспективное поперечное исследование с использованием данных из больничных записей, описывающих распространенность инфекции мочевыводящих путей, ее возбудителя и препараты, к которым были чувствительны и устойчивы в зарегистрированных случаях ИМП в Джалал-Абадской областной клинической больнице. Данные собирались с марта 2024 года по ноябрь 2024 года.

Цель
Исследование направлено на выявление факторов риска, демографических тенденций и сосредоточение внимания на резистентности и чувствительности различных препаратов к различным возбудителям в целевой популяции. Эта тема имеет важное значение, поскольку инфекция мочевыводящих путей остается основной причиной заболеваемости во всем мире, ежегодно поражая миллионы людей.

Результаты
Всего было собрано 156 данных из Джалал-Абадской областной клинической больницы, которые показывают, что возбудителем в большинстве случаев были Escherichia. Coli, Klebsiella, Candida albicans, Pseudomonas и Staphylococcus aureus. Из которых Escherichia. coli имеет самый высокий показатель распространенности. Было обнаружено, что E. coli, устойчивая к амоксициллину, является наиболее и высокочувствительной к меропенему у пациентов Джалал-Абадской областной клинической больницы.

Заключение
Этот комплексный анализ подчеркивает сложность инфекций мочевыводящих путей в Джалал-Абаде, Кыргызстан. Результаты подчеркивают необходимость усиления контроля антибиотиков, улучшения методов контроля инфекций, кампаний по информированию общественности и хорошей гигиены, поскольку личная гигиена имеет решающее значение для профилактики инфекций мочевыводящих путей, она предотвращает попадание бактерий в мочевыводящие пути, снижает рост бактерий и минимизирует раздражение. Внедрение профилактических стратегий и основанных на фактических данных рекомендаций может улучшить результаты лечения пациентов и бороться с устойчивостью к антибиотикам. Эффективное лечение ИМП требует

многогранного подхода. Решая эти проблемы, мы можем способствовать улучшению результатов лечения для жителей Джалал-Абада.

Ключевые слова: устойчивость к антибиотикам, UTI, восприимчивость к антибиотикам, бактерии

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Introduction

Urinary tract infection (UTI) is an infection that affects any part of the urinary system, which includes the kidneys, ureters, bladder, and urethra. Most UTIs involve the lower urinary tract, particularly the bladder and urethra. [1]

UTIs are primarily caused by bacteria, particularly Escherichia coli (E. coli), which normally live in the intestines but can enter the urinary system. Common organisms that cause UTI are Staphylococcus aureus, Klebsiella pneumoniae, Streptococcus pneumoniae, Acinetobacter baumannii, and Pseudomonas aeruginosa. Other microorganisms like viruses or fungi can also cause UTI.

Urinary tract infection (occasionally called UTI infection) is a collective term given to various bacterial infections that occur in the urinary tract. One of the most commonly occurring diseases on the planet, the UTI causing organisms have the potential to invade adjacent tissues and/ or result in kidney complications. As such, the most common manifestation of UTI infection is acute cystitis, which is far more prevalent among women than men [2].

The symptoms of recurrent UTI include pain or burning during urination, fever and chills, nausea, vomiting, frequent urination, cloudy urine, strong-smelling urine, hematuria, pelvic and abdominal pain. Risk factors for recurrent UTI include diabetes, kidney stones, multiple sex partners, urinary catheterization, urinary retention, pregnancy, poor hygiene, dehydration, menopause, weaken immune system, urinary tract abnormalities, use of certain medications or chemotherapy treatments and having an enlarged prostate gland.

According to the research done in Mumbai, India: The overall prevalence of UTI was 33.54% of which 66.78% were females and 33.22% were from males. High prevalence was observed in females as compared to males (2:1). Though the overall prevalence was high in old aged (>45 years) patients, in female high prevalence was seen among middle-aged (31 to 45 years) patients and in male high prevalence was seen among old age (>45 years) patients [3].

Urinary tract infections (UTIs) are prevalent in Pakistan, with studies reporting varying rates. A systematic review covering the past decade found that UTIs constitute 16.1% of all clinical diagnoses in the country [4].

Methods and methodology

This is a retrospective cross-sectional study using data from hospital records describing the prevalence of Urinary tract infection, it's causative agent and the drugs that they are sensitive and resistant to, in the reported cases of Urinary tract infection in Jalalabad Regional Clinical Hospital. Data was collected from March 2024 till November 2024.

Results

There was total 156 data which were collected from Jalalabad Regional Clinical Hospital, pediatric department from March 2024 to November 2024 and some of the data was collected from Nephrology Department. The result of the data is as follow:

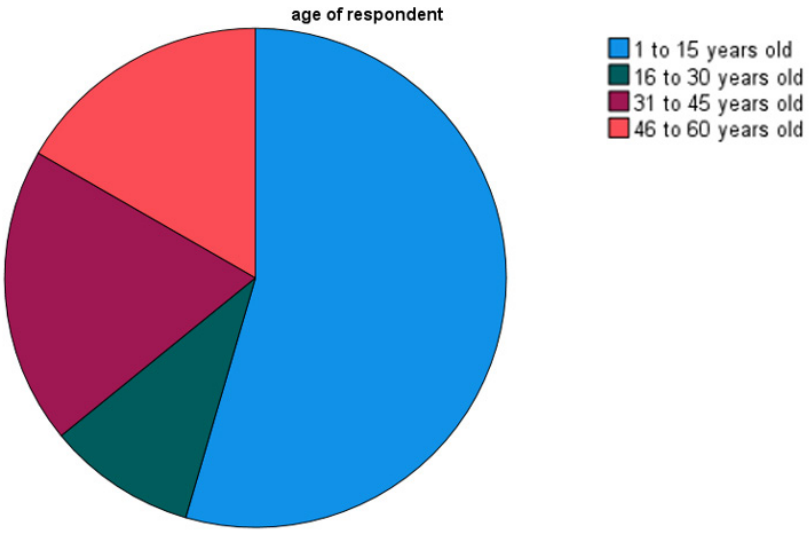


Figure 1: Showing distribution of respondents according to their age

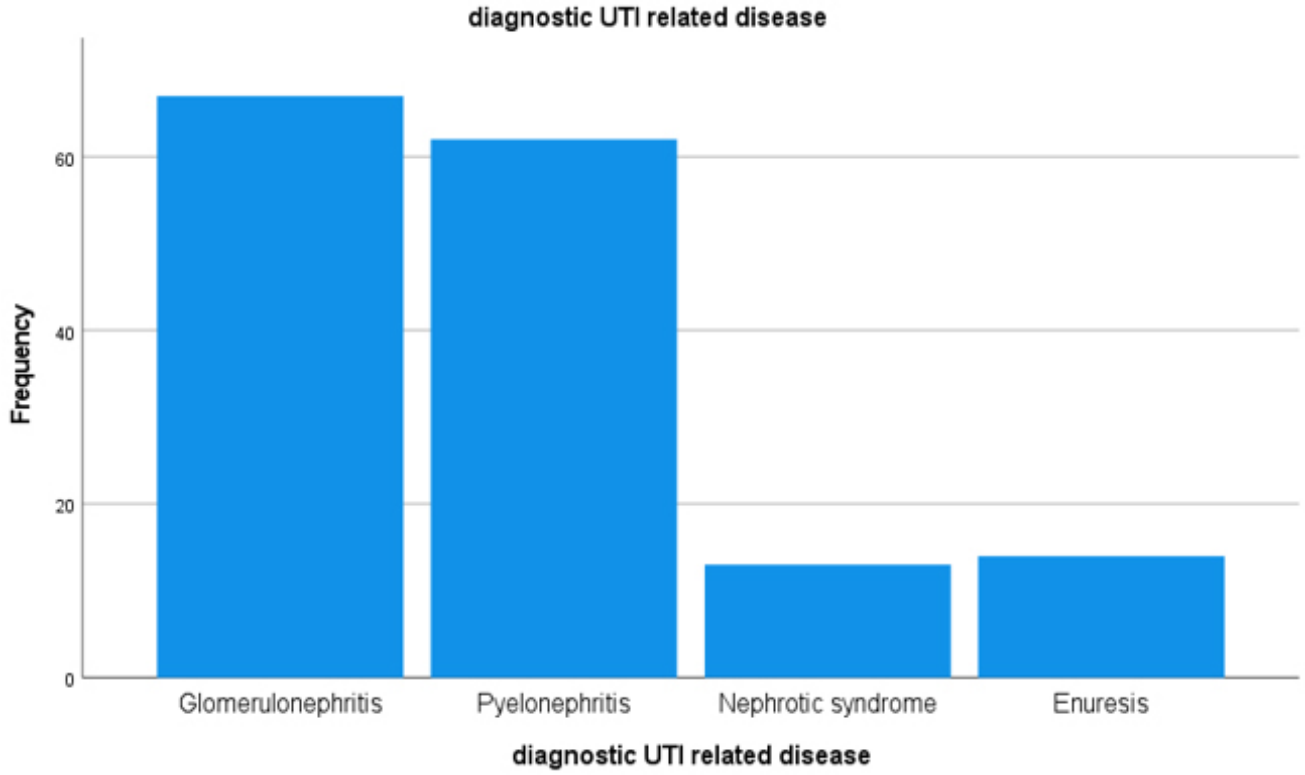
This age distribution shows that the majority of respondents (54.5%) are between 1-15 years old, followed by 31-45 years old (19.2%), 46-60 years old (16.7%), and the smallest group being 16-30 years old (9.6%).

• *Table 1: Showing gender of respondents*

	N	%
Male	54	34.6%
Female	102	65.4%

The gender distribution of respondents shows a significant majority of females (65.4%) compared to males (34.6%). Out of the total respondents, 102 were female and 54 were male, indicating that nearly two-thirds of the respondents were female, while about one-third were male.

The diagnostic results show that among Urinary tract infection-related diseases, Glomerulonephritis is the most common, affecting 42.9% of the respondents (67 cases). Pyelonephritis follows closely, accounting for 39.7% of the cases (62 respondents). Nephrotic syndrome and Enuresis are less prevalent, affecting 8.3% (13 cases) and 9.0% (14 cases) of the respondents, respectively.



Graph 1: Showing diagnosis of urinary tract infection related disease

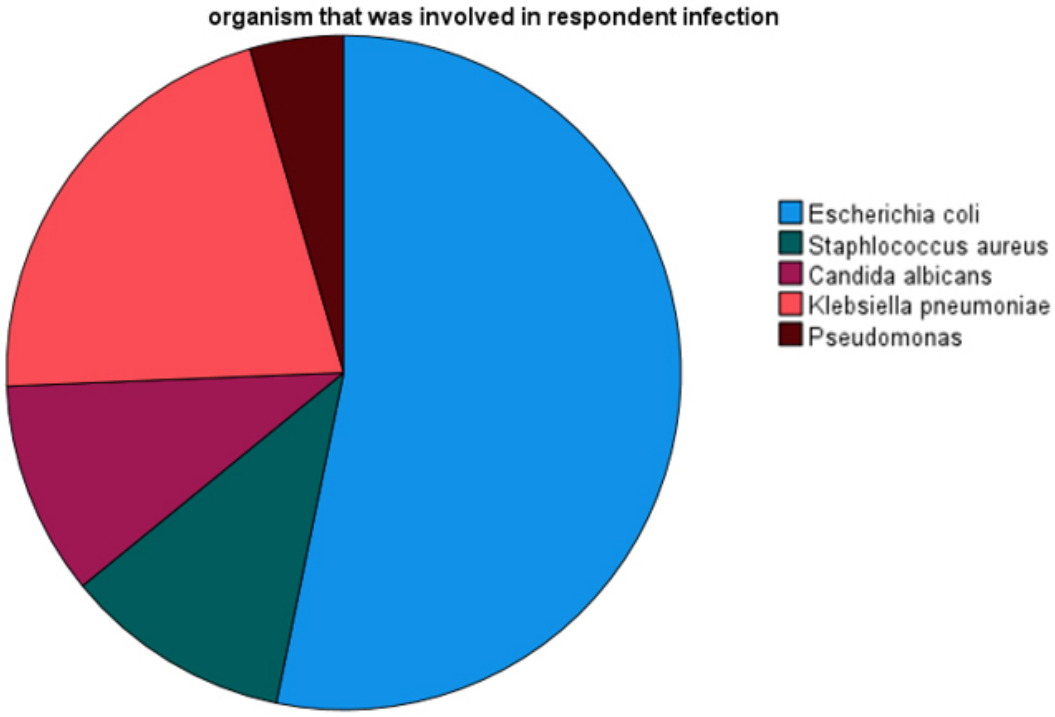


Figure 2: Showing organisms involved in respondent infection

The results show that Escherichia coli (E. coli) was the most common organism responsible for the respondents' infections, accounting for 53.2% of the cases (83 respondents). Klebsiella pneumoniae was the second most prevalent, involved in 21.2% of the cases (33 respondents). Staphylococcus aureus, Candida albicans, and Pseudomonas were less common, responsible for 10.9% (17 cases), 10.3% (16 cases), and 4.5% (7 cases) of the infections, respectively.

The results show that E. coli exhibited resistance to various antibiotics. Amoxicillin had the highest resistance rate, with 23.1% of the cases (36 respondents) showing resistance. Trimethoprim and Ceftazidime followed, with resistance rates of 14.1% (22 cases) and 10.3% (16 cases), respectively. Nitrofurantoin had the lowest resistance rate, at 5.8% (9 cases). Notably, 46.8% of the cases (73 respondents) had missing data on antibiotic resistance.

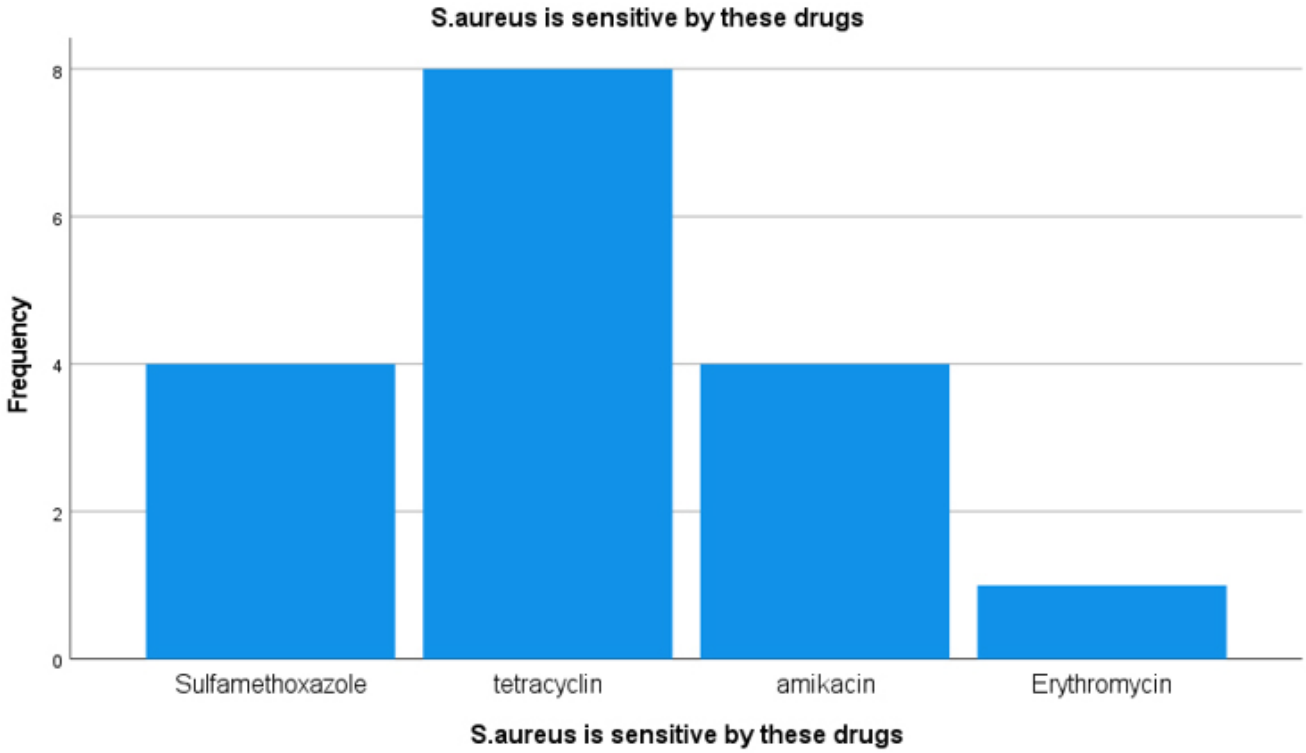
The results indicate that E. coli showed sensitivity to various antibiotics. Meropenem had the highest sensitivity rate, with 21.2% of the cases (33 respondents) showing sensitivity. Amoxicillin, Amikacin, and Imipenem followed, with sensitivity rates of 12.8% (20 cases), 12.8% (20 cases), and 6.4% (10 cases), respectively. However, a significant proportion of cases (46.8%, 73 respondents) had missing data on antibiotic sensitivity.

• *Table 2: Resistance pattern of E. coli.*

	N	%
Ceftazidime	16	10.3%
Nitrofurantoin	9	5.8%
Amoxicillin	36	23.1%
Trimethoprim	22	14.1%

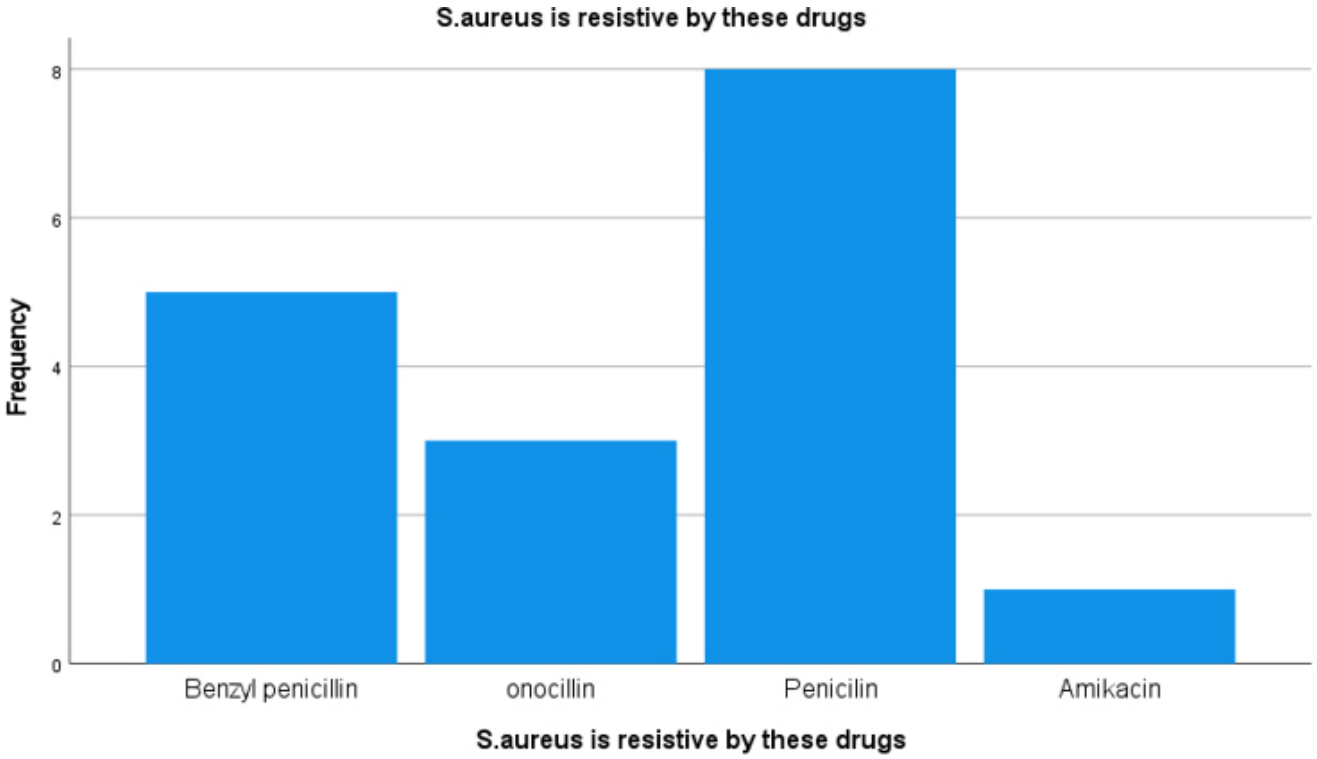
• *Table 3: Sensitivity pattern of E. coli*

	N	%
Amoxicillin	20	12.8%
Meropenem	33	21.2%
Amikacin	20	12.8%
Imipenem	10	6.4%



Graph 2: Sensitivity pattern of S. aureus

Staphylococcus aureus (S. aureus) demonstrated sensitivity to several antibiotics. Tetracycline was the most effective, with 8 cases (5.1%) showing sensitivity. Sulfamethoxazole and Amikacin were effective in 4 cases each (2.6%), while Erythromycin was effective in only 1 case (0.6%).



Graph 3: Resistance pattern of S. aureus

Staphylococcus aureus (S. aureus) exhibited resistance to several antibiotics. Penicillin had the highest resistance rate, with 8 cases (5.1%) showing resistance. Benzyl penicillin followed, with 5 cases (3.2%) resistant. Oxacillin had a resistance rate of 1.9% (3 cases), while Amikacin had the lowest resistance rate, at 0.6% (1 case).

Klebsiella pneumoniae demonstrated sensitivity to various antibiotics. Meropenem was the most effective, with 12 cases (7.7%) showing sensitivity. Nitrofurantoin followed, with 6 cases (3.8%) sensitive. Cefuroxime and Imipenem had lower sensitivity rates, with 3 cases (1.9%) and 2 cases (1.3%) showing sensitivity, respectively

Klebsiella pneumoniae exhibited resistance to several antibiotics. Amoxicillin had the highest resistance rate, with 11 cases (7.1%) showing resistance. Levofloxacin followed, with 7 cases (4.5%) resistant. Cefuroxime and Aztreonam had lower resistance rates, with 3 cases (1.9%) each showing resistance.

• Table 4: Sensitivity pattern of Klebsiella pneumoniae

	N	%
Nitrofurantoin	6	3.8%
Meropenem	12	7.7%
Cefuroxime	3	1.9%
Imipenem	2	1.3%

• Table 5: Resistance pattern of K. pneumoniae

	N	%
Amoxicillin	11	7.1%
Levofloxacin	7	4.5%
Cefuroxime	3	1.9%
Aztreonam	3	1.9%

Discussion

Urinary tract infections (UTIs) are common bacterial infections, primarily caused by Escherichia coli, that affect the bladder, urethra, or kidneys, with women being at higher risk due to anatomical factors. Symptoms include painful urination, frequent urges to urinate, and cloudy or foul-smelling urine. The latest data on Urinary Tract Infections (UTIs) from the World Health Organization (WHO) [1] reveals some alarming trends. According to the Global Burden of Disease Study 2019, there were approximately 404.61 million cases of UTIs worldwide in 2019, resulting in 236,790 deaths.

Retrospective cross-sectional study done in Jalalabad study Regional Clinical Hospital done from March 2024 to November 2024 describing the prevalence of UTI, it's causative agent and the drugs sensitivity and resistivity shows that out of total 156 data we collected cases majority 54.5% of the patients were from age group 1 - 15 years followed by 9.6% of them were in age group 16 to 30 years. Remaining 19.2 % and 16.7 % were in between age group 31 to 45 years and 46 to 60 years respectively. But according to results of study done in Korea, Taiwan and Japan collectively shows that the risk of UTI during the first decade of life is 1% in males and 3% in females [5]. Another cross-sectional study done in morogora Tanzania shows: The prevalence of UTIs was 41% (141/344) and elders (>=60 years) had five times higher odds of having UTI as compared to adolescents ($p < 0.001$) [6].

Regarding the gender 34.6% (54) of respondents were males and 65.4 % (102) were females. The diagnostic UTI related diseases which were mainly Glomerulonephritis, pyelonephritis, nephrotic syndrome and enuresis their percentage was 42.9%, 39.7%, 8.3% and 9.0% respectively.

Urinary tract infections (UTIs) are a severe public health problem and are caused by a range of pathogens, but most commonly by Escherichia coli, Klebsiella pneumoniae, Proteus mirabilia [7] as per study done in Jalalabad Regional Clinical Hospital the organisms involved in respondent infection the most likely organism to cause infection was E. Coli with percentage of 53.2% and least infection causing organism was Pseudomonas (4.5 %). Similarly, according to a research conducted in Europe The six most commonly isolated micro-organisms were, in decreasing order: Escherichia coli (35.6%), Enterococci (15.8%), Candida (9.4%), Klebsiella (8.3%), Proteus (7.9%) and Pseudomonas aeruginosa (6.9%). Pseudomonas was isolated more frequently in non-EU countries [8].

Antibiotics with high percentages of resistance were trimethoprim sulfamethoxazole (50%), followed by third-generation quinolones with similar percentages, ciprofloxacin (38.2%), levofloxacin (36.7%) and norfloxacin 36.5%). The most resistant antibiotic in this study was amoxicillin plus clavulanic acid (33.9%). According to the sensitivity profiles, the most effective antibiotics were fosfomycin (68.9%), amikacin (68.4%), nitrofurantoin (62.5%), gentamicin (60.5%) and ceftriaxone (50.1) [9]. Regarding the drugs sensitivity and resistivity according to the data collected from Jalalabad Regional Clinical Hospital, E. Coli was most resistive by Ceftazidime (10.3%) and sensitive by amoxicillin (12.8%). Similarly, S. aureus was sensitive by sulfamethoxazole (2.6%) and resistive by benzyl penicillin (3.2%). Candida albicans was sensitive by sulfamethoxazole (1.3%) and resistive by benzyl penicillin (1.3%). Klebsiella was most sensitive by nitrofurantoin (3.8%) and resistive by amoxicillin (7.1%). As per cross-sectional study done in Iran, it is shown that the most common pathogen causing UTIs is Escherichia coli with 62%. The resistance among the isolates of E. coli was as follows: ampicillin (86%), amoxicillin (76%), tetracycline (71%), trimethoprim-sulfamethoxazole (64%), cephalexin (61%), and cefalothin (60%). The highest sensitivity among isolates of E.

coli was as follows: Imipenem (86%), nitrofurantoin (82%), amikacin (79%), chloramphenicol (72%), and ciprofloxacin (72%) [9].

Recommendations

To mitigate the incidence of Urinary Tract Infections (UTIs) and the emergence of antibiotic-resistant strains, a multifaceted approach is warranted. Firstly, adherence to proper hygiene practices, including correct wiping techniques and genital area cleansing, is essential. Additionally, promoting adequate hydration through evidence-based guidelines can facilitate the flushing of bacteria from the urinary tract. Implementation of antibiotic stewardship programs, incorporating judicious prescribing practices and regular surveillance of resistance patterns, is crucial to curtail the development of antibiotic-resistant bacteria. Furthermore, development and periodic updating of Urinary tract infection management guidelines, informed by local epidemiological data and susceptibility profiles, can optimize treatment outcomes. Lastly, patient education initiatives emphasizing preventive measures, such as avoidance of irritant foods and stress management techniques, can empower individuals to reduce their risk of Urinary tract infections. By adopting these evidence-based recommendations, healthcare providers can contribute to a reduction in the incidence of Urinary tract infections and the emergence of antibiotic-resistant strains.

References

1. Urinary tract infection (UTI). Available from: https://www.mayoclinic.org/diseases-conditions/urinary-tract-infection/symptoms-causes/syc-20353447#:~:text=A%20urinary%20tract%20infection%20(UTI,a%20UTI%20than%20are%20men.
2. Pace Hospitals. General information on UTI. Available from: https://www.pacehospital.com/urinary-tract-infection-symptoms-causes-complications-prevention-and-treatment.
3. Pardeshi P. Prevalence of urinary tract infections and current scenario of antibiotic susceptibility pattern of bacteria causing UTI. Indian J Microbiol Res. 2018;5(3):334-338.
4. Bullens M, de Cerqueira Melo A, Raziq S, et al. Antibiotic resistance in patients with urinary tract infections in Pakistan. Public Health Action. 2022 Mar 21;12(1):48-52.
5. Chen Z, Li N, Chen Z, et al. Computer-assisted decision support for the usage of preventive antibacterial therapy in children with febrile pyelonephritis: A preliminary study. Heliyon. 2024 May 30;10(10):e11239.
6. Mlugu EM, Mohamedi JA, Sangeda RZ, Mwambete KD. Prevalence of urinary tract infection and antimicrobial resistance patterns of uropathogens with biofilm forming capacity among outpatients in Morogoro, Tanzania: a cross-sectional study. BMC Infect Dis. 2023 Oct 5;23(1):660.
7. Flores-Mireles AL, Walker JN, Caparon M, Hultgren SJ. Urinary tract infections: epidemiology, mechanisms of infection, and treatment options. Nat Rev Microbiol. 2015 May;13(5):269-284.
8. Bouza E, San Juan R, Munoz P, et al. A European perspective on nosocomial urinary tract infections I. Report on the microbiology workload, etiology and antimicrobial susceptibility (ESGNI– 003 study). Clin Microbiol Infect. 2001 Oct;7(10):523-531.
9. Zúniga-Moya JC, Bejarano-Cáceres S, Valenzuela-Cervantes H, et al. Antibiotic sensitivity profile of bacteria in urinary tract infections. Acta Méd Costa Rica. 2016 Dec;58(4):146-154.

Received / Получено 16.01.2025
Revised / Пересмотрено 10.02.2025
Accepted / Принято 20.03.2025

BULLOSIS DIABETICORUM COMPLICATED BY SECONDARY INFECTION AND NECROSIS IN A 29-YEAR-OLD MALE WITH NEWLY DIAGNOSED DIABETES MELLITUS: A CASE REPORT

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Abstract
Bullosis diabeticorum (BD) is a rare cutaneous manifestation of diabetes mellitus characterized by spontaneous bullous eruptions, predominantly on the extremities. This report describes a 29-year-old male car driver from Dubai who presented with pruritus on the right foot, progressing to vesicles, papules, pustules, bullae, and eventual necrosis despite multiple interventions. The condition was complicated by secondary infection and swelling, with laboratory findings revealing mild leukocytosis, eosinophilia, and elevated HbA1c, confirming newly diagnosed diabetes mellitus. Multidisciplinary management involving antimicrobial therapy, antifungal agents, wound care, and lifestyle modifications led to clinical improvement and glycemic stabilization. This case underscores the potential for BD to progress to necrosis in poorly controlled diabetes and highlights the importance of early diagnosis and comprehensive management.

Keywords: Bullosis diabeticorum, diabetic foot, bullous lesions, necrosis, diabetes mellitus

ДИАБЕТИЧЕСКИЙ БУЛЛЕЗ, ОСЛОЖНЕННЫЙ ВТОРИЧНОЙ ИНФЕКЦИЕЙ И НЕКРОЗОМ, У 29-ЛЕТНЕГО МУЖЧИНЫ С ВПЕРВЫЕ ДИАГНОСТИРОВАННЫМ САХАРНЫМ ДИАБЕТОМ: КЛИНИЧЕСКИЙ СЛУЧАЙ

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Аннотация
Диабетический буллез (ДБ) — редкое кожное проявление сахарного диабета, характеризующееся спонтанными буллезными высыпаниями, преимущественно на конечностях. В данном сообщении описывается 29-летний водитель автомобиля из Дубая, у которого был зуд на правой стопе, прогрессирующий до образования везикул, папул, пустул, булл и, в конечном итоге, некроза, несмотря на многочисленные вмешательства. Состояние осложнилось вторичной инфекцией и отёком. Лабораторные данные выявили лёгкий лейкоцитоз, эозинофилию и повышенный уровень HbA1c, что подтвердило впервые выявленный сахарный диабет. Многопрофильное лечение, включающее антимикробную терапию, противогрибковые препараты, уход за раной и изменение образа жизни, привело к клиническому улучшению и стабилизации гликемии. Данный случай подчёркивает вероятность прогрессирования БД до некроза при плохо контролируемом диабете и подчеркивает важность ранней диагностики и комплексного лечения.

Ключевые слова: Bullosis diabeticorum, диабетическая стопа, буллезные поражения, некроз, сахарный диабет

Introduction

Bullosis diabeticorum (BD), or diabetic bullae, is an uncommon dermatologic complication of diabetes mellitus, manifesting as tense, fluid-filled blisters, primarily on the lower extremities [1, 2]. Although its etiology is poorly understood, associations with poor glycemic control, neuropathy, and microangiopathy have been proposed [3]. Typically self-limiting, BD can become complicated by secondary bacterial or fungal infections, leading to ulceration, necrosis, and significant morbidity [4]. Risk factors include longstanding diabetes, male gender, and peripheral neuropathy, with lesions often arising spontaneously or following minor trauma. Histologically, BD shows intraepidermal or subepidermal cleavage without significant inflammation, distinguishing it from autoimmune bullous disorders. This case report details a rare presentation of BD in a young male with newly diagnosed diabetes, complicated by secondary infection and necrosis, emphasizing the critical role of prompt diagnosis, glycemic optimization, and integrated care to prevent severe outcomes such as amputation.

Case Presentation

A 29-year-old male car driver from Dubai, with an 8-hour daily work schedule involving prolonged sitting and potential exposure to heat and friction, presented with a one-week history of pruritus on the dorsal right foot, rapidly progressing to vesicles and papules (Figure 1). Vital signs were unremarkable (blood pressure 120/80 mmHg, heart rate 78 bpm, temperature 36.8°C), and the patient reported no systemic symptoms such as fever, malaise, or weight loss. He had no prior history of diabetes, skin disorders, allergies, or immunosuppressive conditions, and denied recent trauma, insect bites, or exposure to irritants.

Initial management with topical aciclovir 5% cream (suspecting a viral etiology like herpes simplex) and oral ebastine (10 mg daily for antihistaminic relief) provided no improvement after 5 days. The lesions spread distally, forming intertarsal pustules (Figure 2), prompting hospital evaluation. Pustule drainage revealed seropurulent fluid, and sterile bandaging was applied. However, new lesions emerged on the plantar surface within a week, accompanied by diffuse erythema, edema, and warmth suggestive of cellulitis (Figures 3, 4). The patient reported increasing pain (VAS score 6/10) and difficulty bearing weight.

Oral ampicillin-cloxacillin (500 mg twice daily for 7 days) was initiated under medical supervision, but symptoms worsened with progressive swelling, erythema, and induration. Subsequent treatment included itraconazole (100 mg daily for 7 days, suspecting fungal superinfection), serratiopeptidase (10 mg thrice daily for anti-inflammatory and fibrinolytic effects), and fusidic acid cream applied topically twice daily (Table 5). Two tense, fluid-filled bullae (approximately 2-3 cm in diameter) developed on the lateral foot margin (Figure 7), requiring aseptic drainage and daily wound care with saline irrigation. Despite these interventions, the plantar surface became necrotic and eschar-formed within two days (Figure 6), followed by dorsal necrosis the next day. Sensory examination revealed intact pressure and fine touch sensation, with no evidence of peripheral neuropathy on monofilament testing.

Treatment was escalated to mupirocin 2% ointment (applied twice daily for broad-spectrum bacterial coverage), terbinafine (250 mg daily for antifungal therapy), levofloxacin (500 mg daily for gram-negative coverage), and metronidazole (500 mg thrice daily for anaerobic organisms). Initial healing was noted with reduced exudate and eschar sloughing over several

days, but three days later, multiple dorsal bullae recurred (Figure 8), necessitating repeated drainage and debridement. Clinical examination at this stage revealed hyperpigmented, necrotic skin on the toes and dorsum with bullous lesions, crusting, malodorous exudate, and surrounding maceration (Figures 1–10). No signs of deep tissue involvement, such as crepitus or probing to bone, were observed, and radiographs ruled out osteomyelitis.

Laboratory findings on admission included mild leukocytosis (WBC 11.0 × 10^3/μL, reference 4–10), neutrophilia (64.31%), eosinophilia (8.63%, reference 1–6), lymphopenia (19.11%, reference 20–40), and elevated red cell distribution width (RDW-CV 14.3%, reference 11.6–14.0), suggesting inflammatory response and possible nutritional deficiency. Repeat hematology confirmed persistent leukocytosis (WBC 10.60 × 10^3/μL) and neutrophilia (71%). Pus culture yielded no bacterial growth, possibly due to prior antibiotic use. Random blood glucose was within normal limits (116 mg/dL), but HbA1c was elevated at 6.00% (reference <5.7%), confirming pre-diabetes transitioning to overt diabetes (Tables 11–14).

A comprehensive wellness panel four weeks post-infection revealed borderline dyslipidemia (HDL cholesterol 39.50 mg/dL, reference 40–60, indicating increased cardiovascular risk; LDL cholesterol 132.00 mg/dL, reference <100 optimal, suggesting early atherogenesis), vitamin D deficiency (25-OH vitamin D 10.93 ng/mL, reference <20, potentially impairing immune function and wound healing), and mild iron deficiency (serum iron 63.00 μg/dL, reference 65–175, linked to chronic inflammation). Persistent leukocytosis (WBC 11.70 × 10^3/μL) and eosinophilia (9.10%, absolute 1.10 × 10^3/μL, reference 0.02–0.5) indicated ongoing subclinical inflammation, possibly exacerbated by medications or occupational exposures such as prolonged driving in a hot climate (Tables 15–17). Thyroid function, renal profile, and hormone assays were unremarkable.

Following diabetes diagnosis, lifestyle interventions were implemented, including a low-glycemic diet (emphasizing whole grains, vegetables, and lean proteins), moderate exercise (30 minutes of walking daily, adjusted for foot healing), vitamin D and iron supplementation, and metformin initiation (500 mg twice daily). These measures normalized glucose (average 110 mg/dL) and lipid profiles within two months, correlating with lesion improvement. Wound care continued with regular debridement, hydrocolloid dressings, and offloading using orthopedic footwear, leading to gradual epithelialization without scarring or amputation (Figure 18).

• *Figure 1: Initial dorsal foot with vesicles, papules and early bullae showing erythema and swelling*

• *Figure 2: Spreading of infection in toes*

• *Figure 3: Swelling and redness after cleaning the wound in second week of infection look like cellulitis*

• *Figure 4 : Extension of infection to planter surface*

• *Figure 6: Foot with crusting and healing lesions*

• *Figure 7: Comparing the healthy and infected foot after recurrence of bullae after 3 days of cleaning*

• *Figure 8 : progression of bullous formation after debridement*

• *Figure 9: Dorsal foot in later stage with residual necrosis and bullae After drainage*

• *Figure 10: Result after cleaning and bandages with saline solution, povidone-iodine , hydrogen peroxide and triple antibiotic ointment*

• *Table 5: Prescription started after two week of infection*

Medicine Name	*Strength*	*Dosage*	*Frequency*	*Duration*	*Qty*	*Remarks*
Itrazol 100Mg 4 Tab	100 Mg	1	Every 12 Hours	7D	14	Use 1 Capsules Every 12 Hours For A Duration Of 7 Days. After Food
Amoclan Forte 625Mg Tab 15S	125 Mg/ 500 Mg	1	Every 12 Hours	3D	6	Use 1 Tablets Every 12 Hours For A Duration Of 3 Days. After Food
Fucidin Cream 30Gm	2%	1	Every 12 Hours	7D	1	Use 1 Gm Every 12 Hours For A Duration Of 7 Days

• *Table 11: Hematology report leukocytosis & eosinophilia*

Test Name	*Result*	*Units*	*Ref. Range*	*Method*
WBC Count	11.03*	10^3/µL	4-10	El. Impedance
Neutrophils (%)	64.31 L	%	40-80	El. Impedance
Lymphocytes (%)	19.11 L	%	20-40	El. Impedance
Monocytes (%)	7.80	%	2-10	El. Impedance
Eosinophils (%)	8.63 H	%	1-6	El. Impedance
Basophils (%)	0.15	%	0-1	El. Impedance
RBC Count	5.38	10^6/µL	4.5-5.9	El. Impedance
HEMOGLOBIN (Hb)	16.31	g/dL	13-17	El. Impedance
HEMATOCRIT (HCT/PCV)	48.7	%	40-50	El. Impedance
MCV (Mean Cell Volume)	90.6	fL	78-100	Calculation
MCH (Mean Cell Hemoglobin)	29.9	pg	27-32	Calculation
MCHC (Mean Cell Hemoglobin Conc)	29.9	g/dL	31.5-34.5	Calculation
RDW CV	13.1	%	11.6-14.0	El. Impedance
RDW SD	45.5	fL	36.5-46.0	El. Impedance
Platelet Count	354.9	10^3/µL	150-400	El. Impedance

• *Table 12: Additional hematology confirming infection markers*

Test Name	*Result*	*Ref. Range*	*Units*	*Method*
RBC (CBC sample)	4.80	4.5-5.9	10^6/µL	Hydrodynamically focused DC
Haemoglobin	14.30	13.5-18	g/dL	RBC pulse height
Hematocrit	43.30	40-58	%	Cell count computation
MCV	90.3*	80-101	fL	Cell count computation
MCH	29.6	27-35	pg	Cell count computation
Red Cell Distribution Width	10.4 H	11-16	%	Cytometry Flow
Total WBC Count	10.4 H	3.4-10.4	10^3/µL	Cytometry Flow
Neutrophils (%)	71.60	40-75	%	Fluorescence Flow
Lymphocytes (%)	18.6 L	20-40	%	Fluorescence Flow
Eosinophils (%)	4.7	1-6	%	Cytometry Flow
Monocytes (%)	3.7	2-10	%	Cytometry Flow
Basophils (%)	0.3	0-2	%	Cytometry Flow
Absolute Neutrophil Count	7.53 H	2-7	10^3/µL	Cytometry Flow
Absolute Lymphocyte Count	1.76	1-3	10^3/µL	Fluorescence Flow
Absolute Eosinophil Count	0.50	0.02-0.5	10^3/µL	Cytometry Flow

• *Table 13: Report of specimen culture of pus*

Section	*Detail*	*Result*
Investigation	MICROBIOLOGY	-
Specimen	Pus	-
Culture	Pus	No Pathogen Grown after 36 hours of Aerobic Incubation
Note	-	*** Kindly correlate with Clinical History

• *Table 14: Biochemistry report with normal random blood*

Test Name	*Result*	*Biological Interval Reference*	*Units*	*Specimen*	*Test Method*
Random Blood Sugar	116	Diabetic: >200 mg/dL (ADA Guidelines)	mg/dL	Fluoride Plasma	Enzymatic Hexokinase

Notes: Factors such as type and time of food intake, infection, physical or psychological stress, exercise and drugs can influence the blood glucose level.

• *Table 15: Hematology report after 4 weeks of infection*

Test Name	*Value*	*Units*	*Bio. Ref. Range*	*Methodology*
*Total Leucocytes Count (Wbc)	11.70	$X10^3$/Ml	4.0-11.0	Coulter Principle
*Hemoglobin	16.20	G/Dl	13-17	Photometric Measurement
*Platelet Count	372.00	$X10^3$/Ml	150-410	Coulter Principle
*Total Rbc	5.38	$X10^6$/Ml	4.5-5.5	Coulter Principle
*Hematocrit (Pcv)	48.70	%	40-50	Calculated Rbc
Mean Corpuscular Volume (Mcv)	90.60	Fl	78-101	Derived Rbc Histogram
Mean Corpuscular Hemoglobin (Mch)	30.20	Pg	27-32	Calculated
Mean Corpuscular Hemoglobin Conc (Mchc)	33.40	G/Dl	31.5-34.5	Calculated
Red Cell Distribution Width - Rdw-Sd	43.80	Fl	37.1-48.3	Derived Rbc Histogram
Rdw-Cv Distribution Width	13.70	%	11.6-14	Derived Rbc Histogram
(Rdw-Cv) Neutrophils	58.10	%	40-80	Histogram/Impedance
*Lymphocyte Percentage	23.40	%	20-40	Optical/Impedance
*Monocytes	8.90	%	2-10	Optical/Impedance
*Eosinophils	9.10	%	1-6	Optical/Impedance
*Basophils	0.50	%	<1-2	Optical/Impedance
*Neutrophils - Absolute Count	6.80	$X10^3$/Ml	2.0-7.0	Calculated
*Lymphocytes - Absolute Count	2.70	$X10^3$/Ml	1.0-3.0	Calculated
Monocytes - Absolute Count	1.00	$X10^3$/Ml	0.2-1.0	Calculated
*Eosinophils - Absolute Count	1.10	$X10^3$/Ml	0.02-0.5	Calculated
*Basophils - Absolute Count	0.10	$X10^3$/Ml	0.02-0.1	Calculated
*Mean Platelet Volume (Mpv)	8.80	Fl	7.5-11.2	Derived Plt Histogram

• *Table 16: Lipid Profile, Liver function test after 4 weeks of infection*

Test Name	*Value*	*Units*	*Bio. Ref. Range*	*Methodology*
LIPID PROFILE				
*Total Cholesterol	186.00	mg/dL	Desirable <200 mg/dL, Borderline high 200-239 mg/dL, High ⩾240 mg/dL	Enzymatic Assay
*HDL Cholesterol - Direct	39.50	mg/dL	40-60 mg/dL, High >60 mg/dL	Elimination/ Catalase
*LDL Cholesterol - Direct	132.00	mg/dL	Optimal <100, Near optimal 100-129, Borderline high 130-159, High ⩾160-189, Very high ⩾190	Enzymatic/ Colorimetric Method
*Triglycerides	133.00	mg/dL	<150 Normal, 150-199 Borderline high, 200-499 High, ⩾500 Very high	Enzymatic Assay
VLDL Cholesterol	26.60	mg/dL	2-30	Calculated
Non-HDL Cholesterol	146.50	mg/dL	<160, 160-189	Calculated
TC/HDL Cholesterol Ratio	4.71	Ratio	3.5-5.0	Calculated
LIVER FUNCTION TEST				
LDL/HDL Ratio	3.34	Ratio	<3.5	Calculated
*Bilirubin Total Test	0.39	mg/dL	0.3-1.2	Vanadate Oxidation
*Bilirubin - Direct	0.14	mg/dL	⩽0.3	Vanadate Oxidation
Bilirubin (Indirect)	0.25	mg/dL	0-0.9	Calculated
*Aspartate Aminotransferase (SGOT)	22.00	U/L	<34	IFCC (without pyridoxal phosphate)
*Alanine Transaminase (SGPT)	37.00	U/L	10-49	IFCC (without pyridoxal phosphate)
*Alkaline Phosphatase	97.00	U/L	46-116	IFCC Standardization
*Gamma Glutamyl Transferase (GGT)	52.00	U/L	<73	Modified IFCC Method
*Protein - Total	7.48	g/dL	5.7-8.2	Biuret Method
*Albumin - Serum	4.47	g/dL	3.2-4.8	Dye Binding: Bromocresol Green
Serum Globulin	3.01	g/dL	2.2-4.0	Calculated
Serum ALB/Globulin Ratio	1.49	Ratio	>1	Calculated

• *Table 17: Renal function test, Diabetic Profile, Thyroid Function test, Hormone Assay, Vitamin and Iron Profile after 4 weeks of infection*

Test Name	*Value*	*Units*	*Bio. Ref. Range*	*Methodology*
Renal Function Test				
*Blood Urea Nitrogen (Bun)	11.57	Mg/Dl	9-23	Gldh Kinetic Assay
Bun/S.creatinine Ratio	14.65	Ratio	9:1-23:1	Modified Jaffe Kinetic Calculated
Est. Glomerular Filtration Rate (Egfr)	121.00	Ml/ Min/1.73M²	>90	Photometry
*Uric Acid	5.74	Mg/Dl	3.7-9.2	Uricase/Peroxidase
*Calcium	8.90	Mg/Dl	8.3-10.6	Enzymatic Colorimetric Method
Diabetic Profile				
*Hba1c	6.00	%	Normal <5.7, Pre Diabetes 5.7-6.4, Diabetes >6.5	H.p.l.c
Average Blood Glucose (Abg)	125.50	Mg/Dl	90-120	Calculated
Thyroid Function Test				
*Thyroid Stimulating Hormone (Tsh)	1.93	Miu/Ml	Adult 0.55-4.78, 1St Trimester 0.48-2.50, 2Nd 0.20-3.00, 3Rd 0.20-3.0, Newborn >20	Two Site Sandwich Immunoassay
*Free Thyroxine (Ft4)	1.40	Ng/Dl	0.89-1.76	Clia
*Free Triiodothyronine (Ft3)	3.21	Pg/Ml	2.3-4.2	Clia
Hormone Assay				
*Testosterone	479.70	Ng/Dl	260-1000	Clia
Vitamin				
*25-Oh Vitamin D (Total)	10.93	Ng/Ml	Deficiency <20 Ng/Ml, Insufficiency 20-30 Ng/Ml, Sufficiency 30-100 Ng/Ml	Clia
*Vitamin B-12	354.00	Pg/Ml	211-911	Clia
Iron Profile				
*Iron	63.00	Mg/Dl	65-175	Ferrozine Sequential Release & Uptake Of Iron
*Total Iron Binding Capacity (Tibc)	281.00	Mg/Dl	240-450	Immunoturbidimetry
% Transferrin Saturation	22.42	%	16-50%	Calculated

Discussion

• *Figure 18: Image after cleaning, drainage of reoccurred bullous and recovery phase*

This case presents a rare and severe manifestation of bullosis diabeticorum (BD) in a 29-year-old male with newly diagnosed diabetes mellitus, characterized by rapid progression from pruritus to bullae, secondary infection, and necrosis [5]. Unlike typical BD, which manifests as painless blisters in patients with longstanding diabetes, this case was exacerbated by occupational factors, including prolonged sitting and potential heat or friction exposure as a car driver, alongside undiagnosed hyperglycemia, which likely intensified microvascular and immune dysfunction [1]. The initial eosinophilia (8.63%) suggests a possible allergic or environmental trigger, such as footwear irritation or heat exposure in Dubai's climate, though parasitic infection was not confirmed via stool analysis or serology. Differential diagnoses included bullous impetigo, excluded by negative pus culture; necrotizing fasciitis, ruled out due to the absence of systemic toxicity or crepitus; pyoderma gangrenosum [6]; and drug-induced bullous pemphigoid [7]. The strong temporal association with new-onset diabetes and the response to broad-spectrum antimicrobials and glycemic control confirmed BD with superinfection. Necrosis, a rare complication of BD, highlights the risks of uncontrolled diabetes, where impaired immunity and tissue perfusion can lead to tissue death, consistent with prior reports requiring surgical intervention [8].

In 2009, Lopez et al. reported a 54-year-old male with type 2 diabetes and neuropathy who developed painless bullae on the lower legs and feet without clear triggers. Managed conservatively with aspiration and topical antiseptics, the lesions resolved within three weeks without infection or necrosis [10]. In contrast, our patient's case was complicated by rapid infectious progression and necrosis, likely due to undiagnosed diabetes and occupational stressors, highlighting the role of early glycemic control in preventing complications. In 2012, Bello et al. described two cases of BD triggered by long-distance bus journeys in patients with poorly controlled type 2 diabetes. The first, a 59-year-old male, developed bilateral foot bullae with secondary staphylococcal infection, resolving in four weeks with antibiotics and glycemic management. The second, a 47-year-old female, progressed to purulent discharge and dry gangrene, necessitating toe disarticulation [11]. Similar to our case, necrosis occurred, but our patient avoided amputation through aggressive antimicrobial therapy and timely diabetes diagnosis, suggesting that early intervention can mitigate severe outcomes.

In 2013, Zhang et al. documented a 56-year-old male with longstanding type 2 diabetes and neuropathy presenting with haemoserous plantar blisters. Conservative management with aspiration, antiseptic washes, and pressure offloading led to resolution in 3–6 weeks without complications [12]. Unlike our case, the absence of infection or necrosis may reflect established diabetes management and lack of weight-bearing trauma, underscoring the impact of undiagnosed diabetes in our patient's severe presentation. In 2014, Gupta et al. reported a 27-year-old male with uncontrolled type 1 diabetes developing painless elbow blisters following minor trauma (sleeping on a hard surface). Biopsy-confirmed BD resolved in four weeks with hydrotherapy and elbow protection, without infection or necrosis [13]. The milder course and upper extremity involvement contrast with our case's lower extremity

severity, likely exacerbated by weight-bearing stress and occupational factors. These comparisons demonstrate that BD's clinical course varies with glycemic control, anatomical site, and external triggers. Our patient's young age, undiagnosed diabetes, and occupational exposures (prolonged sitting, heat, and friction) likely amplified the risk of infection and necrosis, distinguishing this case from milder presentations [10,12,13]. The progression to necrosis aligns with the severe case reported by Bello et al. [11], though our patient's favorable outcome, avoiding amputation, underscores the efficacy of escalated antimicrobial therapy and early glycemic intervention. Initial treatment resistance necessitated broad-spectrum antimicrobials targeting polymicrobial infection, including anaerobes, reflecting the complexity of superinfected BD. Early HbA1c screening was pivotal, as glycemic optimization facilitated healing [3]. Addressing comorbidities, such as dyslipidemia, vitamin D deficiency, and iron insufficiency, through lifestyle modifications and supplementation further supported recovery and reduced recurrence risk. This case advocates for a multidisciplinary approach, integrating dermatology, endocrinology, infectious disease expertise, and podiatry, potentially incorporating advanced therapies like negative pressure wound therapy for refractory cases.

Conclusion

Bullosis diabeticorum can manifest aggressively in young patients with undiagnosed diabetes, progressing to necrosis when complicated by secondary infections. Early diagnosis, optimized glycemic control, and targeted antimicrobial therapy are critical to mitigating morbidity. This case underscores the importance of screening for diabetes in patients presenting with unexplained bullous foot lesions and highlights occupational factors as potential precipitants.

References

1. Larsen, K., Jensen, T., Karlsmark, T., & Holstein, P. E. (2008). Incidence of bullosis diabeticorum – A controversial cause of chronic ulcerations. International Wound Journal, 5(1), 66–69. https://doi.org/10.1111/j.1742-481X.2007.00379.x
2. Bullosis diabeticorum: A rare complication of diabetes mellitus. PMC. https://pmc.ncbi.nlm.nih.gov/articles/PMC7951251/
3. Derella, C. C., Tingen, R. M., Blanks, J. B., & others. (2020). Bullosis diabeticorum: Is there a correlation between hyperglycemia and symptomatology? Wounds. https://www.hmpgloballearningnetwork.com/site/wounds/article/bullosis-diabeticorum-there-correlation-between-hyperglycemia-and-symptomatology
4. Choi, S. W., Shin, J. Y., Lee, S. Y., Kim, J. E., & Chung, J. O. (2018). Bullosis diabeticorum: A diabetic bullosis, commonly unknown. Journal of Wound Management and Research, 14(2), 113–116. https://www.jwmr.org/m/journal/view.php?number=36
5. Barde, C., Shukla, A., Bharti, R., & Singhi, M. K. (2014). Diabetic bullae: A case series and a new model of surgical management. ResearchGate. https://www.researchgate.net/publication/263095426_Diabetic_bullae_A_case_series_and_a_new_model_of_surgical_management
6. Ma, L., Li, Z., Wang, S., & Liu, Y. (2025). Case report: Pyoderma gangrenosum misdiagnosed as diabetic foot. Frontiers in Endocrinology, 16, Article 1604157. https://doi.org/10.3389/fendo.2025.1604157
7. Geller, S., Gat, A., Zeidenweber, D., & Ergaz-Shaltiel, Z. (2021). Bullous pemphigoid in diabetic patients treated by gliptins: The other side of the coin. Journal of Translational Medicine, 19(1), 512. https://doi.org/10.1186/s12967scaras: 0px; font-size: 12px;">8. Armstrong, D. G., & Boulton, A. J. M. (2018). Diagnosis and management of diabetic foot. Diabetes Spectrum, 31(3), 252–258. https://doi.org/10.2337/db20182-1
9. Basu, S., & McBride, M. (2024). Bullosis Diabeticorum. In StatPearls [Internet]. Treasure Island, FL: StatPearls Publishing. https://www.ncbi.nlm.nih.gov/books/NBK539872/
10. Lopez, P. R., Leicht, S., Sigmon, J. R., & Stigall, L. (2009). Bullosis diabeticorum associated with a prediabetic state. Southern Medical Journal, 102(6), 643–644. https://pubmed.ncbi.nlm.nih.gov/19434040/
11. Bello, F., Samaila, M. O., Lawal, Y., & Nkoro, U. K. (2012). 2 Cases of Bullosis Diabeticorum following Long-Distance Journeys by Road: A Report of 2 Cases. Case Reports in Endocrinology, 2012, Article ID 367218. https://pmc.ncbi.nlm.nih.gov/articles/PMC3479936/

12. Zhang, A. J., Garret, M., & Miller, S. (2013). Bullosis diabeticorum: case report and review. The New Zealand Medical Journal, 126(1371), 91–94. https://nzmj.org.nz/journal/vol-126-no-1371/bullosis-diabeticorum-case-report-and-review
13. Gupta, V., Gulati, N., Bahl, J., Bajwa, J., & Dhawan, N. (2014). Bullosis Diabeticorum: Rare Presentation in a Common Disease. Case Reports in Endocrinology, 2014, Article ID 862912. https://www.researchgate.net/publication/269186492_Bullosis_Diabeticorum_Rare_Presentation_in_a_Common_Disease

Received / Получено 10.06.2025
Revised / Пересмотрено 06.07.2025
Accepted / Принято 14.08.2025

A HOSPITAL BASED STUDY: EPIDEMOLOGY AND PRESENTATION OF BENIGN PROSTATIC HYPERPLASIA

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Abstract
Introduction: Benign prostatic hyperplasia, is one of the most prevalent disorders that affects male population in every part of the world. The incidence of BPH has increased over the past ten years due to an increase in modifiable risk factors, such as obesity and metabolic disease whereas aging is found to be the most common non modifiable risk factor for BPH.

Objective: The main objective of this study is to find the epidemiology and presentation of BPH cases with their treatment modilaty at hospital in Jalalabad.

Method and methodology: Its a retrospective study of 75 patients who were diagnosed with BPH and came for different types of intervention and treatment in City Hospital in the year 2022 at Jalalabad, Kyrgystan.

Results: The age distribution in this study shows the maximum respondents age group of 60-75 years with 66.6%. According to our study 61.33% of the respondents are having a BMI value more than 25. More than 70% respondents were following up case of BPH who were under medication. Most of respondents had multiple disease whereas most common associate disease are hypertension (22.6%) and diabetes mellitus (13.3%). On symptoms analysis, Frequency of micturation was most common presentation found (86.66 %). Among the respondent, 41.33% were suffering from moderate symptoms and 38.66% were suffering from severe symptoms. 56.66% of the respondents have prostate size between 40-90cc and most common complication associate was acute retention of urine (9.33%). Most of respondent (49.4%) were currently on medical management and 34.6% of respondents underwent surgical management. patient who patient who underwent surgery, 80.76 % underwent TURP followed by open prostatectomy.

Conclusion: The study shows that the increasing age is the risk factor for the prevalence of BPH. In the future, this condition will undoubtedly become even more common and a significant burden for all health care systems due to a shifting demographic profile and an aging population in practically every society. Exercise and nutrition recommendations are crucial strategies in addition to medication and surgery, as they empower patients to take charge of their own health.

Keywords: Benign Prostatic Hyperplasia (BPH), Epidemiology, Hospital

ИССЛЕДОВАНИЕ, ПРОВЕДЕННОЕ В УСЛОВИЯХ СТАЦИОНАРА: ЭПИДЕМОЛОГИЯ И ПРОЯВЛЕНИЯ ДОБРОКАЧЕСТВЕННОЙ ГИПЕРПЛАЗИИ ПРЕДСТАТЕЛЬНОЙ ЖЕЛЕЗЫ

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Аннотация

Введение: Доброкачественная гиперплазия предстательной железы (ДГПЖ) — одно из самых распространенных заболеваний, поражающих мужское население во всем мире. Заболеваемость ДГПЖ увеличилась за последние десять лет в связи с ростом модифицируемых факторов риска, таких как ожирение и метаболические заболевания, в то время как старение является наиболее распространенным немодифицируемым фактором риска ДГПЖ.

Цель: Основная цель данного исследования — изучить эпидемиологию и клиническую картину случаев доброкачественной гиперплазии предстательной железы (ДГПЖ) с учетом методов их лечения в больнице г. Джалал-Абад.

Методология: Проведено ретроспективное исследование 75 пациентов с диагнозом ДГПЖ, обратившихся в городскую больницу в 2022 году в г. Джалал-Абад, Кыргызстан, для проведения различных видов вмешательства и лечения.

Результаты: Возрастное распределение в данном исследовании показывает максимальную возрастную группу респондентов 60-75 лет — 66,6%. Согласно нашему исследованию, 61,33% респондентов имели ИМТ более 25. Более 70% респондентов находились под наблюдением в связи с ДГПЖ и принимали лекарственные препараты. У большинства респондентов имелось несколько заболеваний, наиболее распространенными из которых являются гипертония (22,6%) и сахарный диабет (13,3%). При анализе симптомов наиболее распространенным проявлением было учащенное мочеиспускание (86,66%). У 41,33% респондентов наблюдались умеренные симптомы, а у 38,66% – тяжелые. У 56,66% респондентов размер предстательной железы составлял 40–90 см3, а наиболее частым сопутствующим осложнением была острая задержка мочи (9,33%). Большинство респондентов (49,4%) в настоящее время находились на фармакотерапии, а 34,6% респондентов прошли хирургическое лечение. 80,76% пациентов, перенесших операцию, перенесли ТУРП, а затем открытую простатэктомию.

Заключение: Исследование показывает, что возраст является фактором риска развития ДГПЖ. В будущем это заболевание, несомненно, станет еще более распространенным и станет значительным бременем для всех систем здравоохранения в связи с изменением демографического профиля и старением населения практически в каждом обществе. Рекомендации по физическим упражнениям и питанию являются важнейшими стратегиями, помимо медикаментозной терапии и хирургического вмешательства, поскольку они позволяют пациентам самостоятельно заботиться о своем здоровье.

Ключевые слова: Доброкачественная гиперплазия предстательной железы (ДГПЖ), Эпидемиология, Больница

Introduction

Benign prostatic hyperplasia (BPH) is a nonmalignant growth or hyperplasia of the prostate tissue and is a very common cause of lower urinary tract symptoms (LUTS) in old-aged men. Disease prevalence is seen to be increasing with advancing age.Risk factors for the development of BPH include family history, diabetes, diet, genetic factors, obesity and metabolic syndrome. [1]

The symptoms of BPH include urinary frequency, urgency, lower urinary tract symptoms, incomplete bladder emptying, urinary retention, weak urinary stream, post-void dribbling and UTIs.Clinical examination includes Digital Rectal Exam (DRE) which allows for assessment of the size and condition of the prostate gland.[2] Tests commonly performed for patients with benign prostatic hyperplasia (BPH) include, Prostate-Specific Antigen (PSA) Test which measures the level of PSA, a protein produced by the prostate gland. Urinalysis for signs of infection.Uroflowmetry which is a non-invasive test measures the rate and amount of urine voided to assess urinary flow and potential obstruction, Ultrasound abdomen uses ultrasound waves for the imaging the prostate and surrounding tissues for the evaluation of size and structure of the gland.[3]

Medications commonly prescribed include alpha blockers such as tamsulosin, terazosin, and doxazosin, which relaxes the prostate and bladder neck muscles to improve urine flow. Additionally, 5 alpha reductase inhibitors are added for large (>40 gram) symptomatic prostrate, which reduces the size of prostate. Patients with surgical indication commonly undergoes transurethral resection of prostate. [4]

In 2019, the global incidence of benign prostatic hyperplasia was 94 million cases compared to 51.1 million in 2000. The age-standardized prevalence of benign prostatic hyperplasia was 2480 per 100,000 people. Although the global number of prevalent cases increased by 70.5% between 2000 and 2019, the global age-standardized prevalence remained stable.[5] In Eastern Europe, age-standardized prevalence was between 6480 and 987 per 100,000 in 2019, followed by North Africa and the Middle East.[6]

In a comprehensive survey for 2021-2022 with 3265 men of various ages in Kyrgyz Republic, showed the early incidence and prevalence of prostate diseases in Chui region (12%), Issyk-Kul region (36%), Talas region (32%), Osh region (13%) and Jalal- Abad regions (9%). Among the men who applied, 37.8% were urban residents and 62.2% were rural residents. In the survey, 28.4% of the men (in the group of middle and old age) were suffering from Benign prostate hyperplasia. [7]

Methods and methodology

This was a retrospective, descriptive study which was done for a year period of time in the year 2022 in the Urology department of City hospital in Jalalabad. After ethical clearance from committee board and hospital authorities, we have used standard questionnaire to collect the data for final conclusion. There were total 75 patients who were undertaken for this study. The data that are summarized in this study were collected from different sources like folders of investigations, patient's registers, hospital and surgical records from the hospital.

Results

• *Table 1. Distribution of respondents according to their respective age*

Responses	Frequency	Percentage
40-59	19	25.33
60-75	50	66.6
75 and above	6	8
Total		

Above Table shows that the distribution of respondents according to their age which shows the maximum age group belongs to 60-75 years with 66.6% and followed by age group 40-59 (25.33%) .

• *Table 2. Distribution of respondents according to their BMI*

Responses	Frequency	Percentage
24.9 or below	29	38.66
25.0 or above	46	61.33
Total	75	100

The distribution of respondents according to their Body Mass Index (BMI) which shows majority 61.33% of the respondents are having a BMI value 25.0 and above and remaining 38.66% of respondents were having the BMI value of 24.9 and below.

• *Table 3. Distribution of respondents according to their history and the time it was diagnosed*

Respondents	Frequency	Percentage
More than 1 years ago	36	48
Less than a year ago	17	22.66
New cases	22	29.33
Total	75	100.0

According to the previous history of diagnosis, above table shows 48% respondents were diagnosed for more than 1 year ago 29.33% respondents were newly diagnosed and remaining 22.6% respondents were diagnosed less than 1 year ago only.

• *Table 4. Distribution of respondents according to other health conditions they experience*

Responses	Frequency	Percentage
Diabetes Mellitus	10	13.33
Hypertension	17	22.66
Heart Diseases	8	10.66
Pulmonary Diseases	6	8
Multiple Diseases	28	37.33
No Diseases	6	8
Total	75	100

Above Table shows majority 37.33% of respondents had multiple disease where as 22.6% respondents had hypertension, 13.3% had diabetes mellitus and 10.6% had some heart diseases and remaining 8% had pulmonary diseases and remaining 8% had no any diseases along with their current problem.

• *Table 5. Distribution of respondents according to the presenting urinary symptoms associated with BPH*

Responses	Frequency	Percentage
Frequency of micturition during daytime		
No	10	13.33
yes	65	86.66
Frequency of micturition during night time (Nocturia)		
None	13	17.33
Once	24	32
2 or more	38	50.66
Urgency to Urinate		
No	14	18.66
yes	61	81.33
Intermettency		
No	17	22.66
yes	58	77.33
Weak urine stream		
No	12	16
yes	63	84
Sense of incomplete voiding of the bladder		
No	16	21.33
yes	59	78.66
Strain during urination		
No	14	18.66
Yes	61	81.33
Other symptoms		
Acute urinary retention	11	14.66
Hematuria	3	4
Severity of urinary symptoms (IPSS score)		
0-7 Mild	15	20
8-19 Moderate	31	41.33
20-35 Severe	29	38.66

The above table on symptoms assessment shows frequency of micturation was most common presentation found in 86.66 % of the respondents, followed by weak urinary stream (84%) and Nocturia (82.66%). Among the respondent, 38.66% were suffering from severe symptoms and 14.66% presented with acute retention of urine.

• *Table 6. Distribution of respondents according to the findings of relevant diagnostic test--done*

Responses	Frequency	Percentage
Size of Prostate (USG abdomen)		
Below 5*3*5 (40 cc)	29	38.66
Between 5*3*5-6*4*6 (40-90 cc)	41	54.67
Above 6*4*6 (>90 cc)	5	6.67
Other Findings (USG & Lab)		
Bladder Calculi	2	2.66
Hydronephrosis	3	4
UTI	7	9.33

Above Table on Laboratory and Diagnostic Tests shows that 54.67% of the respondents have prostate size between 40-90cc and 6.67% have huge prostate. 14.66 % respondent developed UTI while 4% have hydronephrosis and 2.66 % have associate bladder calculi.

• *Table7. Distribution of respondents according to current treatment status for BPH*

Responses	Frequency	Percentage
Obervation and follow up	12	16
Medical management	37	49.4
Surgical management	26	34.6
Total	75	100

Above Table shows 49.4% of respondents are currently on medical management as a treatment for BPH and 34.6% of respondents went through surgical management and remaining 16% respondents were under observationa and follow up for their condition.

• *Table 8. Distribution of respondents according to the surgery performed for BPH*

Response	Frequency	Percentage
TURP	21	80.76
Open surgery	5	19.23
Total	26	34.7
Additional intervention		
Urethral catherization	5	6.7
Suprapubic cystostomy	2	2.7
Total	7	

Above Table shows, out of 26 patient who underwent surgery, 80.76 % underwent TURP, while for rst of cases, open prostatectomy was done. Out of 9 cases of acute retention of urine; 5 patients were managed by urethral catheterization and 2 were managed by suprapubic cystostomy. After cathererization, 4 patients underwent surgical management and 3 were discharged with medical management and follow up plan.

Discussion

Benign prostatic hyperplasia (BPH) refers to the non-malignant growth or hyperplasia of prostate tissue and is common cause of lower urinary tract symptoms (LUTS) in older men. This study aims to investigate the epidemiology and presentation of Benign Prostate Hyperplasia (BPH) cases at the hospitals in Jalalabad, Kyrgyzstan. Disease prevalence has been shown to increase with advancing age. In our survey, more than 70% cases were diagnosed case of BPH under management where as in the survey conducted by Lim K.B, in his study it shows that on prostate disease awareness, 55.2% of respondents claimed they were unaware of the condition, 11.3% of respondents were unable to assess their own health, 52.2% of respondents said they did not trust doctors, however, 41% of respondents reported that the disease was detected for the first time. [8]

Most of the respondents belongs to age group 60-75 i.e., 66.6% and the respondents who were aged between 40-59years of age were 25.33%. A systematic analysis for the Global Burden of BPH showed men aged 65–74 years shared the greatest absolute burden of benign prostatic hyperplasia, accounting for 42% of the total prevalent cases. Our findings are consistent with global standard (9). A study done in mainland China, shows the prevalence of BPH was with increasing age after the age of 40 years. (10)

According to our data majority men with BPH i.e 61.33%, have BMI 25 or above and rest of patient have BMI less than 25. The growth of the prostate gland corresponds with body mass index (BMI) and waist circumference. According to the WHO classification BMI greater than 35kg/m2 have a 3.5 times higher risk of developing BPH (10). Study conducted by Betai K et al showed significant correlation of BMI with prostate volume. Patients with larger prostates (>75cc) had significantly higher BMI compared to patients with smaller prostate volume (<75cc) (11)

Fowke and colleagues showed that prostate volume was significantly positively associated with BMI, waist-hip ratio, waist circumference, percent body fat, total fat mass, and total lean mass [12]. Kim et al. demonstrated positive correlations between BMI and prostate volume and between BMI and International Prostate Symptom Score among Korean men [13].

In our study, majority 37.33% of respondents had multiple disease where as 22.6% respondents had hypertension, 13.3% had diabetes mellitus and 10.6% had some heart diseases and remaining 8% had pulmonary diseases. There have been multiple studies interested in demonstrating the link between metabolic syndrome and BPH, but findings have been inconsistent. Some studies have reported how diabetes and hyperlipidemia [14,15) were correlated with BPH, while other studies have failed to demonstrate an association [16]. On comparison with the study on Effect of Obesity and Hyperglycemia on BPH in Elderly Patients with Newly Diagnosed Type 2 Diabetes, the respondents with diabetes mellitus type1 where more prone to have BPH (17). Ageing population has higher incidence of cardiovascular disease and diabetis. BPH occurs at a high frequency in the aging man and is usually present with 1 or more comorbidities. Accordingly, the choice of BPH treatment should be guided by the presence of medical conditions such as diabetes, metabolic syndrome, CV disease and hypertension (18)

Symptoms assessment of BPH patient in our study shows, frequency of micturation was most common presentation found in 86.66 % of the respondents, followed by weak urinary stream (84%) and Nocturia (82.66%). Among the respondent, 41.33% were suffering from moderate symptoms & 38.66% were suffering from severe symptoms and 9.33% presented with acute retention of urine. Although BPH is not a life-threatening condition, the impact of BPH on

quality of life can be significant and should not be underestimated.Moderate-to-severe LUTS was seen in 41 % of the patients on community-based done in the United Kingdom (18,19) and Literature review showed frequency was the most common symptoms followed by weak urinary stream and dribbling of urine (20), these findings were consistent with our study.

Study shows that 56.66% of the respondents have prostate size between 40-90cc and 6.66% have huge prostate. In this study it shows that 14.66 % respondent developed acute retention of urine and 9.33% UTI, while 4% have hydronephrosis and 2.66 % have associate bladder calculi. The commonest range of prostate volume was 50–89 cc as shown in study done by obiesie et al.Review article by speakman MJ showed, the most common presenting complication of BPH that requires hospitalization is acute urinary retention, which greatly affects patients' quality of life and is an important health issue. Many of the other complications of BPH are in part due to complications of chronic urinary retention; these include recurrent urinary tract infections formation of bladder calculi, hematuria, and damage to bladder wall and kidneys. Finally, there is an important association between BPH/BOO and male erectile dysfunction. (21)

Our study showed, 49.4% of respondents are currently on medical management as a treatment for BPH and 34.6% of respondents went through surgical management and remaining 16% respondents were under observational and follow up for their condition. Out of 26 patient who underwent surgery, 80.76 % under went TURP, while for rest of cases, open prostatectomy was done. Out of 9 cases of acute retention of urine; 5 patients were managed by urethral catheterization and 2 were managed by suprapubic cystostomy. After cathererization, four patient underwent surgical management and 3 were discharged with medical management and follow up plan.

After lifestyle modifications, medication is generally first line in the treatment of symptomatic BPH. Two drug classes became accepted standard care are 5-alpha-reductase inhibitors and Alpha-blockers. Although monotherapy, with alpha blockers and 5 alpha reductase inhibitors, is beneficial, the combination of these drugs is highly effective (22). Surgical intervention are reserved to patient with complications and refractory to medical therapy. TURP has long been considered the historical gold standard for the surgical treatment of BPH and open techniques are reserved for large prostate (>90 cc) if Holmium laser enucleation of the prostate (HoLEP) are not available (23).

Conclusion

In this study it highlights that the increasing incident of Prostatic Hyperplasia is seen with majority of population with growing age. As we can see in many countries aging population are increasing in trends which means that the incidence of BPH might be increases in coming days. With increasing age from the study, it also highlights that the commodities such as diabetes, hypertension are might lead to more complication with BPH patients. From the study we can see that in treatment approaches huge number of populations they receive medical management while few they undergo surgical managements such as transurethral resection of the prostate (TURP). Overall, as a recommendation we would like to highlight on healthy dietary pattern, lifestyle modification early screening and diagnosis are essential for timely intervention and better management of BPH.

References

1. Dwitawira Wibowo N, Rizky Hidayat M. The Impact Of Benign Prostate Hyperplasia Treatment Modalities On The Incidence And Progression Of Urethral Stricture : A Comprehensive Systematic Review. Journal Of Advanced Research In Medical And Health Science (Issn 2208-2425) [Internet]. 2024 Apr 29 [Cited 2024 Dec 11];10(4):124–32.
2. Levi A Deters, MD; Chief Editor: Edward David Kim, MD, FACS [Updated: Mar 22, 2023], available from :https://emedicine.medscape.com/article/437359-overview#a5
3. National Cancer Institute. Prostate-Specific Antigen (PSA) Test. Cancer.gov. [Internet]. Available from: https://www.cancer.gov
4. Haile ES, Sotimehin AE, Gill BC. Medical management of benign prostatic hyperplasia. Cleveland Clinic journal of medicine. 2024 Mar 1;91(3):163–70.
5. Ye Z, Wang J, Xiao Y, Luo J, Xu L, Chen Z. Global burden of benign prostatic hyperplasia: results from the global burden of disease study 2019. BMC Urology. 2024 Sep 5;24(1).
6. GBD 2019 BPH collaborators, Omid Dadras. The global, regional, and national burden of benign prostatic hyperplasia in 204 countries and territories from 2000 to 2019: a systematic analysis for the Global Burden of Disease Study 2019
7. Kurmanbekov N.K., Keneev R.N., Satybaldyev E.E.,Stambekova K.N., Kylychbekov M.B. Analysis of the incidence of prostate diseases and their early detection based on the results of a scientific project for the study of the male population in the Kyrgyz Republic. Health care of Kyrgyzstan 2022, No. 3, pp. 140-147.
8. Lim K. B. (2017). Epidemiology of clinical benign prostatic hyperplasia. Asian journal of urology, 4(3), 148–151. https://doi.org/10.1016/j.ajur.2017.06.004
9. Awedew AF, Han H, Abbasi B, Abbasi-Kangevari M, Ahmed MB, Almidani O, et al. The global, regional, and national burden of benign prostatic hyperplasia in 204 countries and territories from 2000 to 2019: a systematic analysis for the Global Burden of Disease Study 2019. The Lancet Healthy Longevity [Internet]. 2022 Nov 1;3(11):e754–76.
10. Wang W, Guo Y, Zhang D, Tian Y, Zhang X. The prevalence of benign prostatic hyperplasia in mainland China: evidence from epidemiological surveys. Scientific Reports. 2015 Aug 26;5(1).
11. Batai K, Phung M, Bell R, Aye Aye Lwin, Hynes K, Price E, et al. Correlation between body mass index and prostate volume in benign prostatic hyperplasia patients undergoing holmium enucleation of the prostate surgery. BMC Urology. 2021 Jun 10;21(1).
12. Fowke JH, Koyama T, Fadare O, Clark PE. Does Inflammation Mediate the Obesity and BPH Relationship? An Epidemiologic Analysis of Body Composition and Inflammatory Markers in Blood, Urine, and Prostate Tissue, and the Relationship with Prostate Enlargement and Lower Urinary Tract Symptoms. Hurst R, editor. PLOS ONE. 2016 Jun 23;11(6):e0156918.
13. Kim JM, Song PH, Kim HT, Moon KH. Effect of Obesity on Prostate-Specific Antigen, Prostate Volume, and International Prostate Symptom Score in Patients with Benign Prostatic Hyperplasia. Korean Journal of Urology. 2011;52(6):401.
14. Nandy PR, Saha S. Association between components of metabolic syndrome and prostatic enlargement: An Indian perspective. Medical Journal Armed Forces India. 2016 Oct;72(4):350–5.
15. Shih HJ, Huang CJ, Lin JA, Kao MC, Fan YC, Tsai PS. Hyperlipidemia is associated with an increased risk of clinical benign prostatic hyperplasia. The Prostate. 2017 Nov 9;78(2):113–20.
16. Egan KB, Burnett AL, McVary KT, Ni X, Suh M, Wong DG, et al. The Co-occurring Syndrome—Coexisting Erectile Dysfunction and Benign Prostatic Hyperplasia and Their Clinical Correlates in Aging Men: Results From the National Health and Nutrition Examination Survey. Urology [Internet]. 2015 Jun 17 [cited 2025 Jan 28];86(3):570–80
17. Irene Pascual Mathey L (2022) Benign Prostatic Hyperplasia: Epidemiology, Pathophysiology, and Clinical Manifestations. Molecular Mechanisms in Cancer. IntechOpen. Available at: http://dx.doi.org/10.5772/intechopen.104823.
18. Mobley D, Feibus A, Baum N. Benign prostatic hyperplasia and urinary symptoms: Evaluation and treatment. Postgraduate Medicine. 2015 Mar 30;127(3):301–7.
19. Obiesie AE, A M E Nwofor, Oranusi CK, Mbonu OO. Correlation between Prostate Volume Measured by Ultrasound and Symptoms Severity Score in Patients with Benign Prostatic Hypertrophy in Southeastern Nigeria. Nigerian Journal of Clinical Practice [Internet]. 2022 Aug 1 [cited 2025 Jan 28];25(8):1279–86.
20. Speakman M, Cheng X. Management of the complications of BPH/BOO. Indian Journal of Urology. 2014;30(2):208.

21. Lokeshwar SD, Harper BT, Webb E, Jordan A, Dykes TA, Neal Jr DE, et al. Epidemiology and treatment modalities for the management of benign prostatic hyperplasia. Translational Andrology and Urology [Internet]. 2019 Oct;8(5):529–39
22. Bishr M, Boehm K, Trudeau V, Tian Z, Dell'Oglio P, Schiffmann J, et al. Medical management of benign prostatic hyperplasia: Results from a population-based study. Canadian Urological Association journal = Journal de l'Association des urologues du Canada [Internet]. 2016;10(1-2):55–9
23. Ng M, Leslie SW, Baradhi KM. Benign Prostatic Hyperplasia. [Updated 2024 Jan 11]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2024 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK558920/

Received / Получено 25.06.2025
Revised / Пересмотрено 16.07.2025
Accepted / Принято 12.08.2025

PREVALENCE AND FACTORS ASSOCIATED WITH THE UTILIZATION OF CONTRACEPTIVES AMONG WOMEN OF REPRODUCTIVE AGE IN JALALABAD, KYRGYZSTAN

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Abstract
Globally, sexual and reproductive health remains a critical public health concern for women of reproductive age. The utilization of modern contraceptives is essential for managing fertility, reducing unintended pregnancies, abortions, and associated health complications. This study aimed to assess the prevalence and factors associated with contraceptive use among women aged 15–35 years in Jalalabad, Kyrgyzstan. A descriptive cross-sectional study was conducted using online Google Forms over three months (September to November 2024). A structured questionnaire was administered to 150 randomly selected women, and data were analyzed using SPSS version 22.0. Results revealed that 88.7% of respondents were married, 88.7% resided in rural areas, and 35.9% had more than two children, all of which were associated with higher contraceptive use. Conversely, women aged 15–25 years showed lower utilization. The majority of women demonstrated good knowledge of contraceptives, though some reported side effects such as vaginal discharge or irritation. These findings underscore the need to address socioeconomic, geographic, and cultural barriers to enhance contraceptive effectiveness and promote maternal and child health.

Keywords: Contraceptive utilization, reproductive health, socioeconomic factors, maternal health

РАСПРОСТРАНЕННОСТЬ И ФАКТОРЫ, СВЯЗАННЫЕ С ИСПОЛЬЗОВАНИЕМ КОНТРАЦЕПТИВОВ СРЕДИ ЖЕНЩИН РЕПРОДУКТИВНОГО ВОЗРАСТА В ДЖАЛАЛ-АБАДЕ, КЫРГЫЗСТАН

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Аннотация
Во всем мире сексуальное и репродуктивное здоровье остается важнейшей проблемой общественного здравоохранения для женщин репродуктивного возраста. Использование современных контрацептивов имеет решающее значение для контроля фертильности, снижения числа нежелательных беременностей, абортов и связанных с ними осложнений. Целью данного исследования была оценка распространенности и факторов, связанных с использованием контрацептивов среди женщин в возрасте 15–35 лет в Джалал-Абаде, Кыргызстан. Описательное поперечное исследование проводилось с использованием онлайн-форм Google в течение трёх месяцев (с сентября по ноябрь 2024 года). Структурированный опрос был разослан 150 случайно выбранным женщинам, а данные были проанализированы с помощью SPSS версии

22.0. Результаты показали, что 88,7% респондентов состоят в браке, 88,7% проживают в сельской местности, а 35,9% имеют более двух детей. Все эти факторы связаны с более частым использованием контрацептивов. Напротив, женщины в возрасте 15–25 лет используют контрацептивы реже. Большинство женщин продемонстрировали хорошие знания о контрацептивах, хотя некоторые сообщали о побочных эффектах, таких как выделения из влагалища или раздражение. Эти результаты подчёркивают необходимость устранения социально-экономических, географических и культурных барьеров для повышения эффективности контрацептивов и укрепления здоровья матери и ребёнка.

Ключевые слова: Использование контрацептивов, репродуктивное здоровье, социально-экономические факторы, здоровье матери

Introduction

Rapid population growth poses a significant challenge in developing countries, threatening global health and sustainability [1]. Family planning services are not only critical for controlling population growth and improving maternal and child health but are also recognized as a fundamental human right [2]. Despite the availability of contraceptive methods, unintended pregnancies remain prevalent, with approximately 80 million women worldwide experiencing them annually, of which 45 million results in abortions [3]. These unintended pregnancies contribute to over half a million maternal deaths and 120 million disabilities each year [4].

The ability to adopt effective contraceptive methods is influenced by factors such as access to healthcare, community attitudes, cultural values, and personal beliefs [5]. Studies, particularly from the global north, highlight barriers such as limited understanding of reproductive cycles, overestimation of withdrawal method effectiveness, and cultural influences on contraceptive use [6]. For instance, research among Hispanic women in the United States revealed that economic constraints, healthcare access, and cultural values significantly impact contraceptive behaviors [6].

Modern contraceptive methods, including barrier methods (e.g., condoms, diaphragms), hormonal contraceptives (e.g., oral pills, injectables, implants), and intrauterine devices (IUDs), are designed to prevent pregnancy [7]. These methods offer non-contraceptive health benefits, such as reduced risks of endometrial and ovarian cancer, but also carry risks like increased cardiovascular disease with oral contraceptives or infection with IUDs in high-risk groups [4]. Globally, of the 1.9 billion women of reproductive age in 2021, 1.1 billion required family planning, with 874 million using modern contraceptives and 164 million facing an unmet need [3].

This study evaluates the prevalence and factors associated with modern contraceptive utilization among women of reproductive age in Jalalabad, Kyrgyzstan, using a national demographic and health survey framework. The findings aim to inform the design and implementation of interventions to enhance contraceptive use and reduce maternal and child morbidity and mortality.

Materials and Methods

A descriptive cross-sectional study was conducted from September to November 2024 in Jalalabad, Kyrgyzstan. Data were collected using a structured questionnaire administered via online Google Forms to 150 randomly selected women aged 15–35 years. The questionnaire captured socio-demographic characteristics, contraceptive knowledge, and utilization patterns. Data were analyzed using the Statistical Package for the Social Sciences (SPSS) version 22.0. Associations between dependent (contraceptive use) and independent variables (e.g., age, marital status, residence) were assessed using chi-square tests. Ethical approval was obtained, and informed consent was secured from all participants.

Results

Socio-Demographic Characteristics

Of the 150 respondents, 83.3% had completed university education, while 16.7% had only primary education. The majority (96.7%) were Muslim, with 3.3% identifying as Christian. Age distribution showed 42.0% (n=63) aged 30–35 years, 35.3% (n=53) aged 25–30 years, and 20.0% (n=30) aged 15–25 years. Regarding family income, 87.3% were from middle-income households, and 12.7% were from high-income households. Most respondents (88.7%) were married, while 11.3% were divorced. Employment status indicated 69.3% were employed, and 28.7% were housewives. Geographically, 88.7% resided in rural areas, and 11.3% lived in urban areas (Table.1).

• *Table 1: Factors associated with contraceptive utilization*

		No	Yes
Respondent's current age	15-20	4 (100)	00 (00)
	20-25	10 (33.33)	20 (66.66)
	25-30	30 (56.6)	23 (43.39)
	30-35	13 (20.63)	50 (70.36)
Religion	Muslim	66 (45.20)	80 (54.79)
	Hindu	1 (25)	3 (75)
Current marital status	Married	60 (45.11)	73 (54.88)
	Unmarried	9 (52.94)	8 (47.05)
knowledge of any contraceptive method	85 (56.66)	65 (43.34)	

Factors Associated with Contraceptive Utilization

Contraceptive use was higher among married women (88.7%), those living in rural areas (88.7%), and those with more than two children (35.9%). Conversely, women aged 15–25 years exhibited lower contraceptive use. The majority of respondents demonstrated good knowledge of contraceptives, though some reported side effects, including vaginal discharge and irritation.

Discussion

The findings from this study indicate that marital status, rural residence, and parity (having more than two children) are significant predictors of higher contraceptive utilization among women of reproductive age in Jalalabad, Kyrgyzstan. Conversely, younger women (aged 15–25 years) showed lower rates of contraceptive use. These results align with broader national and regional trends in Kyrgyzstan, where the modern contraceptive prevalence rate (mCPR) among married women is estimated at approximately 23-25% [8]. This relatively low mCPR reflects ongoing challenges in family planning, including an increasing unmet need for contraception, which rose from 19.9% in 2006 to 22.5% in 2018 [9].

Comparatively, our observation that having more than two children promotes contraceptive use is consistent with other studies in Kyrgyzstan. For instance, a study found that men with three living children had significantly higher odds of using modern contraceptives (adjusted odds ratio [aOR] 3.534, 95% CI 1.221–10.229), suggesting a similar pattern among couples aiming to limit family size after achieving desired parity [10]. This parity-related factor is also echoed in Ethiopian studies, where the number of living children was associated with modern contraceptive utilization [11].

The association with marital status in our study, where married women had higher utilization (88.7%), corresponds to the focus of national surveys on married women, as unmarried women often face cultural barriers to accessing reproductive health services [12]. Rural residence promoting use in our sample (88.7%) contrasts with some findings; previous research identified area of residence as a factor in unmet need, potentially indicating that rural women in Jalalabad may have better access to certain methods like IUDs, which are prominent in Kyrgyzstan but declining in use nationally [9].

Lower use among younger women aligns with global patterns in low- and middle-income countries, where adolescents and young adults often have limited knowledge, face stigma, or lack youth-friendly services [3]. This is particularly relevant in Kyrgyzstan, where the unmet need is influenced by women's age [9].

While the majority of women in our study had good knowledge of contraceptives, side effects such as vaginal discharge and irritation were reported, highlighting the need for improved counseling [7]. These side effects may contribute to discontinuation, as seen in declining trends of reversible methods like pills, injections, and IUDs nationally [9]. Overall, our results underscore the importance of addressing socioeconomic (e.g., income, employment), geographic (rural-urban disparities), and cultural barriers to improve contraceptive uptake. Interventions should include comprehensive sexual health education for youth, strengthened supply chains for contraceptives, and training for healthcare providers [5].

Conclusion

This study highlights the critical role of modern contraceptives in reproductive health among women in Jalalabad, Kyrgyzstan. Factors such as marital status, rural residence, and parity significantly influence utilization, while younger age is associated with lower use. Despite good knowledge levels, side effects remain a concern. Interventions targeting socioeconomic, geographic, and cultural barriers are essential to improve contraceptive access and effectiveness, ultimately reducing maternal and child morbidity and mortality.

References

1. Rastak, L. (2005). Correlation between socio-demographic characteristics and contraceptive methods. Sharecrop University of Medical Sciences Journal, 45-52.
2. Belfield, T. (2009). Principles of contraceptive care: Choice, acceptability and access. Best Practice & Research Clinical Obstetrics & Gynaecology, 23(2), 177-185.
3. United Nations Department of Economic and Social Affairs, Population Division. (2022). World family planning 2022: Meeting the changing needs for family planning: Contraceptive use by age and method.
4. National Research Council. (1989). Contraception and reproduction: Health consequences for women and children in the developing world. National Academies Press.
5. Singh, R., Frost, J., Jordan, B., & Wells, E. (2009). Beyond a prescription: Strategies for improving contraceptive care. Contraception, 79(1), 1-4.
6. Sangi-Haghpeykar, H., Ali, N., Posner, S., & Poindexter, A. N. (2006). Disparities in contraceptive knowledge, attitude and use between Hispanic and non-Hispanic whites. Contraception, 74(2), 125-132.
7. Almalik, M., & Mosleh, S. (2018). Are users of modern and traditional contraceptive methods in Jordan different? Eastern Mediterranean Health Journal, 24(2), 154-162.
8. Track20. (2023). Kyrgyz Republic 2023 summary brief and handout. Retrieved from https://track20.org/download/pdf/Country%20Indicators/2023/2023%20Combo%20Briefs/English/Kyrgyz%20Rep.%202023%20Summary%20Brief%20and%20Handout.pdf
9. Dolonbaeva, Z., et al. (2024). Unmet need for contraception among married women in the Kyrgyz Republic using the datasets from the 2006, 2014 and 2018 Multiple Indicator Cluster Survey: a cross-sectional study. BMC Public Health, 24(1), 977. https://doi.org/10.1186/s12889-024-18518-6
10. Bayramova, L., & Kulczycki, A. (2017). Prevalence and socio-economic factors determining use of modern contraception among married men in Kyrgyzstan: Evidence from a demographic and health survey. Public Health, 142, 56-63. https://doi.org/10.1016/j.puhe.2016.10.008
11. Beyene, K. M., Bekele, S. A., & Abu, M. K. (2023). Factors affecting utilization of modern contraceptive methods among women of reproductive age in Ethiopia. [Journal details from original].
12. Whitaker, A. K., Johnson, L. M., Harwood, B., Chiappetta, L., Creinin, M. D., & Gold, M. A. (2008). Adolescent and young adult women's knowledge of and attitudes toward the intrauterine device. Contraception, 78(3), 211-217.

Received / Получено 03.07.2025
Revised / Пересмотрено 23.07.2025
Accepted / Принято 28.07.2025

COMPARATIVE STUDY BETWEEN JALALABAD AND LAHORE ABOUT DENGUE FEVER AND LIFESTYLE OF PEOPLE AS A PREVENTIVE MEASURE FROM MOSQUITOES

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Abstract:
Dengue fever, a mosquito-borne viral illness, continues to pose a significant threat to public health, particularly in densely populated tropical and subtropical regions. This comparative study explores the influence of lifestyle-related factors on dengue prevalence by analyzing two contrasting urban environments: Jalalabad, Kyrgyzstan (a region with no reported dengue cases) and Lahore, Pakistan (where dengue is endemic).

Using structured questionnaires, data were collected from 300 participants (150 from each city), focusing on awareness, preventive behaviors, sanitation practices, and environmental conditions. Despite limited awareness about dengue in Jalalabad, participants demonstrated healthier lifestyle habits and better environmental management. Conversely, although Lahore respondents showed higher awareness of the disease, their preventive practices and environmental hygiene were less consistent.

The findings underscore a strong relationship between personal and communal lifestyle factors; such as water storage, dietary habits, sanitation, and mosquito protection measures and the likelihood of dengue transmission. The study concludes that enhanced public health education, behavioral interventions, and infrastructure improvements are essential for effective dengue control, particularly in high-risk areas. Promoting healthier lifestyles may serve as a key strategy in reducing the burden of vector-borne diseases globally.

Keywords: Dengue Fever, Mosquitoes, Vector borne diseases, Endemic, Sanitation

СРАВНИТЕЛЬНОЕ ИССЛЕДОВАНИЕ ЛИХОРАДКИ ДЕНГЕ И ОБРАЗА ЖИЗНИ ЛЮДЕЙ В ДЖАЛАЛ-АБАДЕ И ЛАХОРЕ КАК МЕРЫ ПРОФИЛАКТИКИ УКУСОВ КОМАРОВ

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Аннотация
Лихорадка денге, вирусное заболевание, переносимое комарами, продолжает представлять значительную угрозу для здоровья населения, особенно в густонаселенных тропических и субтропических регионах. Данное сравнительное исследование изучает влияние факторов образа жизни на распространенность лихорадки денге, анализируя два контрастных городских региона: Джалал-Абад, Кыргызстан (регион, где не зарегистрировано ни одного случая лихорадки денге) и Лахор, Пакистан (где лихорадка денге эндемична). С помощью структурированных анкет были собраны

данные у 300 участников (по 150 из каждого города), уделяя особое внимание осведомленности, профилактическим действиям, санитарным нормам и состоянию окружающей среды. Несмотря на ограниченную осведомленность о лихорадке денге в Джелалабаде, участники продемонстрировали более здоровый образ жизни и более эффективное управление окружающей средой. Напротив, хотя респонденты из Лахора продемонстрировали более высокую осведомленность об этом заболевании, их профилактические меры и гигиена окружающей среды были менее последовательны.

Результаты подчеркивают тесную взаимосвязь между личными и общественными факторами образа жизни, такими как запасы воды, пищевые привычки, санитария и меры защиты от комаров, и вероятностью передачи лихорадки денге. В исследовании сделан вывод о том, что повышение уровня информированности населения в области здравоохранения, поведенческие вмешательства и улучшение инфраструктуры имеют решающее значение для эффективной борьбы с лихорадкой денге, особенно в районах высокого риска. Пропаганда здорового образа жизни может служить ключевой стратегией снижения бремени трансмиссивных заболеваний во всем мире.

Ключевые слова: лихорадка денге, комары, трансмиссивные заболевания, эндемия, санитария

Introduction

Dengue fever is a mosquito-borne viral infection caused by four distinct serotypes of dengue virus, primarily transmitted by Aedes aegypti and Aedes albopictus mosquitoes [1]. Globally, dengue has become a major public health concern, with the World Health Organization (WHO) estimating that nearly half of the world's population is at risk [1]. It poses a major public health threat in tropical and subtropical regions, with an estimated 100–400 million infections annually [2]. The disease ranges from mild flu-like symptoms to severe forms like dengue hemorrhagic fever and dengue shock syndrome, which can lead to significant morbidity and mortality [1]. The global incidence of dengue has increased dramatically over the past two decades, fueled by climate change, rapid urbanization, poor sanitation, and global travel [2][3]. Despite efforts to develop vaccines, prevention still relies heavily on mosquito control and public awareness [1][3]. Notably, lifestyle factors such as hygiene practices, environmental cleanliness, and awareness levels play a critical role in dengue prevention [3] [4]. This study compares the prevalence of dengue and related lifestyle practices between two cities: Jalalabad, Kyrgyzstan (non-endemic), and Lahore, Pakistan (endemic).

Objectives

To study the impact of knowledge on prevention practice rating the sources of information about dengue fever and to access the level of public knowledge and prevention practice about dengue fever

To improve early diagnosis and case management. To defect epidemic early and to respond to potentially epidermias effectively. To strengthen monitoring and evaluation to ensure optimal programme implementation, Management and performances.

Rationale
It is alarming infection from last two years and death rate is increasing due to dengue virus in Pakistan.

Methodology
Study Design:

A comparative study is created to find the difference between the lifestyle and occurrence of dengue fever.

Study Area:

For our research, we choose Jalalabad, Kyrgyzstan and Lahore, Pakistan as research areas in which Jalalabad is taken as ideal or control group where occurrence of dengue is 0%

Study Duration:

We started our research from September 1, 2022 and finished on December 20, 2022.

Inclusion Criteria:

Study population includes workers of Jalalabad having education level of primary and secondary, and also workers of Lahore in Pakistan with same education level and age between 25-40 years old.

Exclusion Criteria:

We excluded the respondent that are not willing to participate in research, younger age, education level more than secondary and inconvenient for us to approach.

Study Sample:

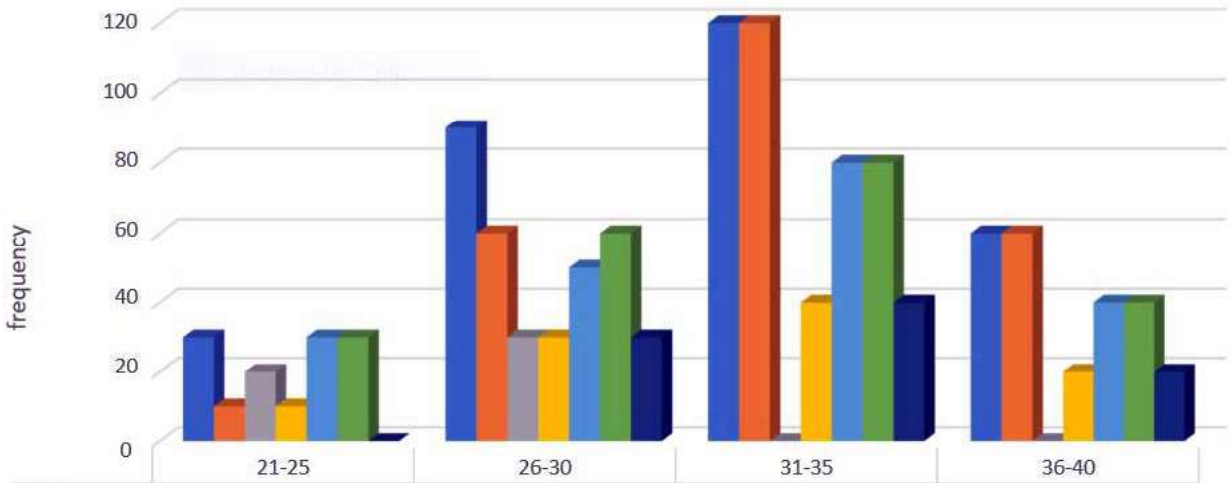
Total Sample size is 300 in which 150 from Jalalabad, Kyrgyzstan and 150 from Lahore, Pakistan. We choose non-probability, conventional sampling model for research due to language barrier and difficulty to approach people.

Study tool:

For research, we made demographic profile and knowledge-based questionnaire, we made social demographic profile which based on the age, marital Status, gender

profession, education level and nationality. We made 12 knowledge-based questions in which asked about knowledge regarding degree and life style of people. We analysed the data on SPSS for authentic results and calculation.

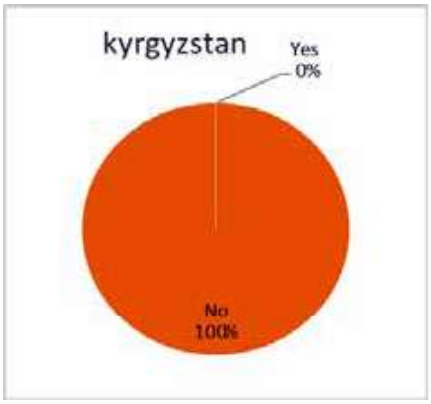
Results
Total respondents are 300 and they are workers of hostel and hotel from which 150 from Jalalabad and 150 from Pakistan, in which, we made four age groups, 21-25, 26-30, 31- 35, 36-40 in which 250 are married and 50 are unmarried. In our total respondents 100 are males and 200 are females from which 210 have education level primary and 90 have secondary education level.

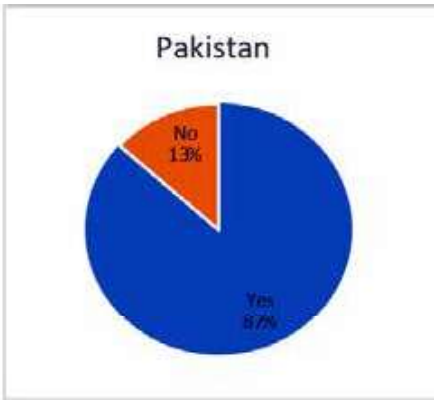


	21-25	26-30	31-35	36-40
People	30	90	120	60
Married	10	60	120	60
single	20	30	0	0
Male	10	30	40	20
Female	30	50	80	40
Primary	30	60	80	40
Secondary	0	30	40	20

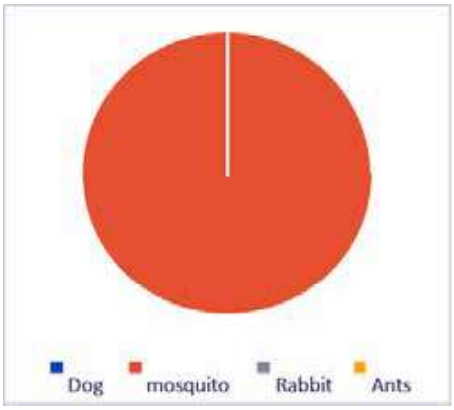
There are 12 questions regarding dengue virus and life style against mosquitoes that we asked from locals of Jalalabad and Lahore and analysed their answers as data for our result.

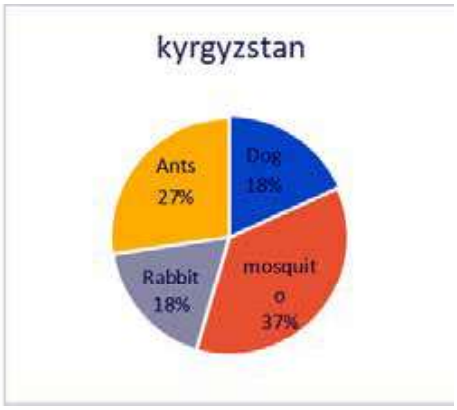
- In Kyrgyzstan 0% people know about dengue virus and 100% didn't know about it.
- In Pakistan, 87% people know about dengue virus and 13% people didn't know about dengue virus.



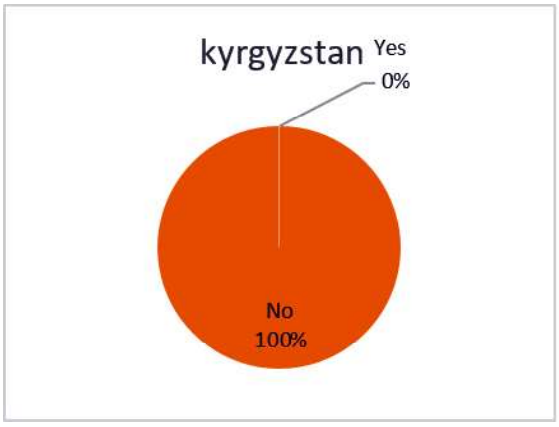


All Lahore respondents give right answer, mosquitoes and no one mark other answer like ant, rabbit, and dog. In Jalalabad, 27% marked Ants, 18% marked Dog, 18% marked Rabbit and 37% marked mosquitoes and these 37% marked right answer by chance because, they didn't know about dengue virus.

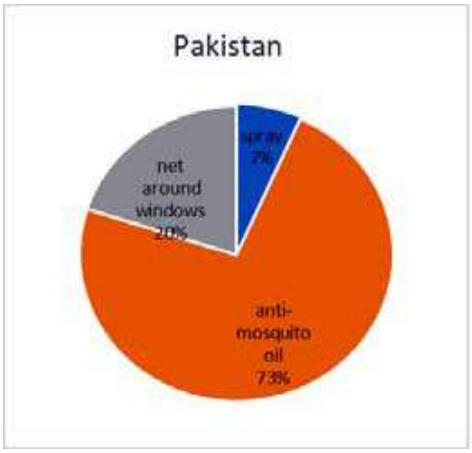


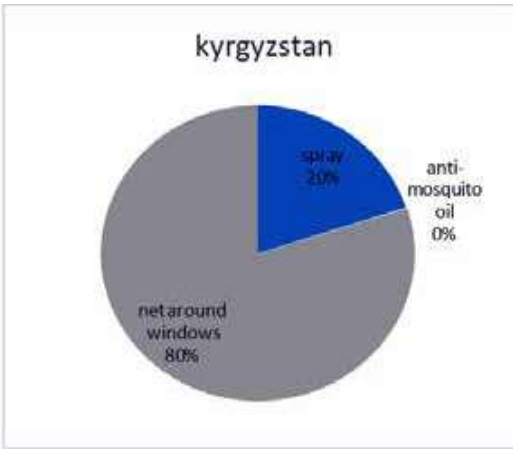


- 0% of Kyrgyzstan respondents is infected by dengue virus therefore 100% respondents marked the answer No .67% of Lahore respondents is infected in their life by dengue virus and 33% didn't infected by dengue virus



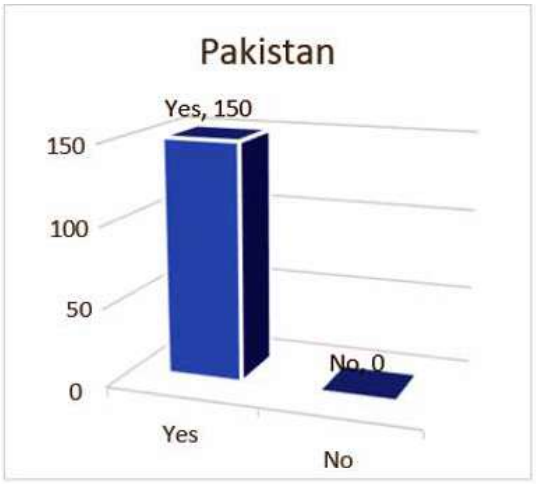
- Lahore respondents, 20% use net around Windows, 7% use mosquitoes spray and 73% people use anti- mosquitoes' oil as a preventive measure for mosquitoes.
- Jalalabad respondents, 20% use spray and 80% use net around Windows as preventive measures and no one use anti- mosquito's oil.

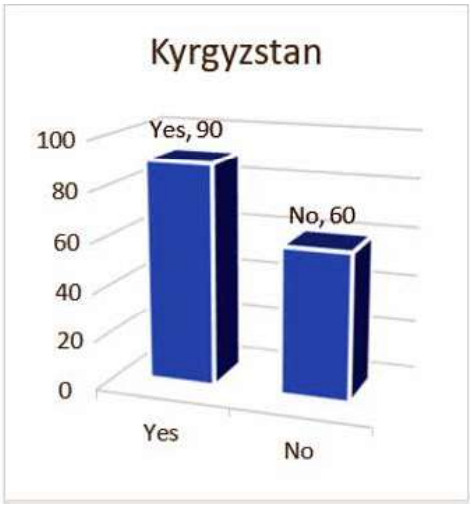




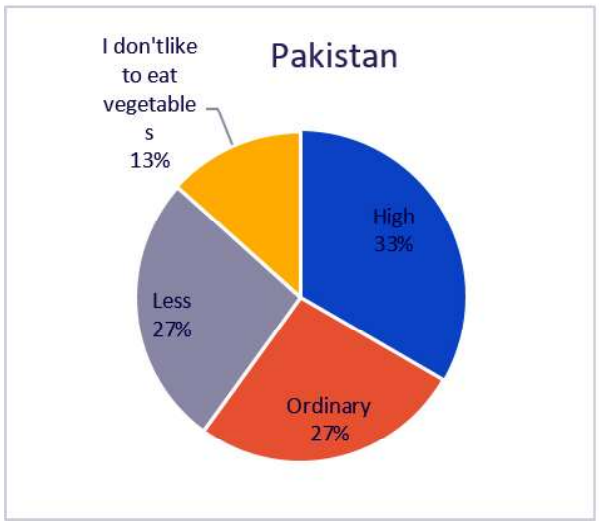
All respondents of Lahore marked answer Yes for storage of water in house and no one marked No.

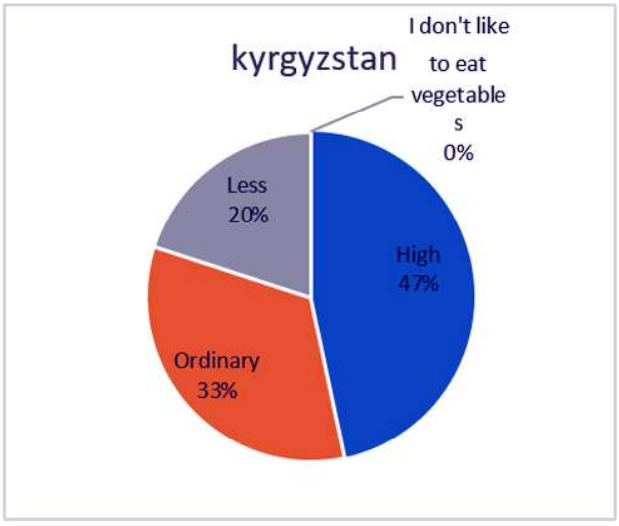
90 respondents of Jalalabad store water at home, in which some may be or maybe not, and in which 60 didn't store water at home.



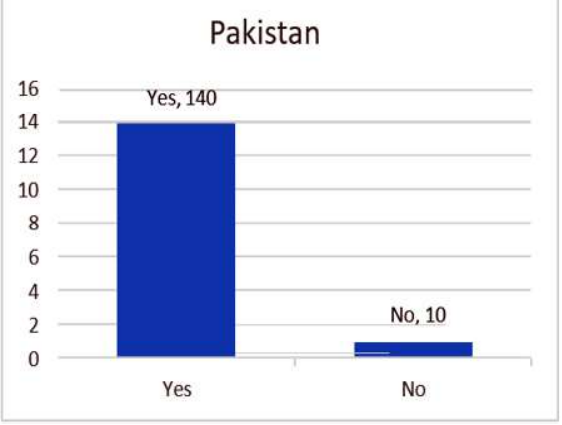


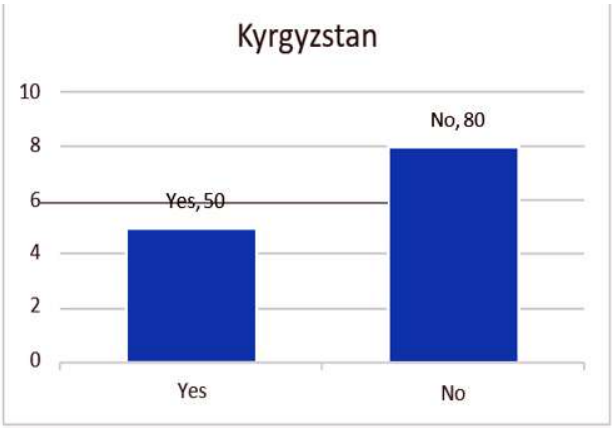
- 13% of Lahore respondents Don't like vegetables to eat, 27 % take less, 27% take normal and 33% take high proportion of vegetables in their diet. Atleast no one mark that they don't like, Jalalabad respondents 20% take less, 33% take ordinary and 47% take high proportion of vegetables in their diet.



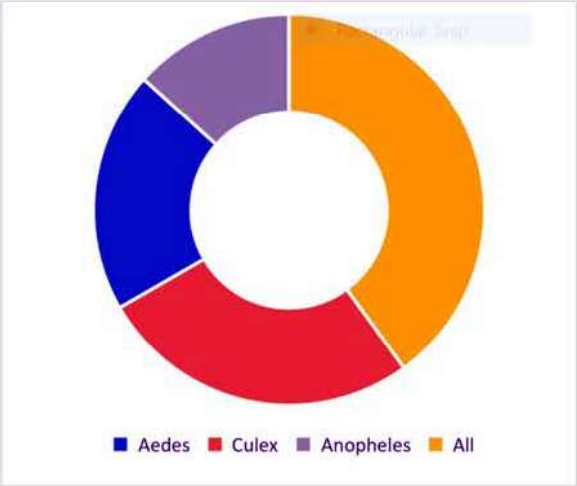


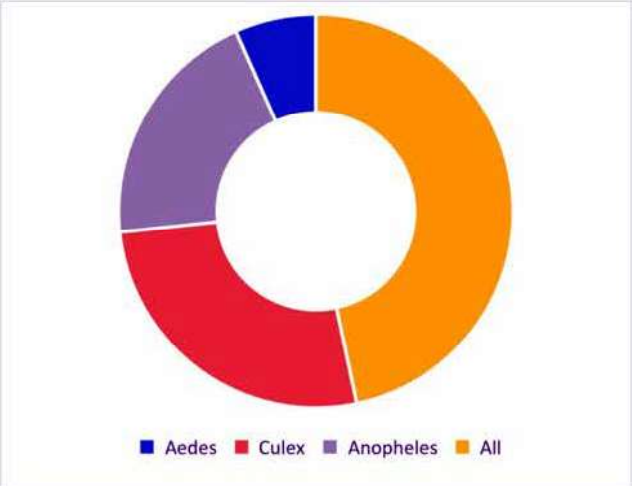
14 respondents from Lahore share their accessories with others but only 1 didn't share their soap, towel, comb etc with others. In Jalalabad 5 respondent share their accessories and 8 didn't share their accessories , that is good thing to stay safe.



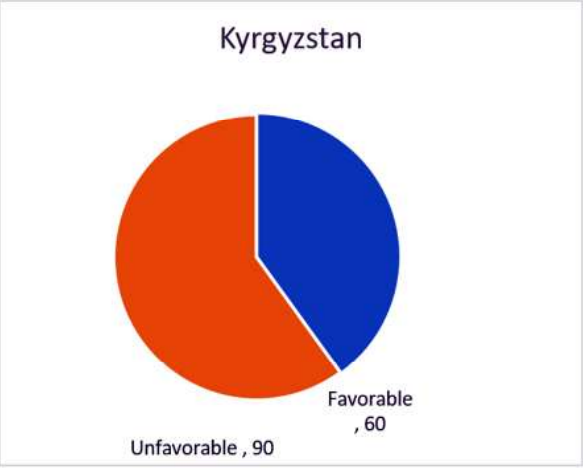


Both Lahore and Jalalabad respondents have not knowledge regarding this question, some give right answer by chance like 20% in Lahore and 7% in Jalalabad.

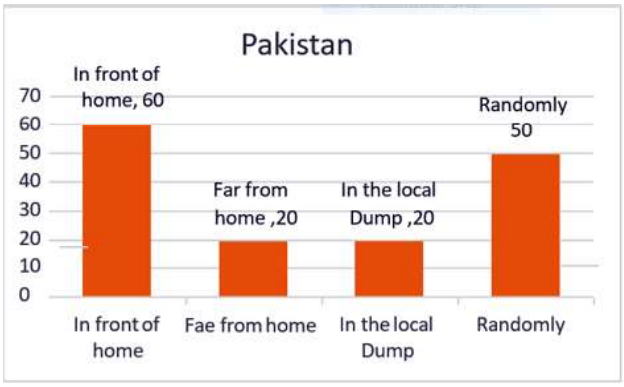


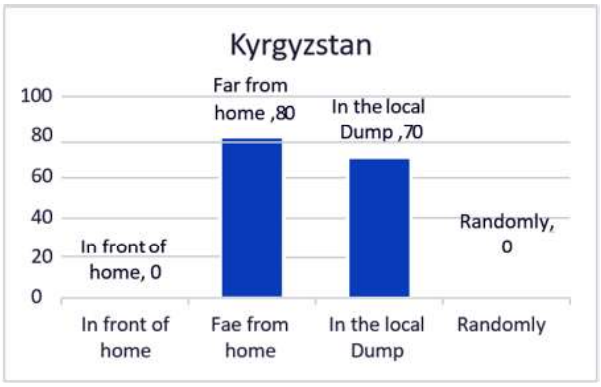


140 Lahore respondents marked yes, that, weather is suitable for mosquitoes' growth and only 10 marked No. Jalalabad respondents marked 60% No and 40% yes, because in whole year mostly there is winters but in month of August there is a lot of mosquitoes at garbage site.

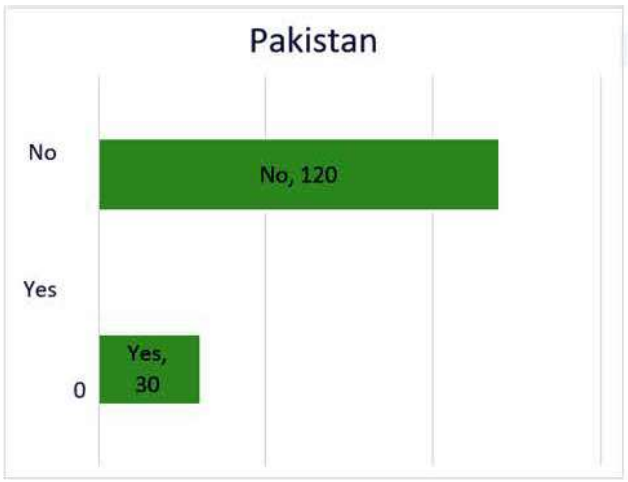


From Lahore respondents, 60 through garbage in front of their homes, 20 far away from home, 20 in local dump and 50 through by chance or randomly. In Jalalabad, No one through in front of their house and no one through randomly. 80 of them through the garbage far away from home and 70 in local dump.

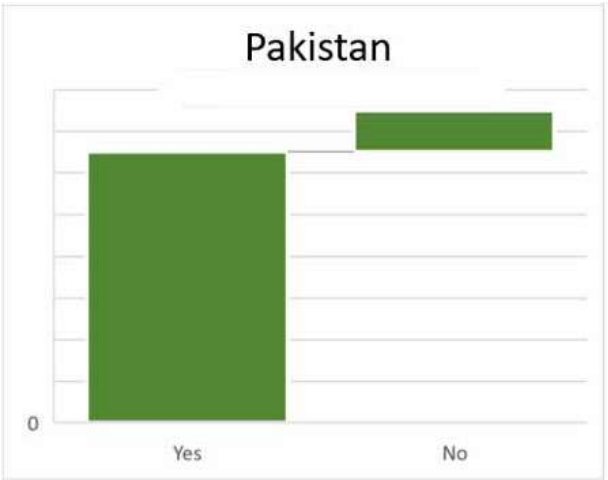


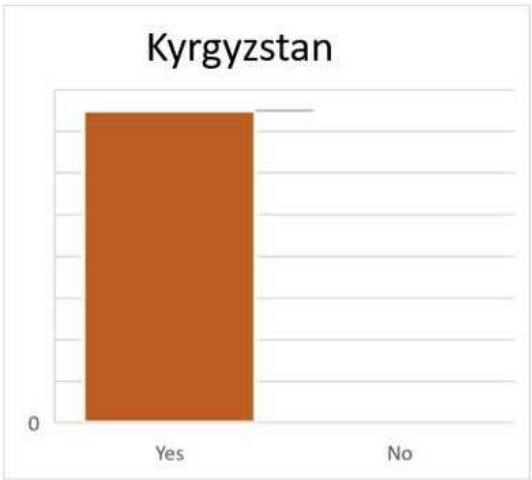


From Lahore respondents, 80% of people don't take calcium and vitamins tablet, and 20% take tablets. From Jalalabad, 53% of people don't take and 47% of people take calcium and vitamins tablets.



In Lahore 13 respondents are not statisfy from their sewerage system of country and 2 are satisfied. In Jalalabad respondents, all are statisfied from the sewerage system of their country.





Discussion

This study aimed to compare the knowledge, awareness, and preventive practices regarding dengue fever between residents of Lahore, Pakistan, a high-risk dengue endemic region and Jalalabad, Kyrgyzstan; where no cases have been officially reported. The findings reveal significant lifestyle-related differences that influence the incidence and risk of dengue infection.

In Lahore, most respondents were aware of dengue fever and recognized its transmission through Aedes mosquitoes [1]. However, despite higher awareness, actual preventive practices were inconsistent. A large number of respondents shared personal accessories, stored stagnant water at home, and reported dissatisfaction with the sewerage system, conditions favourable for mosquito breeding and viral transmission [3]. These findings align with global observations that urban overcrowding, poor sanitation, and unplanned development are major contributors to dengue outbreaks in low- and middle-income countries [2].

In contrast, respondents from Jalalabad displayed minimal knowledge of dengue fever but practiced healthier environmental hygiene, such as avoiding water storage and using window nets [4]. These behaviours may be shaped more by cultural habits and environmental conditions (e.g., a colder climate less conducive to mosquito survival) than by active health education [5]. Importantly, despite the lack of awareness, the preventative lifestyle observed in Jalalabad indirectly aligns with WHO's recommendations for vector control—reducing breeding sites and limiting exposure to mosquitoes [1][6].

Our findings support the hypothesis that lifestyle factors, such as waste disposal, water storage habits, and the use of repellents, play a critical role in the prevention of dengue fever [3][4]. These lifestyle patterns may significantly mitigate the risk of infection, even in the absence of targeted health interventions. Conversely, higher awareness does not always translate into effective prevention if it is not accompanied by practical changes in daily behaviour [4][7].

Moreover, the study reaffirms that dengue prevention is multifactorial. While public knowledge is important, physical infrastructure (e.g., sanitation systems), government vector control programs, and personal hygiene practices collectively determine disease outcomes [1][3]. The disconnect observed between knowledge and practice in Lahore highlights the need for community-based intervention programs that not only educate but also facilitate the adoption of practical preventive measures [3].

Finally, climate change and increased urbanization continue to alter the epidemiology of dengue fever. With global warming expanding the geographical range of Aedes mosquitoes, regions like Jalalabad may become susceptible soon if environmental changes occur [2][8]. Therefore, proactive education and surveillance even in non-endemic regions are essential [2].

Conclusion

This comparative study between Lahore and Jalalabad highlights how lifestyle factors significantly influence the risk of dengue fever, regardless of awareness levels [3][4]. In Lahore, although most respondents were knowledgeable about dengue and its transmission [1], preventive practices were inconsistent and often inadequate [3]. Factors such as poor waste management, stagnant water storage, lack of personal hygiene, and unsatisfactory sewerage systems contributed to an environment conducive to mosquito breeding and disease transmission [3][4]. Conversely, in Jalalabad—despite limited awareness about dengue—residents demonstrated healthier lifestyle habits, such as reduced water storage, better waste

disposal, and use of protective measures like window nets [4]. These practices have likely contributed to the absence of dengue cases in the region [5]. This finding underscores that effective lifestyle behaviours can serve as a strong barrier against dengue, even in the absence of formal health education or endemic risk [4][6].

Overall, the research supports the notion that awareness must be paired with actionable behaviour change [4][7]. Preventive strategies must be practical, community-based, and culturally adapted [3][9]. Dengue prevention is not solely the responsibility of healthcare systems—it also depends on individual and collective commitment to sustainable practices that minimize mosquito breeding and exposure [1][6].

References

1. World Health Organization. Dengue and severe dengue. https://www.who.int/news-room/fact-sheets/detail/dengue
2. World Health Organization. Dengue - Global situation. https://www.who.int/emergencies/disease-outbreak-news/item/2024-DON518
3. BMC Public Health. Factors associated with the increase of dengue cases in Pakistan. https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-020-09064-2
4. Frontiers in Public Health. Knowledge, attitude, and practice regarding dengue in Pakistan. https://www.frontiersin.org/journals/public-health/articles/10.3389/fpubh.2022.929814/full
5. Ebi KL, Nealon J. Dengue in a changing climate. Environ Res. 2016;151:1-14. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7118965/
6. World Health Organization. Dengue: Guidelines for diagnosis, treatment, prevention and control. 2009. https://www.who.int/publications/i/item/9789241547871
7. Simmons CP, Farrar JJ, Nguyen VV, Wills B. Dengue. N Engl J Med. 2007;366(15):1423-1432.
8. Cardona-Ospina JA, Arteaga-Livias K, Rodríguez-Morales AJ. Dengue and climate change: A systematic review. Curr Trop Med Rep. 2020;7:85-94. https://link.springer.com/article/10.1007/s40475-020-00208-4
9. Gubler DJ. Dengue, urbanization and globalization: The unholy trinity of the 21st century. Trop Med Health. 2010;39(4 Suppl):3-11. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3317603/
10. Balmaseda, A., Hammond, S. N., Pérez, L., Téllez, Y., Saborío, S. I., Mercado, J. C., ... & Harris, E. (2010). Trends in patterns of dengue transmission over 4 years in a pediatric cohort study in Nicaragua. The Journal of Infectious Diseases, 201(1), 5–14. https://doi.org/10.1086/648592
11. Cardona-Ospina, J. A., Villamil-Gómez, W. F., Pérez-Díaz, C. E., Bonilla-Aldana, D. K., & Mondragón-Cardona, A. 2021. Dengue situation in Pakistan. National Center of Vector Borne Diseases Control – Ministry of Health, Pakistan.
12. Deubel, V. (2001). The contribution of molecular techniques to the diagnosis of dengue infections. In D. J. Gubler & G. Kuno (Eds.), Dengue and Dengue Hemorrhagic Fever (pp. 335–365). Cambridge: CABI Publishing.
13. Guzman, M. G., Halstead, S. B., Artsob, H., Buchy, P., Farrar, J., Gubler, D. J., ... & Peeling, R. W. (2010). Dengue: A continuing global threat. Nature Reviews Microbiology, 8(12), S7–S16. https://doi.org/10.1038/nrmicro2460
14. Priyadarshini, S. (2008). Single test to detect all dengue serotypes. Nature India. https://doi.org/10.1038/nindia.2008.109
15. Saxena, P., Dash, P. K., Santhosh, S. R., Shrivastava, A., Parida, M. M., & Rao, P. V. (2008). Development and evaluation of one step single tube multiplex RT-PCR for rapid detection and typing of dengue viruses. Virology Journal, 5, 20. https://doi.org/10.1186/1743-422X-5-20
16. Simmons, C. P., Farrar, J. J., Nguyen, V. V., & Wills, B. (2006). Understanding pathogenesis, immune response and viral factors. In Report of the Scientific Working Group Meeting on Dengue, Geneva, 1–5 October 2006 (pp. 54–60). Geneva: World Health Organization.
17. Tanner, L., Schreiber, M. J., Low, J. G., Ong, A., Tolfvenstam, T., Lai, Y. L., ... & Hibberd, M. L. (2008). Decision tree algorithms predict the diagnosis and outcome of dengue fever in the early phase of illness. PLoS Neglected Tropical Diseases, 2(3), e196. https://doi.org/10.1371/journal.pntd.0000196

19. Vazquez-Prokopec, G. M., Stoddard, S. T., Paz-Soldan, V., Morrison, A. C., Elder, J. P., Kochel, T. J., & Scott, T. W. (2010). Quantifying the spatial dimension of dengue virus epidemic spread within a tropical urban environment. PLoS Neglected Tropical Diseases, 4(12), e920. https://doi.org/10.1371/journal.pntd.0000920
20. Vazquez-Prokopec, G. M., Chaves, L. F., Ritchie, S. A., Davis, J., & Kitron, U. (2010). Unforeseen costs of cutting mosquito surveillance budgets. PLoS Neglected Tropical Diseases, 4(10), e858. https://doi.org/10.1371/journal.pntd.0000858
21. Vorndam, V., & Kuno, G. (2001). Laboratory diagnosis of dengue virus infections. In D. J. Gubler & G. Kuno (Eds.), Dengue and Dengue Hemorrhagic Fever (pp. 313–333). Cambridge: CABI Publishing.
22. World Health Organization. (2009). Dengue: Guidelines for diagnosis, treatment, prevention and control. Geneva: WHO and the Special Programme for Research and Training in Tropical Diseases.
23. World Health Organization. (2022). Dengue and severe dengue. Retrieved from https://www.who.int/news-room/fact-sheets/detail/dengue-and-severe-dengue
24. World Life Expectancy. (2020). Kyrgyzstan dengue statistics. Retrieved from https://www.worldlifeexpectancy.com/kyrgyzstan-dengue-fever
25. World Health Organization. (2022). Dengue and severe dengue. https://www.who.int/news-room/fact-sheets/detail/dengue-and-severe-dengue
26. Guzman MG, Harris E. (2015). Dengue. The Lancet, 385(9966), 453–465. [https://doi.org/10.1016/S0140-6736(14)60572-9](https://doi.org/10.1016/S0140-6736%2814%2960572-9)
27. Gubler DJ. (2010). Dengue viruses: their evolution, history, and emergence as a global public health problem. Infectious Disease Clinics, 24(1), 1–13.
28. Simmons CP, Farrar JJ, Nguyen vV, Wills B. (2007). Dengue. New England Journal of Medicine, 366(15), 1423–1432.
29. Cardona-Ospina JA, Villamil-Gomez WE, et al. (2020). Dengue in the time of COVID-19: A double threat for public health. Journal of Clinical Virology, 127, 104398. https://doi.org/10.1016/j.jcv.2020.104398
30. World Health Organization. (2009). Dengue: Guidelines for Diagnosis, Treatment, Prevention and Control. Geneva: WHO Press.

Received / Получено 22.07.2025
Revised / Пересмотрено 28.07.2025
Accepted / Принято 02.08.2025

International Journal of Clinical Science and Medical Research

ISSN(print): 2770-5803, ISSN(online): 2770-582X

Volume 04 Issue 09 September 2024

DOI: https://doi.org/10.55677/IJCSMR/V4I9-05/2024, Impact Factor: 7.606

Page No : 339-344

Knowledge and Practices of Dysmenorrhea and its Effect of Life Among Female Medical Students in Jalalabad

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ABSTRACT

Published Online : September 17, 2024

Dysmenorrhea or painful menstruation is defined as a severe, painful, cramping sensation in the lower abdomen that is often accompanied by other symptoms, such as sweating. headaches, nausea, vomiting, diarrhea, and tremulousness, all occurring just before or during the menses. This study aimed to assess the Knowledge and Practices of dysmenorrhea and its effect of life among female medical students in Jalalabad.

Materials and Methods: A descriptive cross-sectional study was done through online Google forms for a period of 3 months from January to March 202 A structured questionnaire was administered to 173 randomly selected Undergraduate Medical students. Data were analyzed using Statistical Package for Social Sciences (SPSS) version 22.0.

Objective: To gain more insight should think about dysmenorrhea is, if not it's can have alarming consequences sexual life of female. To gain knowledge about dysmenorrhea. To study and practice about dysmenorrhea increase the awareness of immature hygiene and self medication.

Results: In total,173 medical students from 1st year and 2nd year were selected for this study where age range was 17-22 years with mean age of (20±1). Majority of 74% of the participants were found in to have good knowledge about dysmenorrhea. Majority of students who has good knowledge and also had good practices where as students with poor knowledge has poor practice (p value 0.021)

Conclusion: Majority students concluded that dysmenorrhea is a very common problem of female students, and they experience a number of physical and emotional symptoms associated with dysmenorrhea. Mostly students are silently suffer the pain by dysmenorrhea and discomfort associated with it due to lack of knowledge about dysmenorrhea also affects their academic performance. However, their practices were found to be a matter of concern. An educational intervention can be introduced to bring about changes their life style regarding practices about dysmenorrhea among students.

KEYWORDS:

Knowledge, practice, Results, Conclusion

INTRODUCTION

Dysmenorrhea or painful menstruation is defined as a severe, painful, cramping sensation in the lower abdomen that is often accompanied by other symptoms, such as sweating. headaches, nausea, vomiting, diarrhea, and tremulousness, all occurring just before or during the menses.

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****Cite this Article: Farjana Afrin, Shila Acharya, Mahammad Irfan Alam, Safi Reja (2024). Knowledge and Practices of Dysmenorrhea and its Effect of Life Among Female Medical Students in Jalalabad. International Journal of Clinical Science and Medical Research, 4(9), 339-344***

In India reported that dysmenorrhea affects up to 90% of women of childbearing age to varying degrees. Pain is significant in 5-20% who report severe dysmenorrhea or pain that prevents them from participating in their usual activities. In the United States, the annual economic loss has been estimated as 600 million work hours worth 2 billion dollars. The prevalence estimates range from 25 to 90% among women and adolescents (Oksana, 2009). Studies from India reported the prevalence range between 50 to 87.8%. (1)

There are 2 types of dysmenorrhea. Primary dysmenorrhea is defined as spasmodic cramping in the lower abdomen occurring just before or during menstruation Menstrual pains not a symptom of any underlying disorder but part of the normal menstruation process. "primary dysmenorrhea usually

peaks between 20-24 years of age. Symptoms include stomach cramps, backache, diatheses, fatigue, headache, edema, nausea, vomiting and mood changes. These symptom last for more or less three days. The pain of primary dysmenorrhea scanned by excessive E2 and F2a prostaglandin production within secretory interatrial cell.

This prostaglandin release, in turn, causes uterine contractions, uterine muscle ischemia and increased peripheral reined sensitivity. Coupled with their elevated prostaglandin levies, dysmenorrhea women have higher levels of uterine activity during menstruation compared to asymptomatic women. Menstrual bleeding is triggered by progesterone withdrawal following the deems of the corpus luteum As progesterone levels drop prior to menstruation, prostaglandin levels increase together with stimulation of the type-C pain fibers and play a big role in pain, inflammation and other physiological processes regulating body temperature.

Secondary dysmenorrhea is menstrual pain associated with an identifiable disease such as endometriosis, anonymous, uteri fibroids, are infection. (2)

In contrast to primary dysmenorrhea it usually affects older women in their thirties and forties. Elevated prostaglandin production may alto play a women secondary dysmenorrhea, but pelvic pathology must be present women with secondary dysmenorrhea may be more susceptible to developing other chronic pain conditions later in life.

Risk factors: Dysmenorrhea does not usually occur within the first six months, after the first menstruation.

we aimed to determine the prevalence of dysmenorrhea and predictors of dysmenorrhic pain severity among female university students. The results of our study showed that the prevalence of dysmenorrhea was relatively high (85.1%) but fits within the reported values from developing and developed countries. Published studies showed variable rates of dysmenorrhea ranging from 34% in Egypt, 80% in Australia, 85% among Hispanic female adolescents, and 94% in Oman [33,34,35]. Furthermore, studies showed that the prevalence of severe dysmenorrhic pain varies from 0.9% reported from Korea to 59.8% reported from Bangladesh. (3)

First-line procedures in the diagnosis of primary dysmenorrhea include a clinical history and physical examination" Its important to rule out any other possible pathological causes for the menstrual pain, as well as to determine the best approach for the management of pain. "If the etiology remains unknown after an appropriate non-invasive evaluation, a lapamscopy indicated.

Treatment of dysmenorrhea is aimed at providing symptomatic relief as well as inhibiting the underlying processes that cause symptoms. Grading dysmenorrhea according to the severity of pain and the degree of limitation of daily activity may help guide the treatment strategy. Medications used may include NSAIDs and opioid analgesics, as well as hormonal contraceptives. In addition to pain relief, mainstays of treatment include reassurance and education. Other therapies have been proposed, but most are not well studied.

Treatment of secondary dysmenorrhea involves correction of the underlying organic cause. Specific measures (medical or surgical) may be required to treat pelvic pathologic conditions (e.g., endometriosis) and to ameliorate the associated dysmenorrhea. Periodic use of analgesic agents as adjunctive therapy may be beneficial.(4)

Global data: Primary dysmenorrhea is the most commonly reported gynecological and menstrual disorder. It affects a large proportion of women of reproductive ages. It affects millions of women during their reproductive year.

Globally, the previous epidemiological investigations have reported that the magnitudes of dysmenorrhea ranges from 41.7% to 94%. (5)

In sub-Saharan Africa, the prevalence of primary dysmenorrhea ranges also from 51.1% to 88.1%.In Ethiopia the prevalence of primary dysmenorrhea ranges from 62.3% to 85.4%.

The common risk factors for primary dysmenorrhea are a positive family history of dysmenorrhea, obesity, being younger age, shorter or longer menstrual cycle interval, stress, menstrual cycle irregularity, early menarche before 12 years and circumcision.(6)

METHOD AND METHODOLOGY

A descriptive cross sectional study was done through online google forms for a period of 3month from February to April 2024.A structured questionnaire was administered to 173 of 1st year and 2nd year selected Undergraduate Jalal Abad medical students.

Data were analyzed using Statistical Package For Social Science(SPSS) version 22.0.Association between dependent and independent variable were done using a Chi square test.

RESULT

Socio demographic information

In the study we have 173 respondents among them 53.8% belongs to 1st remaining 46.2% belong to 2nd year. Similarly regarding their religion, maximum 52.6% were from Hindu religion followed by 42.2% Muslim and remaining 4.6 and 0.6 were from Christian and Jew religion respectively.

Respondents on the basis of their age, maximum 55.5% (n=96) of the respondents belongs to age of 20-22 years, 37.6% (n=65) were from 17-19 years and remaining 6.9%(n=12)were from 23-25 years age group.

Almost (64.7%) were from single family background where as (35.3%) they were from joint family background.

Respondents regarding family income status majority 64.2% respondents were from middle income and remaining 30.1% and 5.8% were good and bad income status. Similarly regarding respondents mother level of educated (69%) had done their secondary level of education, (21%) completed University education and remaining 20% had only completed their primary education.

On the information of relationship status majority 96% respondents said that they were single where as remaining 4% were married.

among 173 respondents majority 68.8% respondents mother were housewife and 31.2% respondents mother are employee.

Table 1: Distribution of respondents according to their knowledge on dysmenorrhea

Responses	Frequency	Percentage
Painful menstruation	128	74.0
Heavy bleeding during menstruation	11	6.4
Little amount of bleeding during menstruation	6	3.5
All of the above	28	16.2
Total	173	100.0

Above table shows that among 74% of respondents agree that dysmenorrhea is painful bleeding,6.4% of respondents agree that dysmenorrhea is heavy bleeding during menstruation 3.5% respondents agree that dysmenorrhea is little amount of bleeding during menstruation, remaining 16.2%

Table 2: Distribution of respondents according to their Age of first menstruation

Age of first menstruation	Frequency	Percent
9-11 years	27	15.69
12-14 years	117	67.6
Above 15 years	29	16.8
Total	173	100.0

Above table shows that majority of respondents 67.6%(n=117) agree that age of first menstruation when they are 12-14 years old,15.6%(n=27) of respondents were 9-11 years remaining 16.8%(n=29) respondents were above 15 years old.

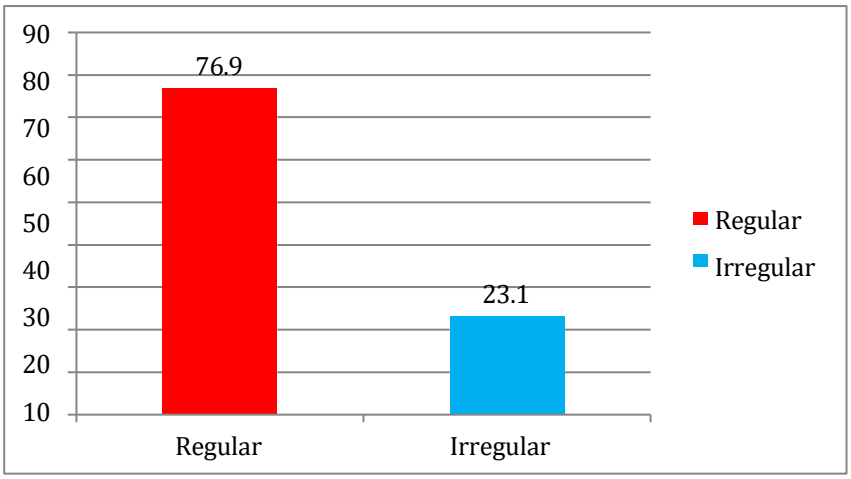

Figure 1: Distribution of respondents according to the nature of their menstruation cycles

Above figure shows that majority respondents 76.9% were regular menstruation cycle and 23.1 % were irregular menstruation cycle.

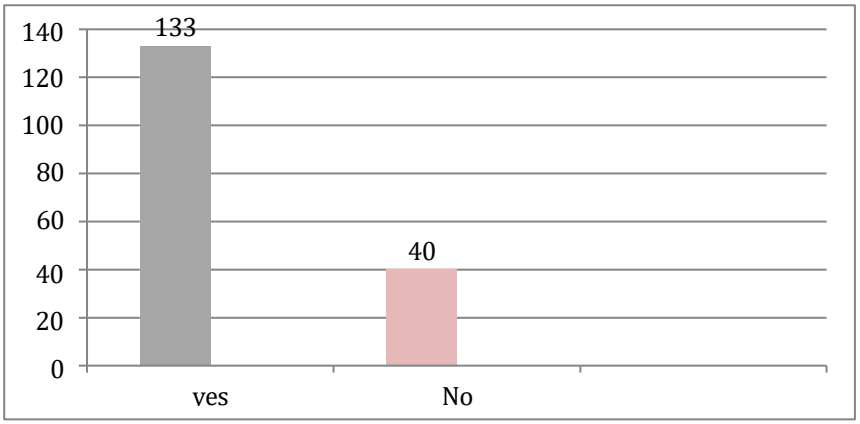

Figure 2: Distribution of respondents according to their painful menstrual period?

Above figure shows that among 173 respondents 133 respondents agreed that in menstrual period is painful and 40 respondents are disagreed.

Table 3: What are the most common symptoms during the menstrual cycle?

Responses	Frequency	Percent
Breast tenderness	21	12.1
Physical discomfort	94	54.3
Stress	39	22.5
Headache	4	2.3
Diarrhea	4	2.3
Dizziness	11	6.4
Total	173	100.0

Above table shows that most common symptoms during the menstrual cycle is physical discomfort (54.3%), then stress 22.5% and diarrhea and headache are less common symptoms (2.3%)

Table 4: How long does the bleeding during menstrual cycle it last?

Responses	Frequency	Percent
1-2 days	14	8.1
3-4 days	74	42.8
5 and more days	85	49.1
Total	173	100.0

Above table shows that 49.1% respondents were 5 and more days bleeding during menstrual cycle it last one month.

Table 5: Distribution of respondents according to the level of knowledge and practices

Responses	**Frequency**	**Percentage**
Level of knowledge		
Good Knowledge	124	71.7
Poor Knowledge	49	28.3

In accordance with the grading scale devised majority 71.7% of the participants were found to have good knowledge and 28.3% to have poor knowledge on Dysmenorrhea.

Table 6: Distribution of respondents according to level of practices

Responses	Frequency (n)	Percentage %
Level of practices		
Good Practices	112	64.7
Bad practices	61	35.3

Above table shows that 64.7% of the respondents had good practice about dysmenorrhea as remaining 35.3% had poor practices about dysmenorrhea.

Table7: Correlation between level of knowledge and socio demographic information

Characteristics	**Level of Knowledge**	
	Good	**Poor**
Year of study		
1st year	39	41
2nd year	85	8
Mother Education status		
Primary	29	11
Secondary	48	21

University	47	17
Nationality		
India	95	40
Pakistan	22	6
Bangladesh	7	3
Mother Occupation		
Housewife	34	15
Employee	85	39

A total of 173 medical students from 1st and 2nd year where as 2nd year medical students(85) good knowledge about Dysmenorrhea compare to then 1st year medical students (39). Respondents mother who are study in secondary and university education they were good knowledge about Dysmenorrhea where as p value is 0.013. Where as majority of the students (95)were from India good knowledge about Dysmenorrhea and 22 were from Pakistan students good knowledge about Dysmenorrhea where p value is 0.036..Respondents mother who is employee they're good knowledge about Dysmenorrhea where p value is 0.008.

Table 8: Correlation between level of practices and socio demographic information

Characteristics	Level of practices	
	Good	Poor
Age of respondents		
17-19	42	23
20-22	64	32
23-25	6	6
Year of Study		
1st year	53	27
2nd year	59	34
Mother educational status		
Primary	25	15
Secondary	46	23
University	41	23
Type of family		
Joint family	39	21
Single Family	72	40

DISCUSSION

Similar to a study conduct among students at Abdeigaber Mohammad and Tale secondary school of Mania city ,where 40.3% respondents mother were secondary education, the majority of respondents mother level of secondary education is 69% in this study. (7)

In our study maximum 55.5% of the respondents belongs to age of 20-22 years where as similar study Index Medical college of Madhya Pradesh. India 57% of respondents belongs to age of 20-22 years .(8)

In this study 76.9% students had a regular menstruation cycle where as study done in Ethiopia shows that 47.19% students had a regular menstruation cycle. (9)

Knowledge related

In this study, majority 74% of students agreed that Dysmenorrhea is painful menstruation where as another study done in urban school in Srilanka also had the similar finding that is 85%, another study done in Banikarim's (2000) studies is 85% of students agreed that Dysmenorrhea is painful menstruation. (10)(11)

Similar to a study conduct in suburban district of Tehran, Where 75.7 %respondents agree pain during menstruation it's normal similarly this study 80.9% respondents were agree this statement.

A study done in Banikarim's 64.6% respondents were agreed that It is better for women experience painful periods to avoid sex similarly in this study 52% students were agreed.

In this study, majority of students 57.4% were agreed that when the lining of uterus is shed then menstruation pain occur, similar study done in Mongos that is 56.4% respondents agree that lining of uterus is shed then menstruation pain occur.

Similar to a study done in Haramaya University students, Eastern Ethiopia that is 43.82% students experienced first menstruation cycle is 12- 14 years age, In this study 67.7% respondents accept that first menstruation cycle start in 12-14 years age group. In this study 74% of students experience pain during menstruation cycle other similar study done in

Gondor University of Western Ethiopia that's is 81.4% experience pain during menstruation period.

In our study 78% students thought women cannot get pregnant during their period where as a study done Adolescent Girls in Suburban Districts of Tehran that's 80.7% students thought women cannot pregnant during their menstruation. (12)(13)

Practice related

In this study, majority of students agreed that Dysmenorrhea is painful menstruation where as another study done in urban school in srilanka that is 85%, another study done in Banikarim's (2000) and Mongo's (2006) studies is 85% and 45-95%, respondents agreed that Dysmenorrhea is painful menstruation. (14)

Similar to a study conduct in suburban district of Tehran, Where 75.7 %respondents agree pain during menstruation it's normal similarly this study 80.9% respondents were agree this statement.

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In our study 78% students thought women cannot get pregnant during their period where as a study done Adolescent Girls in Suburban Districts of Tehran that's (80.7%) In the present study ,the majority of students (49.1%) have moderate pain during their menstruation period , another study done in Srilanka where as majority of students (59%) experienced moderate pain during their menstruation .

In this study 32.4% participants experience menstruation pain for till two day where as another study done in Nigeria 57.7% percipient experience menstruation pain for 3 to 4 days, According to a study conducted in Urban school in Srilanka ,the most common symptom was physical discomfort (84%), similarly in this study most common symptom physical discomfort(54.3%) experience their menstruation period.

A study done in Italy,95%respondents experience pain during their menstruation period for 5 and more then 5 days where as in this study 49.1% respondents experience pain 5 and more then 5 days.(15)(16)(17)(18)

REFERENCES

1. Dysmenorrhea and related disorders Mariagiulia Bernardi et al. F1000Res. 2017.
2. Prevalence and Impact of Dysmenorrhea among Omani High School Students Rahman Al-Kindi et al. Sultan Qaboos Univ Med J. 2011 Nov.
3. Dysmenorrhea in adolescents and young adults: a review in different country V.incenzo De Sanctis et al. Acta Biomed. 2016.
4. A U-Shaped Relationship between Body Mass Index and Dysmenorrhea: A Longitudinal Study Hong Ju et al. PLoS One. 2015.
5. Prevalence and Associated Factors of Primary Dysmenorrhea Among Debre Tabor University Students, North Central Ethiopia Awoke Giletew, Work aferahu Bekele Published 26 March 2019.
6. Dysmenorrhea among University Health Science Students, Northern Ethiopia: Impact and Associated Factors Teshager Aklilu Yesuf et al. Int J Reprod Med. 2018.
7. Assessment of knowledge, Attitude and Practice among Adolescent Girls Regarding Dysmenorrhea. Authors: AsmaaGomaaAwad ,Entisar Mohmed Youngers ,Hoda Abd el aziam Mohmed .2019
8. Menstrual characteristics and prevalence of dysmenorrhea in college going girls MoolRaj Kural et al. J Family Med Prim Care. 2015 Jul-Sep.
9. Prevalence, Impact, and Management Practice of Dysmenorrhea among University of Gondar Students, Northwestern Ethiopia: A Cross-Sectional Study Minaleshewa Biruk Gebeyehu et al. Int J Reprod Med. 2017.
10. Knowledge and attitudes towards dysmenorrhea among adolescent girls in an urban school in Sri Lanka Hapuarachchige Sewvandi Maliga Sampath Kumari Wijesiri et al. Nurs Health Sci. 2013 Mar.
11. Prevalence and Risk Factors of Primary Dysmenorrhea in Students: A Meta- Analysis Liwen Wang et al. Value Health. 2022 Oct.
12. Impact of Dysmenorrhea on Academic Performance Among Haramaya University Undergraduate Regular Students , Eastern Ethiopia Tiruye Tilahun Mesele et al. Front Reprod Health. 2022.
13. Assessing knowledge, attitudes, and behavior of adolescent girls in Suburban districts of Tehran about dysmenorrhea and menstrual hygiene November 2001
14. Knowledge and attitudes towards dysmenorrhea among adolescent girls in an urban school in Sri Lanka Hapuarachchige Sewvandi Maliga Sampath Kumari Wijesiri et al. Nurs Health Sci. 2013 Mar.
15. ATTITUDES of FEMALE ADOLESCENTS ABOUT DYSMENORRHEA AND MENSTRUAL HYGIENE IN TEHRAN SUBURBS M. Poureslami, F. Osati-Ashtiani 2002
16. Impact of Dysmenorrhea on Academic Performance Among Haramaya University Undergraduate Regular Students, Eastern Ethiopia Tiruye Tilahun Mesele et al. Front Reprod Health. 2022.
17. Management of Primary Dysmenorrhea by School Adolescents in ILE-IFE, Nigeria Ogunfowokan, O. A. Babatunde Published in Journal of School Nursing 1 April 2010 Medicine
18. Prevalence of Dysmenorrhea and Associated Factors Among Haramaya University Students, Eastern Ethiopia Tiruye Tilahun Mesele et al. Int J Women's Health. 2022.

International Journal for Multidisciplinary Research (IJFMR)
E-ISSN: 2582-2160 ● Website: www.ijfmr.com ● Email: editor@ijfmr.com

Pregnancy Induced Hypertension and It's Associated Factors Among Women Attending Delivery Center

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Abstract

Background: Pregnancy-induced hypertension (PIH) is a dangerous condition that can arise during pregnancy and has been associated with a number of negative outcomes for both the mother and the fetus. According to estimates from the World Health Organization, the effects of hypertensive diseases during pregnancy claim the lives of at least one woman every seven minutes. Examining pregnancy-induced hypertension and associated risk factors in women receiving prenatal treatment at Jalalabad Hospital is the aim of this study.

Method: During two months, from October 1 to November 30, 2023, a cross-sectional survey was conducted in the maternity hospitals located in Jalalabad. The hospital provided a proportionate amount of the total sample size (620). Using a systematic sampling procedure, study participants were chosen. A p-value of less than 0.05 was deemed statistically noteworthy.

Result: Out of a total of 620 pregnant women, only 8% (50/620) of pregnant women had Hypertensive Disorders in Pregnancy (HDP). The average age of the respondent who visited outpatient department of a maternity hospital in Jalalabad was 27.5± 2 years with the majority 42% in years 25-30. The findings from our study indicate that hypertensive disorder in pregnancy has a significant relationship with risk factors such as increasing maternal age ($p<0.041$), body mass index (BMI) ($P<0.007$), and family history of hypertension in pregnancy ($p<0.026$). Whereas other risk factors assessed in our study had no significant association with HDP.

Conclusion: The findings of our study highlight the importance of factors including obesity, advancing pregnancy age, and a family history of hypertension as risk factors for HDP. It also emphasizes the necessity of appropriate preconceptional counseling, regular ANC monitoring, and HDP treatment in order to minimize morbidity and death associated with this condition.

Keywords: Pregnancy induced hypertension, associated factors, Pregnancy

Introduction

The term "pregnancy" refers to the time when a fetus develops inside a woman's uterus, during which time significant physiological changes occur in women's bodies. Nevertheless, some have issues as they

develop, endangering the health of the moms and the fetus.(1) While the origin of hypertension during pregnancy is unknown, gestational hypertension is a prevalent cause of maternal morbidity. The chance of having gestational hypertension may increase due to certain conditions, such as pre-existing hypertension, a family history of hypertension, or any type of kidney illness.. One of the leading causes of maternal death, especially in developing nations, is still hypertensive disorders during pregnancy. The World Health Organization (WHO) describes hemorrhage, HDP, and infection as the deadly trifecta of pregnancy. These conditions greatly increase maternal mortality and morbidity, taking the lives of at least one woman every seven minutes (2).

The incidence of HDP increased from 16.30 million to 18.08 million worldwide between 1990 and 2019, a total increase of 10.9% over 20 years. Pre-eclampsia and other pregnancy-related hypertension disorders fall under the umbrella term "PIH." Pre-eclampsia is more common in women with antiphospholipid antibodies, pre-existing diabetes, multiple pregnancies, nulliparity, familial history, high blood pressure, and a high body mass index (4). There are several known risk factors for a developing of PIH. Pregnancy-induced hypertension was found to be connected with a number of factors including living in a rural area, being illiterate, having a history of renal illness, having a family history of hypertension, and not eating enough vegetables.(5) Another study found a clear correlation between racial and ethnic differences and the prevalence of maternal hypertensive disorders, with risk variables including obesity, gestational diabetes, education level, and maternal age.(6) Other major risk factors for PIH include extremes in mother age, passive and active smoking, primigravida and multipara (≥5), aided vaginal delivery, elective cesarean section, interval between pregnancies ≥ 4 years, and specific contraceptive methods.(7)

According to a meta-analysis carried out in Ethiopia, women who have hypertension during pregnancy had 3.89 times higher risks of giving birth to infants with low birth weights than women who do not have hypertension. Women who developed pregnancy-induced hypertension gave birth to low-birth-weight babies in excess of one-third of their babies.(8)

The mother is more likely to experience heart attacks, heart failure, kidney failure, and cerebral vascular accidents if she has severe hypertension. Furthermore, problems like inadequate placental oxygen transfer, growth limitation, premature birth, placental abruption, stillbirth, and neonatal death put the fetus at higher risk. (9)

Materials and Methods

Among women receiving antenatal care at Jalalabad Hospital over a three-month period, a descriptive cross-sectional study was carried out to evaluate pregnancy-induced hypertension and its associated variables. This study took place between October 1, 2023, and December 31, 2023. Direct interviews utilizing a series of standardized questionnaires were used to collect the data. A prior study on hypertension during pregnancy served as the basis for the questionnaire.

Study Population:

Our study concentrated on pregnant patients who visited the outpatient department of the maternity hospital in Jalalabad for consultation and whose pregnancy was verified by ultrasound or biological test.

Inclusion and exclusion criteria:

Inclusion criteria: All pregnant women at maternity hospitals who were diagnosed with hypertensive disorder (HDP) and whose gestational age was greater than 28 weeks for an ANC checkup were eligible to participate in the study.
Exclusion Criteria: Study participants who had eclampsia, were critically unwell, or were known to have persistent hypertension were not excluded

Sample size:
The sample size was determined by: $n=t^2 *p*(1-p)/m^2$
n = Minimum sample size for significant results
t = Confidence level = 95% will be 1.96
p = Estimated proportion of population with the characteristic (10%)
m = Margin of error 3%
n= 1.96x1.96x0.1x(1-0.1)/0.0236x0.0236 = 620

Result
Out of total 620 pregnant women from maternity hospitals of Jalalabad for three month period of time only 8% (50/620) of pregnant women had Hypertensive Disorders in Pregnancy (HDP).

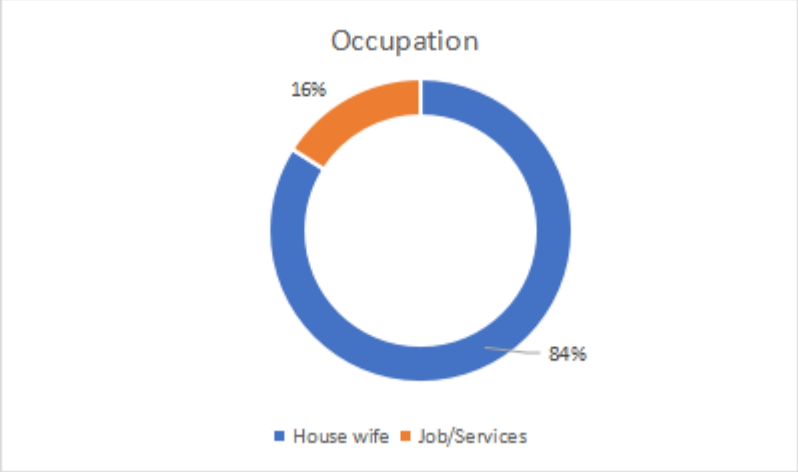
Socio-demographic Information

Table 1: Distribution of respondents according to their socio-demographic information

Responses	Frequency (n=50)	Percentage(%)
Age		
<20	2	4
20-24	9	18
25-30	21	42
>30	18	36
Marital Status		
Married	47	94
Divorced	3	6
Educational Status		
Primary	29	58
Secondary	17	34
University Level	4	8

The average age of the respondent who visited out patient department of maternity hospital in Jalalabad was 27.5±2 year with majority 42% in year 25-30 years. Majority of respondent 94% were married and remaining 6% were leaving single as being divorced. Majority of respondents 58% have only completed their primary level education whereas only 8% have done their Univerisity level higher education. (Table 1)

Figure 1: Distribution of respondents according to their occupation



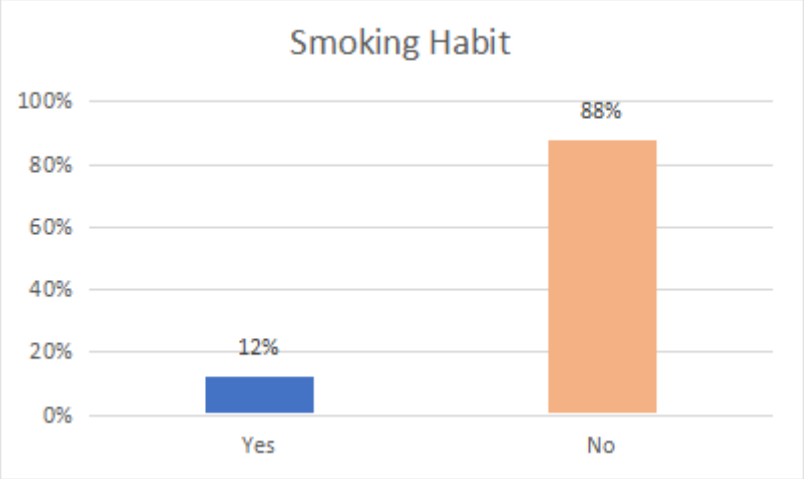
Almost 84% respondents were house wife and remaing 16% were engaged in certain types of job.(Figure 1)

Table2: Distribution of respondents according to the present pregnancy status

Responses	Frequency(50)	Percentage(%)
BMI		
<19	11	22
19-25	16	32
25-30	6	12
>30	17	34
Wanted pregnancy		
Yes	45	90
No	5	10
Gravida		
Primi	8	16
Multi	42	84
Number of ANC visit		
2 ANC Visit	2	4
3 ANC Visit	30	60
=>4 ANC Visit	18	36

Out of 50 HDP patients, 34% of the respondents were having BMI more that 30 (Obesity) similarly 32% of respondents were found to have normal BMI i.e 19-25. Regarding the status of pregancy 90% pregnant women said they have planned for their pregancy whereas remaining 10% said they havent planned for this current pregnancy. Out of 50 respondents, 16% were in primi gravida where as majority 84% of the pregnant women were with multi Gravida status. Most of the pregnant women 60% had done their three ANC visit similarly 36% have done for at least or more than 4 ANC visit as a follow up for their pregnancy. This shows that majority of women in Jalalabad were aware about the importance of having proper regular ANC check-up as per recommeded by WHO for early detection of any abnormality during pregancy. (Table 2)

Figure:2 Distribution of respondents according to their smoking habit



Above figure shows respondents regarding their smoking habit, where majority 88% said they dont smoke.

Table 3: Distribution of respondents according to their past obsteric history

Responses	Frequency(n=50)	Percentage(%)
Previous PIH		
Yes	5	10
No	44	88
I dont know	1	2
Gestational Diabetes		
Yes	2	4
No	46	92
I dont know	2	4

A proportion of 10% of the pregnant women had history of previous PIH and similarly only 4% of the pregnant women said they had gestational diabetes during her previous pregnancy. (Table 3)

Table 4: Distribution of respondents according to their family history of chronic disorders and habits

Family History	Frequency(n=50)	Percentage(%)
Hypertension		
Yes	22	44
No	28	56
Kidney Disease		
Yes	2	4
No	48	96
Diabetes		
Yes	6	12
No	41	82
Smoking Habit		

Yes	22	44
No	28	56

Out of 50 respondents, almost fifty percentage of the respondents family had history of hypertension whereas 96% of respondents said they didnt have any kidney diseases in their family regarding diabetes also only 12% of the resondents said they had family members who are affected with diabetes. Similarly 44% of the respondents said someone in their family members they smokes.(Table 4)

Table 5: Factors associated with Hypertensive Disorders of Pregnant women with socio demographic information

		HDP		p-value
Age	**Total (n=620)**	Yes (n=50)	Percentage(%)	***0.041**
<20	52	2	4	
20-24	153	9	18	
25-30	181	21	42	
>30	234	18	36	
BMI				***0.007**
<19	150	11	22	
19-25	157	16	32	
25-30	98	6	12	
>30	215	17	34	
Family History of Hypertension				***0.026**
yes	246	22	44	
No	374	28	56	
Family history of Diabetes				**0.060**
yes	24	6	12	
No	576	41	82	
I dont know	20	3	6	
Smoking habit				**0.095**
Yes	31	6	12	
No	589	44	88	

* Statistically significant

The variables linked to Hypertensive Disorders in Pregnancy (HDP) in our research study's pregnant participants are shown in this table.The p-value, which indicates the statistical significance of the association, is displayed in the table along with the number and percentage of pregnant women with HDP for each factor. Age, BMI, family history of hypertension in relation with HDP were found to be associated with p-values of 0.041, 0.007, and 0.026, respectively, indicating a statistically significant relationship.There is no statistically significant relationship of family history of diabetes and smoking habits with HDP according to the p-values of 0.060 and 0.095.

Discussion

One of the main causes of maternal morbidity and mortality during pregnancy is hypertensive disorders. According to our study, 8% (50/620) of pregnant women attending delivery services in Jalalabad, Kyrgystan, had hypertensive disorders in pregnancy (HDP). The prevalence of HDP in this study was 7.8%, which was comparable to the study done in India (10). The low prevalence of hypertensive disease during pregnancy in these studies may be attributed to the short study duration and small sample size.

The majority of participants in our study who had pregnancy-induced hypertension (PIH) were over 25 (78%). Comparably, a case-control research conducted in an Indian hospital found that pregnant women in the age group of 25 had a greater prevalence of hypertension (74.6%).(11)

The majority of patients with PIH of those in this study were housewives (42/50) In the same way 43.2% of cases in a study conducted in Public Hospitals in the Wolaita Zone of South Ethiopia were housewives (41/95), which is inconsistent with our research.(12)

About 10% of the respondents reported having prior experience with pregnancy-induced hypertension (PIH), compared to over 88% who had no prior history of the condition. 92% of those surveyed had no prior history of gestational diabetes. Similarly, 98% of participants in a research conducted at a teaching hospital in Bangladesh had no prior history of pregnancy-induced hypertension, which is consistent with the findings of this study. 96% of those surveyed had no prior history of gestational diabetes. (13)

In the present study, 34% (17/50) of patients with hypertension problems during pregnancy had BMIs more than 30. This is consistent with an Indian study that discovered the majority of HDP individuals also had BMIs above thirty.(14) Similar findings have been reported by a few other research, which point to obesity as a risk factor for pregnancy-induced hypertension (15). Therefore, obese and overweight women should lose weight before getting pregnant as there may be an increased risk of gestational hypertension.

Of the 50 participants in the research, 4% had a history of kidney disease. This is in line with findings from Ethiopia, where 7.7% of patients with PIH also had a history of kidney disease.(16).

Factors linked to HDP (10%) included a previous history of preeclampsia or gestational hypertension. This finding is consistent with a study conducted in the city of Parakou, which discovered a similar finding following a review of the literature on preeclampsia risk factors during pregnancy. In our research, a family history of hypertension was found to be statistically linked with HDP ($p < 0.026$). In his research, M. V. Vodouhe1 reported a similar outcome, which supported the notion that a family history of hypertension poses a risk for developing arterial hypertension during pregnancy (17).

The study revealed that the incidence of HDP was correlated with the age, BMI, and family history of hypertension of the participants. The p-values for these factors were 0.041, 0.007, and 0.026, respectively, suggesting a statistically significant link. Obesity raised the incidence of PIH by ten times, according to a prospective research by Bener and Saleh (18). Likewise, additional research has demonstrated that obesity increases the chance of having PIH (19). Consequently if such women were to become pregnant, they would be at higher risk of developing PIH. But in contrast there were no statistically significant relationship of with other variables like, family history of diabetes and smoking habits etc according to the p-values of 0.060 and 0.095.

Limitations

The short study period, small sample size, and single center study were possible limitations. Additional

limitations included recall bias, which was inevitable given that risk factors were assessed at the time of diagnosis.

Conclusion and Recommendation

The prevalence of pregnancy induced hypertension among women attending delivery service was 8%. The results of our study demonstrate the number of variables as significant risk factors for hypertensive disorders in pregnancy, such as obesity,increasing pregnancy age, and a family history of hypertension.It is therefore imperative that weight loss be prioritized, and that appropriate preventative measures be followed to manage hypertensive disorders in families. Early detection and treatment of chronic conditions such as hypertension have also been identified as critical interventions.

Reference

1. Chaim SRP, Oliveira SMJV, Kimura AF (2008) Pregnancy-induced hypertension and the neonatal outcome. Acta Paul Enferm 21(1): 53- 58.
2. Maternal health; World health organization; Available from: www.who.int/health-topics/maternal-health
3. Wang, X. Xie, T. Yuan, et al.Epidemiological trends of maternal hypertensive disorders of pregnancy at the global, regional, and national levels: a population-based study BMC Pregnancy Childbirth, 21 (1) (2021), p. 364, 10.1186/s12884-021-03809-2
4. Gudeta TA, Regassa TM. Pregnancy induced hypertension and associated factors among women attending delivery service at Mizan-Tepi University Teaching Hospital, tepi general hospital and Gebretsadik Shawo Hospital, Southwest, Ethiopia. Ethiopian Journal of Health Sciences. 1970 Jan 1;29(1). doi:10.4314/ejhs.v29i1.4
5. Belayhun, Y. et al. (2021) 'Determinants of pregnancy-induced hypertension among mothers attending public hospitals in Wolaita Zone, South Ethiopia: Findings from unmatched case-control study', International Journal of Hypertension, 2021, pp. 1–9. doi:10.1155/2021/6947499.
6. Orós M, Siscart J, Perejón D, Serna MC, Godoy P, Roca B-S. Ethnic Disparities and Obesity Risk Factors in Pregnant Women: A Retrospective Observational Cohort Study. Nutrients. 2023 Feb;15(4):926.
7. Hammodi F Al-jumaily, Y. T. (2017). Risk Factors of Pregnancy-Induced Hypertension in Falluja city. Falluja city: Al Anbar Medical Journal. Retrieved from https://www.iasj.net/iasj/download/b5aabe59c2ab20b3
8. Getaneh, T. et al. (2020) 'The impact of pregnancy induced hypertension on low birth weight in Ethiopia: Systematic review and meta-analysis', Italian Journal of Pediatrics, 46(1). doi:10.1186/s13052-020-00926-0.
9. Paola Aghajanian P, Ainbinder S, Andrew E, Vicki VB, Heather B, Helene B, et al. Current Diagnosis and Treatment in Obstetrics and Gynecology. the McGraw-Hill; 2006.
10. SAJITH, M. (2014). Incidence of pregnancy induced hypertension and prescription pattern of antihypertensive drugs in pregnancy. Retrieved from / International Journal of Pharma Sciences and Research (IJPSR): https://www.ijpsr.info/docs/IJPSR14-05-04-002.pdf
11. Lamba, D. S. (2019). Assessment of risk factors of pregnancy induced hypertension in a hospital: A case control study. Retrieved from International Journal of Clinical Obstetrics and Gynaecology : https://doi.org/10.33545/gynae.2019.v3.i4a.283

12. Regassa, T. A. (2019, January). Pregnancy Induced Hypertension and Associated Factors among Women Attending Delivery Services at Mizan-Tepi University Teaching Hospital, Tepi General Hospital, and Gebretsadik Shawo Hospital, Southwest, Ethiopia. Retrieved from National Library of Medicine: 10.4314/ejhs.v29i1.4
13. Sultana, N. (2017). Pregnancy induced hypertension and associated factors among pregnant women. Journal of Gynecology and Womens Health, 3(5). https://doi.org/10.19080/jgwh.2017.03.555623
14. Rachel Mathew, B. P. (2023, june). Prevalence of hypertensive disorders of pregnancy, associated factors and pregnancy complications in a primigravida population. Retrieved from Gynecology and Obstetrics Clinical Medicine: https://doi.org/10.1016/j.gocm.2023.01.002
15. Robinson HE, O'Connell CM, Joseph KS, McLeod NL (2005) Outcomes in Pregnancies Complicated by Obesity. Obstet Gynecol 106: 1357-1364.
16. Yitagesu Belayhun, 1. K. (2021). Determinants of Pregnancy-Induced Hypertension among Mothers Attending Public Hospitals in Wolaita Zone, South Ethiopia: Findings from Unmatched Case-Control Study. hindawi doi:https://doi.org/10.1155/2021/6947499
17. M.V. Vodouhe1*, A. A. (2021). Factors Associated with Hypertensive Disorders of Pregnancy in Public Maternities of the City of Parakou In 2019. parakou: scientific research. doi:10.4236/ojog.2021.117081
18. Bener A, Saleh NM (2013) The impact of socioeconomic, lifestyle habits and obesity in developing of pregnancy induced hypertension in fast growing country: Global comparisons. Clin Exp Obstet Gynaecol 40(1): 52-57.
19. Ministry of Health & Child Welfare (2005) National Survey Zimbabwe Non-Communicable Disease Risk Factors - (ZiNCoDs) Preliminary Report. Harare, Zimbabwe, East Africa, pp. 65-66.

International Journal of Science and Research Archive
eISSN: 2582-8185
Cross Ref DOI: 10.30574/ijsra
Journal homepage: https://ijsra.net/

(RESEARCH ARTICLE)

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Analytical study of knowledge, attitude and practices about superficial dermatophytosis among medical students of Kyrgyzstan

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International Journal of Science and Research Archive, 2024, 12(02), 636–647

Publication history: Received on 02 June 2024; revised on 10 July 2024; accepted on 13 July 2024

Article DOI: https://doi.org/10.30574/ijsra.2024.12.2.1278

Abstract

Background: Dermatophytosis is a fungal infection that often manifest as a red or silvery ring. It penetrates the skin's outermost dead layer or keratinized tissue like hairs and nails. Another name for ringworm is tinea. The medical term for ringworm is dermatophytosis. People living in warm and humid climate have a higher risk of getting this infection. This study is aimed to assess the knowledge, attitude and practices of superficial dermatophytosis.

Methodology: A cross sectional study was done using Google forms. A structured questionnaire was given to the UG students of Jalal Abad State University from 1st year to 5th year. Questionnaire based on knowledge, attitude and practices. Where most of the questions types were in the form of yes or no. There were 583 respondents who actively responded to the questionnaires.

Result: In total, 583 Medical students from 1st year to 5th year were selected for the study where the age range was 17 to 27. Majority 64.5% where found to have good knowledge on superficial dermatophytosis. While majority (154) of male gender have poor practices. Most of the students who have good knowledge and good practice are 235 (p= 0.017) and with good attitude and good practice are 231 (p= 0.018). More concern to those who have poor practice related to superficial dermatophytosis.

Conclusion: Most of the students were aware of the disease superficial dermatophytosis. Still most of the students failed to implement the knowledge about dermatophytosis into their personal hygiene practices.

Keywords: Dermatology; Superficial dermatophytosis; Tinea; Ringworm

1. Introduction

Ringworm is a fungal infection that often manifests as a red or silvery ring – shaped rash on the skin, but it's important to note that it is not caused by worms. The medical term for ringworm is dermatophytosis. Another name for ringworm is tinea, followed by a specific term based on the location of the infection on body [1].

Ringworm infection can affect people of any age, but it is more frequent among children because it spreads quickly through close contact. People living in a warm and humid climate have a higher risk of getting this infection. Those with diabetes, obesity or weakened immune systems are also at increased risk. Coming in close contact with an infected person or animal can increase your probability of getting contaminated. Wearing tight clothing or using public showers or restrooms are other risk factors. Around 20,000 to 25,000 out of 100,000 people are affected annually by ringworm infection worldwide. It is common among children in the age range of 5–10 years[2].

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This infection is more prevalent among females than males. Few symptoms and appearance of ringworm infection can vary depending on which part of body it appears. In the majority of cases, we will notice a raised round patch with a clear center (ring shape). The area inside the ring may contain small bumps. Single or multiple patches can occur on your skin that may appear red, brown, gray or skin – colored.

Treatment of ringworm involves medications and lifestyle adaptations. Medications may include antifungal cream, lotions; oral antifungals can be prescribed to reduce the spread of infection. We should wear light, loose – fitted clothing along with medication. Also disinfect your rooms, toilets and other areas of common use to limit its spread. Change your clothes and socks frequently, if you live or work in a warm, humid climate. Topical antifungals include imidazoles, allylamines, benzoic acid preparations and other agents. Oral antifungals include griseofulvin, fluconazole, ketoconazole, itraconazole and terbinafine [3].

According to the 2023 survey, the New York state department of health reported, ringworm infection is a common infection of skin. About 20 – 25% of population will experience a ringworm infection at any given time [4].

In a study in India there was an initial rise of dermatophytosis until 2019 and thereafter downward trend. Males (60.0.4%), outnumbered females (39.94%) with ratio of 1.5:1. Most common age group belongs to 21 – 30 years (28.64%) of which majority (53.07%) of patients had disease duration of more than 3 months. The majority of patients (51.1%) belong to rural backgrounds [5].

In Kyrgyzstan according to the national institutes of health, they estimated that a total of 185,961 people (3% of population) have serious fungal infection [6].

According to another study in Bangladesh, 320 clinically suspected cases of dermatophytosis. 105 cases (32.8%) were positive for fungus in direct microscopy while 97 (30.3%) were culture positive. Out of 320 cases male were 194 (60.6%) and female were 126 (39.4%) with a male – female ratio 1.54:1 [7].

2. Methodology

The cross sectional study was conducted between January and May of 2024 using Google forms.

2.1. Study Setting

Jalalabad State University, Medical Faculty, Kyrgyzstan.

2.2. Participants

Respondents were undergraduate medical students ranging from 1st year to 5th year.

2.3. Sampling Technique

Convenient sampling was employed, where participants were selected based on their availability and willingness to participate.

2.4. Sample Size

A total of 583 undergraduate medical students participated in the study.

2.5. Data Collection Method

The study utilized Google Forms as the platform for data collection.

The questionnaire was shared via a Google link to ensure easy access and participation.

2.6. Questionnaire Structure

2.6.1. Section 1: Socio-demographic Information

This section collected data on participants' age, gender, year of study, and any other relevant demographic information.

2.6.2. Section 2: Knowledge Related to Dermatophytosis

Participants were asked close-ended questions to assess their knowledge about dermatophytosis, its causes, symptoms, modes of transmission, and preventive measures.

2.6.3. Section 3: Practices to Deal with Dermatophytosis

This section focused on participants' behaviors and practices related to dermatophytosis, including hygiene practices, treatment seeking behavior, and use of preventive measures.

2.6.4. Section 4: Attitude Toward Skin Infections

Participants' attitudes toward skin infections, specifically dermatophytosis, were explored through questions assessing their perceptions, concerns, and beliefs.

2.7. Data Analysis

Quantitative data collected through Google Forms was analyzed using Statistical Package for Social Sciences.

Descriptive statistics such as frequencies, percentages, and means were used to summarize socio-demographic characteristics, knowledge levels, practices, and attitudes of the participants.

2.8. Ethical Considerations

Participants were informed about the purpose of the study and provided with informed consent before participating.

Confidentiality of participants' responses was maintained throughout the study.

Limitations

- The study utilized convenient sampling, which may limit the generalizability of the findings to other populations.
- The use of close-ended questionnaires may restrict the depth of understanding compared to open-ended or mixed-method approaches.
- This chapter deals with superficial dermatophytosis an analytical study of knowledge, attitudes & practices among the medical students.

3. Result

Table 1 Distribution of respondents according to their socio demographic information

Responses	Frequency	Percentage
Respondent's Age		
17-19	67	11.5
19-21	232	39.8
21-24	246	42.2
24-27	38	6.5
Respondent's Gender		
Female	262	44.8
Male	322	55.2
Respondent's Year		
1st year	162	27.8
2nd year	147	53.0
3rd year	11	54.9

4th year	245	96.9
5th year	18	100.0
Respondent's Religion		
Hindu	266	45.6
Muslim	294	50.4
Christianity	13	2.2
Others	10	1.7
Respondent's Country		
India	443	76.0
Pakistan	117	20.1
Bangladesh	21	3.6
Kyrgyzstan	2	3
Father's occupation		
Business	273	46.8
Government sector	105	18.0
Teacher	60	10.3
Doctor	45	7.7
Farmer	86	14.8
Unemployed	14	2.4
Mother's occupation		
Government sector	81	13.9
Housewife	429	73.6
Doctor	27	4.6
Private sector	45	7.7

Table 2 Distribution of respondents regarding their knowledge on dermatophytosis

Responses	**Frequency**	**Percent**
Does sharing of clothes and objects spread it?		
Yes	485	83.2%
No	98	16.8%
Do you know any 5 sites where dermatophytosis can occur in your body?		
Yes	407	69.8%
No	176	30.2%
Dermatophytosis is only contagious when symptoms are present?		
Yes	299	51.3%
No	284	48.7%
Can dermatophytosis affect any part of the body other than skin, hair and nails?		

Yes	294	50.4%
No	289	49.6%
Discoluration and thickening of nails can be a sign of dermatophytosis?		
Yes	420	72%
No	163	28%
Can I get dermatophytosis from pet animals?		
Yes	406	69.6%
No	177	30.4%

From the above table respondents regarding to the knowledge based on sharing of clothes and objects, highest 485[83.2%] respondents think sharing of the clothes and objects cause dermatophytosis.From the given table respondents based on knowledge regarding sites of dermatophytosis, 69.8% [407] of respondents knows the sites of the dermatophytosis.

In the given table respondents based on knowledge regarding dermatophytosis is contagious when symptoms are present, 51.3% [299] respondents think that dermatophytosis is contagious when symptoms are present similarly 50.4%[294] respondents think that infections of dermatophytosis can affect other than skin, hair, and nails.

In the above table respondents according to discoloration and thickening of nails can be a sign of dermatophytosis, 72%[420] of respondents think that discoloration and thickening of nails can be sign of dermatophytosis as well the highest 69.6%[406] of respondents think pet animals can be the cause of dermatophytosis.

Table 3 Distribution of respondents according to the attitude among the medical students on superficial dermatophytosis

Responses related to attitude	**Frequency**	**Percentage**
Is Poor skin hygiene is a cause of dermatophytosis?		
Yes	505	86.6%
No	78	13.3%
Do you think there are specific measures to prevent dermatophytosis ?		
Yes	393	67.4%
No	190	32.6%
Do you think dermatophytosis is unavoidable and everyone will get it at some point?		
Yes	256	43.95%
No	327	56.1%
Do you believe dermatophytosis is a contagious disease?		
Yes	345	59.2%
No	238	40.8%
Do you think dermatophytosis can heal by itself?		
Yes	395	67.8%
No	188	32.2%
Do you think there is enough information available about dermatophytosis?		
Yes	346	59.3%
No	237	40.7%

The highest 86.6% [505] of respondents think that poor skin hygiene as a cause of dermatophytosis. Among total respondents 43.95% [256] of respondents think that dermatophytosis is unavoidable and everyone will get at some point. The highest 67.8% [395] of respondents think that dermatophytosis heal by itself while 32.2% [188] of respondents didn't think that dermatophytosis will heal by itself similarly 59.3% [346] of respondents think that there is enough information on dermatophytosis.

Table 4 Distribution of respondents according to the practices among the medical students on superficial dermatophytosis

Responses related to practices	**Frequency**	**Percentage**
How often do you wash your hands thoroughly with soap and water?		
Only after meal	412	70.7%
Thrice a day	41	7.0%
Whenever hand is dirty	130	22.3%
Do you maintain hygiene in college premises and while eating?		
Yes	546	93.7%
No	37	9.3%
How often do you wash towels?		
Daily	90	15.4%
Weekly	420	72%
Monthly	73	12.5%
How frequently do you change your socks and shoes?		
Once a week	164	28.1%
Once in a month	38	6.5%
Alternate days	380	65.2%
Do you share hair combs/hair brushes?		
Yes	447	76.7%
No	136	23.3%
Do you share your rooms, or do you stay alone?		
Sharing rooms with 4 to 5 members	173	29.7%
Stay alone	410	70.3%
How do you dry your clothes and undergarments?		
In the sun	272	46.7%
Dryer	73	12.5%

Abovetable shows that the highest 70.7%[412] of respondents wash their hands thoroughly with soap and water similarly maximum 93.7% [546] of respondents maintain hygiene in college premises and while eating majority 73[12.5%] the respondents change their socks once a week. Among total respondents 136[23.3%] of them share utilities. Respondents who dry their clothes and undergarments in the sun are 272[46.7%].

Table 5 Distribution of respondents according to the level of knowledge about superficial dermatophytosis

Responses	Frequency	Percentage
Level of knowledge		
Good Knowledge	376	64.5
Poor Knowledge	207	35.5
Level of Attitude		
Good Attitude	362	62.1
Poor Attitude	221	37.9
Level of Practice		
Good Practice	368	63.1
Poor Practice	215	36.9

According to above table, majority of students have good knowledge [376] 64.5%, and [207]35.5% of them have poor level of knowledge.

In the given table respondents with good attitude are about 62.1% and respondents with poor attitude are 37.9%.

The respondents with good practices are more in number [368] about 63.1% as compare the respondents with poor practices [215]26.9%. This table shows that students are aware of the disease and them preventing themselves by proper hygiene.

Table 6 Correlation between level of knowledge, practice and attitude of students

Responses	Good practices	Poor practices	p value
Good knowledge	235	141	0.017
Poor knowledge	133	74	
Good Attitude	231	131	0.018
Poor Attitude	137	84	

From the above correlation table we can clearly notices that the students with good knowledge and practices are about 235 and there are some students [133] with poor knowledge but they have good practices on superficial dermatophytosis. There are less respondents who have good knowledge with poor practices [141] and poor knowledge and poor practices are about 74 respondents [p value: 0.017].

In the correlation of good attitude and practices there are 231 respondents who have good attitude and also good practices and respondents with poor attitude and good practices are 137. Students with good attitude and poor practices are 131 and poor attitude and poor practices are 84 [0.018].This correlation table clearly shows that the students have good knowledge and attitude but need to implement on good practices.

Table 7 According to the socio demographic the level of knowledge of respondents towards superficial dermatophytosis

Responses	Good knowledge	Poor knowledge	p value
Age			0.016
17-19	36	31	
19-21	166	66	
21-24	151	95	
24-27	23	15	
Gender			0.045
Female	176	85	
Male	200	122	
Year of study			0.003
1st year	124	38	
2nd year	92	55	
3rd year	8	3	
4th year	141	104	
5th year	11	7	

From the above given table the students age from 19-21[166] have good knowledge of the disease [p=0.016]. As compare to female, male [200] have good knowledge [p=0.045], where most of the students are from 4th year [141]. [p=0.003].

Table 8 Correlation based on socio demographic factors on attitude towards superficial dermatophytosis

Responses	Good Attitude	Poor Attitude	p value
Age			0.008
17-19	38	29	
19-21	150	82	
21-24	150	96	
24-27	24	14	
Gender			0.017
Female	176	85	
male	186	136	
Father's Occupation			0.026
Business	168	105	
Gov. jobholder	70	35	
Teachers	41	19	
Doctors	24	21	
Farmer	50	36	
Unemployed	9	5	

Year of study			0.019
1st year	108	54	
2nd year	85	62	
3rd year	4	7	
4th year	154	91	
5th year	11	7	

From the above given table respondents age groups from 19-21 and 21-24 have good attitude [150]. Respondents with poor attitude are from the age 21-24[96]. [p=0.008]. Males [186] as compared to females [176] have good attitude toward disease but male [136] have poor attitude. This shows that males have good attitude but some of the male students have poor attitude also. [p=0.017].In the father's education those are in good financial family have good attitude towards superficial dermatophytosis [168] and poor attitude [105].[p=0.026].Students from 4th year have good attitude[154].[p=[0.019].

Table 9 Correlation table based on socio demographic factors and practices towards superficial dermatophytosis

Responses	**Good Practice**	**Poor practice**	**p value**
Age			0.018
17-19	45	22	
19-21	137	95	
21-24	162	84	
24-27	24	14	
Mother's Occupation			0.015
Gov. jobholder	45	36	
House wife	281	148	
Doctors	12	15	
Private sector	30	16	
Gender			0.001
Female	200	61	
Male	168	154	
Year of study			0.001
1st year	83	79	
2nd year	91	56	
3rd year	6	5	
4th year	171	74	
5th year	17	1	

Above table shows the correlation between socio demographic factors and practices which shows that students from age group between 21-24year have good practice with p value 0.018. Similarly mother's occupation who are housewife seems to have good practices with p value =0.015. As compare to male respondents, female gender have good practices [200] with p value p=0.001. Students from 4th year maintained good practices towards this disease with p value =0.001.

4. Discussion

Superficial dermatophytosis infection has been reported under a variety of different terminologies since the early days of recorded human civilization. However, it has only been during the past 200 years with the development of modern science that the contagious nature of the disease could be related to the presence of fungal organisms.

In this study overall percentage of female respondents are 44.8% and males respondents are 55.2%. In the similar study conducted in Kaduna, north central Nigeria overall 608 were studied where males are 40.2% and females are 59.8% [8]. One more study which was conducted in eastern Nepal there were 95(58.64%) males and 67 (41.36%) are females [9].

4.1. Knowledge about superficial dermatophytosis

In western Kenya the study was conducted related to superficial dermatophytosis where most people (32.5%) were agreed that close contact with pet animals leads to infection [10]. In our research similar study were conducted and 69.6% students agreed that dermatophytosis can occur from pet animals.

The study conducted in Sree Balaji Medical College and Hospital Chennai, Tamil Nadu showed that 45% of patients knew that the infection spread through contact and 55% of patients had no idea about spread of infection through contact [11]. In contrast to this study in our research the students (83.2%) knows that dermatophytosis can spread by sharing clothes and objects.

4.2. Attitude related discussion about superficial dermatophytosis

According to our present study students (86.6%) think that poor skin hygiene is a cause of dermatophytosis whereas in similar study conducted in eastern Nepal that 25.31% agreed to the point that though they keep their body clean still they have problem [9].

In our study students think that dermatophytosis cannot heal by itself (32.2%). In similar study conducted in eastern Nepal where (156) 96.30% students did not agree that it can heal by itself [9].

4.3. Practice related discussion about superficial dermatophytosis.

In our present study students sharing hair comb, hairbrushes and soaps are about 76.7% and who don't share their utilities are about 23.3%. In contrast to this article another survey which was taken in Madras Medical College, Chennai, 2015 showed 73.3% participants shared their combs, this shows that more students are ignoring the hygienic habits which should be taken to prevent dermatophytosis [12]

Participants who didn't take bath daily are about 41.7%. From the article of superficial fungal in western Kenya studies show that participants share bathing towels and clothes are about 45.4% to 57.7% [10].

In other study which was in Kaduna, North central Nigeria, 204/608[33.6%] people believed that the condition was caused by poor personal hygiene [8]. Whereas the study which was conducted in our university found that 93.7% students maintains hygiene and 9.3% not maintains hygiene.

Overall by seeing the result we can conclude that the students are taking preventive measures to prevent from skin related problems, but sharing of personal things may lead to increase of dermatophytosis.

Study which was conducted in eastern Nepal shows that people who dry their clothes in the sunlight are about 89.51% and 10.49% people did not dry their clothes in the sunlight [9], whereas in our study students who dry their clothes in sunlight are about 46.7% and who dry their clothes in the room are 40.8%. Drying clothes in summer is important because it kills bacteria. This is also a preventive measures should be taken by students.

5. Conclusion

In the case of superficial dermatophytosis, more attention should be devoted to the awareness of dermatophyte infections for the students of medical university especially in the rural areas. Beside that there is an urgent need to raise the current control measures and develop effective measures that may reduce the dermatophyte infection, especially among the patients with chronic diseases. We come to the point that about 69.9% of students have knowledge about superficial dermatophytosis which is the good sign that student will take more preventive measures regarding this

disease. Despite students demonstrating good knowledge about mode of spread of dermatophytosis, still most of the students have failed to implement the knowledge in maintaining the personal hygiene practices. So there is need to improve the gap between knowledge about the dermatophytosis and their personal hygiene practices. We come to the conclusion that there should be a proper communication among the students, teachers, society and family members about superficial dermatophytosis infection. This approach will help to improve the adherence of treatment and also prevent the recurrence.

Recommendation

Since the superficial dermatophytosis is a communicable disease, we should arrange the awareness program campaign in different regions or through the posters and social media so that the students can get more knowledge about superficial dermatophytosis. They should well educate regarding Do's and Don'ts to prevent infection. Preventive measures like sharing of clothes and personal utilities should be avoided to reduce the risk of infection. Similar studies need to be carried out in different regions.

Compliance with ethical standards

Disclosure of conflict of interest

The authors have disclosed no potential conflicts of interest, financial or otherwise.

Statement of ethical approval

Ethical clearance was obtained from the Institutional Ethics Committee.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

References

[1] Patro N, Panda M, Jena AK. The menace of superficial dermatophytosis on the quality of life of patients attending referral hospital in Eastern India: A cross-sectional observational study. Indian Dermatol Online J. 2019 May-Jun;10(3):262-266.

[2] Mayo Clinic. Ringworm (body) - Symptoms and causes. Available from: https://www.mayoclinic.org/diseases-conditions/ringworm-body/symptoms-causes/syc-20353780

[3] Cura4u. Ringworm Infection. Available from: https://cura4u.com/conditions/ringworm-infection

[4] https://theconversation.com/ringworm-fungal-infections-are-common-in-the-us-and-are-becoming-increasingly-resistant-to-treatment-6-questions-answered-206560

[5] Dalei, S. R., Nayak, D., Bhue, P. K., Das, N. R., & Behera, B. (2023). Current Status of Dermatophytosis: A Hospital-Based Study in Northern Odisha, India. Cureus, 15(11), e48664.

[6] Turdumambetova, G. K., Osmanov, A., & Denning, D. W. (2019). The Burden of Serious Fungal Infections in Kyrgyzstan. Journal of fungi (Basel, Switzerland), 5(3), 66.

[7] Rahim MR, Saleh AA, Miah MRA, Anwar S, Rahman MM. Pattern of dermatophyte in Bangabandhu Sheikh Mujib Medical University. Bangladesh J Med Microbiol. 2012;6(2):11-14.

[8] Yahya H. Knowledge, perception, and practice of patients about pityriasis versicolor in Kaduna, North Central Nigeria. Int J Dermatol. 2017;56:1169-1174

[9] Yamu S, Choudhary D, Aryal S. Knowledge attitude and practice regarding superficial fungal infections in dermatology patients in Eastern Nepal. Birat J Health Sci. 2023;8(3):2096-2101.

[10] Arina AH, et al. Knowledge, attitude and practices of school children on prevention and control of superficial fungal in Western Kenya. 2021.

[11] S., Sivaramakrishnan & S., Arun & N., Ashok & G., Sukanya. (2021). Study on knowledge, attitude and behaviour of patient towards dermatophytosis and importance of maintaining personal hygiene. International Journal of Advances in Medicine. 8. 1560.

[12] Evangeline Mary, A. (2015). A Study on Prevalence of Preventable Skin Diseases and their Risk Factors among Households in Selected Slums of Chennai, Tamil Nadu–2014 (Doctoral dissertation, Madras Medical College, Chennai).

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INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

Knowledge, Attitude And Practices About Measles, Measles Vaccine And Its Risk Factors Among Medical Students Of Jalal-Abad State University, Kyrgyzstan

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Abstract:-

Introduction: - This study investigates the knowledge, attitudes, and practices (KAP) regarding measles vaccination and associated risk factors among medical students at Jalal-Abad State University (JASU), Kyrgyzstan. Measles, a highly contagious viral disease, remains a significant global health challenge, with recent resurgences linked to declining vaccination rates and misinformation.

Objective: - The objective was to assess student understanding and identify gaps in vaccination practices to inform public health strategies.

Methodology: - A cross-sectional analytical study was conducted using an online survey distributed to medical students across all academic years. Data from 206 respondents were analyzed using SPSS software version 29.0, with statistical significance set at $p < 0.05$. Key demographic data and responses were summarized to evaluate KAP dimensions.

Result: - Results showed that while 89.3% of students recognized measles as a viral and airborne disease, vaccination rates were suboptimal at 53.9%. Key risk factors identified included incomplete vaccination (70.6%), international travel (72.8%), and environmental conditions like low humidity (43.7%). While most participants

(79.6%) acknowledged the importance of vaccination, misconceptions about antibiotics (41.5%) and uncertainty regarding vaccination schedules persisted.

Conclusion: - The study concludes that targeted educational initiatives, catch-up vaccination programs, and advocacy for vaccine adherence are critical to mitigating measles outbreaks among student populations. These findings underscore the need for integrating public health strategies into medical curricula to bridge gaps between knowledge and practice.

Introduction:-

Measles is a highly contagious, serious disease caused by a virus from the *paramyxovirus* family, and it typically spreads through direct contact and respiratory droplets from an infected person. Measles primarily affects the respiratory tract but can spread throughout the body, causing a systemic infection [1]. In the United States, measles is fatal for about 2 in 1,000 children infected. Between 2000 and 2018, measles vaccinations prevented an estimated 23.2 million deaths worldwide [2]. Measles is as a result of a measles virus that is a spherical, non segmented, single-stranded RNA virus belonging to the *Morbillivirus* family, it's far intently associated with the rinderpest and dog distemper viruses [3]. While it can manifest in various forms, the two most common types are Rubeola (Classic Measles) and Rubella (German Measles). Both forms are preventable through widespread vaccination with the MMR (Measles, Mumps, and Rubella) vaccine. 1. Rubeola (Classic Measles):- Rubeola, commonly referred to as classic measles, is the most prevalent form of the disease. It is caused by the measles virus, which spreads via respiratory droplets and is known for its high transmission rate. The incubation period for rubeola typically ranges from 7 to 14 days. The clinical presentation begins with prodromal symptoms, including high fever, cough, coryza (runny nose), and conjunctivitis (red eyes). This is followed by the appearance of Koplik's spots, which are small, white lesions inside the mouth and serve as a pathognomonic sign of measles. The characteristic measles rash begins on the face and gradually spreads to the rest of the body, including the trunk and extremities. The rash progresses from red, flat macules to raised papules, and typically fades in the same order in which it appeared [4]. 2. Rubella (German Measles):- Rubella, also known as German measles, is caused by the Rubella virus, which belongs to the *Togaviridae* family. Although rubella shares some similarities with rubeola, particularly the rash and mild fever, it is generally a much milder illness. The rubella rash typically appears first on the face before spreading to the trunk and limbs, and it resolves within three days. Other common symptoms include swollen lymph nodes, particularly behind the ears and at the back of the neck. While rubella is usually self-limiting and does not cause severe illness in children or adults, it poses a significant risk during pregnancy. If a pregnant woman contracts rubella during the first trimester, the virus can cross the placenta and cause Congenital Rubella Syndrome (CRS), leading to serious birth defects, including heart abnormalities, cataracts, deafness, and intellectual disabilities. For this reason, rubella vaccination is critical in preventing CRS [5]. Measles is a highly contagious viral illness that presents with a range of signs and symptoms that evolve in stages. The initial phase, known as the prodromal phase, typically begins 10 to 12 days after exposure to the virus and is characterized by high fever, often exceeding 39°C, along with cough, coryza (runny nose), and conjunctivitis (red, watery eyes). One of the key diagnostic features during this phase is the appearance of Koplik's spots—small, white spots with bluish centers that appear inside the mouth, particularly on the inner cheeks. These spots usually emerge 1 to 2 days before the onset of the rash. The characteristic maculopapular rash typically appears 3 to 5 days after the prodromal symptoms begin. It starts on the face, especially around the hairline, and spreads downwards to the neck, trunk, arms, legs, and feet. The rash is initially red and flat, but as it progresses, raised spots (papules) may develop. It usually lasts for 5 to 6 days before fading in the same order in which it appeared. During the rash phase, fever often peaks, sometimes reaching 40°C (104°F), and the patient may experience increased discomfort. As the rash subsides, the patient enters the recovery phase, during which the fever decreases, and the rash fades, often leaving behind areas of discoloration or mild skin peeling. Respiratory symptoms, such as cough, may persist for one to two weeks following the resolution of the rash. In

some cases, measles can lead to severe complications, including pneumonia, otitis media, diarrhea, and encephalitis, particularly in young children, malnourished individuals, and those with weakened immune systems [6].

Risk factors of Measles:-

Measles, a highly contagious viral disease which presents a significant public health concern, particularly in regions with low vaccination coverage. Several risk factors contribute to the re-emergence of measles, even in areas where it was previously under control. A primary risk factor is inadequate immunization coverage, often due to vaccine hesitancy, misinformation, and lack of awareness about the importance of the measles vaccine. In certain populations, socio-economic barriers, such as limited access to healthcare and vaccines, exacerbate the problem. Additionally, global travel and migration can facilitate the spread of the virus from regions experiencing outbreaks to areas with susceptible populations. Environmental factors, such as crowded living conditions, also heighten transmission risks, especially in densely populated urban areas or institutions like universities. Among student populations, such as those at JASU, insufficient vaccination rates, coupled with a lack of awareness about the seriousness of the disease and the benefits of vaccination, may contribute to the re-emergence of measles. Addressing these risk factors through education, improved vaccination programs, and targeted public health interventions is critical to controlling the spread of measles.

According to a new report from the World Health Organization (WHO) and the U.S. Centers for Disease Control and Prevention (CDC), Globally measles cases have seen a significant rise in recent years. By the end of 2022, measles cases had more than doubled compared to the previous year, with over 9 million reported cases and 128,000 deaths worldwide. This surge is largely attributed to the decline in vaccination coverage during the COVID-19 pandemic. Approximately 33 million children missed a measles vaccine dose in 2022, putting many at increased risk, particularly in low-income countries, which have the lowest immunization rates. Global vaccine coverage remains below the 95% target necessary to prevent outbreaks [7].

According to Global center for health security that in Kyrgyzstan, there has been a significant rise in measles cases in recent years. In 2023, the country reported 559 cases by June, a stark increase from just 23 cases in 2022. This surge followed a decline in cases, with only about 3 cases in 2021. However, prior to the pandemic, Kyrgyzstan saw 733 cases in 2020 and 2,380 cases in 2019. The Osh region was most affected in 2023, with 386 of the reported cases. Authorities have since launched a vaccination campaign to prevent further outbreaks [8].

Method and methodology :-

A descriptive cross-sectional analytical design to assess the knowledge, attitudes, and practices (KAP) regarding the measles, measles vaccine and its risk factors among medical students at JASU, Kyrgyzstan. The study was conducted using an online survey, distributed through Google Forms. The Google Form was distributed electronically through student email lists, social media platforms, and academic groups within JASU. Data collection occurred over a two-week period [15/October/2024 - 29/October/2024], with reminders sent after one week to increase the response rate. The target population for this study consisted of 1st to 6th year medical students of JASU. Data was exported from Google Forms into statistical software SPSS software version 29.0 for analysis. Descriptive statistics (means, frequencies, percentages) were used to summarize the demographic characteristics and responses to knowledge, attitude, and practice questions. A p-value of <0.05 was considered statistically significant**.** The study met the inclusion and exclusion Criteria.

The Inclusion Criteria were:-

1. Participants must be currently enrolled in the medical faculty at Jalal-Abad State University (JASU), Kyrgyzstan, across any academic year (first to final year).

2. Participants aged 18 years and above, as they are legally adults and capable of providing informed consent.

3. Both vaccinated and unvaccinated students will be included to compare knowledge, attitudes, and practices between different groups.

The Exclusion Criteria were:-

1. Students from other faculties or departments at JASU who are not part of the medical program will be excluded.

2. Exclusion of students under 18 years of age, as they may not be considered mature enough to provide informed consent on healthcare-related topics in many research ethics frameworks.

3. Participants who have never received or been exposed to formal education regarding vaccines, specifically the measles vaccine.

4. Students who are not currently active in their studies, such as those on academic leave or deferred enrollment, will be excluded from the study.

Result:-

Demographic Characteristics:-

The total number of students who participated in this study were 206. Among the 206 students n= 113 were (54.9%) Males, 92 (44.7%) were females & n= 1 (0.5%) were other. In this study, n= 27 (13.1%) were with an age group of 17 to 19, n = 80 (38.8%) were with the age group of 20 to 22, n=48 (23.3%) were with an age group of 23 to 25 , n=51 (24.8%) were with an age group of 26 to 28. In this study n= 21 (10.2%) of father were middle school , n= 46 (22.3%) were having high school, n= 80 (38.8%) were having graduate and n= 59 (28.6%) were having postgraduate . In this study, n=44 (21.4%) of mother were high school , n= 51 (24.8%) were having Secondary school, n= 60 (29.1%) were having graduate and n= 51 (24.8%) were having postgraduate. In this study n= 22(10.7%) of father were Medicine and Pharmaceutical Sector, n= 17 (8.3%) of father were Government employees and n= 134 (65%) of the father were Private and Self Employed. In this study n= 139 (67.5%) of the mothers were housewives, n= 14 (6.9%) of mothers were Medicine and Pharmaceutical Sector, n= 28 (13.6%) of mother were Government employees and n= 25 (12.1%) of mother were educational Sector. Shown in **TABLE NO. 1**

Responses	**Frequency**	**Percentage**
Gender		
Male	113	54.9
Female	92	44.7
Other	1	0.5
Age		
17-19	27	13.1
20 - 22	80	38.8

23 - 25	48	23.3
26 - 28	51	24.8
Respondents Father's Education		
Middle School	21	10.2
High School	46	23.3
Graduated	80	38.8
Post-Graduated	59	28.6
Respondents Mother's Education		
High school	44	21.4
Secondary school	51	28.8
Graduated	60	29.1
Post-Graduated	51	24.8
Respondents Father's Occupation		
Medicine & Pharmaceutical Sector	22	10.7
Governments employees	17	8.3
Private & Self employees	134	65
Respondents Mother's Occupation		
House Wife	139	67.5
Medicine & Pharmaceutical Sector	14	6.9
Governments employees	28	13.6
Educational sector	25	12.1

Estimating the Understanding of the students about Measles:- According to the distributed questions provided to the students through Google Form format, response from them have been collected accordingly, and it was seen that about 100% of the students have an accurate knowledge about Measles disease. Though few students prefer to not answer to some questions. Around n= 178 (86.4%) responded that the disease is an Air-Borne disease, n= 11 (5.3%) for Water-Borne disease, n=4 (1.9%) for Food-Borne disease and n=13 (6.3%) gave an opinion that none of the mentioned diseases causes Measles. Shown in **FIGURE NO. 1**

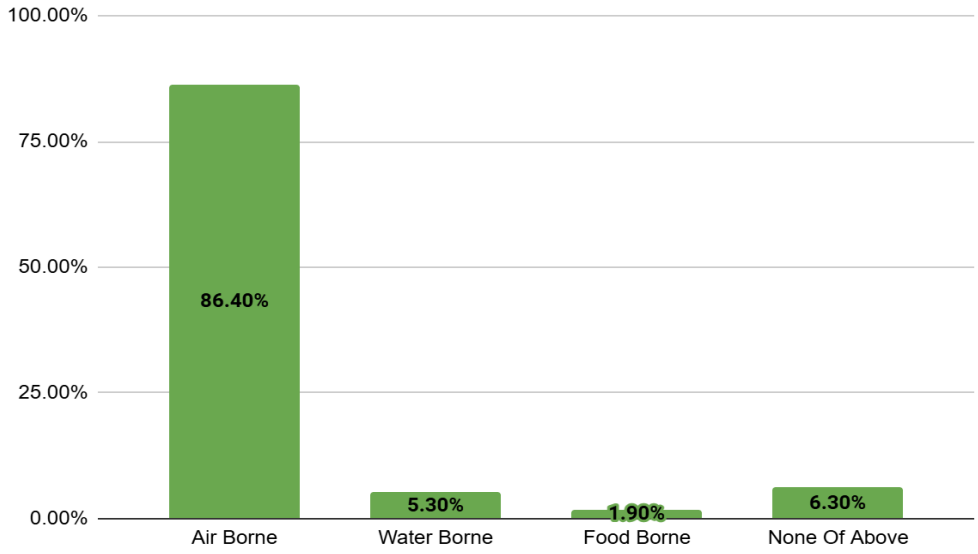


Figure No. 1: What Type Of Disease Is Measles ?

Measles is mainly caused by Virus n= 184 (89.3%), while some of them responded that the measles disease is caused by Bacteria n= 12 (5.8%), parasites n= 2 (1%) and n= 8 (3.9%) answered that neither bacteria nor virus caused the disease. Shown in **FIGURE NO. 2**

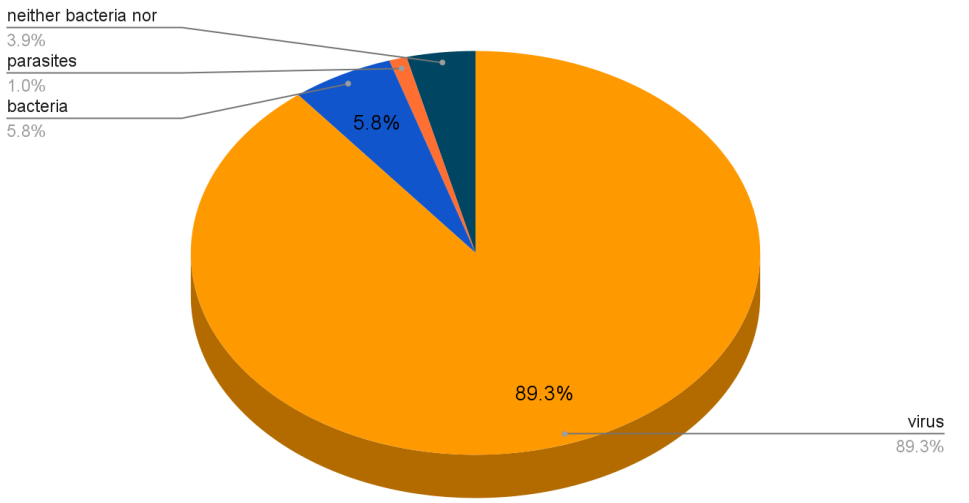
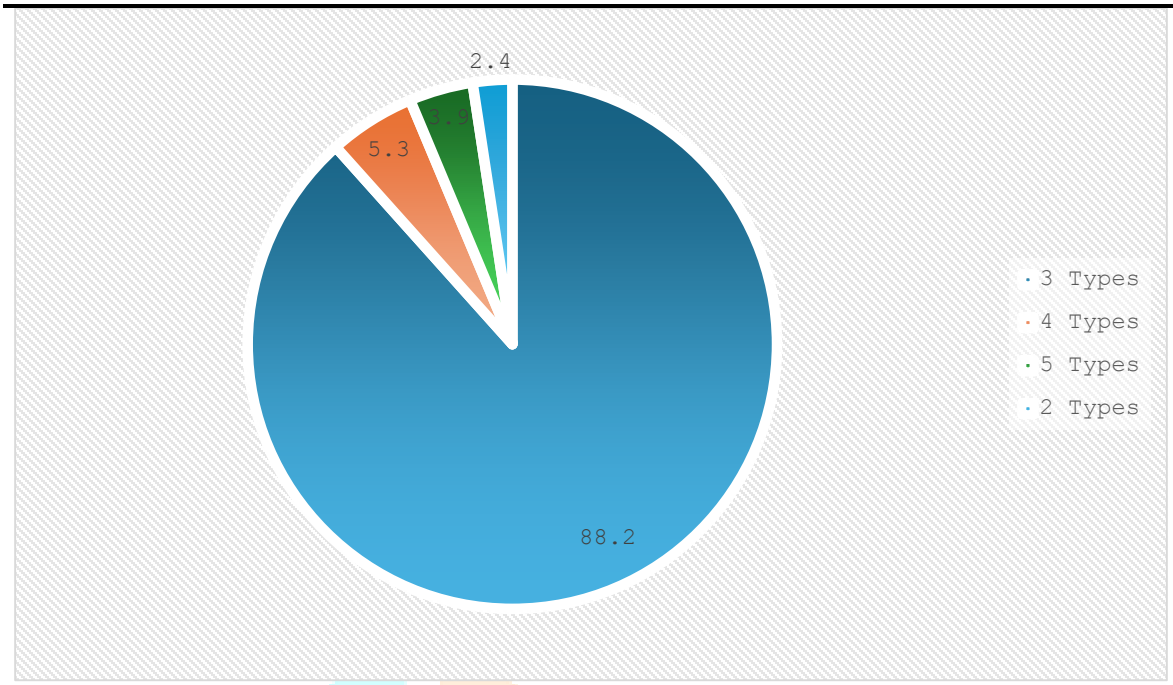


Figure No. 2: Which Of The Following Caused Measles ?

As other diseases, Measles also have different types which can infect both the children and adults. With the knowledge that the students have about the measles disease, about n= 182 (88.2%) of them have interpreted that there are 3 types of measles, however, n= 11 (5.3%) of the students have replied that there is 4 types of measles, n=8 (3.9%) and n= 5 (2.4%) have replied that there is 5 types of measles and 2 types of measles respectively. The distribution between the types of Measles is shown in **Figure No. 3**



- **Figure No. 3 : How Many Different Types Of Measles ? ?**

The disease can infect both adults and children in many ways. About n=113 (54.9%) of the students responded that it infects only children, and the other n=80 (38.8%), n=10 (4.9%) and n=3 (1.5%) infect all age group, children and adults respectively. Shown in **Figure No. 4**

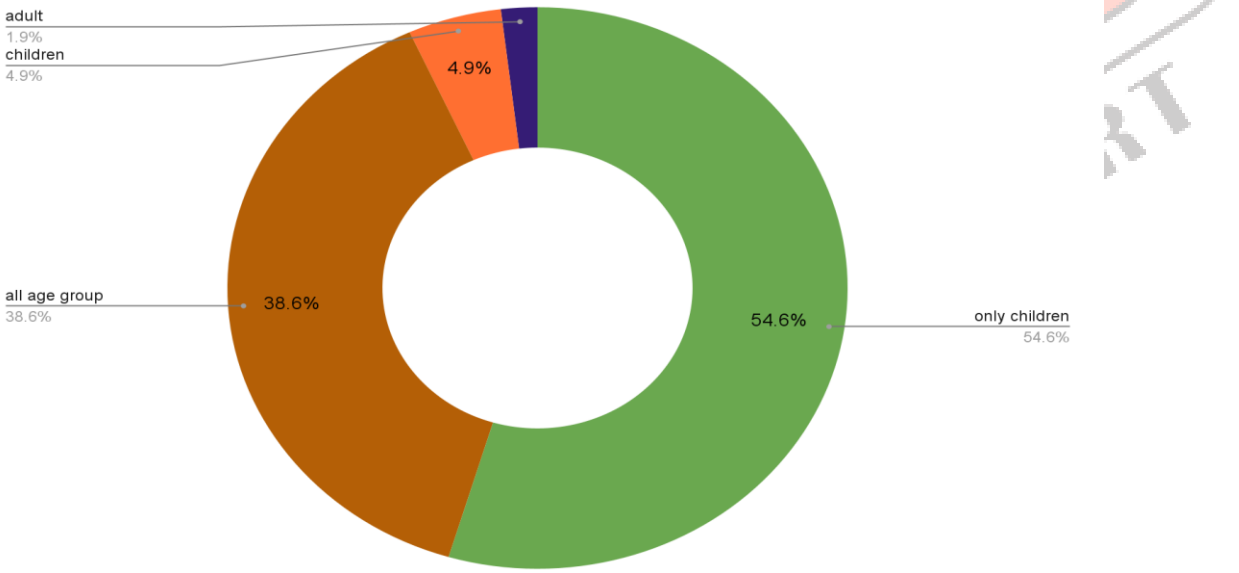


Figure No. 4 : Does Measles Mainly Infect ?

Based from their understanding about the disease, n= 39 (18.9%) responded that the symptoms of measles appear within 5 days, n= 147 (71.4%) answered that its symptoms appear within 10-14 days and the other n= 20 (9.7%) replied that the symptoms of the disease appear right after infection. Shown in **Figure No. 5**

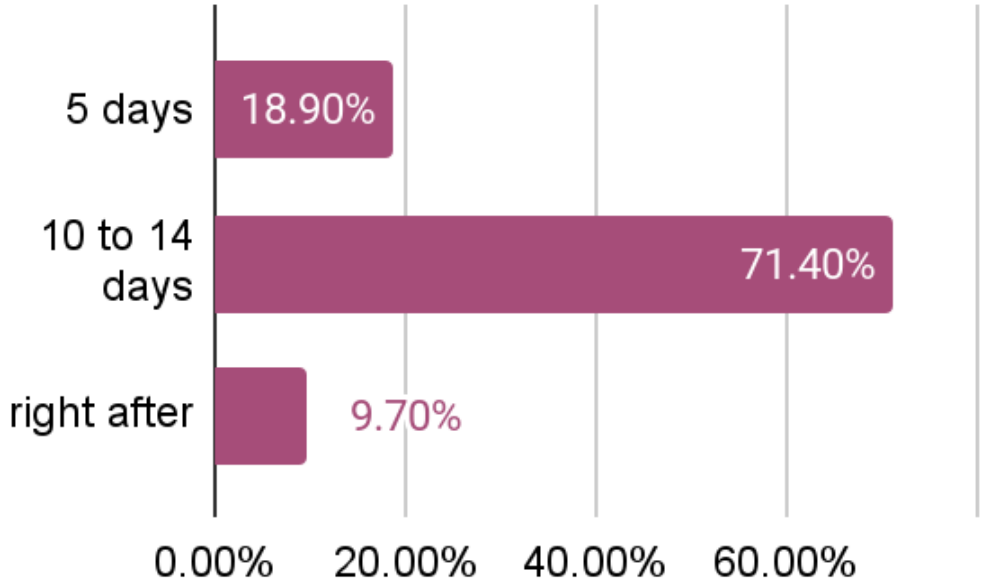


Figure No. 5 : When Does The Signs & Symptoms Of Measles Appear ?

The research findings indicate that dysentery, observed in n= 134 cases (65%), was the most frequently reported symptom that was not associated with measles. In contrast, fever were identified in only n= 32 cases (14.5%), while Koplik's spots in n= 27 (13.1%) and skin rashes were each observed in n= 13 (6.3%). These results support the well-documented characteristic symptoms of measles, which typically include fever, Koplik's spots, and skin rashes, while dysentery is not a recognized symptom of the disease. Shown in **Figure No. 6**

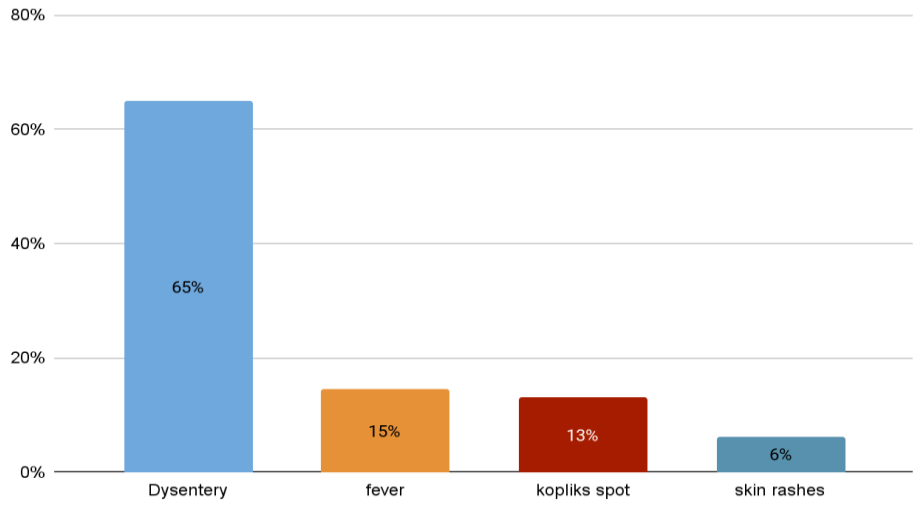


Figure No. 6 : The Following Are The Symptoms Of Measles , Except ?

The study identified multiple risk factors contributing to measles susceptibility. Incomplete vaccination was the most significant factor, with n= 146 (70.6%) participants recognizing it as a risk, while n= 21 (10.2%) denied its association, and n= 39 (18.9%) were uncertain. Among vulnerable groups, pregnant women were highlighted as at-risk, with n= 147 (71.4%) respondents affirming this, n= 21 (10.2%) disagreeing, and n= 38 (18.8%) expressing uncertainty. Similarly, international travel was identified as a risk factor by n= 150 (72.8%) participants, whereas 22 (10.7%) disagreed, and 34 (16.5%) were unsure.

Regarding specific risk factors, our results show that unvaccinated children n=54 (26.2%) , and vitamin A deficiency n=14 (6.8%) are significant contributors. However, a staggering n=127 (61.7%) of participants

identified both unvaccinated children and vitamin A deficiency as primary risk factors. Only n=11 (5.3%) of respondents reported none of the above as risk factors.

Environmental risk factors were also assessed, revealing that low relative humidity n=90 (43.7%) and cold

Risk factor of measles	**FREQUENCY**	**PERCENTAGE**
Incomplete vaccination		
Yes	146	70.6
No	21	10.2
May be	39	18.9
Pregnant women at risk		
Yes	147	71.4
No	21	10.2
May be	38	18.8
International travel can increase risk		
Yes	150	72.8
No	22	10.7
May be	34	16.5
What are the main risk factors of measles ?		
Deficiency	14	6.8
Unvaccinated	54	26.2
Both of the above	127	61.7
None of the above	11	5.3
What is the environmental risk factor of measle?		
Low relative humidity	90	43.7
Cold temperature	87	42.2
Hot temperature	29	14.1

temperature n=87 (42.2%) are perceived as primary contributors to measles transmission. In contrast, hot temperature was identified as a risk factor by only n=29 (14.1%) of participants. Shown in **Table No. 2**

These findings underscore the importance of vaccination, vitamin A supplementation, and environmental factors in preventing measles outbreaks. Specifically, targeting unvaccinated children and addressing vitamin A deficiency can significantly mitigate measles risk. Furthermore, public health strategies should prioritize education on environmental risk factors, particularly during periods of low humidity and cold temperature**.**

Estimating the Attitude of the students towards Measles according to their Understanding

The study aimed to assess attitudes and perceptions about measles among participants, revealing a range of insights. Among respondents, only n=23 (11.2%) reported having suffered from measles, while the majority, n= 183 (88.8%), had not. Of those who had suffered from measles, n=20 (10.2%) reported experiencing re-emerging measles.

Regarding vaccination, n=111 (53.9%) reported being vaccinated against measles, while n=95 (46.1%) had not. When asked whether measles and chickenpox were the same, n=165 (80.1%) correctly identified that they were not, though n=15 (7.3%) believed they were, and n= 26 (12.6%) were unsure. Shown in **Table No. 3**

Responses related to know the attitude about measles	**FREQUENCY**	**PERCENTAGE**
Have you ever suffered from measles?		
Yes	23	11.2
No	183	88.8
Have you ever suffered from re-emerging measles?		
Yes	20	10.2
No	177	89.8
Have you had measles vaccination?		
Yes	111	53.9
No	95	46.1

In terms of personal hygiene during illness, n= 107 (51.9%) of respondents indicated they would bathe if they had measles, while n=42 (20.4%) would avoid bathing, and n=57 (27.7%) were uncertain. The role of traditional herbs in alleviating symptoms was less clear, with n=93 (45.1%) believing herbs might help, n=79 (38.3%) agreeing they do, and n=34 (16.5%) disagreeing.

When exploring symptoms, n= 163 (79.1%) recognized that measles causes rashes and itching, and n= 145 (70.4%) acknowledged that scratching these rashes could leave scars. However, n= 28 (13.6%) were unsure about these effects, and a minority denied them n=15 (7.3%) for rashes, n=17 (8.3%) for scars.

Most respondents n=164 (79.6%), agreed that vaccination helps control measles, with only n=14 (6.8%) denying its efficacy and n=28 (13.6%) uncertain. A similarly high proportion, n= 163 (79.1%), expressed a willingness to encourage relatives and friends to vaccinate their children, while n=15 (7.3%) were against this, and n= 28 (13.6%) were unsure.

Finally, social attitudes towards visitors during illness showed that n= 147 (71.4%) would not allow visitors if they had measles, while n=23 (11.2%) would permit them, and n=36 (17.5%) were undecided. Shown in **Table No. 4**

Responses	Frequency	Percentage
Are measles and chicken pox the same		
Yes	15	7.3
No	165	80.1
May be	26	12.6
Would you bath if you had measles ?		
Yes	107	51.9
No	42	20.4
May be	57	27.7
Traditional herbs help to reduce symptoms?		
Yes	79	38.3
No	34	16.5
May be	93	45.1
Does measles cause skin rashes and itching?		
Yes	163	79.1
No	15	7.3
May be	28	13.6
Does scratching the itchy rash leave scars on the skin?		
Yes	145	70.4
No	17	8.3
May be	44	21.4
Can vaccination help control measles?		
Yes	164	79.6
No	14	6.8
May be	28	13.6
Can relatives and friends be encouraged to have their children vaccinated against measles?		
Yes	163	79.1

No	15	7.3
May be	28	13.6
Can visitors be allowed if you have measles?		
Yes	23	11.2
No	147	71.4
May be	36	17.5

Estimating the Practice done toward Measles with respect to the knowledge Of the students

The study aimed to assess practices regarding measles among respondents, shedding light on their knowledge and actions to manage or prevent the disease. Most respondents n=162 (78.6%), correctly identified the MMR (measles, mumps, and rubella) vaccine as the one given to measles patients, though there was some confusion, with n=19 (9.2%) mentioning JEV (Japanese Encephalitis Virus), n=13 (6.3%) mentioning DENV (Dengue Vaccine), and n=12 (5.8%) mentioning CHIK (Chikungunya Vaccine). Shown in **FIGURE NO. 7**

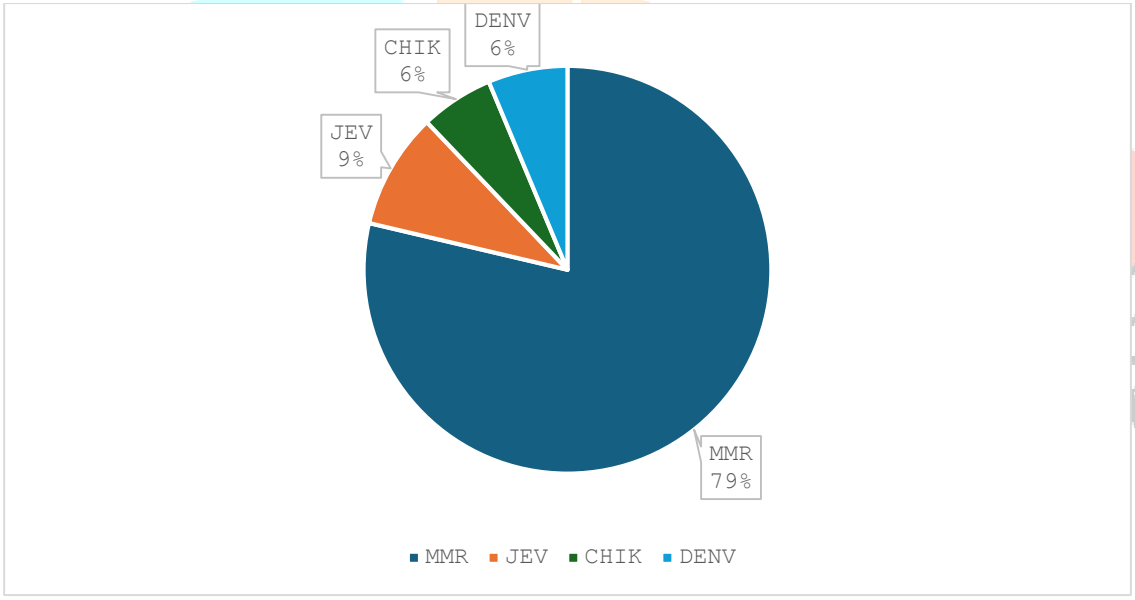


Figure No. 7 : What Vaccine Is Giving To Measles Patients ?

Regarding over-the-counter (OTC) medication to manage fever during measles, the majority, n=142 (68.9%), reported using a combination of ibuprofen and paracetamol. Smaller groups favored ibuprofen n= 25 (12.1%), aceclofenac n=26 (12.6%), or paracetamol alone n=13 (3.6%). Shown in **Figure No. 8**

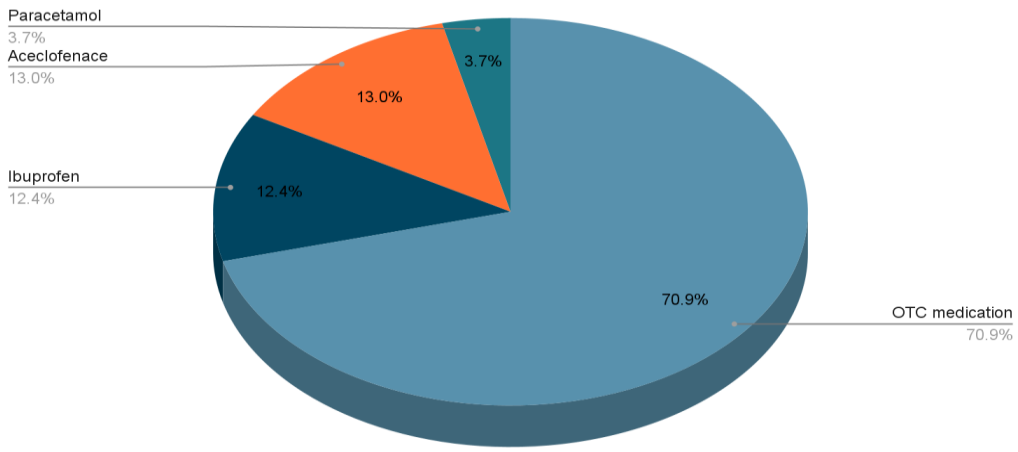


Figure No. 8 : What Type Of OTC Medication Is Given To Reduce Fever In Measles Disease ?

When asked about foods to avoid during measles, n=146 (70.9%) identified alcohol as the primary item to be avoided, followed by dairy products n=28 (13.6%), and fruit juices n=9 (4.4%). Meanwhile, n= 23 (11.2%) believed no specific foods needed to be avoided. Shown in **Figure No. 9**

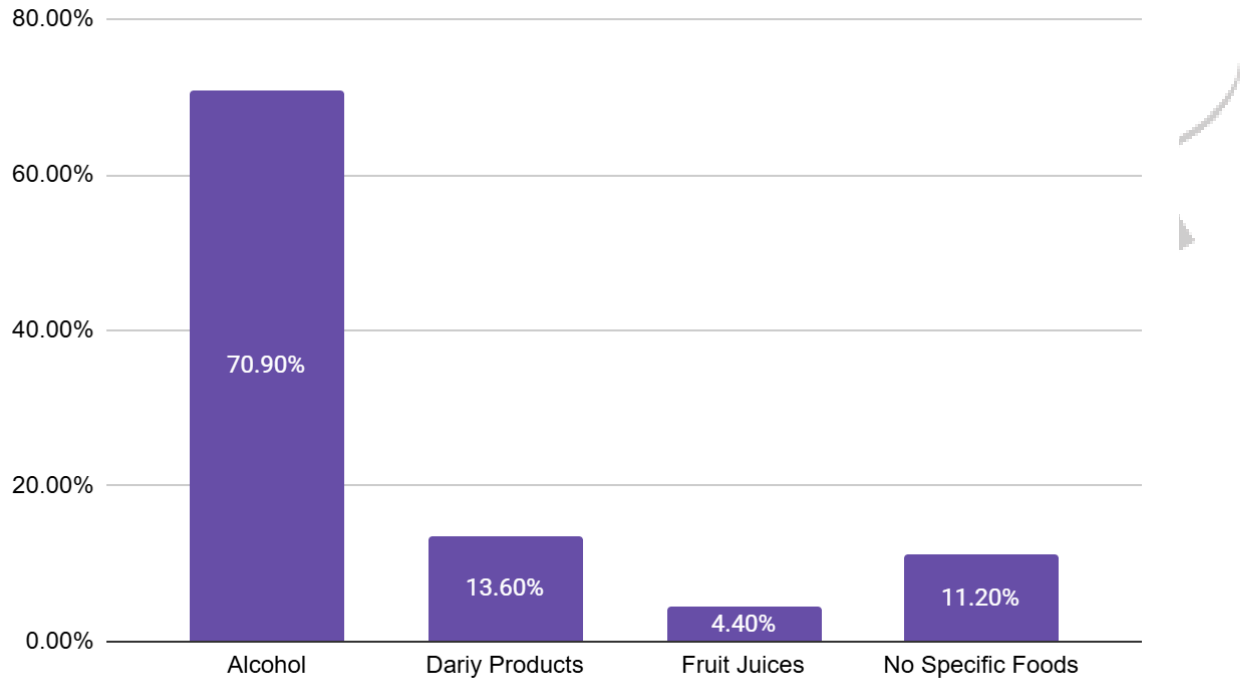


Figure No. 9 : What Type Of Food Should Be Avoided During Measles ?

To boost immunity at home, the majority n= 162 (78.6%), endorsed a combination of practices, including consuming green leafy vegetables, taking plenty of rest, and using Vitamin A supplements. Only smaller fractions prioritized these measures individually: n=20 (9.7%) for vegetables, n=11 (5.3%) for rest, and n=13 (6.3%) for Vitamin A. Shown in **Figure No. 10**

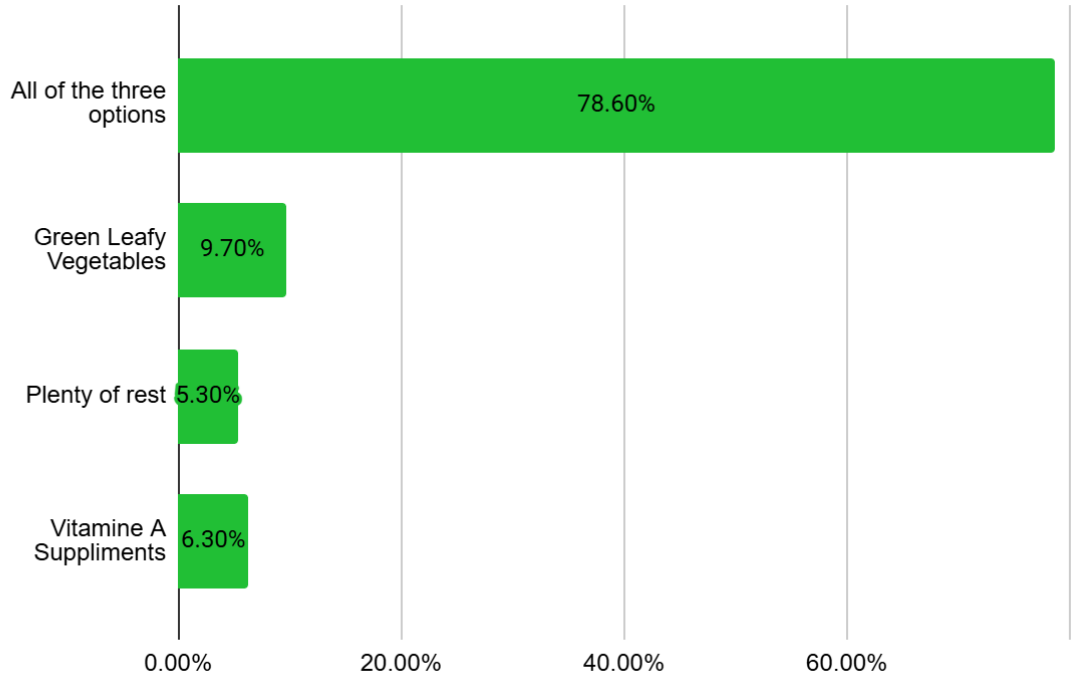


Figure No. 10 : How Can A Person Boost Their Immune System At Home ?

On the recommended age for measles vaccination, n=113 (54.9%) correctly acknowledged that vaccination is advised at all the recommended ages (9 months, 15-18 months, and 4-6 years). Smaller groups mentioned individual age brackets: n=45 (21.8%) for 15-18 months, n=23 (11.2%) for 9 months, and n=25 (12.1%) for 4-6 years. Shown in **Figure No 11**

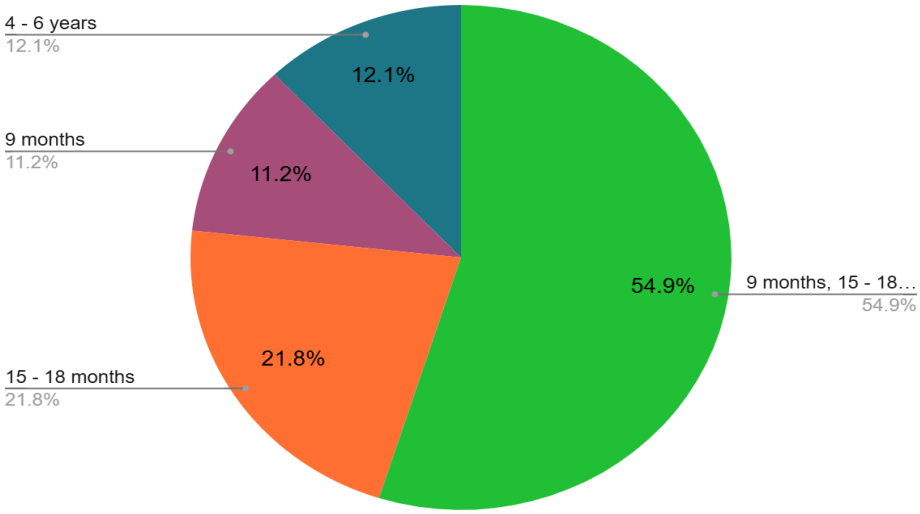


Figure No. 11 : What Is The Recommended Age For Measles Vaccination ?

A notable proportion, n=85 (41.5%), believed that antibiotic drugs could help treat the symptoms of measles, while n=79 (38.3%) correctly disagreed, and n=42 (20.4%) strongly rejected the idea.

Awareness of vaccination programs for measles prevention was relatively high, with n=153 (74.3%) reporting awareness. However, n=28 (13.6%) were unaware, and n=25 (12.1%) were entirely unfamiliar with such programs.

Finally, n= 145 (70.4%) agreed that vaccination increases immunity against measles. However, n=34 (16.5%) disagreed, and smaller groups expressed uncertainty, with n=13 (6.3%) saying "maybe" and n=14 (6.8%) indicating they "don't know." Shown in **Table No. 5**

Responses	Frequency	Percentage
Can Antibiotic Drugs help to treat the symptoms of measles?		
Yes	85	41.5
No	73	38.3
Not At All	42	20.4
Are you aware about vaccination programs for prevention of measles ?		
Yes	153	74.3
No	28	13.6
Not At All	25	12.1
Does getting vaccinated increases the immunity of a person?		
Yes	145	70.4
No	34	16.5
May Be	13	6.3
Don't Know	14	6.8

Discussion:-

Discussion of Socio Demographic:-

This study analyzed the gender distribution of 206 medical students at JASU, Kyrgyzstan, revealing a slight male predominance with 113 male participants (54.9%), 92 female participants (44.7%), and one individual identifying as "other" (0.5%). Among the total participants, 23 students reported a history of measles infection, with males comprising the majority (n=17) compared to females (n=6). These findings reflect gender-related differences in measles exposure, which may be influenced by various biological, behavioral, and sociocultural factors. The higher prevalence of measles infection among male participants aligns with observations from

similar studies. Similar research is Manfred S. Green (2022) in BMC Infectious Disease[9]. Identified males as more susceptible to infectious diseases, including measles, due to increased exposure to outdoor environments and less consistent health-seeking behaviors. Another research done by Qiongying Yang (2014) in Guangzhou, Southern China [10] highlighted that males were less likely to participate in routine vaccination programs during childhood, potentially increasing their vulnerability to vaccine-preventable diseases later in life. Female participants in this study had lower reported cases of measles (n=6), which might indicate better vaccination compliance or increased likelihood of seeking healthcare services. Sonja Merten (2015) in Canada by PLOS [11] found similar trends in Bangladesh, where females exhibited a higher tendency to follow preventive health measures, including vaccination. However, the gender disparity in health outcomes also raises concerns about underreporting or differences in exposure levels between genders, emphasizing the need for further investigation. These findings suggest the necessity of targeted health education campaigns addressing gender-specific barriers to vaccination and disease prevention. For males, interventions might focus on improving awareness of vaccination schedules and reinforcing the importance of routine health check-ups. For females, maintaining high vaccination compliance while addressing potential barriers such as cultural norms or limited access to healthcare remains critical.

This study assessed the age distribution of 206 medical students at JASU, Kyrgyzstan, categorized into four groups: 17–19 years (n=27, 13.1%), 20–22 years (n=80, 38.8%), 23–25 years (n=48, 23.3%), and 26–28 years (n=51, 24.8%). Among these, 23 students reported a history of measles infection, with the highest number of cases observed in the 20–22 age group (n=10), followed by the 23–25 age group (n=8), the 26–28 age group (n=3), and the 17–19 age group (n=2). These findings suggest a higher burden of measles among students in their early 20s, which may reflect increased vulnerability due to gaps in vaccination coverage during their childhood. The higher prevalence of measles among the 20–22 and 23–25 age groups aligns with similar research in global trends reported by Gill Norman (2024) by BMC Public Health [12], who highlighted a resurgence of measles among young adults due to incomplete vaccination during childhood and waning immunity. This trend may also be linked to disruptions in routine immunization programs caused by sociopolitical instability or public health crises, such as the COVID-19 pandemic. Similar observations were seen in a study by Samiuddin Tari (2022) in Pakistan [13], where young adults were disproportionately affected by measles outbreaks due to inadequate vaccination coverage during earlier years. Interestingly, the youngest group (17–19 years) reported the fewest cases (n=2), which may indicate the positive impact of improved vaccination campaigns targeting younger cohorts. For instance, WHO (2023) [14] reported significant progress in measles control among children and adolescents in regions with intensified immunization efforts. However, the presence of cases even in this group highlights the need for continued vigilance and efforts to close existing gaps in vaccination coverage. The relatively low number of cases among the oldest group (26–28 years, n=3) may reflect lower exposure to measles outbreaks in this cohort or better immunity due to previous infection or vaccination. These findings underscore the importance of age-specific strategies to address measles susceptibility. For the 20–22 and 23–25 age groups, targeted catch-up vaccination campaigns and awareness programs are crucial to mitigating the risk of future outbreaks. For younger students (17–19 years), ensuring high vaccination rates through routine immunization programs remains a priority. Furthermore, public health policies should consider integrating booster doses for older age groups (26–28 years) to maintain long-term immunity.

Discussion of Knowledge:-

The results demonstrated that the majority of participants possessed accurate knowledge about measles as a viral, airborne disease, with 89.3% correctly identifying the measles virus as the causative agent. This is in line with findings from a study conducted by Jasmine L. Khongthaw (2022) [15] among Indian pharmacy students, where a similar level of knowledge was observed regarding the etiology and transmission of measles. Additionally,

88.2% of students recognized the types of measles, reflecting a sound understanding of the disease's clinical presentation.

Despite their knowledge, the vaccination rate among JASU students was 53.9%, which falls short of the 95% coverage needed to achieve herd immunity, as emphasized by the World Health Organization (WHO). A recent report by WHO and CDC (2023) [16] highlighted a global decline in vaccination rates during the COVID-19 pandemic, which may explain the low uptake observed in this study. Similar vaccination gaps have been documented in Kyrgyzstan, where measles cases surged from 23 in 2022 to 559 in 2023, emphasizing the urgent need for targeted interventions.

Discussion of Attitude :-

Attitudes toward measles vaccination were largely positive, with 79.6% of respondents agreeing that vaccination helps control the disease. Furthermore, 79.1% expressed willingness to encourage others to vaccinate their children. These findings align with a study by Syed M. Akramuzzaman (2002) in Dhaka Bangladesh [17], which also reported a high level of pro-vaccine attitudes among medical students. However, vaccine hesitancy persists among a minority, influenced by misinformation or cultural beliefs, as seen in 16.5% of students who expressed doubts about the efficacy of vaccination.

The study identified incomplete vaccination and international travel as key risk factors for measles outbreaks, consistent with global research by Jasmine L. Khongthaw (2022) [15] among Indian pharmacy students [15], which showed that under-vaccination remains the primary driver of measles resurgence. Environmental factors, such as low humidity and cold temperatures, were also identified as significant contributors, aligning with studies conducted in similar climates, where measles transmission peaks during winter months.

While the majority of participants recognized the importance of vaccination programs, gaps in practical knowledge were evident. For example, confusion about the appropriate age for vaccination and the role of antibiotics in treating measles symptoms indicates the need for enhanced educational initiatives. The high proportion (41.5%) of students believing that antibiotics can treat measles symptoms reflects a broader misunderstanding that has also been noted in other settings, such as in a study conducted in India by Sushil K Kabra (2013) [18].

Discussion of Practices:-

In our study, 53.9% of students reported being vaccinated against measles, which is consistent with trends seen in other low- to middle-income countries, where vaccine uptake among healthcare students is often below recommended levels Vincenzo Restivo (2023) by Vaccine MDPI [19]. Practices such as the use of over-the-counter medications and dietary adjustments during measles also showed variability. For example, 68.9% of students correctly identified ibuprofen and paracetamol as the primary medications for fever management, but there was confusion about the role of antibiotics in treating measles symptoms—a misconception that underscores the need for strengthened clinical education, as similarly noted by AD Hay (2009) by Health Technology Assessment [20].

The use of dietary and immunity-boosting practices, such as the consumption of green leafy vegetables and Vitamin A supplements, was widely endorsed among participants, reflecting awareness of supportive care for measles similar research done by Andrea Lo Vecchio (2021) by Pediatric Infectious Disease Journal [21]. However, 70.9% also identified avoiding alcohol during illness, which, while beneficial, does not address core disease transmission concerns. This disconnect between knowledge and action mirrors global findings on student health behaviors during outbreaks.

Moreover, 74.3% of students demonstrated awareness of vaccination programs, yet practical engagement in promoting immunization, such as advocating for family vaccinations, remains suboptimal. These findings are consistent with studies from regions like India and Bangladesh, where student populations exhibit strong theoretical knowledge but limited involvement in public health initiatives Vincenzo Restivo (2023) by Vaccine MDPI & WHO, (2024) [19] & [22] .

To bridge the gap between knowledge and practice, targeted interventions such as integrating vaccine advocacy into medical curricula, organizing regular vaccination drives within universities, and promoting active participation in community outreach programs are recommended. These measures align with global public health strategies and could significantly reduce the re-emergence of vaccine-preventable diseases like measles.

Conclusion:-

In conclusion, this study underscores the importance of integrating comprehensive measles education into the medical curriculum to address knowledge gaps and counter vaccine hesitancy. Future efforts should focus on improving vaccination coverage, promoting public health campaigns, and addressing misinformation. Lessons from successful vaccination campaigns, such as India's intensive measles-rubella immunization efforts, could serve as models for Kyrgyzstan to curb the re-emergence of measles. Strengthening surveillance and outbreak response strategies will be essential to achieving sustained measles control in the region.

References:-

[1.] https://www.who.int/news-room/fact-sheets/detail/measles

[2.] https://www.yalemedicine.org/conditions/measles#:~:text=In%20the%20United%20States%2C%20measles,%2Drubella%20(MMR)%20vaccine

[3.] https://www.montana.edu/orc/biosafety/psds/measles_virus.html#:~:text=Measles%20virus%20is%20a%20negative,diameter%2C%20surrounded%20by%20an%20envelope

[4.] https://www.chop.edu/conditions-diseases/measles-rubeola#:~:text=Measles%2C%20also%20called%20rubeola%2C%20is,followed%20by%20a%20distinct%20rash

[5.] https://www.mayoclinic.org/diseases-conditions/rubella/symptoms-causes/syc-20377310

[6.] https://www.mayoclinic.org/diseases-conditions/measles/symptoms-causes/syc-20374857

[7.] https://www.who.int/news/item/16-11-2023-global-measles-threat-continues-to-grow-as-another-year-passes-with-millions-of-children-unvaccinated

[8.] https://www.unmc.edu/healthsecurity/transmission/2023/06/06/kyrgyzstan-registers-559-cases-of-measles/

[09.] Green, M. S., Schwartz, N., & Peer, V. (2022). Gender differences in measles incidence rates in a multi-year, pooled analysis, based on national data from seven high income countries. BMC infectious diseases, 22(1), 358. https://doi.org/10.1186/s12879-022-07340-3

[10.] Yang, Q., Fu, C., Dong, Z., Hu, W., & Wang, M. (2014). The effects of weather conditions on measles incidence in Guangzhou, Southern China. Human vaccines & immunotherapeutics, 10(4), 1104–1110. https://doi.org/10.4161/hv.27826

[11.] Merten, S., Martin Hilber, A., Biaggi, C., Secula, F., Bosch-Capblanch, X., Namgyal, P., & Hombach, J. (2015). Gender Determinants of Vaccination Status in Children: Evidence from a Meta-Ethnographic Systematic Review. PloS one, 10(8), e0135222. https://doi.org/10.1371/journal.pone.0135222

[12.] Norman, G., Kletter, M. & Dumville, J. Interventions to increase vaccination in vulnerable groups: rapid overview of reviews. BMC Public Health 24, 1479 (2024). https://doi.org/10.1186/s12889-024-18713-5

[13.] Tariq, S., Niaz, F., Afzal, Y., Tariq, R., Nashwan, A. J., & Ullah, I. (2022). Pakistan at the precipice: The looming threat of measles amidst the COVID-19 pandemic. Frontiers in public health, 10, 1000906. https://doi.org/10.3389/fpubh.2022.1000906

[14.] https://www.who.int/news/item/16-11-2023-global-measles-threat-continues-to-grow-as-another-year-passes-with-millions-of-children-unvaccinated

[15.] Khongthaw, Jasmine & Geetha, P.. (2022). Estimation of knowledge, attitude and practices towards measles and its risk factors among pharmacy students. International journal of health sciences. 10.53730/ijhs.v6nS1.8208.

[16.] https://www.cdc.gov/media/releases/2024/p1114-measles-cases.html

[17.] Akramuzzaman, S. M., Cutts, F. T., Hossain, M. J., Wahedi, O. K., Nahar, N., Islam, D., Shaha, N. C., & Mahalanabis, D. (2002). Measles vaccine effectiveness and risk factors for measles in Dhaka, Bangladesh. Bulletin of the World Health Organization, 80(10), 776–782.

[18.] Kabra, S. K., & Lodha, R. (2013). Antibiotics for preventing complications in children with measles. The Cochrane database of systematic reviews, 2013(8), CD001477. https://doi.org/10.1002/14651858.CD001477.pub4

[19.] Restivo, V., Fallucca, A., Trapani, F., Immordino, P., Calamusa, G., & Casuccio, A. (2023). Measles Immunization Status of Health Care Workers: A Cross-Sectional Study Exploring Factors Associated with Lack of Immunization According to the Health Belief Model. Vaccines, 11(3), 618. https://doi.org/10.3390/vaccines11030618

[20.] Hay, A. D., Redmond, N. M., Costelloe, C., Montgomery, A. A., Fletcher, M., Hollinghurst, S., & Peters, T. J. (2009). Paracetamol and ibuprofen for the treatment of fever in children: the PITCH randomised controlled trial. Health technology assessment (Winchester, England), 13(27), iii–163. https://doi.org/10.3310/hta13270

[21.] Vecchio, A. L., Cambriglia, M. D., Bruzzese, D., & Guarino, A. (2021). Vitamin A in children hospitalized for measles in a high-income country. The Pediatric Infectious Disease Journal, 40(8), 723-729.

[22.] https://www.who.int/news/item/24-04-2024-global-immunization-efforts-have-saved-at-least-154-million-lives-over-the-past-50-years

JETIR.ORG ISSN: 2349-5162 | ESTD Year : 2014 | Monthly Issue
JOURNAL OF EMERGING TECHNOLOGIES AND INNOVATIVE RESEARCH (JETIR)
An International Scholarly Open Access, Peer-reviewed, Refereed Journal

Prevalence of Polycystic Ovarian Syndrome: A Study Among Female Medical Students of Jalalabad State University.

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ABSTRACT

Introduction:
Polycystic Ovary Syndrome (PCOS) is a common endocrine disorder among women of reproductive age, marked by symptoms such as elevated androgen levels, menstrual irregularities, and ovarian cysts. The condition has a significant impact on physical and emotional well-being, making its study crucial, particularly in specific populations.

Objective:
This study aimed to determine the prevalence of PCOS and associated factors among female medical students at Jalalabad State University in Kyrgyzstan.

Methodology:
A cross-sectional study was conducted from February 26 to March 17, 2024, involving 217 female medical students from the 1st to 5th years. Data was collected using a semi-structured questionnaire distributed via Google Forms. Statistical analysis was performed using SPSS software, with results expressed as percentages.

Results:
The study revealed that 25.8% of respondents had been formally diagnosed with PCOS, with the majority receiving their diagnosis from an obstetrician-gynecologist. Additionally, 39.3% of participants with PCOS reported a family history of the condition. Common symptoms among those diagnosed included moderate to severe dysmenorrhea, hirsutism, and acne. Emotional concerns were also prevalent, particularly related to weight gain, fertility, and acne.

Conclusion:
This study underscores the high prevalence of PCOS among female medical students, emphasizing the need for increased awareness, early diagnosis, and comprehensive management strategies. Addressing both the physical and emotional impacts of PCOS is crucial to improving the quality of life for those affected, particularly in high-stress environments such as medical academia.

Keywords: PCOS, Female Medical Students, JASU

INRODUCTION

Polycystic ovary syndrome (PCOS) is a complex condition characterized by elevated androgen levels, menstrual irregularities, and/or small cysts on one or both ovaries. The disorder can be morphological (polycystic ovaries) or predominantly biochemical (hyperandrogenemia). Hyperandrogenism, a clinical hallmark of PCOS, can cause inhibition of follicular development, microcysts in the ovaries, anovulation, and menstrual changes.

PCOS is a heterogeneous disorder that affects at least 7% of adult women. According to the National Institutes of Health Office of Disease Prevention, PCOS affects approximately 5 million women of childbearing age in the U.S. Costs to the U.S. health care system for the identification and management of PCOS are approximately $4 billion per year.[1]

According to WHO PCOS affects an estimated 8–13% of reproductive-aged women. Up to 70% of affected women remain undiagnosed worldwide. [6]

The pathophysiology of PCOS involves primary defects in the hypothalamic–pituitary axis, insulin secretion and action, and ovarian function. The association with insulin function is expected; insulin helps to regulate ovarian function, and the ovaries respond to excess insulin by producing androgens, which can lead to anovulation.Follicular maturation arrest is a hallmark sign that an ovarian abnormality exists.[2,3]

Although signs and symptoms vary .The three most common factors associated with PCOS include ovulation irregularities, increased androgen levels, and cystic ovaries. Problems with ovulation and elevated androgen levels occur in the majority of women with PCOS.

Laparoscopic ovarian drilling is an outpatient surgical intervention in which multiple perforations are created in the ovarian surface and stroma. It is thought that this intervention destroys androgen-producing tissue, It has been found to be as effective as medical interventions without increasing the risk of multiple pregnancies.[4]

The drug of choice for inducing ovulation in PCOS is clomiphene citrate.

Antidiabetic drugs can be used to improve fertility, decrease insulin resistance, and reduce circulating androgen levels.[5]

A clomiphene/metformin combination may be tried if individual therapies fail, but evidence of improved results is limited

Human menopausal gonadotropin (HMG) and FSH can also be used to induce ovulation if clomiphene and/or metformin therapy fails

Medroxyprogesterone acetate (MPA) can be used to treat amenorrhea or dysfunctional uterine bleeding in women with PCOS who do not wish to conceive and who are not at risk for pregnancy.

Methodology

This cross-sectional study utilized a semi-structured questionnaire administered to female medical undergraduate students from the 1st to 5th year at Jalalabad State University named after B. Osmonov in Jalalabad, Kyrgyzstan. The questionnaire was distributed via Google Forms, and students were requested to complete and submit their responses. The study was conducted from February 26, 2024, to March 17, 2024. The study population comprised female medical students from the 1st to 5th year who agreed to participate, resulting in a sample size of 217 students. Inclusion criteria were all consenting female medical students from the 1st to 5th year, while those who did not consent were excluded. Statistical analysis will be performed using SPSS (Statistical Package for the Social Sciences) software, with the results expressed as percentages.

Results:

INFORMATION RELATED TO SOCIO DEMOGRAPHY

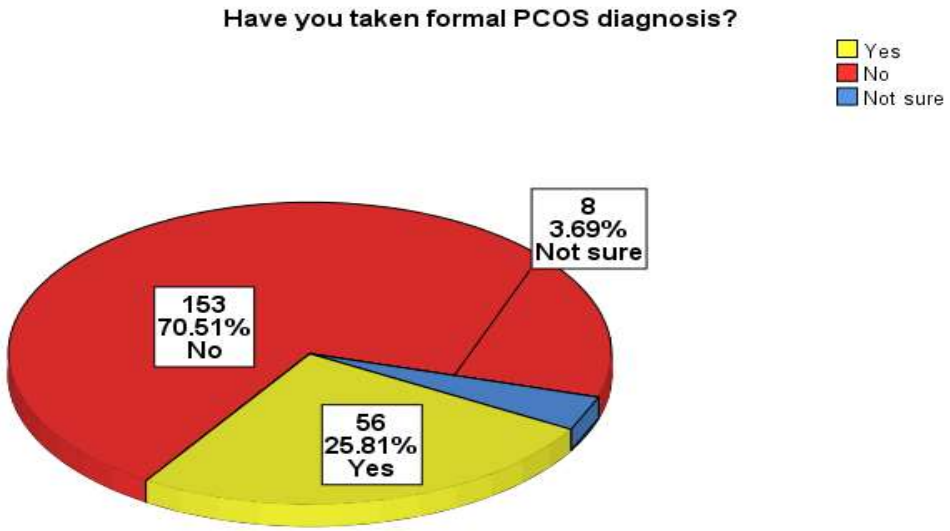
TABLE 1: Socio demographic Information of the respondents

VARIABLES	FREQUENCY (F) N=217	PERCENTAGE (%)
Year of study		
1st year	50	23
2nd year	43	19.8
3rd year	33	15.2
4th year	62	28.6
5th year	29	13.4
Age of the respondent		
15-20 years old	55	25.3
20-25 years old	158	72.8
25-30 years old	4	1.8
Religion of the respondent		
Hindu	116	53.5
Muslim	84	38.7
Christians	13	6
Other	4	1.8
Nationality of the respondent		
India	167	77
Pakistan	44	20.3
Bangladesh	6	2.8
Family		
Joint family	67	30.9
Single family	150	69.1
Marital status of the respondent		
Single	215	99.1
Married	2	0.9

Mother's level of education		
Illiterate	11	5.1
Primary – secondary school	69	31.8
UG Graduate	64	29.5
Diploma	22	10.1
PG Graduate	51	23.5
Father's level of education		
Illiterate	4	1.8
Primary – secondary school	56	25.8
UG Graduate	60	27.6
Diploma	23	10.6
PG Graduate	74	34.1

The above table 1 shows that Year of Study with accordance with Frequency is Maximum at 4th Year (i.e.62) and Minimum at 5th Year (i.e.29).The Distribution of the Respondent according to their Age which is Maximum of 72.8% in 20-25 Years Old and Minimum of 1.8% in 25-30 Years Old. There are Maximum of Hindu and Muslim Respondents (i.e.116 and 84 respectively) and Minimum Number of Christian and Other Respondents (i.e.13and4 respectively). Most of the Respondents are from India (ie.167) and Next come the Pakistani (ie.44) Respondents. There is Lot of Nuclear Family Respondents as Compared to Joint Family Respondents. The maximum numbers of Respondents are not married and Very Least Number (i.e.0.92%) is married. The Education Level of respondent's Mothers is 23.50% in PG Graduate and 5.07% are Illiterate. The Education Level of respondent's Fathers is 27.65% in UG Graduate and 10.60% in Diploma Level.

Figure 1: Distribution of respondents according to their PCOS diagnosis



The above figure shows that Out of 217 respondents, 56 individuals (25.81%) reported having taken a formal PCOS diagnosis, while 153 (70.51%) said they hadn't, and 8 (3.69%) were unsure.

Table 2: Distribution of respondents according to position of person who diagnosed them.

SN	VARIABLE	FREQUENCY	PERCENTAGE
1	OBGYN	50	89.1
2	Internal medicine	6	10.9
	Total	56	100

The above table 2 shows that the majority of respondents diagnosed with PCOS were seen by obstetrician-gynecologists (OBGYN), accounting for 49 individuals (89.1%), while 6 individuals (10.9%) were diagnosed by internal medicine physicians.

Table 3: Distribution of respondents according to their insulin resistance, prediabetes or type 2 diabetes diagnosis

SN	VARIABLE	FREQUENCY	PERCENTAGE
1	YES	9	16.1
2	No	39	69.6
3	Not sure	8	14.3
	Total	56	100

The above table 3 shows that Out of 56 respondents who have PCOS, 39 (69.6%) reported not being diagnosed with insulin resistance, prediabetes, or type 2 diabetes, 9 (16.1%) said they had been diagnosed, and 8 (14.3%) were unsure of their diagnosis status.

INFORMATION RELATED TO FAMILY HISTORY

Table 4: Distribution of respondents with PCOS according to their family chronic medical history.

Variable	Response	(n=56)	(%)
Family history of hypertension	Yes	28	50%
	No	28	50%
Family history of diabetes	Yes	31	55.4%
	No	25	44.6%
Family history of PCOS diagnosis	Yes	22	39.3%
	No	34	60.7%
Family history of miscarriages or Recurrent pregnancy Loss	Yes	3	5.4%
	No	53	94.6%
Family history of hormonal disorder or condition related to Reproductive health	Yes	11	19.6%
	No	45	80.4%
Family history of PCOS symptoms	Yes	24	42.9%
	No	32	57.1%
Family history of heart disease or cardiovascular problems	Yes	20	35.7%
	No	36	64.3%
Family history of female smoking	Yes	4	7.1%
	No	52	92.9%

The above table 4 shows that Out of 56 respondents with PCOS diagnosis, 28(50%) reported that someone in their family is suffering from hypertension, while 28 (50%) stated that no one in their family has hypertension. 31 (55.4%) reported that someone in their family is suffering from diabetes, while 25 (44.6%) stated that no one in their family has diabetes. 22 individuals (39.3%) reported having female relatives diagnosed with Polycystic Ovary Syndrome (PCOS), while 34 individuals (60.7%) stated that no female relatives had been diagnosed with PCOS. 3(5.4%) reported a family history of miscarriages or recurrent pregnancy loss, while the majority, 53 (94.6%), stated there was no such history. 11 (19.6%) reported a family history of hormonal disorders or conditions related to reproductive health, while 45 (80.4%) stated there was no such history in their families. 24(42.9%) stated that family members have reported symptoms like ovarian cysts, pelvic pain, or abnormal bleeding, while 32 (57.1%) said no family members have reported such symptoms. 20 individuals (35.7%) reported a family history of heart disease or cardiovascular problems, while 36participants (64.3%) did not have a family history of such issues and the majority of respondents, ie.92.9% (52 individuals), reported that female member of their family were not smoking or exposed to cigarette smoke, while a smaller percentage, ie.7.1% (4 individuals), indicated that female member of their family were smokers or exposed to cigarette smoke.

INFORMATION RELATED TO MENSTRURAL PROBLEM OF RESPODENTES

Table 5: Distribution of the respondents with PCOS according to their history of menstrual problems during their menstrual cycle

SN	VARIABLE	SUBGROUP	FREQUENCY	PERCENT
1	Heavy bleeding during their menstrual cycle	No problem	14	25.0
		Moderate problem	36	64.3
		Sever problem	6	10.7
2	Irregular bleeding during their menstrual cycle	No problem	15	26.8
		Moderate problem	32	57.1
		Sever problem	9	16.1
3	Dysmenorrhea during the menstrual cycle	No problem	14	25

		Moderate problem	29	51.8
		Sever problem	13	23.2
4	Abdominal bloating during menstrual cycle	No problem	13	23.2
		Moderate problem	35	62.5
		Sever problem	8	14.3
5	Menstrual clots during their period	No problem	17	30.4
		Moderate problem	28	50.0
		Sever problem	11	19.6
		TOTAL	56	100

The above table 5 shows that among the 56 participants with pcos, 14 individuals (25%) reported no problem with heavy bleeding during their menstrual cycle, 36 participants (64.3%) reported a moderate problem, and 6 participants (10.7%) reported a severe problem with heavy bleeding during their menstrual cycle. 15 participants (26.8%) reported having no problem with irregular bleeding during their menstrual cycles , 32participants (57.1%) reported having a moderate problem, and 9participants (16.1%) reported having a severe problem with irregular bleeding during their menstrual cycles. 14participants (25%) reported having no problem with dysmenorrhea during their menstrual cycles ,29 participants (51.8%) reported having a moderate problem, and13 participants (23.2%) reported having a severe problem with dysmenorrhea during their menstrual cycles. 23.2% (n=13)reported no problem with abdominal bloating during their menstrual cycle, 62.5%(n=35) reported a moderate problem, and 14% (n=8)reported a severe problem. 17 individuals reported having no problem with menstrual clots during their period. 28 respondents experienced a moderate problem, while 11respondents, faced a severe problem with menstrual clots during their period.

INFORMATION RELATED TO EMOTION OF THE RESPONDENTS.

Table 6: Distribution of respondents with PCOS according to their emotional feeling

Variables	**Frequency**	**percentage**
worried on talking about PCOS in society		
Embarrassed	2	3.6
Little embarrassed	4	7.1
Not embarrassed	50	89.3
Emotionally worried about their fertility		
Worried	14	25
Little worried	20	35.7
Not worried	22	39.3
Emotional feeling about weight gain		
Worried	27	48.2
Little worried	15	26.8
Not worried	14	25.0
Emotional feeling about getting acne		
Worried	32	57.1
Little Worried	8	14.3
Not Worried	16	28.6
total	56	100

The above table 6 shows that out of 56 respondents with PCOS, 3.6% (n=2) reported feeling embarrassed, 7.1 %(n=4) felt a little embarrassed, and the majority, 89.3 %(n=50), reported not feeling embarrassed when discussing PCOS in society. Approximately 25% of respondents expressed concern about fertility, while around 39.3% indicated they were not worried, and approximately 39.3% stated they were only slightly worried.maximum respondent with PCOS (i.e.27) worried about weight gain but about 26.8% of respondent with PCOS little worried about weight gain and 25% of respondent with PCOS didn't worried about weight gain. Maximum number of respondent with PCOS worried about getting acne (i.e.32) and about 16 respondents with PCOS not worried about getting acne.

INFORMATION RELATED TO RISK FACTOR

Table 7: Distribution of respondent with PCOS according to their risk factor

SN	VARIABLE	SUBGROUP	FREQUENCY	PERCENT
1	BMI	<18.5(underweight)	4	7.1
		18.5-24.5(normal)	32	57.1
		25-29.5 (obese)	16	28.9
		>35(extreme obese)	4	7.1
2	Hirsutism	No problem	24	42.9
		Moderate problem	26	46.4
		Sever problem	6	10.7
3	acne problem	No problem	32	57.1
		Moderate problem	17	30.4
		Sever problem	7	12.5
4	blood pressure history	Yes	11	19.6
		No	45	80.4
5	history of cigarette smoking	Once in a while	8	14.3
		More often	2	3.6
		No	46	82.1
6	stress level in their daily life	Rarely	11	19.6
		Occasionally	24	42.9
		Often	21	37.5
		TOTAL	**56**	**100**

The table 7 shows that among 56 respondents with PCOS maximum respondent (i.e.32) has normal BMI. About 4 respondents are underweight. About 16 respondents are obese. About 4 respondents are extremely obese. 24 respondents had no hirsutism problem. About 26 respondents had moderate hirsutism problem and about 6 respondents had sever hirsutism problem. 32 respondents had no acne problem. About 17respondents had moderate acne problem and about 7respondents had severe acne problem.11 respondents had been diagnosed with high blood pressure or high cholesterol. 2 respondents have been smoking. 8respondents had been smoked once in a while and 46 respondents didn't smoke. 11 respondents reported that they rarely feels stress, 24 respondents reported that they occasionally feels stress and 21 respondents reported that they often feels stress.

Discussion

This study indicated that 25.8% of respondents reported having a diagnosis of PCOS. Similarly, among Pakistani undergraduate students, 18.32% reported a PCOS diagnosis.[11]Additionally, a study conducted among staff, faculty, and students at Texas Women's University campuses in Denton, Dallas, and Houston found that 28.5% of respondents reported having received a formal diagnosis of PCOS.[8]

This study found that 39.3%% (n=22) of participants with PCOS reported having a family history of PCOS. Similarly, another study conducted in a medical college in Nerul, Navi Mumbai, Maharashtra, showed that 6.35% (n=29) of respondents had relatives with PCOS. [7]

This study reveals that 51.81% (n=29) of participants with pcos reported experiencing moderate dysmenorrhea, while 23.2% (n=13) described their condition as severe. Similarly, a descriptive cross-sectional study conducted at the King Saud Medical City Gynecological Referral from July 2022 to January 2023 found that 28.29 % (n=58) of respondents with PCOS reported experiencing issues with dysmenorrhea. [15]

In the research outlined, it was discovered that 46.4% (n=26) of the participants with PCOS reported experiencing moderate issues with hirsutism, while 10.7% (n=6) described their hirsutism as severe. A comparable investigation by Barberis et al. found a notably higher prevalence, with 75% (n=327) of respondents with PCOS indicating they experienced hirsutism. [16]

In the research findings, it was revealed that among 217 participants 8.8% (n=19) of participants indulged in occasional smoking, while 3.2% (n=7) admitted to a more frequent habit. Likewise, a descriptive cross-sectional study conducted at Kathmandu Medical College and Teaching Hospital (KMCTH) in Sinamangal, Kathmandu, Nepal, by K.C. et al., noted that 1.8% (n=7) of respondents acknowledged smoking. [9]

This study found that 12.5 %(n=7) respondents with PCOS has severe problems with acne 30.4%(n=17) respondents with PCOS has moderate problem with acne and 57.1 %(n=32) of respondents with PCOS has no problem with acne Similar study was carried out from September 2017 to March 2018 among the students of Sarojini Naidu College for Women, Kolkata, WB shows that Acne was found in 40.74% of participants with PCOS.[17]

Conclusion

The study conducted at Jalalabad State University reveals a significant prevalence of polycystic ovary syndrome (PCOS) among female medical students, with 25.8% having been formally diagnosed with the condition. A strong association was found between PCOS and family history, as many diagnosed students reported a familial link to the disorder. The study also noted that women with PCOS frequently face menstrual and metabolic challenges, including dysmenorrhea and hirsutism. Additionally, the psychological and emotional burden of PCOS is evident, with concerns about acne, weight gain, and fertility being common among those diagnosed. This underscores the mental health challenges associated with the condition. The findings emphasize the need for increased awareness of PCOS, particularly in academic settings, to ensure early diagnosis and intervention. Furthermore, the study calls for comprehensive management strategies that address both the physical and psychological aspects of PCOS, thereby improving the overall well-being of affected individuals. Lastly, it highlights the potential impact of academic stress on exacerbating PCOS symptoms, pointing to the necessity of targeted support for students facing such challenges.

References

1. Ndefo UA, Eaton A, Green MR. Polycystic ovary syndrome: a review of treatment options with a focus on pharmacological approaches. Pharmacy and therapeutics. 2013 Jun;38(6):336.
2. Shannon M, Wang Y. Polycystic ovary syndrome: a common but often unrecognized condition. Journal of midwifery & women's health. 2012 May;57(3):221-30.
3. Diamanti-Kandarakis E, Kandarakis H, Legro RS. The role of genes and environment in the etiology of PCOS. Endocrine. 2006 Aug;30:19-26.
4. Farquhar C, Brown J, Marjoribanks J. Laparoscopic drilling by diathermy or laser for ovulation induction in anovulatory polycystic ovary syndrome. Cochrane database of systematic reviews. 2012(6).
5. Morley LC, Tang T, Yasmin E, Norman RJ, Balen AH. Insulin-sensitising drugs (metformin, rosiglitazone, pioglitazone, D-chiro-inositol) for women with polycystic ovary syndrome, oligoamenorrhoea and subfertility. Cochrane Database of Systematic Reviews. 2017(11).
6. https://www.who.int/news-room/fact-sheets/detail/polycystic-ovary-syndrome
7. Aggarwal M, Yadav P, Badhe S, Deolekar P. A cross sectional study on prevalence of PCOS and risk factors associated with it among medical students. Indian J ObstetrGynecol Res. 2019;6:522-6.
8. Rao M, Broughton KS, LeMieux MJ. Cross-sectional study on the knowledge and prevalence of PCOS at a multiethnic university. Progress in Preventive Medicine. 2020 Jun 1:e0028.
9. Shreeyanta KC, Shah RK, Singh A, Prasai A, Bhandari B, Aryal S, Khatri A, Thapa M. Prevalence of polycystic ovarian syndrome among medical students of a tertiary care hospital. JNMA: Journal of the Nepal Medical Association. 2020 May;58(225):297.
10. Jabeen A, Yamini V, Amberina AR, Eshwar MD, Vadakedath S, Begum GS, Kandi V. Polycystic ovarian syndrome: prevalence, predisposing factors, and awareness among adolescent and young girls of South India. Cureus. 2022 Aug;14(8).
11. Rizvi M, Islam MA, Aftab MT, Naqvi AA, Jahangir A, Ishaqui AA, Iqbal MZ, Iqbal MS. Knowledge, attitude, and perceptions about polycystic ovarian syndrome, and its determinants among Pakistani undergraduate students. Plos one. 2023 May 25;18(5):e0285284.
12. Kamrul-Hasan AB, Aalpona FT, Selim S. Clinical, metabolic and hormonal profiles of Bangladeshi adolescents with polycystic ovary syndrome. touchREVIEWS in Endocrinology. 2021 Apr;17(1):54.
13. Goh JE, Farrukh MJ, Keshavarzi F, Yap CS, Saleem Z, Salman M, Ramatillah DL, Goh KW, Ming LC. Assessment of prevalence, knowledge of polycystic ovary syndrome and health-related practices among women in klang valley: A cross-sectional survey. Frontiers in Endocrinology. 2022 Aug 29;13:985588.
14. Gupta M, Singh D, Toppo M, Priya A, Sethia S, Gupta P. A cross sectional study of polycystic ovarian syndrome among young women in Bhopal, Central India. Int J Community Med Public Health. 2018 Jan;5(1):95-100.

15. Mohmed FES, Aljuhaysh RM, Alonze SK, Alhagbani MA. Prevalence and Risk Factors of Polycystic Ovarian Syndrome PCOS: Cross-sectional Study. J. Pharm. Res. Int. [Internet]. 2023 Mar. 1 [cited 2024 Aug. 10];35(2):13-9. Available from: https://journaljpri.com/index.php/JPRI/article/view/7311
16. Barberis N, Calaresi D, Cannavò M, Verrastro V. Body mass index and quality of life in individuals with polycystic ovary syndrome: Dysmorphic concerns and eating disorders as mediators. Frontiers in Public Health. 2022 Oct 5;10:962083.
17. Chatterjee M, Bandyopadhyay SA. Assessment of the prevalence of polycystic ovary syndrome among the college students: A case–control study from Kolkata. Journal of Mahatma Gandhi Institute of Medical Sciences. 2020 Jan 1;25(1):28-32.

Risk Factors Associated with Acute Respiratory Tract Infection Among Under 16 Age Group Children in Hospital, Jalal-Abad

Article *in* INTERNATIONAL JOURNAL OF CLINICAL SCIENCE AND MEDICAL RESEARCH · July 2024

DOI: 10.55677/IJCSMR/V4I7-06/2024

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International Journal of Clinical Science and Medical Research

ISSN(print): 2770-5803, ISSN(online): 2770-582X

Volume 04 Issue 07 July 2024

DOI: https://doi.org/10.55677/IJCSMR/V4I7-06/2024, Impact Factor: 7.606

Page No : 270-277

Risk Factors Associated with Acute Respiratory Tract Infection Among Under 16 Age Group Children in Hospital, Jalal-Abad

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ABSTRACT

Published Online : July 19, 2024

Introduction

Acute respiratory tract infections (ARTIs) are a significant health concern among children, contributing to high rates of morbidity and mortality, especially in developing regions.

Objective

To identify the risk factors associated with acute respiratory tract infections among children under 16 years of age in a hospital in Jalal-Abad, Kyrgyzstan. The present study was undertaken to know the various types of ARTIs in children under 16 years of Age and analyze factors influencing the morbidity and mortality of those cases. Prospective cross-sectional study for 243 infected children with ARTIs was conducted in a Jalal-Abad City Hospital, using secondary data from hospital records.

Methodology

This cross-sectional study analyzed secondary data from the medical records of children admitted with ARTIs at Jalal-Abad City Hospital, Jalal-Abad. Various Socio-demographic and health-related factors were examined using descriptive and inferential statistical methods.

Results

The analysis revealed that younger children, particularly those under 1 year of age, had the highest incidence of ARTIs. Significant risk factors included immature immune system, breastfeeding practices and under lying health conditions play. Male children were more frequently affected than females. Additionally, incomplete vaccination and low immunization status were associated with higher ARTI rates.

Conclusion

Addressing the identified risk factors through targeted public health interventions, such as enhancing immunization coverage, improving nutrition, and reducing exposure to Environmental pollutants (specially male Children those who are suffering with ARTIs), can significantly reduce the incidence of ARTIs among children in Jalal-Abad.

KEYWORDS:

Acute respiratory tract infection, Children, Microbiology, Pediatrics

INTRODUCTION

The Respiratory tract is divided as upper respiratory tract and lower respiratory tract. The upper respiratory tract includes Nose, Ethmoidal air cell, Frontal Sinuses, Maxillary sinus, Sphenoidal Sinus and Larynx. The lower respiratory tract includes the Trachea, Lungs, Air ways (bronchi and bronchioles) and the air sacs (alveoli). Together with all these organs the respiratory tract is responsible to give the breath that keeps a human alive. If infection occurs in Upper Respiratory Tract called Upper Respiratory Tract Infection & in lower respiratory tract called Lower Respiratory Tract Infection [1]. Both of them are major cause of pediatric

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Cite this Article: Shila Acharya, Shivam Singh, Swanand Deshmane, Chitranjan Sharma, Pratap Pokhrel (2024). Risk Factors Associated with Acute Respiratory Tract Infection Among Under 16 Age Group Children in Hospital, Jalal-Abad. International Journal of Clinical Science and Medical Research, 4(7), 270-277

emergency and mortality among children in both developed and developing countries [2-3]

Upper Respiratory Tract Infection: Nasopharyngitis specifically to refer to swelling and inflammation of the nasal passages and the block of the throat. Most common occurs in Babies and children because virus is so easily spread and also Children having weakened immune system. It occurs as the result of an inflammatory reaction or an infection from virus, bacteria, or fungus. Sinusitis specifically refers to swelling and inflammation of the Sinuses. Babies and children have a higher risk for Sinusitis because Sinuses are fully developed until after age 12. It occurs as the result of an inflammatory reaction or an infection from virus, bacteria, or fungus. Most common sinusitis are maxillary and ethmoid sinuses.[4] Tonsillitis specifically refer to swelling and infection of the Tonsils . Tonsils are the two small lumps of soft tissue one on either side at the back of your throat & tonsils are part of your immune system. Tonsillitis is most common in children and adolescents, but it can also affect people of all ages. [5]

Causative agents of upper respiratory tract infections are virus or bacterial. The most common virus is rhinovirus. Other viruses also include influenza virus, adenovirus, enterovirus, and respiratory syncytial virus. Bacteria may cause roughly 20-40% of sudden onset pharyngitis [6]. The most common bacteria is S. pyogenes, a Group A streptococcus. [7]. Initial symptoms of Upper Respiratory Tract Infection are runny, stuffy nose and sneezing, usually without fever. Children with Nasopharyngitis may have difficulty in breathing, muffled speech, drooling (saliva flowing out of your mouth unintentionally) and stridor (an abnormal, high-pitched respiratory sound). Children with serious laryngotracheitis (croup) may also have tachypnea (rapid and shallow breathing), stridor and cyanosis (bluish color in the skin, lips, and nail). Major precautions to be followed is to wear a mask in public places, cover your nose and mouth when you cough or sneeze, wash your hands often with clean, running water and soap. Viral infections are treated symptomatically. Nasopharyngitis caused by Haemophilus influenzae are treated with antibiotics and also Haemophilus influenzae type b vaccine is commercially available [8].

Lower Respiratory Tract Infection: Bronchitis is a common type of lower respiratory tract infection. It is defined as inflammation of the large airways of the lung. Bronchitis happens most of the time in older children and adults, but bronchitis can affect all ages. Pneumonia is an infection of the air sacs of the lungs. Pneumonia affects people of any age but can be more serious in babies, older people, and those with weakened immune systems. There are various causes of pneumonia, and pneumonia can have a wide range of symptoms. Bronchiolitis is inflammation of the small airways of the lungs. This illness is more common in infants and toddlers under 2 years old. Bronchiolitis is one of the top reasons for hospitalization in small children during the fall and winter months.[9]

Causative agents of lower respiratory infections are viral or bacterial. Viruses cause most cases of bronchitis and bronchiolitis. The most common virus is influenza virus and respiratory syncytial virus (RSV) and other viruses also include parainfluenza virus (PIV) (90% serotype III), influenza A virus, and coronavirus[10]. In community-acquired pneumonias, the most common bacterial agent is Streptococcus pneumoniae. Atypical pneumonias are cause by Mycoplasma pneumoniae, Chlamydia spp, Legionella & Coxiella burnetti. Initial symptoms of lower Respiratory Tract Infection are cough, fever, chest pain, tachypnea and sputum production. Patients with pneumonia may also exhibit non-respiratory symptoms such as headache, myalgia (muscles pain), abdominal pain, nausea, vomiting and diarrhea. Some precautions must be taken such avoiding touching the face with unwashed hands, staying away from people with respiratory symptoms, cleaning and disinfecting surfaces regularly. Viral infections are treated symptomatically. Bacterial pneumonias are treated with antibacterials. A polysaccharide vaccine against 23 serotypes of Streptococcus pneumoniae is recommended for individuals at high risk [11].

In Global Data, according to the 2022 survey, National Library of Medicine reported that the highest age group to suffer from Respiratory tract infection were >5 years which was nearly 89%, in the age group between 18 to 30 years which was nearly 22% and in older patients >70 years which was nearly 3% had experience a respiratory Tract Infection [12]. A child dies of pneumonia every 43 seconds. Pneumonia kills more children than any other infectious disease, claiming around 2,000 every day in the age group of below 5 years [13].

According to the survey 2020 Ministry of Health, Kyrgyz Republic respiratory tract infections (RTIs) are the most common in Kyrgyzstan. In 2020, respiratory diseases accounted for 49.7% of child morbidity in children aged 0-14 years [14].

In India according to the 2022 survey, National Library of Medicine reported that the Highest age group to suffer from respiratory tract infection were 0 to 12 months which was nearly 63.2%, in the age group between 2 to 5 years which was nearly 59.5% and in the age group 1 to 2 year which was nearly 63.5%had experience a Respiratory Tract Infection. Higher proportions of boys (62.9%) were reported to have acute Respiratory Tract Infections compared with girls (55.1%) [15]

METHOD AND METHODOLOGY

A cross-sectional study design was used to assess the Risk factors associated with acute respiratory tract infections (ARTIs) among children under 16 years of age. The study was relied on secondary data obtained from hospital records at City Hospital in Jalal-Abad. The research was conducted at City Hospital, which was a major primary healthcare facility

in Jalal-Abad. Patients who were admitted to the Department of Pediatrics and Pulmonology in the hospital during the time period of one year (January 2023 to December 2023) were recorded in the hospital data base from where information was collected. SPSS software version 27 was used to do the analysis of the result from the data they were collected. This hospital provides comprehensive pediatric healthcare services and maintains detailed medical records, making it an ideal setting for this study. Ethical clearance was obtained from the Institutional Ethics Committee. The study met the inclusion and exclusion Criteria.

The Inclusion Criteria were

- •Children aged 0-16 years that were diagnosed with ARTIs and admitted to the hospital during the study period.
- •Records from January 2023 to December 2023.

The Exclusion Criteria were:

- •Children with chronic respiratory conditions or immunocompromised states.
- •Records with incomplete data on key variables.

RESULT

A total of 243 patients admitted to the Jalal-Abad City Hospital, Jalal-Abad during the study period were analyzed according to the study parameter. The results are displayed in the tabular format.

Table 1: Distribution of respondents according to their socio demographic information

RESPONSES	FREQUENCY	PERCENTAGE
GENDER		
Male	128	52.7
Female	115	47.3
Age		
Below 1 Year	88	36.2
Below 5 Years	41	16.9
Below 10 Years	68	28.0
Below 15 Years	46	18.9
Parents Qualification		
Educated	99	40.7
Uneducated	144	59.3
Parents Occupation		
Private And Self Employed	225	92.6
Educational Sector	10	4.1
Government Employees	1	0.4
Medicine And Pharmaceuticals Sector	7	2.9
Immunization Status		
Immunized	233	95.9
Unimmunized	10	4.1

Of the total number of patients included in the study, 128 (52.7%) were males and 115 (47.3%) were females. The above table shows of the patients age group, 88(36.2%) were under the age group of below 1 year, 41(16.9%) were in the age group below 5 years, 68 (28.0%) were in the age group below 10 and 46 (18.9%) were in below 15 years patients admitted in the hospital. The data shows that out of 243 patients, 144 (59.3%) patient's parents were uneducated and 99 (40.7%) patient's parents are educated. From the above data it shows, 225 (92.6%) were private and self employed, 10 (4.1%) were educational sector, 1 (0.4%) were government employee and 7 (2.9%) were Medicine and Pharmaceutical Sector. When looking into patients' immunization status, most of patients are 233 (95.9%) immunized and 10 (4.1%) are unimmunized [TABLE 1]

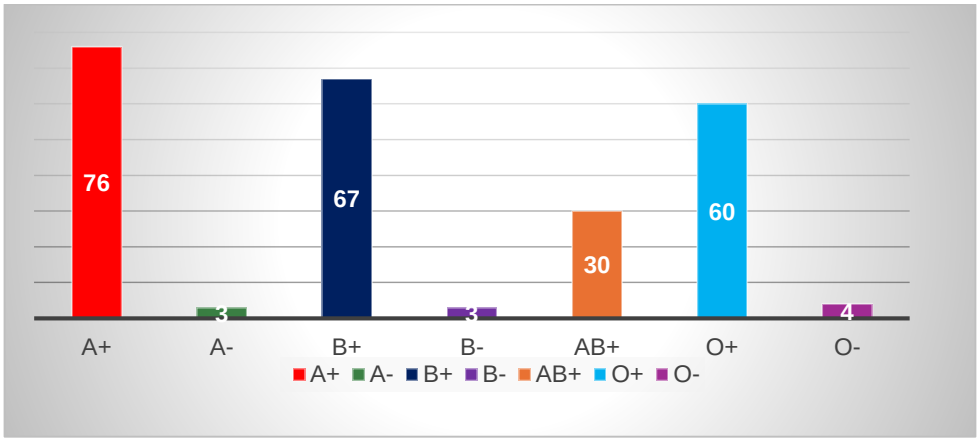

Figure 1: Distribution of respondents according to their blood group.

When patients Blood Groups was taken into the account, 7 categories were categorized such as Blood Group A+ 76 (31.3%), Blood Group A- 3(1.2%), Blood Group B+ 67 (27.6%), Blood Group B- 3(1.2%), Blood Group AB+ 30(12.3%), Blood O+ 60(24.7%), and Blood Group O- 4(1.6%). [FIGURE 1]

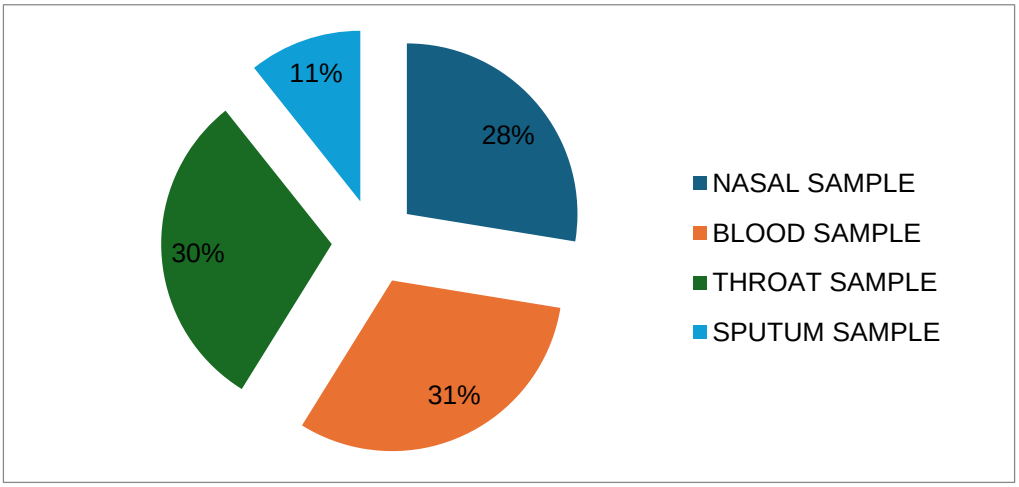

Figure 2: Distribution of respondents according to their Sample taken for Diagnosing.

Above figure shows the diagnosis method used by respondents, majorly used Blood Sample 76 (31.3%) and Throat Sample 74 (30.5%) in the hospital to make the diagnosis, whereas 67 (27.6%) cases were diagnosed with the help of Nasal Sample. Only few cases 26 (10.7%) were diagnosed with Sputum Sample. [FIGURE 2]

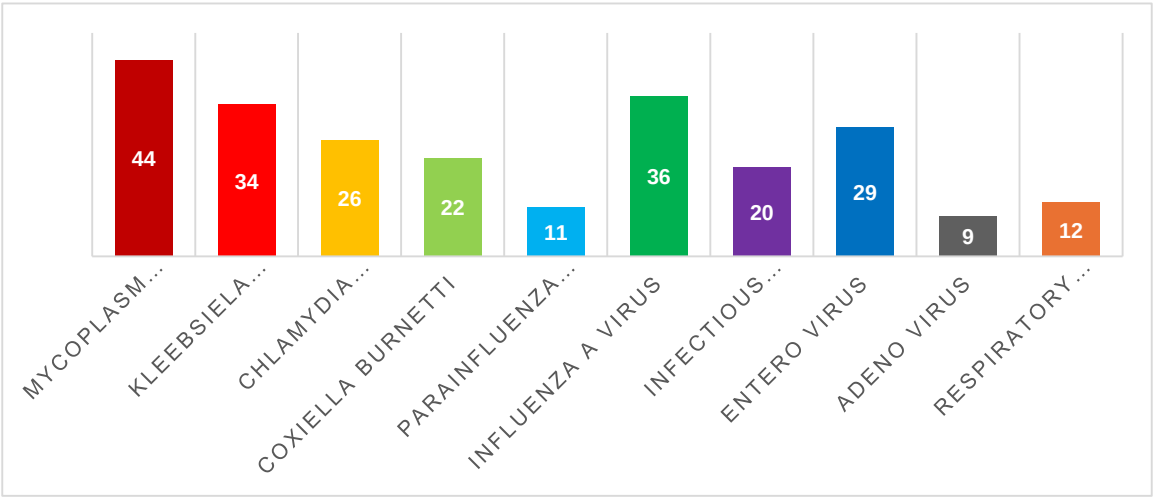

Figure 3: Distribution of respondents according to their organism after being diagnosed.

Among 243 blood tests analyzed, 126 cases of bacterial infections were diagnosed, with MYCOPLASM PNEUMONIAE being the most commonly identified organism. Viral infections were less frequent, with 117 cases of viral infections were diagnosed with INFLUENZA A VIRUS being the most commonly detected organism. These findings highlight the importance of blood sample, throat sample, nasal sample and sputum sample testing in diagnosing infectious diseases and guiding appropriate treatment strategies.Of the total number of patients, 44(18.1%) Mycoplasma Pneumoniae, 36(14.8%) Influenza A Virus, 34(14.0%) Kleebsiela Pneumoniae, 29(11.9%) Enterovirus, 26(10.7%)Chlamydia Pneumoniae, 22 (9.1%) Coxiella Burnetti, 20(8.2%) Infectious Bronchitis Virus, 12(4.9) Respiratory Syncytial Virus, 11 (4.5%) Parainfluenza Virus and 9 (3.7%) Adeno Virus were recorded. [FIGURE 3]

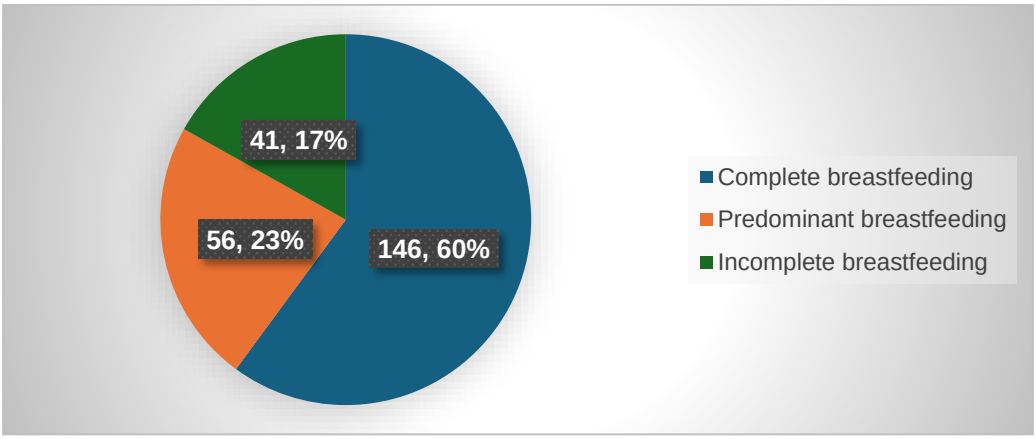

Figure 4: Distribution of respondents according to type of Breastfeeding to infant

When we took patient history we took breastfeeding into consideration, 3 categories were classified complete breastfeeding n = 146 (60%), predominant breastfeeding n = 41 (17%) and incomplete breastfeeding n = 56 (23%)[Figure 4].

DISCUSSION

When we conducted the study about Risk factors associated with acute respiratory tract infection (ARTI) among under 16 age group children, we came across lots of information regarding the (ARTI). The gender of the patients has significant role in the causes of (ARTI). In our research, out of the total patient counts, male n=128 (52.7%) was affected, which is more comparing to the female n=115 (47.3%) patients. When we look into the similar researches done in the different countries, we are almost getting the similar results. In the research done in Jaamnagar, Gujrat, out of the 150 patients with ARTI, n=63 (42%) were female and n=87 (58%) were male [16]. Similarly in a research done in Wuhan, China out of the 39,756 patients n=26747 (67.3%) were male and n=13,009 (32.7%) were female, [17] the incidence of ARTI in males was higher as compared to that in females. This may happen due to the fact that children, especially younger ones, may exhibit different behavioural patterns based on gender. For instance, boys might engage in more risky behaviours or activities that increase exposure to respiratory pathogens, such as playing outdoors or being in close contact with other children who are sick.

The age group getting affected more is below 1 year old which is n = 88 (36.2%) of the patients were affected in our study. Similarly research done in Thane, Maharashtra also had the similar results which shows the similar finding the most of the people getting affected were below 1 year with n = 60 (60%) patients out of 100 [18]. Similarly in a research done in Jaamnagar, Gujrat out of the 150 patients, n= 60 (45.3%) are below 1 year[16]the incidence of ARTIS in below 1 year was higher as compared to other ages. There are several facts why ARTI are more common in this age group than others one among the reason is due to immature immune system, Breastfeeding Practices and Underlying Health conditions also play a significant role in determining an individual's risk of experiencing a problem of ARTI. Other reasons for the ARTI maybe even due to Previous Exposure and Ciliary Function.

Immunization status emerged as a significant factor associated with the occurrence of (ARTIs) among children under 16 years of age in our study, out of the total patient counts, immunized n= 233 (95.9%) and Unimmunized n= 10 (4.1%). Similar Research done in Tigray regional state, Northern Ethiopia, out of the 986 patients with ARTIs, immunized n= 664 (67.3%) and Unimmunized n= 322 (32.7%)[19] the incidence of ARTIs in immunized was higher as compared to that in Unimmunized. If the overall vaccination coverage in the population is high, it is expected that a higher number of children with ARTIs would be from the immunized group simply because there are more immunized children in the population. This reflects the general demographic distribution rather than an indication of vaccine failure and may be some children recorded as immunized may not have completed the full vaccination series, reducing the effectiveness of their immunization

status. Partial immunization provides less protection compared to full immunization.

In this study, we found that M. pneumoniae is a major cause of respiratory infections in school-age children and young adults. Recent reports from several European countries have indicated an increase in the detection of M.pneumoniae infection over the past few years, notably in children aged 4–15 years [20-21]. M. pneumoniae infection accounted for n = 44 (18.1%) cases of respiratory infection in Jalal-Abad, Kyrgyzstan. In most studies, RSV was the leading cause of respiratory tract infections; especially in hospitalized infants less than 6 months of age [22-23]. In agreement with these studies, RSV was detected in only. n = 12 (4.5%)of cases in this study. Influenza viral infections were also common, in that n = 36 (14.8%) of cases were caused by these viruses. Similar research is done in Wuhan, China also similar results M. Pneumoniae accounted n = 12841 (32.3%), RSV is n = 795 (2%) and Influenza viral Infection is n = 7986 (18.1%) [17]

It has been suggested that most M. pneumoniae epidemics occur in either summer or autumn, with no obvious explanation for this seasonal variation. [24-25]

In this study, M. pneumoniae was prevalent throughout almost the entire year, with peaks occurring in June and September. An epidemiologic study found that influenza viral infection occurred throughout the year with no seasonal predominance [26].This study showed that influenza viral infection was more prevalent in late autumn and winter.

Breastfeeding of the patients has significant role in the causes of (ARTI). In our research, out of the total patient counts, complete breastfeeding(more then 6 months) n=146 (60%) , which is more compared to incomplete breastfeeding (less than 6 months) n= 41 (17%) patients and predominant breastfeeding (equal to or less then 6 months) n=56 (23%) . Similar research done in Tripoli, Libya, out of the 200 patients with ARTI, n=79(39.5%) were complete breastfeeding, n=67 (33.5%) incomplete breastfeeding and n= 54 (27%) were predominant breastfeeding [27]. Our findings also support that breastfeeding has a protective effect against respiratory infection. Those who were breastfed for <4 months had a higher risk of hospitalization for infectious diseases in the first year of life than those who were breastfed for >4 months [28]. Besides, infants who were breastfed for 4–6 months showed a higher risk of pneumonia and recurrent otitis media than those who were breastfed for 6 months or longer [29].

CONCLUSION

This study aimed to determine the Risk factors associated with acute respiratory tract infections (ARTIs) among children under 16 years of age in a Jalal-Abad city hospital setting in Jalal-Abad, using secondary data from hospital records. The findings indicate a significant prevalence of ARTIs within this population, with certain socio demographic contributing to the likelihood of infection.

Key findings include:

- A high prevalence of ARTIs among children, particularly in those under 1 year of age.
- Male children exhibited a higher rate of infection compared to females.
- Health-related factors, including incomplete vaccination status and poor nutritional status, were significant contributors to the incidence of ARTIs.

These results underscore the critical need for targeted interventions to reduce the burden of ARTIs among children in this region. The study highlights the importance of addressing both medical and Socio-demographic to improve children's respiratory health.

LIMITATIONS

- Secondary data obtained from hospital records may be incomplete or inconsistent, potentially leading to information bias. Some patient records may lack key variables such as detailed immunization history, socioeconomic status, and environmental exposures.
- Some potentially important environmental and socioeconomic factors may not be adequately captured in hospital records, such as detailed information on housing conditions, no. of members in family, family history related to ARTIs, and family income. These unmeasured confounders could influence the study results.
- Immunization data in hospital records may be incomplete or not up-to-date, making it challenging to accurately assess the vaccination status of all children. Children classified as immunized might not have received all recommended doses, affecting the analysis.

RECOMMENDATION

- Strive to use hospital records that are as complete and detailed as possible. This includes demographic information, medical history, immunization records, and socioeconomic data.
- Investigate the specific pathogens responsible for ARTIs in the study population to develop targeted interventions.
- Encourage hospitals to maintain meticulous and standardized record-keeping practices. Detailed notes on patient diagnosis, treatment, and follow-up are crucial.

REFERENCES

1. https://my.clevelandclinic.org/health/articles/4022-upper-respiratory-infection
2. Nair H, Simões EA, Rudan I, Gessner BD, Azziz Baumgartner E, Zhang JS et al et al. Global and regional burden of hospital admissions for severe acute lower respiratory infections in young children in 2010: a systematic analysis. Lancet 2013;381:1380-90.

3. Liu L, Johnson HL, Cousens S, Perin J, Scott S, Lawn JE et al et al. Global, regional, and national causes of child mortality: an updated systematic analysis for 2010 with time trends since 2000. Lancet. 2012;379:2151-61
4. https://ufhealth.org/conditions-and-treatments/sinusitis
5. https://my.clevelandclinic.org/health/diseases/21146-tonsillitis
6. https://www.medicalnewstoday.com/articles/324144#causes
7. Thomas M, Bomar PA. Upper Respiratory Tract Infection. [Updated 2023 Jun 26]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2024 Jan
8. Khattak ZE, Anjum F. Haemophilus influenzae Infection. [Updated 2023 Apr 27]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2024 Jan
9. Worrall G. (2008). Bronchiolitis. Canadian family physician Medecin de famille canadien, 54(5), 742–743.
10. Dasaraju PV, Liu C. Infections of the Respiratory System. In: Baron S, editor. Medical Microbiology. 4th edition. Galveston (TX): University of Texas Medical Branch at Galveston; 1996. Chapter 93. [11]
11. https://www.who.int/teams/health-product-policy-and-standards/standards-and-specifications/vaccine-standardization/pneumococcal-disease#:~:text=The%20polysaccharide%20vaccine%20consists%20of,%2Ddependent%20and%20serotype%2Ddependent
12. Loosen, S. H., Plendl, W., Konrad, M., Tanislav, C., Luedde, T., Roderburg, C., & Kostev, K. (2023). Prevalence of Upper Respiratory Tract Infections Before, During, and After the COVID-19 Pandemic in Germany: A Cross-Sectional Study of 2 167 453 Outpatients. Journal of primary care & community health, 14, 21501319231204436.
13. https://data.unicef.org/topic/childhealth/pneumonia/#:~:text=Pneumonia%20kills%20more%20children%20than,of%20these%20deaths%20are%20preventable
14. https://icars-global.org/projects/kyrgyzstan-rti/
15. Kumar, S. G., Majumdar, A., Kumar, V., Naik, B. N., Selvaraj, K., & Balajee, K. (2015). Prevalence of acute respiratory infection among under-five children in urban and rural areas of puducherry, India. Journal of natural science, biology, and medicine, 6(1), 3–6.
16. https://web.archive.org/web/20220610043108id_/https://www.paediatricjournal.com/article/view/151/5-1-1
17. Liu J, Ai H, Xiong Y, Li F, Wen Z, et al. (2015) Prevalence and Correlation of Infectious Agents in Hospitalized Children with Acute Respiratory Tract Infections in Central China. PLOS ONE 10(3): e0119170
18. Joshi, Shrikant & Shaikh, Kamil & Kulkarni, Vrushali. (2021). Prevalence of lower respiratory tract infection in tertiary care hospital, Thane. International Journal of Contemporary Pediatrics. 8. 1700.
19. Dagne, H., Andualem, Z., Dagnew, B. et al. Acute respiratory infection and its associated factors among children under-five years attending pediatrics ward at University of Gondar Comprehensive Specialized Hospital, Northwest Ethiopia: institution-based cross-sectional study. BMC Pediatrics 20, 93 (2020)
20. Brunstein JD, Cline CL, McKinney S, Thomas E. Evidence from multiplex molecular assays for complexmultipathogen interactions in acute respiratory infections. J ClinMicrobiol. 2008; 46: 97–102. PMID:17977985
21. Chalker V, Stocki T, Litt D, Bermingham A, Watson J, Fleming D, et al. Increased detection of Mycoplasma pneumoniae infection in children in England and Wales, October 2011 to January 2012. EuroSurveill. 2012; 17: 20081. PMID: 22340973
22. Zamberi S, Zulkifli I, Ilina I. Respiratory viruses detected in hospitalised pediatric patients with respiratory infections. Med J Malaysia. 2003; 58: 681–687. PMID: 15190654
23. Calvo C, García-García ML, Blanco C, Vázquez MC, Frías ME, Pérez-Breña P, et al. Multiple simultaneous viral infections in infants with acute respiratory tract infections in Spain. J ClinVirol. 2008; 42:268–272. doi: 10.1016/j.jcv.2008.03.012 PMID: 18455958
24. Rastawicki W, Kaluzewski S, Jagielski M, Gierczyski R. Epidemiology of Mycoplasma pneumoniae infections in Poland: 28 years of surveillance in Warsaw 1970–1997. Euro Surveill. 1998; 3: 99–100.PMID: 12631756
25. Jacobs E. Mycoplasma pneumoniae: now in the focus of clinicians and epidemiologists. Euro Surveill.2012; 17: 20084. PMID: 22340972
26. Tseng RK, Chen HY, Horng CB. Influenza virus infections in Taiwan from 1979 to 1994. J FormosMedAssoc. 1995; 94 Suppl 2: S126–S136. PMID: 8672941
27. Etrhuni S, Omar R, Hadid I. Risk factors of acute respiratory infections in children in Tripoli, Libya. Ibnosina J Med Biomed Sci 2020;12:200-7.
28. ParicioTalayero JM, Lizán-García M, Otero Puime A, BenllochMuncharaz MJ, Beseler Soto B, Sánchez-Palomares M, et al. Full breastfeeding and hospitalization as a result of infections in the first year of life. Pediatrics 2006;118:e92-99

29. Chantry CJ. Full breastfeeding duration and associated decrease inrespiratory tract infection in US Children. Pediatrics 2006;117:425-32

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Published In: Volume 6, Issue 1 (January-February 2024)

Paper Id: 13402

Editor / Publisher
IJFMR

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Volume 9 | Issue 3 | March -2024

ARTICLE DIGITAL NO.

IJISRT24MAR1858

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INTERNATIONAL JOURNAL OF INNOVATIVE SCIENCE AND RESEARCH TECHNOLOGY

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AUTHORED BY

Amara Abdullah

HAS BEEN PUBLISHED IN

Volume 9 | Issue 3 | March -2024

ARTICLE DIGITAL NO.

IJISRT24MAR1858

EDITOR IN CHIEF IJISRT

International Journal of Research Publication and Reviews

(Open Access, Peer Reviewed, International Journal)

(A+ Grade, Impact Factor 5.536)

ISSN 2582-7421

Sr. No: IJRPR 114719-4

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