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Office of the Managing Editor,
Khyber Medical College, Peshawar

Principal Contact
Managing Editor, PMSRJ
Khyber Medical College Peshawar
Phone +92-91-9221387
managingeditor@pmsrj.com
Support Contact
Administrator PMSRJ
admin@pmsrj.com

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MESSAGE BY THE PATRON IN CHIEF

It is with immense pleasure and pride to announce the publication of the first issue of the Pakistan Medical Students Research Journal (PMSRJ). The idea was instilled in my mind when studies showed that medical students who indulged in research at college level later go on to becoming meaningful research oriented doctors in their respective fields. Success is all about harmonious team work for which I would especially like to thank Prof Bushra Iftihkar, associate Dean Research, our Director of Medical Education Professor Farooq Ahmad and the entire editorial board.

The prelude to this was a very successful "All Pakistan Medical Students Research Conference" held last year at Khyber Medical College. Its is a pleasure to present the 1st issue of the Pakistan Medical Students Research journal (PMSRJ) to our audience.

A lot of credit goes to our Editors, Reviewers, and Authors. The journal serves to provide a medium for communicating wealthy novel findings to all in the field of Medicine, Public health, and Social Science. In line with the aim of PMSRJ to interconnect all aspects of health sciences, this issue mostly covers topics related to public health.

This journal is intended to provide a platform for both undergraduate and postgraduate students in health sciences to present their research work on priority and in a cost-effective way. The editorial team has ensured a user-friendly, cost-effective, and facilitative platform for this purpose on the journal website, where the peer review process ensures transparency, and time-saving, in the meantime, ensures the editorial process is up to the mark. I hope the editorial team will try to maintain the highest research and medical writing standards in this journal.

The journal will consist of an editorial related to current topics of interest in medicine, dentistry, education, public health, and epidemiology. Guest editorials are also welcomed. It will have original articles and a case report on a mandatory basis.

The journal is also open to students' blogs, infographics, students' success stories, and other relevant material. We encourage students within our institution and outside to present their research work to this journal for speedy publication. We greatly value students' and others' inputs in the form of letters to the editor regarding critiques, feedback, and suggestions.

I thank and congratulate the authors, the editorial team, and the IT support staff for this invaluable new step towards excelling in research from the doors of Khyber Medical College.

Professor Dr. Mahmud Aurangzeb
Dean, Medical Teaching Institute, Khyber Medical College, Peshawar - Pakistan
Patron-in-Chief, Pakistan Medical Students Research Journal (PMSRJ)

MESSAGE BY THE CHIEF EDITOR

As the Editor in Chief of Pakistan Medical Students Research Journal (PMSRJ) I wholeheartedly congratulate the students & faculty of KMC on launching a health research journal dedicated exclusively to medical students. This initiative brings forth a remarkable opportunity to enrich the educational experience and intellectual growth of aspiring medical professionals. It is an endeavour that deserves our attention and support. Firstly, the creation of a health journal specifically tailored for medical students is an important step in encouraging their development as future healthcare providers. By providing a platform for students to publish their research findings, case reports, and clinical experiences, this journal will encourage their engagement in scholarly activities. It will enable them to contribute to the existing body of medical knowledge and enhance their understanding of scientific inquiry.

Moreover, the journal will serve as a valuable resource for medical students, offering a compilation of informative articles, reviews, and discussions related to various medical disciplines. This comprehensive coverage will help students broaden their understanding beyond their curriculum, exposing them to different perspectives and advancements in the field. It will encourage critical thinking, stimulate intellectual curiosity, and promote a culture of lifelong learning among future physicians. The availability of a dedicated health journal for medical students will also promote a sense of collaboration within the student and health community. It will provide a platform for them to connect, share their experiences, and learn from each other. The opportunity to engage in peer review processes and editorial roles will further enhance their skills in scientific writing, critical appraisal, and academic leadership.

Additionally, this journal can bridge the gap between students and faculty, facilitating mentorship and advancing meaningful interactions. Faculty members can contribute their expertise by serving as reviewers, editors, or advisors to the journal, guiding students in their scholarly pursuits. Such collaboration will not only enhance the quality of the journal but also strengthen the student-faculty relationship, creating a supportive academic environment. While the launch of this health journal is a promising development, it is important to ensure its sustainability and continued growth. Adequate resources, including dedicated editorial staff, peer reviewers, and technical support, will maintain the journal's standards and ensure timely publication.

Collaborations with other institutions and medical societies can help broaden its reach and increase its impact on the medical education community. In conclusion, the newly launched health journal for medical students is a significant milestone in the academic landscape. It provides a platform for students to publish their work, expand their knowledge, and strengthen collaboration. By supporting and actively engaging with this initiative, we can empower our future healthcare professionals, develop their research skills, and contribute to the advancement of medical education. Let us embrace this journal as a valuable tool in shaping the next generation of medical practitioners and promoting excellence in medical education.

Prof. Dr. Bushra Iftikhar

Associate Dean (Research) & Chairperson, Department of Community Medicine, Khyber Medical College, Peshawar

EDITORIAL

POLIO IN PAKISTAN: PROGRESS AND PERSISTENT CHALLENGES IN KHYBER PAKHTUNKHWA (KP)

Muhammad Imran Marwat, Bushra Iftikhar

[1]Community Medicine Department, Khyber Medical College, Peshawar - Pakistan

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Polio, a highly contagious viral disease that can lead to permanent disability and even death, continues to pose a significant public health challenge in Pakistan. [1] The country remains one of the few in the world where polio transmission is still a concern. [2] A closer look at the reported cases from 2019 to 2024 reveals both progress and worrying trends, particularly in Khyber Pakhtunkhwa (KPK), a province that has consistently reported the heaviest burden of this disease. [3]

The data from 2019 to 2024 (table-1) paints a picture of both progress and lingering threats in the fight against polio. Nationwide, the number of reported cases has significantly decreased, from 147 cases in 2019 to 63 cases in 2024, a 62.5% reduction over the period. This overall decline is a testament to the tireless efforts of health workers, vaccination campaigns, and the collective will of the government and various stakeholders to eradicate polio. [3] However, the situation in KPK remains a concern. In 2019, KPK accounted for 63.3% of Pakistan's total polio cases, with 93 reported cases, a disproportionate share compared to other provinces. Although the number of cases in the province decreased in subsequent years, KPK still reported 18 cases in 2024, representing 28.6% of the national total. While this marks a substantial improvement from 2019, KPK's contribution to the national total is still significant, underscoring that the province is far from achieving polio-free status. The trend in KPK illustrates a fluctuating pattern, with cases dropping from 93 in 2019 to just 22 in 2020, followed by a small resurgence in 2022 (20 cases). The dramatic decrease in 2023 to only 4 cases could have been seen as a hopeful sign of progress, yet the resurgence in 2024 to 18 cases indicates that challenges remain. Despite the decline, KPK's relatively high proportion of national cases suggests that eradication efforts in the region need to be intensified.

KP's polio burden can be attributed to a combination of factors, including socio-political instability, difficult terrain, and vaccine refusal or hesitancy in certain areas. [4] The province's rugged, mountainous terrain presents logistical challenges for vaccination teams, often making it difficult to reach remote villages where the disease remains a threat. Additionally, the social and cultural dynamics in some areas contribute to vaccine resistance, where misinformation about the vaccine leads to refusals. These issues are compounded by conflicts and displacement, which further complicate immunization efforts. However, it is not all bleak. The efforts to combat polio in KP have made substantial strides, with enhanced surveillance, improved community engagement, and focused vaccination campaigns. The significant decrease in polio cases over the years indicates that these measures are working, albeit slowly. The role of local communities, particularly in high-risk areas, in accepting and supporting vaccination campaigns is crucial in achieving polio-free status.

The national decline in polio cases must not be seen as a cause for complacency, especially in KP. The persistence of cases in the province highlights the need for more tailored, localized approaches that address the unique challenges faced by its communities. This includes expanding public awareness campaigns to combat mis-

S.No:	2019	2020	2021	2022	2023	2024	Total
Punjab	12	14	-	-	-	2	28
Sindh	30	22	-	-	2	17	71
Balochistan	12	26	1	-	-	26	65
KP	93	22	-	20	4	18	157
Total	147	84	1	20	6	63	320

information, improving access to healthcare in remote areas, and engaging local leaders to advocate for vaccination.

Moreover, the recent rise in cases in 2024 should serve as a reminder that polio eradication is not just about numbers; it is about reaching every child, in every part of the country, consistently. There must be a renewed focus on the remaining hot spots in KP to ensure that no child is left unvaccinated. Special attention must be paid to areas where refusal rates are high, and where access to healthcare services remains difficult. While the numbers indicate a positive trend in the fight against polio, KP's continued contribution to the national total shows that the battle is far from over. The country is close, but it must remain vigilant. The ultimate goal of a polio-free Pakistan is within reach, but only with sustained effort, community cooperation, and adaptive strategies tailored to local realities can this goal be achieved.

In conclusion, the decline in polio cases nationwide is a commendable achievement, yet the situation in KP underscores that polio eradication efforts must be intensified. As Pakistan moves closer to achieving its goal of a polio-free future, the lessons from KPK must serve as a guide for overcoming the remaining challenges. Only through perseverance, innovation, and collaboration can Pakistan ultimately rid itself of this debilitating disease.

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Dr. Muhammad Imran Marwat
Assistant Professor
Department of Community Medicine, Khyber Medical College, Peshawar,
Email: imranmarwat_30@kmc.edu.pk
Cell: +92-343-9486164

ORIGINAL ARTICLE

PERFORMANCE EVALUATION OF PRIMARY HEALTH CARE CENTERS IN DISTRICT PESHAWAR: A DESCRIPTIVE CROSS-SECTIONAL STUDY

Syed Muttahar Shah[1], Muhammad Haseeb Ahsan[1], Muhammad Saqib[1], Ayesha Mahsud[1], Sumayya Nazir[1], Himanshi[1], Sumayya Yousaf[1], Muhammad Imran Marwat[2]

[1]4th year MBBS students, Khyber Medical College, Peshawar - Pakistan

[2]Department of Community Medicine, Khyber Medical College, Peshawar - Pakistan

ABSTRACT

Objective: To assess the health care delivery system of Primary Health Care facilities in district Peshawar of Khyber Pakhtunkhwa province of Pakistan

Material and Methods: A descriptive cross-sectional study was conducted to assess the conveniently selected four primary healthcare facilities in district Peshawar. The participants' responses were recorded via structured questionnaires. The participants were selected through non-probability convenient sampling techniques. Written informed consent was obtained from each study participant.

Results: All participants indicated that the Basic Health Units (BHUs) were generally functioning efficiently. However, they expressed dissatisfaction with several aspects of the services provided. Specifically, there were concerns regarding the field visits conducted by Lady Health Visitors (LHVs), with participants feeling that these visits were insufficient or lacked proper guidance, particularly about antenatal and postnatal care, as well as family planning services. Additionally, the availability of essential resources such as ambulances and basic laboratory facilities was also a point of concern, as these were either inadequate or not easily accessible, hindering the overall effectiveness of the healthcare services at the BHUs.

Conclusion: This study results revealed that the performance was overall satisfactory at the PHC level except for a few areas including family planning services, ambulatory services, and availability of laboratory facilities which need improvement.

Keywords: Primary Health Care, Essential Services, Immunization, Health Systems, Maternal and Child Healthcare.

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INTRODUCTION

A Better Health system is required for the progression and maintenance of health, management, and prevention of diseases and to reduce unnecessary disabilities and premature deaths. [1, 2] A health system or health care system is defined as the alliance of people, resources, and institutions that are accountable for delivering health care services to convene the health requirements of the target population. [3] The public health measures and primary health care are being considered as the common constituents in all health systems. [4] The goals of the health care system according to WHO are to provide good health to all citizens, respond to the expectations of the population, and reasonable ways of funding operations. The achievement of these goals depends upon how systems carry out the subsequent four fundamental functions i.e., stewardship, financing, provision of health care services, and resource generation. [5]

Provision of Primary Health Care facilities is the basic component of a responsive health system. [6] It is defined as "A set of universally accessible first-level services that promote health, prevent diseases and provide diagnostic, curative, rehabilitative, supportive, and palliative services". [7] The provision of primary healthcare facilities has emerged as a global challenge in providing first-level healthcare facilities along with the selective packages of health to economically unstable populations. [8]

Multiple factors have been reported to be responsible for the low coverage of healthcare facilities. [9] For ex-

Correspondence
Dr. Muhammad Imran Marwat
Assistant Professor
Department of Community Medicine, Khyber Medical College, Peshawar - Pakistan
Cell: +92-343-9486164
Email: imranmarwat_30@kmc.edu.pk
Date Received: 11/11/2021
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ample; inefficiency and incompetency seen in antenatal care in Pakistan are the major contributors to the high mortality rate of mothers and infants.[10] But during the recent decades, substantial improvements have been recorded due to the quality and efficient delivery of healthcare services. [11] According to a study in India, it was recorded that intervention in the medical care centers of the hospital that included focused training, skilled personnel, better quality drugs, and availability of better equipment showed an increase in the testing and treatment quality. [12]

According to the literature search, most of the evidences prove that it is unanimously accepted that PHC plays a crucial role in achieving social goals. With the development, proper accountability and checks and balances are required to assess the relation between the planned and accepted health reforms and the actual activity of government departments to benefit the citizens of its society. [13]

The assessment and provision of primary healthcare facilities, which has become a global dilemma needs efficient and competent strategies to be taken. This will help in minimizing the barriers that the masses face during their access to basic healthcare means. The health care system in Pakistan is in progress and is making improvements in the health care delivery system.[14] Being a developing country, the achievement of a competitive healthcare system is a great issue for Pakistan. The government has taken steps to reach the goals of "HEALTH FOR ALL" and has joined hands with other organizations to guarantee the provision of facilities including preventive, rehabilitative, and curative services. [15] This study is aimed to assess the healthcare delivery system of Primary Health Care facilities in the capital district i.e., Peshawar of Khyber Pakhtunkhwa province.

MATERIALS AND METHODS

A Descriptive Cross-Sectional Study Design was selected for this study. The study was carried out from January 2021 to June 2021 in the provincial capital district Peshawar. District Peshawar is divided into 4 towns and 279 moazas (revenue villages). After approval from the ethical committee of the institution and individual health centers, the data was collected from 04 Primary health care facilities situated in rural villages i.e., BHU Jhagra, BHU Chamkani, BHU Palosi, and RHC Regi of district Peshawar selected through non-probability convenient sampling technique. Data from 120 study participants was collected by using a structured questionnaire. There were three main sections of the questionnaire: Mother & child health, essential health care services, and routine immunization. Data was collected by four teams each comprising of one male and one female member. The data collected was entered and analyzed in SPSS software version 20. All the data was coded and kept confidential.

RESULTS

After obtaining informed consent, data was collected from 120 participants (30 from each PHC) with a mean age of 32 years $\pm$ 2 Standard Deviation by using a structured questionnaire. The respondents were asked about their satisfaction with EPI services and the results revealed that 90% of respondents were satisfied with the services provided in all four health facilities as shown in Figure 1.

Similarly, the study participants also enquired about services provided for mother and child health care including the availability of trained health person, their behavior, and the availability of essential health services. Their responses are shown in Figure 2.

More than half of the study respondents revealed that the health staff does not provide any guidance about antenatal and postnatal checkups. The responses are shown in Figure 3.

The participants' responses regarding the availability of essential drugs, provision of proper guidance regarding the use of prescribed drugs by the doctor, and availability of essential drugs were satisfactory. While the majority of respondents were not satisfied with the availability of ambulatory and laboratory services.

DISCUSSION

Primary Health Care facilities play a pivotal role in providing essential services including EPI, mother and child health, family planning, and providing services for

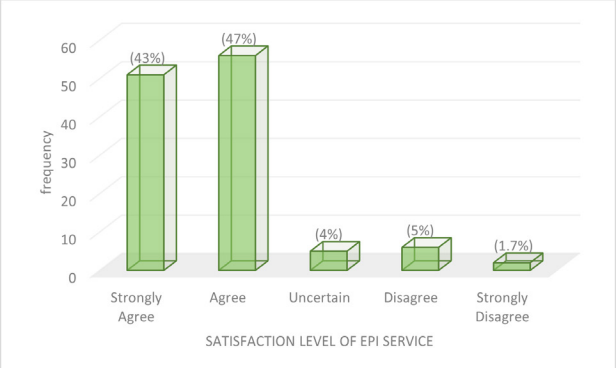

Fig 1: satisfaction level with EPI services

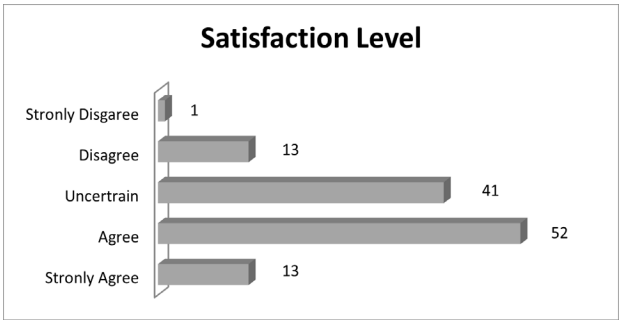

Fig 2: Satisfaction with LHW behavior

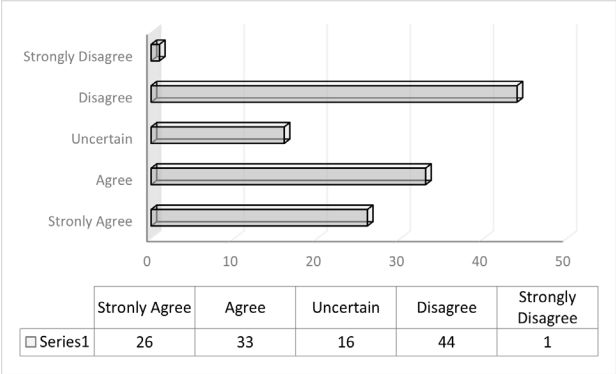

Fig 3: Provision of guidance regarding medical check-ups

normal ailments in the community especially in rural areas. Maternal and child health care (MCH) is an essential component of PHC. The availability, behavior, and response to the questions of participants by a health worker play an essential role in achieving the targets of MCH. A study conducted at selected primary health care centers of Gurugram city of Indian Harnaya state showed that educating mothers regarding water-borne diseases and their prevention helps in reducing the cases of diarrhea and other water-borne diseases in children below 5 years of age. [16]

Provision of antenatal and postnatal checkups and care has been an essential component of MCH. The results showed that antenatal/postnatal checkups were also poor. In Punjab, only 53% of pregnant women have access to ANC services from medical professionals at least once during their pregnancies, and only 41% have access to postnatal care. [17] In a rural setting of Sindh, Pakistan, 29.3% of women utilized ANC, of those, 72.3% received ANC services from government healthcare providers. [18] This reflects the low level of seeking antenatal and postnatal services in Peshawar, due to religious, cultural, and low levels of education as compared to Punjab, where it's comparatively higher.

Similarly, in our study, participants were asked whether the drugs were available free of cost or not. The majority of them (i.e., 101/120) said that drugs were free of charge and 10/120 said that drugs were not available freely. A study conducted in 2007 in Peshawar, Pakistan concluded that a low percentage of respondents received free medicines from healthcare centers which reflects that the conditions have improved over time and we are heading towards achieving the goals of providing quality health services to the citizens. [19]

Our study findings revealed that the general facilities including proper waiting area and availability of separate toilets for male and female visitors were either not available or in very bad condition. Similar findings were also revealed by a study conducted in Ethiopia. [20] When it was asked about ambulance services, 19/120 said that there were services available, 35/120 (29%) were uncertain and 66/120 disagreed. A research project conducted about primary health facility assessment in Enugu State, Nigeria accessed the infrastructure of various primary health care centers by judging ambulance and access to a computer with internet on the day of the assessment. It concluded that none of the centers had a functional ambulance. [21]

Similarly, the research conducted in Enugu State, Nigeria concluded that nearly 46.7% of participants said that laboratory technicians were available. [22]

CONCLUSION

This study results revealed that the performance was overall satisfactory at the PHC level except for a few areas including family planning services, ambulatory services, and availability of laboratory facilities which need improvement.

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Authors Contribution:

Following authors have made substantial contributions to the manuscript as under

Authors	Conceived & designed the analysis	Collected the data	Contributed data or analysis tools	Performed the analysis	Wrote the paper	Other contribution
Shah SM	✓	×	✓	×	✓	×
Ahsan MH	✓	✓	×	✓	✓	×
Saqib M	×	✓	×	×	✓	×
Mahsud A	✓	✓	✓	×	✓	✓
Nazir S	✓	✓	×	✓	✓	×
Himanshi	✓	✓	×	✓	✓	×
Yousaf S	×	✓	×	×	✓	×
Marwat MI	✓	✓	✓	×	✓	✓

Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

ORIGINAL ARTICLE

THE PREVALENCE OF DIABETES MELLITUS AND ITS ASSOCIATED SYMPTOMS IN THE ELDERLY POPULATION OF UNIVERSITY CAMPUS PESHAWAR

Muhammad Abbas[1], Faiza Nadeem[2], Sofia Irshad[3], Humma Shafiq[4], Muhammad Alam Khan[5], Muhammad Wasif[2]

[1]Department of General Medicine, Peshawar Medical College, Peshawar - Pakistan

[2]Department of Forensic Medicine, Khyber Medical College, Peshawar - Pakistan

[3]Women Medical Officer, Tehsil Gol Ghatri Peshawar - Pakistan

[4]Department of Anatomy, Women Medical College, Abbotabad - Pakistan

[5]Department of Forensic Medicine, Gandhara University, Peshawar - Pakistan

ABSTRACT

Objective: To find the frequency of diabetes with associated symptoms in elderly people aged 60 and above residing on the university campus in Peshawar.

Materials & Methods: This community-based descriptive cross-sectional study included a total of 103 elderly people aged 60 and above, selected from the university campus in Peshawar by simple random sampling from January to April 2023. Random blood sugar was measured by using a glucometer. Those having a random blood sugar of greater than 200g/dl and those who were having signs and symptoms of diabetes and were on diabetic medications were considered diabetics Semi-structured questionnaires were used to collect the data. Data was entered and analyzed on SPSS version 20 and Microsoft Excel 2013.

Results: The prevalence rate of diabetes in the study population was 32% (33/103). Diabetes was more common among females than males. The mean RBS value was 195.48 mg/dl (SD 43.78 mg/dl, 95% CI 180.55-210.42) in the diabetic population (32.04%, 33/103). Of the total diabetic population, 57.58% (19/33) had controlled diabetes. The diabetes was more controlled in males than females.

Keywords: Elderly, Diabetes, random blood sugar

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INTRODUCTION

The steady degradation of physiological function with age, including decreased productivity, is termed aging. [1] Aging is a normal, continuing process. Aging in humans refers to the accumulation of changes in a person over time, including physical, psychological, and social change. Diabetes mellitus is a set of metabolic diseases characterized by persistently elevated blood sugar levels. Type II diabetes is most common in the elderly. [2] In the elderly, it is usually caused by insulin resistance, which is caused by a deficiency in the responsiveness of the insulin receptor, resulting in high glucose levels. Diabetes in the elderly is caused primarily by lifestyle and hereditary factors. Obesity, sedentary lifestyle, urbanization, lack of physical activity, stress, poor nutrition such as eating a lot of white rice, and increased intake of sugar-sweetened drinks and food are all thought to contribute to type II diabetes in the elderly. [3, 4] It is a serious condition with serious sequelae like stroke, neuropathies, nephropathies, and retinopathies. Diabetes claimed the lives of 1.5 million people in 2012. High blood glucose levels contributed to an additional 2.2 million deaths by raising the risk of cardiovascular and other illnesses. [5] Forty-three percent of these 3.7 million deaths occur before the age of 70 years. The percentage of deaths attributable to high blood glucose or diabetes that occurs before age 70 is higher in low- and middle-income countries than in high-income countries. [6] Almost half of all deaths caused by high blood glucose occur before the age of 70. Diabetes is expected to be the seventh greatest cause of mortality by 2030, according to the WHO. [7] In 2015, there were approximately 7

Correspondence
Dr. Faiza Nadeem
Assistant Professor
Department of Forensic Medicine, Khyber Medical College, Peshawar - Pakistan
Cell: +92-333-5151458
Email: drfaizanadeem17@gmail.com
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million diabetes cases in Pakistan.

Studies evaluating the prevalence of diabetes in elderly individuals based on birth weight have also been conducted. It has been observed that midlife body mass index (BMI) and birth rate have an impact on the metabolism of glucose and insulin in later life. Low birth weight and body length were reported to be associated with higher levels of insulin, HbA1c, and fasting glucose in both diabetes and non-diabetic older individuals. [8] When comparing this to those who were born with higher birth weights and lower BMIs in their middle years, the likelihood of developing diabetes could increase up to five times for those with low birth weights and high BMIs. [9]

It is also known commonly that type 2 diabetes mellitus is characterized by the burning up of beta cell function and also its mass in the islets of Langerhans. The incidence of this increases with age. Autophagy can be parted as a process of cellular components degradation, especially the proteins. Impairment of this function of cells can also cause age-related problems such as age-related type 2 diabetes mellitus. [10] This function of autophagy is necessary for the proper functioning of as well as maintaining the structure of islets in the pancreas. In a study of clinical trials, it was found that beta cell function decreases gradually with age. The expression of protein for autophagy markers such as LC3/Atg8 and Atg7 was found to show a marked decline in aged islets of Langerhans. The expression of Lamp-2 which is also an indicator for autophagic degradation was found to decline with age in a study done on rats. Also, while analyzing the islets under an electron microscope, it was found that there was swelling as well as the disintegration of cristae in the mitochondria of those rats that were aged. [11, 12]

There is evidence from clinical studies that diabetes mellitus in older patients delays the onset of pancreatic cancer due to non-functional islets of Langerhans [13]. The mean age of onset of pancreatic cancer in patients with diabetes mellitus was found to be 71 years while in those without diabetes, the mean age was found to be 67.5. [14] This significantly shows how diabetes has a protective effect against pancreatic cancer. [15]

The study will add new data in the field of diabetes. There is a need to better understand the realities of living with diabetes to tailor adequate and appropriate medical and psychosocial interventions. Many studies have focused on quality of life, patient activation, resource utilization, or the clinical aspects of diabetes, but there has not been a concerted effort to simultaneously address all of these to gain a more holistic understanding of the everyday experiences of people living with diabetes and inform health policy planning and service delivery. This study will help health practitioners know the burden of diabetes with associated symptoms and their treatment options.

MATERIALS AND METHODS

This Descriptive cross-sectional study was conducted in the University Campus Peshawar, Pakistan, from 1st January 2023 to 30th April 2023 on 103 participants (residents of the university campus) using a convenient probability sampling method. Elderly people aged 60 and above were included in our study. Informed verbal consent was taken, and those who were willing were included in our study. Severely ill, bedridden, and unwilling to participate were excluded from our study.

RESULTS

Of the total population, 32.04% (33/103) had diabetes. The diabetes was more common among females (16.50% 17/103) than males (15.53% 16/103). Among the male population, 28.57% (16/56) had diabetes, while 71.43% (40/56) had not. Among the female, population, 36.17% (17/47) had diabetes, while 63.83% (30/47) had not. Table 1 shows Diabetes in gender-wise distribution in different age groups. Most of the diabetic males were in the age group 81 years and above whereas diabetes in females was seen mostly in the age group 60-65 as shown.

The mean RBS value was 195.48 mg/dl (SD 43.78 mg/dl, 95% CI 180.55-210.42) in the diabetic population (32.04%, 33/103). The mean RBS value in diabetic males (15.53%, 16/103) was 189.44 mg/dl (SD 41.53 mg/dl, 95% CI 169.09-209.78). The mean RBS value in diabetic females (16.50%, 17/103) was 201.18 mg/dl (SD 46.32 mg/dl, 95% CI 179.16-223.20). The maximum RBS value among males was 270 mg/dl while the minimum was 126 mg/dl. The maximum RBS value among females was 300 mg/dl while the minimum was 125 mg/dl.

Of the total diabetic population, 57.58% (19/33) had controlled diabetes i.e., RBS value 200 mg/dl and below, while 42.42% had uncontrolled diabetes i.e., more than 200 mg/dl. Of the diabetic male population, 62.50% (10/16) had controlled diabetes, while 37.50% (6/16) had uncontrolled. Of the diabetic female population, 52.94% (9/17) had controlled diabetes, while 47.06% (8/17) had uncontrolled.

Table 1: The presence or absence of diabetes in different age groups according to sex in the age above 60 years with %ages in particular age groups

60-65	**0 (0.00)**	**11 (36.67)**	**7 (23.33)**	**12 (40.00)**	**30 (100.00)**
66-70	4 (11.76)	17 (50.00)	5 (14.71)	8 (23.53)	34 (100.00)
71-75	7 (36.84)	9 (47.37)	2 (10.53)	1 (5.26)	19 (100.00)
76-80	3 (23.08)	1 (7.69)	3 (23.08)	6 (46.15)	13 (100.00)
81 and above	2 (28.6)	2 (28.6)	0 (0.00)	3 (42.9)	7 (100.00)

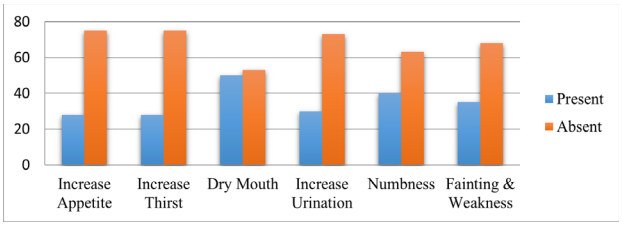

Fig 1: Diabetes-associated symptoms in the total population in the age above 60 years

In our survey, the diabetes-associated symptoms were assessed in the subjects, out of whom 27.18% (28/103) had increased appetite, 27.18% (28/103) had increased thirst, 48.54% (50/103) had dry mouth, 29.13% (30/103) had increased urination, 38.84% (40/103) had numbness and 33.98% (35/103) had weakness and fainting as shown in Figure 1.

DISCUSSION

Diabetes was also found to be a major problem of old age because it occurs due to hormonal imbalance and much of the time superimposed by unhealthy diet, malnutrition, adulterations, and sedentary lifestyles. In our study, 32% (33/103) of subjects were suffering from this disorder which is by the 2014 study in Peshawar in which the prevalence was 32%, and also similar to the 2015 study in district Karachi in which the prevalence was 38%. But these findings are more than the 2014 study by CDC conducted in the USA according to which 9.3% of the total US population was diabetic in 2014. [16] This prevalence is also higher than the study done in Chandigarh, India in which prevalence was 14%. The reason for this high prevalence is that growing urbanization has led to a sedentary lifestyle, advanced calorie food intake, eating more and consuming less, and also stressful conditions added to the increasing prevalence of DM. Other reasons for this high prevalence are unhealthy food and lack of exercise in both groups. [17] The differences in physiology, anatomy, and biochemistry of the elderly, their psychological make-up, and social environments often lead to unique clinical presentations of geriatric diabetes. [18]

In males, the prevalence was found to be 15.5% (16/103) which is similar to the 2008 study in Punjab according to prevalence was 15%. In males, this high prevalence is due to smoking habits and more exposure to a polluted environment which causes metabolic disorders like diabetes mellitus. In females, the prevalence was found to be 16.5% (17/103) which is more than the 2008 study of Punjab 6. This high prevalence is due to obesity, sedentary lifestyles, fatty diets, and stress. Also, there are fewer concerns in society for female health care. Gestational diabetes with all the other causes that have been mentioned leads to the high prevalence of diabetes in females. A direct relation was observed between the prevalence of diabetes and the age of the subjects among both males and females. Half of the subjects had dry mouth as their chief complaint associated with diabetes, followed by numbness, and weakness. 58% (19/33) were found to have controlled diabetes because they were well aware of their health problems and were taking good care of them. [19, 20]

CONCLUSION

The results of the study showed that a major proportion of the elderly were suffering from diabetes which, may lead to other chronic problems like nephropathy, retinopathy, neuropathy, and cardiovascular problems. The results of the study showed that there is a need for geriatric counseling centers that can take care of their physical and psychological needs. There must be regular blood sugar checkups to prevent this disease. The elderly people should be compelled to do easy exercises and should be prevented from stress.

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Authors Contribution:

Following authors have made substantial contributions to the manuscript as under

Authors	Conceived & designed the analysis	Collected the data	Contributed data or analysis tools	Performed the analysis	Wrote the paper	Other contribution
Abbas M	✓	×	✓	×	✓	×
Nadeem F	✓	✓	×	✓	✓	×
Irshad S	×	✓	×	×	✓	×
Shafiq H	✓	✓	✓	×	✓	✓
Khan MA	✓	✓	×	✓	✓	×
Wasif M	✓	✓	×	✓	✓	×

Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

EXAMINING OUTDOOR MEALS CONSUMPTION AND ITS ASSOCIATION WITH DIGESTIVE HEALTH AMONG MEDICAL STUDENTS DWELLING IN HOSTELS OF KHYBER MEDICAL COLLEGE, PESHAWAR

Tayyab Rafiq[1], Khawaja Awais Ahmad[1], Haiqa syed[1], Abdullah[1], Jehan Hussain[2]

[1]Second-year MBBS Khyber Medical College Peshawar - Pakistan

[2]Department of Community Medicine Khyber Medical College Peshawar - Pakistan

ABSTRACT

Objective: The objective of the study is to find the association between outdoor meal consumption and digestive health in students dwelling in hostels of Khyber Medical College, Peshawar.

Materials and Methods: A cross-sectional study was conducted among 297 undergraduate medical students dwelling in hostels of Khyber Medical College, Peshawar for one month. Data collection was carried out through an adapted questionnaire. A pilot test was performed for testing the questionnaire. Data was analyzed using Microsoft Excel and SPSS-20.

Results: The study revealed that most students (38.4%) consumed outdoor meals two to three times a week. Dinner was the most popular choice, favored by 38.4% of students. Dissatisfaction with hostel-cooked meals was a significant factor, with 57.6% of students citing it as their reason for choosing outdoor meals. Street food emerged as the most preferred type of outdoor meal, relished by 38.4% of hostel residents.

Conclusion: The study found that the majority of the hostel-dwelling medical students ate two to three times a week from outdoor sources, especially dinner. Dissatisfaction with hostel meals was a key reason, with street food being the most preferred option. A significant association was observed between outdoor meal consumption and digestive issues. These findings underscore the need to improve hostel meal quality and taste to promote healthier dietary habits.

Key Words: Outdoor meals; Hostel Dwellers; Digestive health.

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INTRODUCTION

Food plays a vital role in human health. It acts as the primary source of essential nutrients that are necessary for growth, development, and the maintenance of normal body function. Food is an ineluctable necessity for all species of the World. Humans, as well as animals, require food for their survival and the fulfillment of their nutritional requirements. [1] A proper nutritional diet is required by every person to maintain normal health and for protection against various diseases. The Dietary Guidelines for Americans offer recommendations on foods and eating habits that help meet nutritional needs, improve overall health, and prevent diseases. [2] College students' poor dietary habits may be linked to their increased independence, such as living away from their homes. [3] On the other hand, fast food has become a major part of modern life. The attraction to these foods is because of their tastes and advertisements all over the World. [5] Students spend a large portion of their monthly pocket money on junk food. These foods are commonly sold near educational institutions. These foods are high in calories, fats, and sugars but low in other essential nutrients. [6] Food choices significantly influence their dietary intake, which in turn affects their nutritional status. [7] It is natural for students to have a penchant for delicious foods, but they are often unaware of the detrimental effects on their health. Most of the students believe that fast foods are not harmful to their health. They enjoy the taste of these foods and don't take care of their effects on health. [8] Proper nutritious food is important for the physical health of a student. It also keeps the students mentally fit and healthy. Findings from a previous study show that nutritious and hygienic food is essential for the normal functioning of the brain. The consumption of outdoor food is strongly linked to eating fewer fruits,

Correspondence
Dr. Jehan Hussain
Assistant Professor
Department of Community Medicine Khyber Medical College Peshawar
Cell: +92-331-4646414
Email: jehan.hussan@kmc.edu.pk
Date Received: 03/09/2024
Date Revised: 21/01/2025
Date Accepted: 21/01/2025

and vegetables and adopting a more comfortable lifestyle among people of all ages and genders. [9]

Students who are dwelling in hostels often compromise on their proper diet. This is due to many reasons, but the prime reason is the lack of proper supervision. Most of the hostel resident students don't follow dietary recommendations. Medical students living in the hostels face a demanding academic environment that often makes them resort to irregular eating habits and increased consumption of outdoor meals, such as fast food which satisfies them quickly with mostly no health benefit and lack of all essential nutrients. According to a survey, 50% of first-year students consume fried foods at least twice a week. [10] Despite their desirable taste, these foods are patterned by poor nutritional quality and can have significant health implications. Food lacking proper nutrition is harmful to both children and adults. [11]

Various digestive problems, including Gastro-esophageal Reflux Disease (GERD), irritable bowel syndrome (IBS), ulcerative colitis, peptic ulcers, celiac disease, lactose intolerance, gallstones, constipation, diarrhea, and gastritis, are often due to poor digestion. Research indicates that poor hygiene practices in food preparation can introduce harmful bacteria and contaminants, leading to infections and inflammation in the digestive tract. For example, peptic ulcers are known to be caused by Helicobacter pylori, which is frequently found in food that is not well-cooked[12]. Furthermore, eating meals high in fat and low in fiber, which are known to aggravate illnesses like GERD and IBS, can be the consequence of improper cooking techniques. Irritable bowel syndrome (IBS) affects 7% to 21% of the general population. [13] In addition, outdoor foods and mess-cooked meals lack a normal number of dietary fibers and vital nutrients, which is detrimental to the digestive system. [14] Chemical contaminants, especially heavy metals, may mix in outdoor meals and cause various digestive issues along with other health problems. [15]

Digestive issues like constipation, acid reflux, diarrhea, burping, bloating, nausea, stomach pain, etc., are common among medical students with poor dietary habits. Previous research shows that irregular eating patterns, such as consuming meals that are high in fats and sugars, can lead to digestive discomfort, bloating, infections, and other gastrointestinal problems. Although there is still a growing concern over the dietary habits of students, there is still only a paucity of research specifically examining the impact of outdoor fast food meal consumption on the digestive health of students residing in hostels of Peshawar University. Addressing this gap is crucial for developing targeted healthy measures that can support better dietary choices and improve digestive health outcomes in this population.

The basic objective of this cross-sectional study was to investigate outdoor meal consumption and its association with digestive health among medical students at Khyber Medical College, Peshawar hostels. This study will be crucial for all the students who are dwelling in hostels to retrieve knowledge and laurels in their respective fields. By examining the association between outdoor meal consumption and digestive health, this research will provide valuable information that will help students make healthier dietary choices. This will not only result in better health but also ensure that students have access to nutritious and hygienic food options. The findings of this study can be used to develop educational programs that promote healthier dietary habits among all hostel-dwelling students, especially medical students. By emphasizing the importance of proper nutrition and its impact on digestive health, these programs can encourage students to select a healthy and nutritious diet.

MATERIALS AND METHODS

A cross-sectional study was conducted from May 7th, 2024, to June 7th, 2024, among hostel-dwelling medical and dental students belonging to the four hostels of Khyber Medical College located in University of Peshawar, Pakistan. The inclusion criteria for the study comprised all undergraduate medical students residing in the hostels of Khyber Medical College (KMC) who provided informed consent to participate. The exclusion criteria included undergraduate students who were day scholars, those residing in hostels other than KMC hostels, and students who were not available in hostels for any reason.

Data was collected using an adapted questionnaire that included socio-demographic details, questions on outdoor meal consumption patterns, and ten items from the GSRS scale. The questions were designed based on hostel dwellers' preferences for outdoor meals and common digestion issues they faced. The ten GSRS items, pretested and Likert-scale based, ranged from "No discomfort at all" to "Very Severe discomfort." Ten items of GSRS were about ten common digestion problems which were acid reflux, constipation, diarrhea, bloating, rumbling, stomach ache, heartburn, nausea, hunger pain in the stomach, and burping. Questions on outdoor meal consumption were formulated after reviewing current literature and observing students' behavior. A pilot tested 30 initial responses and validated the questionnaire. The questionnaire began with a brief explanation of the study's purpose and was circulated online in college and hostel groups, and later sent to the personal numbers of hostel-dwelling students. Researchers gave instructions on how to fill out the questionnaire during its distribution.

Data was analyzed using IBM SPSS Statistics 20 and Microsoft Excel. First, the data from the online questionnaire was compiled in an Excel sheet. After compilation, the data was coded into SPSS-20 for analysis. Errors and inconsistencies were checked and addressed before

proceeding. Descriptive statistics were used to describe frequencies and percentages. To find the association between the frequency of outdoor meals consumption and digestion issues among students in different hostels, the Chi-Square Test of Independence was employed. The same test was used to check whether the type of outdoor meal influences digestion.

RESULTS

Figures 1, 2, and 3 show the socio-demographic profile of hostel dwelling students. The study included 297 respondents of which 191 (64.3%) were males and 106 (35.7%) were females. For the hostel, a maximum of 112 (37.7%) participants were dwelling in the Qasim Hall hostel. About half of the respondents (49.5%) were from Second Year MBBS/BDS.

Table 1 explains that the majority of the hostel-dwelling students (38.4%) consumed two to three times a week from outdoor sources whereas 16.1% didn't consume any meal from outside of hostels. Additionally, 31.3% of hostel living students preferred to eat one to two times a week from outdoor sources while 13.8% ate daily from places other than hostels.

Table 2 shows that the maximum hostel-living students, (38.4%) showed a proclivity for dinner whereas minimum hostel-residing students (5.4%) consumed breakfast from outdoor sources. Furthermore, 25.9% of hostel dwellers ate outdoor meals at the time of lunch.

Statistical analysis in Table 3 reveals that 38.4% showed their preference for street food whereas 30% of students from all hostels ate Fast food. The study further elucidated that 17.8% of students consumed both fast and street foods. In contrast, 16.5% of students didn't eat anything from outside of the hostel.

In Table 4, it is clear that most of the students (57.6%) ate outdoor meals because of dissatisfaction with hostel-cooked meals followed by 16.8% of students socializing with friends. However, only a small number of students (9.1%) consumed outdoor meals because of convenience.

The results of the Chi-square Test of independence in Table 5 indicated that there is an association between frequency of outdoor meal consumption with digestion issues, with a significance (p) of 0.004, which is less than 0.05. As the correlation is significant, it implies that outdoor meals have significant effects on digestion in hostel-living students.

The above table further elucidates that students who didn't consume outdoor meals and students who ate one to two times a week from outdoor sources, a maximum of them, 42.9% and 35.5%, have complained of slight discomforts in digestion, respectively. In contrast, students who consumed two to three times a week and those who ate outdoor meals daily, most of them, 43.9% and 41.5%, claimed that they didn't have any discomfort in digestion, respectively. The table indicates that variation

Table 1: Frequency of outdoor meal consumption in students living in different hostels

Frequency of outdoor meal	Qasim Hall	Razi Hall	Cena Hall	Girls Hostel	Total (297)
I didn't consume	11(22.4%)	2(4.1%)	0(0%)	36(73.5%)	49(16.5%)
1-2 times a week	31(33.3%)	6(6.5%)	11(11.8%)	45(48.4%)	93(31.3%)
2-3 times a week	56(49.1%)	24(21.1%)	12(10.5%)	22(19.3%)	114(38.4%)
Daily	14(34.1%)	10(24.4%)	14(34.1%)	3(%)	41(13.8%)

Table 2: Timing of outdoor meal consumption in students dwelling in different hostels:

Time of meal	Qasim Hall	Razi Hall	Cena Hall	Girls Hostel	Total
I don't consume outdoor meal	11(24.4%)	2(4.1%)	0(0%)	36(73.5%)	49(16.5%)
Breakfast	8(50%)	3(18.8%)	5(31.2%)	0(0%)	16(5.4%)
Lunch	23(29.9%)	3(3.9%)	6(7.8%)	45(58.4%)	77(25.9%)
Dinner	56(49.1%)	24(21.1%)	12(10.5%)	22(19.3%)	114(38.4%)
All	14(34.1%)	10(24.4%)	14(34.1%)	3(7.3%)	41(13.8%)

Table 3: Frequency of type of outdoor meal consumption among students of different hostels:

	I didn't consume outdoor meal	Fast food (e.g., burgers, fries, pizza)	Street food (e.g., chicken karahi, kebabs)	Both
Qasim Hall	11(22.4%)	23(26.7%)	56(48.7%)	22(48.9%)
Razi Hall	2(4.1%)	8(8.9%)	23(20.4%)	9(20%)
Cena Hall	0(0.0%)	8(8.9%)	23(20.4%)	6(13.3%)
Girls Hostel	36(73.5%)	50(55.6%)	12(10.6%)	8(7.5%)
Total	49(16.5%)	89(30.0%)	114(38.4%)	45(17.8%)

Table 4: Reasons for consumption of Outdoor meals among students dwelling in different hostels

Reasons	Qasim Hall	Razi Hall	Cena Hall	Girls Hostel	Total (297)
I didn't consume outdoor meal	11(22.4%)	2(4.1%)	0(0%)	36(73.5%)	49(16.5%)
Dissatisfaction with hostel meal	66(38.6%)	21(12.3%)	31(18.1%)	53(31%)	171(57.6%)
socializing with friends	25(50%)	15(30%)	2(4%)	8(16%)	50(16.8%)
convenience	10(37%)	4(14.8%)	4(14.8%)	9(33.3%)	27(9.1%)

Table 5: Results of difference in digestion issues due to difference in frequency of outdoor meal

Digestion Problems	I didn't consume	2-1 times a week	3-2 times a week	Daily	Chi Square Value	P Value
No discomfort at all	18(36.7%)	24(25.8%)	50(43.9%)	17(41.5%)		
Slight discomfort	21(42.9%)	33(35.5%)	40(35.1%)	15(36.6%)		
Mild discomfort	10(20.4%)	19(20.4%)	16(14.0%)	8(19.5%)		
Moderate discomfort	0(0.0%)	12(12.9%)	8(7.0%)	0(0.0%)	12.963	0.044
Moderately severe discomfort	0(0.0%)	4(4.3%)	0(0.0%)	1(2.4%)		
Very severe discomfort	0(0.0%)	1(1.1%)	0(0.0%)	0(0.0%)		
Total (297)	49(16.5%)	93(31.3%)	114(38.4%)	41(13.8%)		

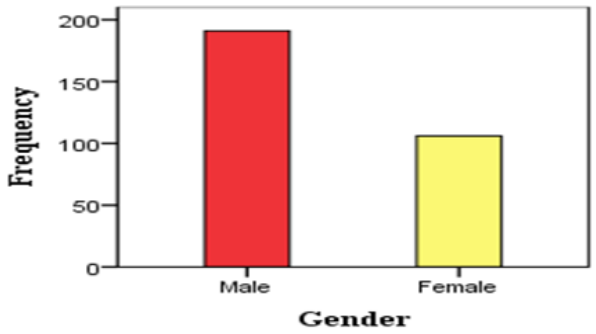

Fig 1: Frequency of Males and Females in a Sample

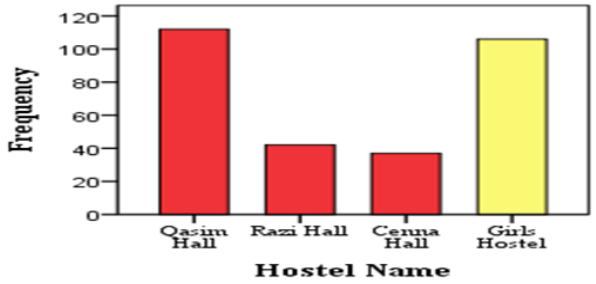

Fig 2: Students living in different hostels of Khyber Medical College

in digestion problems was associated with the frequency of outdoor meal consumption.

The Test of independence showed a P value of 0.044, indicating a significant association between digestion issues and the choice of outdoor meals.

This suggests that types of outdoor meal consumption had a significant association with digestive health outcomes.

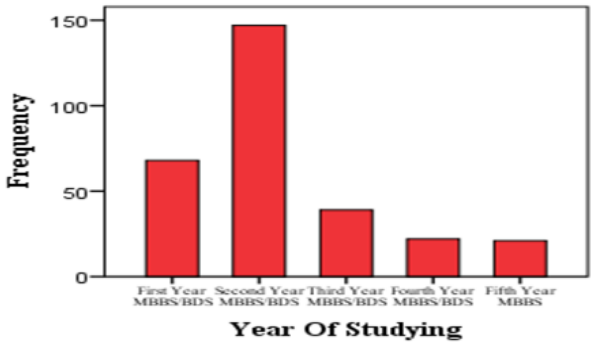

Fig 3: Students studying in different years of KMC/ KCD

DISCUSSIONS

In the present study, there is a higher proportion of male residents in hostels compared to females. Driskell et al. 200 conducted a study among students at a Mid-western land-grant university, revealing that approximately 25% of participants consumed outdoor meals two to four times per week on average. [16]

Another study by Bhavani et al. 2020 found that 16.0% of students rarely consumed outdoor meals, while an equal percentage reported daily consumption. In the current study, 13.8% of students reported consuming outdoor meals daily, and 31.3% consumed them one to two times per week.

Interestingly, 16.5% of participants did not consume outdoor meals at all, contrasting with Bhavani et al. 2020 findings, which indicated that 40.1% of students rarely consumed outdoor meals. [17]

Findings of research conducted on hostel-residing medical students of IGIMS, Shree et al. 2018, elucidated that the majority of the hostel-dwelling students (48.3%) preferred to eat dinner outdoors and then Lunch (21.6%). [18] There were very few students (2.3%) who ate breakfast from outdoor sources. These results are consistent with the present study which also showed that the majority of the hostel-dwelling students have a proclivity for dinner (38.4%), then lunch (25.9%) and only a few students (5.4%) compared to others consumed breakfast from places other than hostels. However, current findings contradict the findings of one of the previous research, according to a study conducted on students of Midwestern Land Grand University Driskell et al. 2006, the majority of men were consuming lunch from outdoor sources. [16]

In a present study, results indicated that 38.4% showed their preference for street food while 30.0% of students from all hostels ate Fast food. These results are like a previous study in which 30.1% of students had a liking for fast food.

However, in several other studies done worldwide, it is mentioned that fast food consumption was seen between 30.3% to 93.5% of children Abdel Hady et al.2014, Masse et al. 2014 and Abuzaid et al. (2012). [19-21] One of the Studies conducted on the consumption of street food, it is enlisted that 45% of students preferred street foods Hassan et al. Another study found that about 41% of students consumed street foods. [22]

The results don't follow most of the results of previous studies regarding the reasons for consuming outdoor meal sources in which convenience was selected by most of the students as the prime reason for outdoor meals Vaida et al. 2013[23], Wilson et al. 2009[24], Fung et al. 1997[25]. Several other studies indicated that the majority of the students consumed because of socializing with friends Sharifirad et al. 2013, Fung et al. 1997. [25, 26]. However, according to current findings, most of the students preferred an outdoor meal because of dissatisfaction with hostel-cooked meals.

To find the association between frequency and type of outdoor meal consumption with digestion Chi-Square Test of independence was performed. The results of the Chi-Square Test of Independence revealed a significant association between frequency and types of outdoor meal consumption with digestion.

These findings are supported by one prior research by Niranjan et al. 2016 in India, who reported a 63.17% prevalence of gastrointestinal symptoms among medical college hostel residents. They suggested that these symptoms could be attributed to unhygienic mess conditions and frequent consumption of outside food. [27]

CONCLUSIONS

Our study has found that the majority of the students (38.4%) consumed outdoor meals two to three times a week, with dinner being the most consumed meal from outdoor sources (38.4%), primarily due to dissatisfaction with hostel-cooked meals (57.6%).

Street food was the most preferred outdoor meal among hostel dwellers (38.4%). A significant association was identified between the type and frequency of outdoor meal consumption and digestive discomforts. These findings highlight the critical need to improve hostel meal quality and promote balanced dietary habits to support the overall health and academic performance of medical students.

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Authors Contribution:

Following authors have made substantial contributions to the manuscript as under

Authors	Conceived & designed the analysis	Collected the data	Contributed data or analysis tools	Performed the analysis	Wrote the paper	Other contribution
Rafiq T	✓	×	✓	×	✓	×
Ahmad KA	✓	✓	×	✓	✓	×
Syed H	×	✓	×	×	✓	×
Abdullah	✓	✓	✓	×	✓	✓
Hussain J	✓	✓	×	✓	✓	×

Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

ORIGINAL ARTICLE

CAUSES AND HEALTH EFFECTS ON CHILDREN WORKING IN AUTOMOBILE WORKSHOPS OF PESHAWAR, PAKISTAN

Kashif Ur Rehman Khalil[1], Baber Awan[2], Faisal Hassan[2], Iftikhar Ali[2]

[1]department of Community Medicine, Khyber Medical College, Peshawar - Pakistan

[2]4th year students of Khyber Medical College, Peshawar - Pakistan

ABSTRACT

Objective: To determine the causes and health effects of children working in automobile workshops in Peshawar, Pakistan.

Materials & Methods: From February to July 2016, a descriptive cross-sectional study was conducted in different automobile workshops in Peshawar. After obtaining consent, data was collected from 200 randomly selected children via questionnaires. The study included children under 15 who were working in automobile workshops in Peshawar, while the children who could not answer the questions were excluded. The data were analyzed using Excel and SPSS version 15.

Results: Most (84%) of the children working in automobile workshops were in the age range of 11-15 years. A major (47%) proportion had below primary level education. According to the study, parental income for most (44%) children was Rs.11-15,000. 58% of children were living in families having more than 10 members. Poverty was the main cause of working in workshops for 63% of children. As a consequence, 46.77% of children were suffering from GIT problems.

Conclusion: The main causes of children working in automobile workshops were poverty and large families, as a result of working conditions most of the children suffered from gastrointestinal diseases.

Key Words: Child Health; Income; Automobiles; Poverty; Parents; Employment

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INTRODUCTION

The International Labor Organization Convention defines child labor as a harmful occupation in children below 18 years of age. [1] Child labor is one of the major issues all over the world. About 200 million children are working in different sectors allaround the world. [2] Asia and African regions have the highest number of child workers, almost greater than 90 percentin total. Among Asian countries, India has the highest number of child laborers i.e. about 44 million. About 12 million child workers are present in Nigeria. South America also has a large number of child workers. In Brazil, almost 7 million child workers are working in different sectors. Pakistan has passed laws to limit child labor but the laws are completely ignored, and some 11 million children, aged four to fourteen, keep that country's factories operating. [3]

In Pakistan, about 3.3 million children are working according to a nationwide survey conducted in 1996. In 2005 an estimated 10 million child laborers were reported according to the Human Rights Commission of Pakistan (HRCP)[3]. Children work for a variety of reasons, for which poverty is the leading cause. [4] Child labor frequently experiences work-related injuries and health problems. The health-related problems of child labor are very high in developing countries in the absence of proper knowledge and preventive actions. Children also face various occupational injuries and other health-related problems. The health-related issues of such children aremore common in developing countries as compared to developed because of strong legislative measures in developed countries. [5]

Child labor creates a significant burden on the development, welfare, and overall health of Children. This project would improve upon past and ongoing cross-sectional studies. The objectives of our study were to find the causes and health effects of children who were working in automobile workshops.

Correspondence
Faisal Hassan
4th year MBBS student, Khyber Medical College, Peshawar, Pakistan
Cell: +92-345-9411704
Email: dr.kashif.khalil@gmail.com
Date Received: 11/09/2024
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MATERIALS AND METHODS

A descriptive cross-sectional study was carried out to assess various causes and health effects of the working environment on children working in different automobile workshops in Peshawar from February 2016 to July 2016. The study included children less than 15 years of age who were working in automobile workshops in Peshawar, while the children unable to answer the questions were excluded. A sample of 200 children was randomly selected with

a 95% confidence interval and 5% margin of error. Before collecting actual data, a pilot study was conducted and a questionnaire was modified. Data was collected from 200 randomly selected children via questionnaires, which included closed-ended questions regarding the causes and health-related issues of children. Consent was taken from the head of a workshop as well as the children.

RESULTS

Most (84%) of the children were between 11 and 15 years old. 47% of the children had education below the primary level or none (35%). 44% of children had their father's income between Rs.11,000 and 15,000. Most (58%) children had more than 10 family members in their homes (Table 1). Figure 1 shows that 63% of children had to work in automobile workshops due to poverty, while 18% and 11% were due to self-interest and no education interest respectively. There was the least (8%) pressure from the parents. Most (46.77%) of the children suffered from Gastrointestinal problems, next to which were urinary tract diseases in 27.42% of children. Automobile workshops caused respiratory diseases in 16.13% of children. (Figure 2)

DISCUSSION

The age group of our study sample lies between 6 to 15 years which is considered a school-going age but due to poverty children are forced to work. These findings are similar to a study conducted by H Khan in which the children's age group was similar. [6] Large family size is also a cause of poverty that forces children to work. The majority of our study population's family size was greater than 10 which is also a cause for child labour. This is similar to a case study conducted by Rana Ejaz in which about 20.83 percent of the working children come from families having 7 children. [7]

According to research conducted by Shahid et al. on socioeconomic determinants of child labor in automobile workshops stated that about half of the children were working because of financial problems in the family. About 37.5% of children reported that they were not interested in studies and the rest argued large family as a reason for work, same is reflected in our study in which poverty is the main reason for children to work. [8]

According to research conducted by Shandell et al. globally, children are exposed to numerous physical agents, including extreme heat or cold and diseases. Child labor can also manifest in psychological trauma due to psychosocial stressors—an emerging category of exposure agents—like verbal and physical abuse, and prolonged. Absence from school, which is especially detrimental if before finishing primary school. Adverse outcomes were compounded by family poverty affecting the child's physical health. Studies cited in this review consistently documented how children of poor families are at increased risk of being involved in child labor and therefore, potentially missing out on education at school or home. Family size and number of children in a family have also been shown to increase the likelihood of a child being engaged in the labor of children. [9] Although our findings indicate that child- labor may be affecting the health of children, more data are needed to develop a better understanding of the short- and long-term health problems associated with child labor. [9]

Studies of Roggero et al. with an ecological design have proven valuable in descriptive and etiological epidemiology, as well as in economics, social planning, and policy evaluation. Our study was to analyze the health effects of children showing that some health indicators are affected by child labor. We have identified a set of health indicators affected by child labor, and our data support the hypothesis that child labor affects children's health. Although our findings indicate that child labor affects the health of children. Most importantly, longitudinal studies are required to understand the short- and long-term health effects of child labor on the individual child. [10] Given the limited peer-reviewed work identified, more field research on child labor, with longitudinal quantitative measures on exposures is needed in lower-income countries.

CONCLUSION

The main causes of children working in automobile workshops were poverty and large families, as a result of working conditions most of the children suffered from gastrointestinal diseases.

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Authors Contribution:

Following authors have made substantial contributions to the manuscript as under

Authors	Conceived & designed the analysis	Collected the data	Contributed data or analysis tools	Performed the analysis	Wrote the paper	Other contribution
KUR Khalil	✓	×	✓	×	✓	×
Awan B	✓	✓	×	✓	✓	×
Hassan F	×	✓	×	×	✓	×
Ali I	✓	✓	✓	×	✓	✓

Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

ORIGINAL ARTICLE

FREQUENCY OF DEPRESSION IN ADOLESCENTS IN PUBLIC AND PRIVATE HIGH SCHOOLS IN PESHAWAR CITY, PAKISTAN

Umair, Sidra Irfan, Abdul Majid, Atif Rahim, Maryam Irfan

Department of Community Medicine, Khyber Medical College, Peshawar, Pakistan

ABSTRACT

Objectives: To determine the frequency of depression in Public and Private High School adolescents in Peshawar Pakistan and to find an association between depression and age, and depression and gender.

Materials and Methods: A descriptive cross-sectional study was conducted over 6 months from April 2021 to October 2021 in public and private colleges of Peshawar city. Colleges were selected through a stratified random sampling technique. A sample of 220 adolescent students aged 16-18 was chosen through a simple random technique using the balloting method. Data from students was collected through a modified pre-tested version of Beck's Depression Inventory. Ethical approval was sought from the IREB (Institutional Review and Ethical Board) of Khyber Medical College. The chi-square test was used to find the relationship between depression and gender and depression and age of adolescent students.

Results: Out of 220 participants, 115 (52.25%) adolescents had depression, 18 (8.18 %) had extreme depression, 27 (12.27%) had severe depression, 44 (20.0%) had moderate depression, 26 (11.8%) had borderline clinical depression. The frequency of adolescents with mild mood disturbance is (18.18%). Depression was found more in female students than males (55%). There was a significant relationship between depression and gender. However, the age categories of adolescents were not statistically related to each other.

Conclusion: The frequency of depression in adolescents is an escalating public health issue. About half of the students in the study were found to have some form of depression. The study further concluded a statistically significant relationship between depression and gender with females having a higher frequency of depression 62 (55%).

Keywords: Depression, Adolescent, High Schools, Peshawar.

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INTRODUCTION

Depression is one of the most common psychiatric conditions, which involves every age group and both genders. Depression in adolescence is common worldwide but often unrecognized. The incidence in girls rises sharply after puberty and by the end of adolescence. The burden is highest in low-income and middle-income countries. Depression is associated with substantial present and future morbidity and heightens suicide risk. [1]

Adolescence is an important developmental period for understanding the nature, course, and treatment of depression. Anxiety and depression represent an escalating public health problem among adolescents. [2] It expresses itself in multiple ways like change in appetite, loss of energy, and insomnia along with mood changes.

Among psychiatric disorders, depression is responsible for maximum DALYs (disability-adjusted life years) and is also the most common cause of suicide. Globally it is estimated that 10 to 20 % of adolescents experience depression and it is on the rise. [3] It is a sensitive transitional phase from childhood to adulthood, during which, many factors can alter the behavior of the developing child which may lead to the emergence of mental health problems in the future. [4] Half of all people who will ever experience a mental illness in their lifetime will have had their first episode by age 18. Perhaps the greatest dilemma of our general public is that their little information about depression and shows very criticizing perspectives towards individuals with mental health disorders. [5-7]

Mental health disorders account for 16% of the global burden of disease and injury in adolescents with depressive disorders being the 4th leading cause of suicide in adolescents aged 15 to 19. [8] In the United States of America, the prevalence of major depressive episodes in adolescents was 15.8%. [9] Lahore has the highest prevalence (53.4%) followed by Quetta (43.9%) and Karachi (36.7%) with a frequency of 35.8% in men and 50.2% in women. [4, 10]

Correspondence
Dr. Sidra Irfan
Demonstrator
Department of Community Medicine,
Khyber Medical College, Peshawar - Pakistan
Cell: +92-331-8173465
Email: sidirfan50@gmail.com
Date Received: 12/09/2024
Date Revised: 17/01/2025
Date Accepted: 17/01/2025

Psychosocial factors such as major life events, family income, family history of depression, marital status, occupation, education level, etc. have a greater impact on depression. [11-13] If these factors are correctly identified, we can come up with strategies to deal with depression keeping in view the psychosocial factors.

Although multiple studies were conducted in Peshawar city on depression they were mostly centered on pregnant women, cancer patients police officers, etc. [14-16] After a thorough literature search, no evidence was found that addresses depression in adolescents in high schools in Peshawar city, thus we aimed to find out the prevalence of depression in high school adolescents of Peshawar city.

MATERIALS AND METHODS

A descriptive cross-sectional study was conducted over 6 months from April 2021 to October 2021 in public and private colleges of Peshawar city. A sample of 220 students was calculated using the WHO prevalence study formula. [17] Colleges were selected through a stratified random sampling technique. Adolescent students aged 16-18 were chosen through a simple random technique using the balloting method. Adolescent students (aged 16-18 years) who are healthy and who have given consent and are willing to survey will be included in our research. Any adolescent with known medical conditions like asthma, T.B., or diabetes will be excluded. Data from students was collected through a modified pre-tested version of Beck's Depression Inventory questionnaire, an instrument for quantifying depression.

'BDI' is a self-reported tool that consists of 21 items, each having 4 4-point scaling range from 0(no symptoms) to 3 (symptoms very intense). Depression among adolescent school-going adolescent will be measured according to their 'BDI' score. A score from 0-10 is considered normal, from 11-16 as mild depression, from 17-20 as borderline depression, from 21-30 as moderate depression, from 31-40 as severe depression, and over 40 as extreme depression. SPSS-26 was used for data analysis. A chi-square test was used to ascertain the association between age, gender, and depression. Ethical approval was sought from the IREB (Institutional Review and Ethical Board) of Khyber Medical College.

Results

In the sample of 220, 43 (19.54%) participants were aged 16, 61 (27.72%) participants were aged 17 and 116 (52.72%) were aged 18. Among them 116 (52.72) were males and 114 (51.81) were females.

Out of 220 participants, 115 (52.25%) adolescents had depression, 18 (8.18 %) had extreme depression, 27 (12.27%) had severe depression, 44 (20.0%) had moderate depression, and 26 (11.8%) had borderline clinical depression. The frequency of adolescents with mild mood disturbance is (18.18%). However, 65 (29.54%) were normal according to the Beck's Depression Inventory. See Table 1 for details.

When the chi-square test was applied to find an association between depression and gender and depression and age, it was found that there is a significant relationship between depression and gender however, age categories of adolescents are not statistically related to each other as shown in table no I.

DISCUSSION

In the United States of America, the prevalence of major depressive episodes in adolescents was 15.8%. [9] China showed the prevalence of depression in adolescents between 17.98% and 21.73%. [18] Ahmed B et al. found the prevalence of depression ranging from 22% to 60%. [17]

Costello et al. performed a meta-analysis comprising about 60,000 adolescents. The studies included were only those that involved interviews and the prevalence was reported to be 5.6%. [19] A recent study involving 7,255 participants was conducted in China. [20]

Table 1: Showing Frequency of Depression and its Relationship with Age and Gender

Age of Patients	No Depression		Depression				
	Normal	mild mood disturbance n (%)	borderline clinical depression n (%)	moderate depression n (%)	severe depression n (%)	extreme depression n (%)	Total n (%)
	n (%)						
16	18(41.86)	9(20.93)	3(6.97)	9(20.93)	3(6.97)	1(2.32)	43(19.54)
17	14(22.95)	11(18.03)	8(13.11)	11(18.03)	10(16.39)	7(11.47)	61(27.72)
18	33(28.44)	20(17.24)	15(12.93)	24(20.68)	14(12.06)	10(8.6)	116(52.72)
Total	65(29.54)	40(18.18)	26(11.81)	44(20.0)	27(12.27)	18(8.18)	220(100.00)
							220(100.00)
Gender of Patients							
Male	35(30.17)	18(15.51)	14(12.06)	20(17.24)	6(5.17)	13(11.20)	116(52.72)
Female	60(50.63)	22(19.29)	12(10.52)	24(21.05)	21(18.42)	5(4.38)	114(51.81)
Total	65(29.54)	40(18.18)	46(20.90)	44(20.0)	27(12.27)	18(8.18)	220(100.00)

Jadoon NA et al. in their study also reported a high prevalence of anxiety and depression (43.89%) among medical students. Prevalence of anxiety and depression among students in the first, second, third, fourth, and final years was 45.86%, 52.58%, 47.14%, 28.75%, and 45.10% respectively. Female students were found to be more depressed than male students (OR = 2.05, 95% CI = 1.42-2.95, p = 0.0001). [21]

In a study conducted in the Shandong province of China, the prevalence of depression was high in school students at 52.4%. Female students exhibited a higher rate of 60.25% than male students. [22] The study finding is consistent with another Indian study, which showed a higher prevalence rate of 45.3% depression among female medical students. [23] A study conducted in Greece showed a prevalence rate of 5.67 % for depressive episodes according to ICD-10 and 17.43 % for a broader definition of depressive symptoms. [24]

All of these show a high prevalence of depression in high school-going adolescents from different regions of the world, with females having a relatively higher frequency of depression compared to males.

CONCLUSION

The frequency of depression in adolescents in Public and Private High Schools in Peshawar City is an escalating public health issue. A very high frequency of depression was found in the high school-going adolescents of Peshawar, Pakistan. The study further concluded a statistically significant relationship between depression and gender with females having a higher frequency of depression.

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Authors Contribution:

Following authors have made substantial contributions to the manuscript as under

Authors	Conceived & designed the analysis	Collected the data	Contributed data or analysis tools	Performed the analysis	Wrote the paper	Other contribution
Umair	✓	×	✓	×	✓	×
Irfan S	✓	✓	×	✓	✓	×
Majid A	×	✓	×	×	✓	×
Rahim A	✓	✓	✓	×	✓	✓
Irfan M	✓	✓	×	✓	✓	×

Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

ORIGINAL ARTICLE

FREQUENCY OF ENERGY DRINK CONSUMPTION AMONG KHYBER MEDICAL UNIVERSITY–INSTITUTE OF MEDICAL SCIENCES KOHAT PAKISTAN

Abid Zaman, Muhammad Arsalan, Muhammad Kashif Zaman, Naeem Ur Rehman, Naeem Khan, Muhammad Ishtiaq

Department of Community Medicine, Khyber Medical University – Institute of Medical Sciences Kohat, Peshawar - Pakistan

ABSTRACT

Objective: The main objective was to assess the prevalence of energy drink consumption among undergraduate medical students of a public medical college in Kohat Pakistan

Materials and Methods: After ethical approval, a cross-sectional study was conducted from February to September 2024 at the Department of Community Medicine KMU-Institute of Medical Sciences Kohat. Relevant information was collected using a self-structured questionnaire that included all the direct and indirect variables, such as demographics and other determinants of energy drinks. The data was analyzed using SPSS-23.

Results: The study involved 228 MBBS students from first to final year. Among them, 160 (70.2%) reported drinking energy drinks, and 68 (29.8%) said they did not. Most participants were male, with 146 males (64%) and 82 females (36%). In terms of how often they drank energy drinks, 70 students (30.7%) had them once a day, 16 (7%) drank them twice a day, and 10 (4.4%) had them three times a day. Only 4 students (1.8%) consumed more than three energy drinks daily, and 62 (27.2%) drank them occasionally. Additionally, 88 students (38.6%) had tried to stop drinking energy drinks, while 74 (32.5%) had never attempted to quit. Eight students (3.5%) also smoked while drinking energy drinks, but most, 154 students (67.5%), did not smoke. Taste is the primary motivation for consuming energy or cold drinks, with 92 (40.4%) of respondents prioritizing flavor, social gatherings also play a significant role, attracting 42 (18.4%) consumers.

Conclusions: The study concluded that the prevalence of energy drink consumption was high among the study participants and showed a strong relationship with age, year of study, taste and social gatherings, monthly pocket money, residence, and physical exercise, etc. Thus, effective strategies are needed to reduce the frequency among medical students.

Keywords: Energy drinks consumption, frequency of energy drinks consumption, Sting, Red Bull

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INTRODUCTION

Energy drink consumption is rising day by day. Beverages like Sting, Charged, and Red Bull are the most frequently used energy drinks which contain certain products that include glucuronolactone, ribose, B vitamins, amino acids such as taurine, and amino acid derivatives like carnitine. [1] These drinks are heavily consumed for their certain effects including increased energy, enhanced alertness, reduced fatigue, accelerated metabolism and boosted physical performance. [2] Despite these benefits, heavy consumption of energy drinks among adults and teenagers are concerned as these have certain acute and chronic health risks. [3] Sometimes, water and minerals are replaced with energy drinks after sports which leads to health problems. [4]

In Pakistan, a study was conducted that showed a prevalence of 42.89% among the young generation. [5] Energy drinks are popular among medical students and athletes for managing stress and improving focus as they contain caffeine. [6] However excessive use of caffeine can sometimes cause many complications like gastrointestinal discomfort, muscle twitching, restlessness, persistent feelings of restlessness, anxiety, and insomnia. [7-9] Moreover, high caffeine levels in the blood can cause irregular heartbeats, increased blood pressure, and even heart attacks. Chronic use of EDS can lead to cardiovascular complications like sudden death. [10] A Daily intake of caffeine of 6mg/kg/day is safe for adults but for children, caffeine intake should not exceed 2.5mg/kg/day. [11] Energy drinks consumption can also damage tooth enamel or root exposure leads to tooth hypersensitivity. [12]

Correspondence
Dr. Muhammad Ishtiaq
Department of Community Medicine, Khyber Medical University – Institute of Medical Sciences Kohat Peshawar - Pakistan
Cell: +92-334-9121822
Email: drishtiaq250@yahoo.com
Date Received: 28/11/2024
Date Revised: 17/01/2025
Date Accepted: 17/01/2025

In Pakistan, a study was conducted at Agha Khan University which showed Red Bull and Sting major energy drinks consumed 101 (43.4%) and 44 (15.8%). (13) Red Bull is famous for its large caffeine, taurine, vitamins, and sugar content. [14] Despite the common use of energy drinks and their complications among students, many medical students lack enough knowledge about their ingredients and potential health risks. Educating medical students about the effects of drinks is crucial, as they will play a key role in educating young people in the future. Our study aims to evaluate the frequency and patterns of energy drink consumption among medical students at KMU-IMS Kohat Pakistan.

MATERIALS AND METHODS

A cross-sectional descriptive study was conducted at the Department of Community Medicine, KMU-Institute of Medical Sciences Kohat, Khyber Pakhtunkhwa Pakistan from February 2024 to September 2024. After obtaining ethical approval, students from 1st year to Final Year MBBS students were selected based on a 95% confidence interval and 7% margin of error; with 42% of energy drinks consumption from a prevalence study conducted among medical students in Islamabad Pakistan. All the students who are currently enrolled at KMU-IMS were included. A self-structured questionnaire was constructed in which all the direct and indirect variables i.e., demographics and other determinants affecting energy drinks were used to collect relevant information. The data was analyzed using SPSS software and presented in the form of tables.

RESULTS

The study involved 228 MBBS students from various academic years including 44 (19.3%) first-year students, 60 (26.3%) second-year students, 22 (9.6%) third-year students, 92 (40.4%) fourth-year students, and 10 (4.4%) final year students. The sample predominantly consisted of males 146 (64%) and females 82 (36%). The participants ages ranged from 18 to 26 years with a mean age of 21.63 ± 1.855 years. Of the total participants, 94 students (41.2%) were from rural areas while 134 (58.8%) belonged to urban areas. Additionally, 22 (9.6%) students were day scholars, whereas 206 (90.4%) students were hostelites. In financial ranges, an income in the 5-10k range comprised 74 (32.5%) participants. This was closely followed by the 15-20k range, with 66 (28.9%) participants. The 10-15k range included 46(20.2%) participants, while 42 (18.4%) participants fell into the category of more than 20k. The survey results revealed that a majority of the students consume energy drinks with a prevalence of 160 (70.2%) individuals while 68 (29.8%) students reported that they do not consume these beverages. The daily consumption of energy drinks revealed that 70 (30.7%) consume these beverages once a day, while nearly 16 (7%) consume them twice a day, with 10 (4.4%) three times. About 4 (1.8%) indicated more than three times. Only 62 (27.2%) report no consumption at all. Sting was the most common brand consumed by 54 (23.7%), followed by Red Bull with 46 (20.2%) consumers. The primary motivation for students to consume energy drinks was social gatherings or events by 136 (85%) participants, followed by advertisements at 2 (1%) and social media at 22 (13.7%).

Additionally, 88 (38.6%) participants reported attempting to quit energy drink consumption while 74 (32.5%) had never tried to quit. 8 (3.5%) participants admitted to smoking tobacco while consuming energy drinks, whereas the majority 154 (67.5%), participants did not smoke. Taste is the primary motivation for consuming energy drinks with 92 (40.4%) of individuals. Social gatherings also play a significant role, attracting 42 (18.4%) of consumers. Despite this, motivations related to being active or seeking energy are much less influential with only 16 (7.0%) of participants. Trends also have minimal impact, as only 6 (2.6%) cite them as a motivation.

DISCUSSIONS

In the modern era, the consumption of energy drinks is dramatically high and its evaluation is important. The main energy drink brands in Pakistan included Sting which is the most majorly used energy drink, in second place comes Red Bull. The age of most of the students in this study was 22 years, with the lowest figure being 18 years and the high being 25 years, but another study conducted in Saudi Arabia had most of the students 18-20 years old, and the highest age recorded was 26 years (14), Most of the students lived in hostels 56.3% which gave them free hand to use energy drinks without proper checks and balances while in comparison to other side study it was reported that 65% lived in urban areas. Most

Table 1: Socio-demographic characteristics of medical students

Variables	ED user = 160	ED non-user = 160
Gender		
Male	108 (74%)	38 (26%)
Female	52 (64.4%)	30 (36.6%)
Year of study		
1st year	24 (15%)	20 (29.4%)
2nd year	44 (27.5%)	16 (23.5%)
3rd year	10 (6.3%)	12 (17.6%)
4th year	72 (45%)	20 (29.4%)
5th year	10 (6.3%)	0
Location		
Urban	90 (56.3%)	44 (64.7%)
Rural	70 (43.8%)	24 (35.3%)
Stay		
Day scholars	20 (90.9%)	2 (9.1%)
Hostelites	140 (68%)	66 (32%)

Table 2: Knowledge about ingredients of energy drinks

Variables	Number (%)
Brand consumed	
Sting	54 (23.7%)
Red bull	46 (20.2%)
Source of information about ED	
Ads	2 (1%)
Gathering/events	136 (85%)
Social media	22 (13.7%)
Daily consumption of ED/CD	
Once a day	70 (30.7%)
Twice a day	16 (7%)
Thrice a day	10 (4.4%)
More than thrice a day	4 (1.8%)
Not consumed daily	62 (27.2%)
Tried to quit ED/CD	
Yes	88 (38.6%)
No	74 (32.5%)
Motivation for ED consumption	
Taste	92 (40.4%)
Social gatherings	42 (18.4%)
For energy	16 (7.0%)
Trends	6 (2.6%)

of those students, 18.4%, were involved in energy drink usage and got high pocket money from their parents, but according to another study, it was suggested that 29% of students with high pocket money use more energy drinks. [15] Some students said that they had never had an energy drink intake in their life. The majority of individuals preferred a sedentary lifestyle, but very few exercised daily. Energy drink usage with a sedentary lifestyle leads to many health concerns, especially obesity. In our study, the prevalence of energy drink consumption was found to be 160 (70.2%) as compared to prevalence from another other study that reported a prevalence rate of 42.89%, suggesting a moderate level of consumption among the surveyed population. [13] Of 160 participants in this study, males predominantly consumed energy drinks comparable to other studies conducted in Islamabad had 21(10%) males. [14] Males are predominant in usage because they are mostly outdoors as compared to females. A study at a Turkish university found that the main reasons students tried energy drinks for the first time were curiosity (51.3%), wanting to improve their physical performance (15%), and to fight off sleepiness (9.2%), while our study showed that attraction for students was mainly taste (40.4%), social gatherings (18.4%) and energy (7%). [16]

CONCLUSIONS

The high prevalence of energy drink consumption among medical students highlights the significant influence of Taste, social gatherings/events, and peer pressure on their choices. Moreover, among participants, the study found that the majority of students consumed energy drinks; more than half of energy drink consumers were males due to their outdoor and heavy activities; most of the surveyed individuals have no concern about the ingredients of energy drinks and they took them for taste and in events/gatherings. Additionally, the study revealed many relations between energy drink prevalence and other factors of age, MBBS years, residence, energy drink brands, monthly pocket money, exercise, lifestyle, etc. Furthermore, there is a dire need for awareness and sensitization targeting adolescents and teenagers who are particularly vulnerable to accessible energy drinks, to avoid unnecessary consumption of energy drinks among medical students.

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Authors Contribution:

Following authors have made substantial contributions to the manuscript as under

Authors	Conceived & designed the analysis	Collected the data	Contributed data or analysis tools	Performed the analysis	Wrote the paper	Other contribution
Zaman A	✓	×	✓	×	✓	×
Arsalan M	✓	✓	×	✓	✓	×
Zaman MK	×	✓	×	×	✓	×
Rehman NU	✓	✓	✓	×	✓	✓
Khan N	✓	✓	×	✓	✓	×
Ishtiaq M	✓	✓	✓	×	✓	✓

Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

CASE REPORT

A CASE OF HEREDITARY SPASTIC PARAPLEGIA- A NEUROLOGICAL CONUNDRUM

Mariyah Saqib Qureshi, Awais Naeem, Fahad Naim, Nadia Raheem, Muqsit Ali Shaukat

Department of Medicine, Khyber Teaching Hospital, Peshawar - Pakistan

ABSTRACT

Objectives: Hereditary Spastic Paraplegia is a group of rare neurological degenerative disorders with a broad pattern of inheritance and not limited to a specific age group. Around 82 different loci have been identified in the causation of this disease. It may present with weakness limited to lower limbs or maybe a complex disease with extra neurological manifestations.

Case Description: We report a case of a 44-year-old Pakistani male with progressive spasticity and lower limb weakness of 3 years duration with upper motor neuron signs limited to the lower limb. His Baseline investigations were within normal range and his metabolic profile as well as inflammatory markers were normal. His MRI showed Non-specific peri-ventricular intensities on T2W and FLAIR sequences with mild axonal neuropathy on Nerve Conduction Studies. EMG was normal. He was diagnosed with Type 2, Pure Hereditary Spastic Paraplegia after the exclusion of all other possible differentials. He was started on muscle relaxants, statins, and pregabalin.

Discussion: Our diagnosis was supported by previous literature on the disease and the treatment we initiated was also evidence-based. Due to the lack of accessibility to genetic testing in Pakistan, our case highlights the importance of analyzing in detail, a patient's clinical examination and history as well as picking subtle MRI findings.

Key Words: Case Report, Hereditary Spastic Paraplegia, SPG, Inherited

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INTRODUCTION

Hereditary Spastic Paraplegia (HSP) is a rare group of diverse inherited diseases that affect the nervous system with a prevalence of 1–5:100,000. The disease may be inherited through multiple inheritance patterns and may be AD, AR, XR, or even maternal and the patient may not always give a positive family history. They have been classified by their symptoms; pure or complex, the genotypes (more than 82 loci/genes i.e., SPG1-SPG82), and the age of manifestation. The pure form is limited to lower limb spasticity while the complex form may manifest as extra-neurological features in addition to lower limb spasticity. The degeneration in the pure form usually involves the corticospinal tract and manifests as distal axonal neuropathy of the lower limbs. The disease is progressive and to date, there is no drug to slow the progress and we can only alleviate the symptoms of the patients with muscle relaxants and physiotherapy

CASE DESCRIPTION

Correspondence
Dr. Awais Naeem
Assistant Professor
Department of Medicine, Khyber Teaching Hospital,
Peshawar - Pakistan
Cell: +92-323-9713171
Email: awaisnaeem06@gmail.com
Date Received: 28/11/2024
Date Revised: 17/01/2025
Date Accepted: 17/01/2025

A 44-year-old Pakistani male who was employed as a clerk at a factory, presented to the out-patient-department with progressive bilateral lower limb weakness, spasticity, and abnormal gait for the last 3 years. He had no previous comorbidities and no family history of neurological illnesses. He complained of lower limb muscle fatigue and inability to walk for more than 4-5 minutes with associated paresthesia and numbness as well. He also complained of urinary urgency. There were no symptoms of cognitive decline. On examination, he had a wide scissoring gait, there was bilateral hypertonia in lower limbs with hyperreflexia at the knee and ankle. Babinski's Reflex, Chaddock's Reflex, and Gordon's Reflex were all positive. Vibration sense was reduced in the lower limbs and Romberg's sign was positive. Proprioception, pain, touch, and temperature sense were preserved. Power was 5/5 in all limbs and Cranial nerve examination as well as examination for cerebellar signs was unremarkable. Upper limb neurological examination was normal. Laboratory investigations; metabolic profile, inflammatory markers, and auto-immune profile were within normal ranges. Screening for Muscular dystrophy, Myasthenia Gravis, Auto-immune encephalitis, and multiple sclerosis was normal.

Nerve Conduction studies revealed mild axonal neuropathy in bilateral lower limbs. EMG was normal. MRI Brain with contrast showed hyper-intense signals in periventricular white matter and centrum semi-ovale region on T2W and FLAIR sequence. MRI Lumbosacral spine showed a mild disc bulge at LV5-SV1 level with only thecal indentation. See Figure 1 for details. A diagnosis of Pure type of Hereditary Spastic Paraplegia, the adult

variant was made after excluding other possible causes. The patient was started on Baclofen 10mg thrice a day, Pregabalin 50mg once a day, and Atorvastatin 10mg once a day. He was also given multivitamins.

DISCUSSION

Hereditary spastic paraplegias (HSPs) are a group of rare hereditary neurodegenerative diseases characterized by degeneration of the corticospinal tract involving

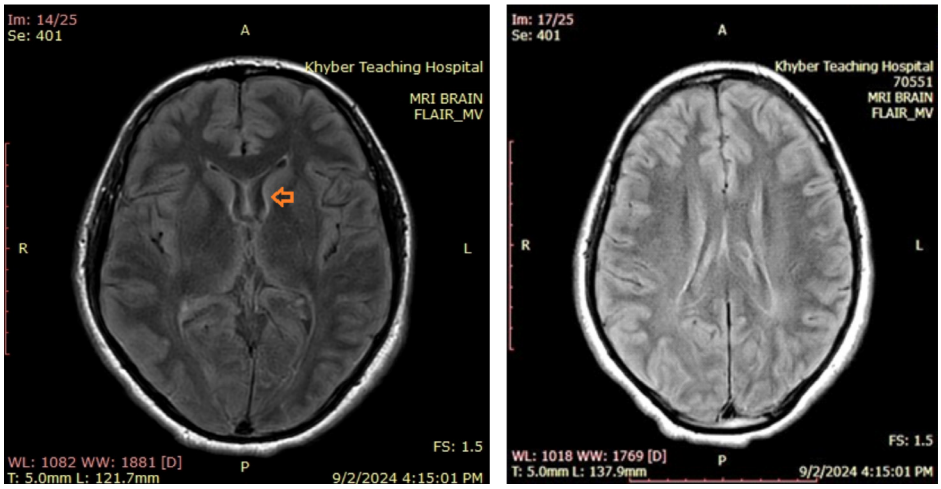

Fig 3: MRI Brain-FLAIR sequence: Shows Few discrete high signal foci in periventricular white matter and centrum semi-ovale region.

the first-order motor neuron but may extend to the second-order motoneuron.[3] Its most prominent clinical manifestation is progressive bilateral lower limb weakness with spasticity. There are two main types identified by Harding based on the clinical manifestations the Pure/uncomplicated type which was the type identified in our patient is characterized by lower limb spasticity, hypertonic bladder, and a mildly decreased vibration sense in the lower limbs. This type is less debilitating and does not decrease the lifespan of the patient. Whereas the complicated type includes symptoms of the pure type with additional symptoms of ataxia, seizures, cognitive impairment, muscle atrophy, extrapyramidal signs, and peripheral neuropathy. Based on the age of onset they can be classified into Type 1 in less than 35 years of age and Type 2 in patients more than 35 years of age.

Genetic diagnosis is the only way to confirm the diagnosis and without it is difficult to estimate the exact prevalence of the disease but a recent study detects the prevalence to be 2.4/100,000 based on genetic/ clinical diagnosis/ both. The diagnosis is usually clinical in the absence of genetic testing facilities but MRI findings can also aid the diagnosis.

Autosomal dominant, autosomal recessive, and X-linked or maternal (mitochondrial) inheritance patterns have all been reported with HSP, therefore, family history is crucial to diagnosis but our patient did not give such a history in immediate family members, distant relatives' history was unknown to him as he was estranged from them. HSP is confused with several disorders such as leukodystrophies, multiple sclerosis, peripheral neuropathies, Parkinson's disease, and even Amyotrophic lateral sclerosis. Therefore, it is essential that we exclude these causes before making a final diagnosis of HSP.

Genetic testing includes Next-generation sequencing of exons and Multiplex litigation probe amplification but unfortunately, it wasn't available in our setting.

MRI Findings are equally important in the diagnosis which may show thinning of the spinal cord, thinning of the corpus callosum, cerebellar atrophy, and Periventricular hyperintensities. In addition, there is the diagnostic "Ears of the Lynx sign" which shows an abnormality at the forceps minor of the corpus callosum appearing hyper-intense on T2-FLAIR-weighted and hypo-intense on T1-weighted images, this was not prominent in our patient but was seen in a similar case in Pakistan. There is no curative or modifying therapy yet available for HSP but symptomatic treatment can improve quality of life. Muscle relaxants such as Tizanidine, Baclofen, and oxybutynin for urinary urgency can be given. Physiotherapy and orthotics may be used for stiffness and deformities. There is currently research being done into gene therapy and tubulin-binding molecules. Lowering cholesterol levels is recommended for the treatment of some HSP phenotypes using atorvastatin.

CONCLUSION

Hereditary Spastic Paraplegia was a clinical diagnosis made after the exclusion of other possible diagnoses in our patient. Based on clinical features and MRI findings of Non-specific periventricular hyperintensities on FLAIR and T2 weighted imaging. The patient had struggled immensely in the 3 years before coming to us and therefore it is essential to focus on the clinical examination and history taking of the patient as well as picking MRI findings and correlating them. We hope that in the future we will have access to genetic testing facilities for this disease so that the patient can be labeled with more certainty.

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Authors Contribution:

Following authors have made substantial contributions to the manuscript as under

Authors	Conceived & designed the analysis	Collected the data	Contributed data or analysis tools	Performed the analysis	Wrote the paper	Other contribution
Qureshi MS	✓	×	✓	×	✓	×
Naeem A	✓	✓	×	✓	✓	×
Naim F	×	✓	×	×	✓	×
Raheem N	✓	✓	✓	×	✓	✓
Shaukat MA	✓	✓	×	✓	✓	×

Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

INSTRUCTION TO AUTHORS

INSTRUCTIONS FOR AUTHORS

The **"PAKISTAN MEDICAL STUDENTS RESEARCH JOURNAL (PMSRJ),** is the official student-based journal of Khyber Medical College, Peshawar. The PMSRJ started its publications in 2023. The PMSRJ is a triannually, peer-reviewed medical journal. It follows the uniform requirements for Manuscripts (URM) submitted to Biomedical journals as approved by the International Committee of Medical Journal Editors (ICMJE) as revised in 1997 and published in N Eng J Med 1997; 336:309-15. Detailed information about updated URM can be downloaded from www.icmje.org. The PMSRJ follows the Committee on Publication Ethics (COPE) guidelines regarding publication ethics.

1- SUBMISSION OF ARTICLE

The PMSRJ is one of the Pakistani medical journals that provides you with easy and user-friendly ONLINE SUBMISSION OF ARTICLES on its website. Visit www.pmsrj.com and REGISTER yourself as an AUTHOR by filling out a form. Log in with your "username" and "password". A web portal will be on the screen with a block of NEW SUBMISSION and follow the following 5 steps of manuscript submission as per online instructions.

- Start
- Upload Submission
- Enter Metadata
- Confirmation
- Next steps

Log in > User Home > Author > Submissions > New Submission > step 1 Starting the submission> step 2 Enter metadata> step 3 Upload submission >step 4 Upload supplementary files > step 5 Confirmation.

2- FORMAT/ REQUIREMENTS

While submitting manuscripts, please carefully follow the instructions given below:-

Summary of Technical Requirements

The journal will accept (a) Original research articles (b) Review articles (c) Case reports (d) Editorials (f) Special communication (g Short communications (h) a Letter to the Editor.

It should be typed in single or double space with clear margins on both sides. Begin each section or component on a new page.

Review the sequence: title page, abstract and keywords, text (Introduction to conclusion), acknowledgments, references, tables (each on a separate page), and legends. Illustrations, unmounted prints, should not be larger than 203 × 254 mm (8 × 10 inches).

The manuscript should not exceed 20 pages excluding tables and references. There should be no more than 40 references in the original article, <10 references in the case report, and no more than 100 references in a review article.

Include permission to reproduce previously published material or to use illustrations that may identify human subjects. Keep copies of everything submitted.

Approval certificate from Institutional review board for bioethics (IRBB)/ research ethical committees. From July 2015 onward no article will be processed without IRBB approval certificate.

3- ARTICLE PROCESSING/PUBLICATION FEE

The PMSRJ has no article processing fee while it will charge Rs: 4000/- for publication of article. The PMSRJ also follow different waiver policies adopted internationally.

4- MATERIAL FOR PUBLICATION

All manuscripts of original research should contain following sections:-

5- Title Page

- The title of the article should be concise, specific, and informative. Authors should include all information in the title that will make electronic retrieval of the article sensitive and specific.
- Full name of each author, with his or her highest academic degree(s) and institutional affiliation.
- The name of the department(s) and institution(s) to which the work should be attributed.
- Disclaimers, if any.
- The name, email, and postal address of the author responsible for correspondence about the manuscript.
- The name and address of the author to whom requests for reprints should be addressed, source(s) of support in the form of grants, equipment, drugs, or all of these.

6- Abstract

The second page should carry structured abstract of not more than 250 words.

Objectives: The abstract should state the Objective: the purpose of the study or investigation;

Materials and Methods: Study design, place and duration of the study, basic procedures such as selection of study subjects or laboratory animals, observational and analytical methods;

Results: Main findings giving specific data and their statistical significance, if possible and

Conclusion: It should emphasize new and important aspects of the study or observations. Below the abstract authors should provide, and identify as such, 3 to 10 keywords or short phrases that will assist indexers in cross-indexing the article and may be published with the abstract. Terms from the Medical Subject Headings (MeSH) list of Index Medicus should be used. If suitable MeSH terms are not yet available for recently introduced terms, present terms may be used.

Keywords: About 3-5 keywords are mandatory to mention

References: References should be in Vancouver style. The introduction section should not contain more than 10% of the references of the whole document.

The rest of the article should follow the same rules of abstract but in greater detail. The article must contain between 2000-3500 words.

Executive Editor,

PMSRJ, KMC

FOR DETAILS, SEE OUR EDITORIAL POLICY IN THE NEXT SECTIONS

AUTHOR'S AGREEMENT

Pakistan Medical Students Research Journal (KMC Peshawar pISSN - Under-process)

Journal_____

ArticleTitle_____

I certify that

A) None of the material in the manuscript has been published previously/currently under consideration for publication elsewhere.

B) The article has not been accepted for publication elsewhere

C) I have not signed any right or interest in the article to any third party

D) I am able/willing to produce the data on which this article is based, should the Editorial Board of the PMSRJ request such data.

E) Animal Care Committee/Institutional Review Board approval was granted for this study.

I (including spouse and children), disclose financial interest at the level

a) Nothing to disclose b) Financial interest to the amount of _____

F) I/We confirm to comply fully with the suggestions/critical views of the reviewers/editor, failing which my/our article may be rejected at the sole discretion of the editor. I/we further confirm that if our article is rejected (whihc is the sole discretion of the editor) I/we will have no right to complain against the journal/editor/representative of the journal/printer in any forum including the court of law.

G) I/we suggest the following two overseas reviewers to review our article.

1) _____	_____	_____
2) _____	_____	_____
Name of reviewer	Postal address	Email address & Telephone No.

_____	_____	_____
Author name	Author signature	Author e-mail address

Note: Author agreement form must be signed by each author (one page for each) and submitted with the article.

Author's Checklist:

i) Eliminate nonstandard abbreviation in the titles
ii) Supply full author names (including institutional affiliation and contact informations)
iii) Contribution of individual authors
iv) Nomination of first 3 co-authors by the principal author
v) Abstract: 250 words, Article: 2000-3500 words (excluding references).
vi) Supply references in Vancouver style, accurately cited in the text in numerical order
vii) Cite tables in the text in numerical order
viii) Ethical approval certificate
ix) Cite figures in the text in numerical order
x) Author agreement is signed by all authors.
xi) Departmental Permission Letter for the study.
xii) Bank draft for Rs. 4000/- (Rs. Four Thousand) in the name of Pakistan Medical Students Research Journal, Peshawar, Pakistan/or deposit in cash with Managing Editor Account No. 4048685170 (3548-9) Can be transferred ONLINE to the Account No. 4048685170 (3548-9) Branch Code 0388 at National Bank of Pakistan, University Campus Branch, Peshawar.

EDITORIAL & RELEVANT POLICIES

OVERVIEW

This text highlights the mission, objectives, and editorial policy of PMSRJ regardingthe publication process by adhering to the guidelines by COPE (Committee in Publication Ethics) and ICMJE (International Committee of Medical Journals Editors). Each component of the editorial policy is explained in the next sections.

A THE MISSION OF THE PMSRJ

To provide a platform for medical students (both undergraduate and postgraduate) to publish scientific material to help them in their practice, teaching and learning, and career development

B OBJECTIVES OF PMSRJ

a. To publish clinical, epidemiological, public health, educational, translational, and allied sciences research to enable the scientists, clinicians, and researchers to learn about developments and innovations in these disciplines

b. To publish high quality descriptive and experimental research, review articles, editorials, and case reports enhancing the understanding of the scientific community regarding clinical practice and education

c. To provide a platform formedical studentsin promoting their career development through publishing quality research

C EDITORIAL POLICY

1- OPEN ACCESS

PMSRJ is an Open access scholarly literature source that is free of charge and often carries less restrictive copyright and licensing barriers than traditionally published works, for both the users and the authors. However, it complies with well-established peer review processes and tries to maintain high publishing standards.

2- PEER REVIEW PROCESS

The review process of PMRJS is following a “triage approach”. Upon submission of a manuscript, either online or physical, the document undergoes a preliminary open (un-blinded) review in the office of the chief editor. The document is either accepted for further review, sent for revision back to the authors, or rejected at that time. Further review of PMSRJ is following a blinded approach, where the article is sent to 2 reviewers, local and international. During this process, all the relevant information about the authors and reviewers is kept confidential. However, we encourage to share reviewers’ comments with co-reviewers of the same paper in a blinded manner, so reviewers can learn from each other in the review process. We also encourage the readers to send us the post-publication reviews about research work in the form of letters to the editors, which are then published and shared with the authors of relevant articles. The editorial board has the authority to retract an article if a serious violation of credibility or quality of research is found after the article is published.

The journal is under no obligation to send submitted manuscripts for review, and under no obligation to follow reviewer recommendations, favorable or negative at all times. The editor of a journal is ultimately responsible for the selection of all its content, and editorial decisions may be taken by issues unrelated to the quality of a manuscript, such as suitability for the journal. An editor can reject any article at any time before publication, including after acceptance if concerns arise about the integrity of the work.

3-AUTHORSHIP

According to the ICMJE criteria, authorship is based on 4 criteria; (1) conceptualization and designing, (2) AND, data collection, (3) AND, writing and critical review, (4) AND, taking responsibility for the authenticity and integrity of all the researchprocess. All those designated as authors should meet all these 4 criteria. The co-authors should declare their roles and contributions in the research process explicitly. Those who do not meet all 4 criteria should be ACKNOWLEDGED only. If agreement cannot be reached about who qualifies for authorship, the institution(s) where the work was performed, not the journal editor, should be asked to investigate. If authors request removal, addition, or change in the sequence of an author after manuscript submission or publication, journal editors should seek an explanation and signed statement of agreement for the requested change from all listed authors and from the author to be removed or added. The corresponding author is the one individual who takes primary responsibility for communication with the journal during the manuscript submission, peer review, and publication process. The corresponding author typically ensures that all the journal’s administrative requirements, such as providing details of authorship, ethics committee approval, clinical trial registration documentation, and disclosures of relationships and activities, are properly completed and reported.

4-SUBMISSION OF MANUSCRIPT

The manuscript should be submitted through

the journal website which is using the Online Journal System (OJS) along with the Institution research and ethics board (IREB) certificate. The article should have the following format:

4.1: The abstract should be structured with a word count of not more than 250 words.

4.2: The fonts should be Calibri, with size 12, and spacing of 1.5, with justified margins in MS office format.

4.3: The whole document should not be more than 3000 words (excluding references and appendices).

4.4: The number of figures and tables should not exceed 5 in the whole

4.5: The pictures and tables should be black and white.

4.6: Copied pictures and tables from other sources will not be entertained unless written approval from the original researcher and publisher is provided

The guidelines for correction and retraction of articles are as follows:

5- INSTITUTIONAL RESEARCH AND ETHICS BOARD (IREB) CERTIFICATE

Under no circumstances, an article will be accepted if approval from the relevant ethical board/committee is not taken before the start of the research. The board/committee should assess the proposal of research in both ethical and technical aspects before giving a certificate of approval.

6- CONFLICT OF INTEREST

To ensure transparency in the research conduction, writing, and publication, the authors, peer reviewers, and editors have to declare conflicts of interest regardingfinancial aspects, academic competitions, and relationships during writing, reviewing, and publishing the manuscripts. Details of sponsors along with their roles and access to data should be clearly stated.

7- CONFIDENTIALITY

The editorial board in no way should publicize the work of a researcher in any form unless it is published. They should not publicize the comments and critiques given by reviewers. Similarly, the reviewers are bound to keep the confidentiality of the work of researchers during and after the review. The work of researchers and the critique should never be discussed or exemplified in forums. The confidentiality of the researchers should be maintained in every possible way when the documents are sent for review. However, our review process is open (non-blinded) in the first phase, as per the policy of the journal. In this case, the policy is displayed on the journal`s website for the researchers. Reviewers must not retain the manuscript for their personal use and should destroy paper copies of manuscripts and delete electronic copies after submitting their reviews. If a manuscript is rejected, it should be deleted from the editorial system. If an article is published, the manuscript along with its reviews and other relevant documents should be retained for 3 years and then deleted. The only situation where confidentiality needs to be breached is when a situation of fraud or misconduct is found during the review process or after publication. Still, the authors and sometimes the reviewers,have to be notified.

8- CORRECTION AND RETRACTION OF ARTICLES

The guidelines for correction and retraction of articles are as follows:

8.1: A specific page is allocated in the journal (both electronic and printed) that will be used for news related to corrections in articles published in previous journals.

8.2: The editorshould also post a new article version in the journal with details of the changes from the original version and the date(s) on which the changes were made.

8.3: Previous electronic versions will prominently note that there are more recent versions of the article (that will be placed at the end of the abstract). Similarly, the more recent version should be cited by the authors or others.

8.4: If the error is judged to be unintentional, and the underlying science appears valid, and the changed version of the paper survives further review and editorial scrutiny, then retraction with the republication of the changed paper, with an explanation, allows full correction of that research paper.

8.5: If a serious violation of credibility or quality of a research paper is found after the publication, the article has to be retracted after approval of at least 3 members of the editorial board in consultation with the chief editor. The whole process will follow the guidelines presented by Committee on publication ethics (COPE).

8.6: The retracted article should be notified on the website and the word “retracted” should be mentioned along with the title of the article.

9- CORRESPONDENCE

Correspondence for submitting an article in PMSRJ will be through a corresponding author. The duties of a corresponding author have already been presented in a previous section. Correspondence regarding debating an article is given high value and a separate page for letters to the editors has been allocated. Derogatory and demeaning letters are screened and letters that promote debates and critique are encouraged to be published. However, correspondence about the articles published in the last 1 year will be included only.

10-THE FEE SUBMISSION PROCESS

The editorial board has fixed a fee of 4000/- Rs (Pakistani), for local authors and 100 $ (US) for international authors. The fee should be submitted as bank draft/ online payment through the account (for more information visit/contact Office of Managing Editor, PMSRJ) For international authors, the amount of 100 US dollars will be accepted after both internal and external review. Authorsare advised to submit the fee after the whole process of review is completed and the article is accepted for publication.

11- ROLES OF THE EDITORIAL BOARD, EDITORS, AND MEMBERS

The editorial board of PMSRJ is following the Higher Education Commission (HEC) policy for research journals. The roles of the editorial board for PMSRJ are mentioned below:

11.1: THE ROLES OF THE EDITORIAL BOARD ARE:

11.1.1: To offer expertise in their specialist area

11.1.2: To review submitted manuscripts

11.1.3: To advise on journal policy and scope

11.1.4: To work with the Editor to ensure the ongoing development of the journal

11.1.5: To identify topics for special issues of the journal or recommend a Conference that would promote the journal, which they might also help to organize and/ or guest edit

11.1.6: To attract new and established authors and articles

11.1.7: To submit some of their work for consideration, ensuring that they adhere to Conflict of Interest rules and stating their relationship to the journal. This is very important as the journal cannot be seen to publish only papers from members of the Editorial Board.

11.1.8: Editorial Board must have a regular communication forum with other boards of similar nature, either face to face in person (depending on their country of origin, funding availability, etc.) or as more journals are doing today, communicating by teleconference, Skype, or other web platforms.

11.2: THE PATRON:

The Patron is usually the Dean of the institute and is overall in charge of the journal, who needs to be kept informed of the decisions taken by the editorial board. The patron is the final authority to approve the decisions and policies of the editorial board.

11.3: THE CHIEF/ASSOCIATE/ASSISTANT EDITORS:

11.3.1: The criteria for selection of Chief/Associate/ Assistant Editors are:

i. Expertise and experience in the specialist field related to the journal

ii. Publication record of articles and /or books (usually in / related to the specialist field)

iii. Being a reviewer for an international peer-reviewed journal

iv. Senior research position with equivalent experience in research and scholarship

v. Enthusiasm to undertake the Editor role

vi. Preferably a diploma, master or doctoral degree in Education and Research It is not necessary to fulfill all the criteria to become a chief editor.

11.3.2: THE ROLES OF CHIEF EDITOR ARE:

i. The key role of a journal`s chief editor is to promote scholarship in the specialist field associated with the journal, whilst also promoting the journal as the best journal to publish in. For any journal, the editor will need to encourage new and established authors to submit articles and set up a reliable panel of expert reviewers. Editors are also responsible for offering feedback to reviewers when required and ensure that any feedback to authors is constructive.

ii. An editor should also familiarize him/herself with the Committee on Publication Ethics (COPE) 'Code of Conduct and Best Practice Guidelines for Journal Editors.

iii. Depending on how the journal is managed and how it is structured, an Editor may have to make all the decisions regarding which articles to accept or reject for publication.

11.3.3: MANAGING EDITOR:

The roles of managing editor are:

i. To help the chief editors to achieve the above-mentioned goals

ii. To communicate with the authors, reviewers, publishers, and other agencies for the smooth running of the journal

iii. To regularly evaluate the research work

iv. To communicate with funding and regulating agencies (HEC and others) for grants and accreditations.

11.3.4: EXECUTIVE EDITOR:

The roles of the executive editor are:

i. To evaluate the research articles presented for publication

ii. To help the editorial board in policymaking

iii. To help the editorial board in smooth publishing

iv. To communicate with reviewers and collaborate with external agencies for relevant purposes

11.3.5: SECTION EDITORS:

Section editors are allotted different responsibilities.Some of these are mentioned below:

i. Bibliography

ii. Proof-reading

iii. Academic writing reviewing, grammar, and spell checking

iv. Dissemination of articles for review

v. Contact with publishers under the supervision of senior editorial team

vi. Training of future reviewers, young members, and other faculty members

vii. others

11.3.5: EDITORIAL ADVISORY BOARD:

Editorial advisory board members consist of national and international senior academicians, researchers, clinicians, and others to help the current editorial board in designing, implementing, and evaluating policies regarding upgrading the quality of research work. These people also share best practices to help the editorial team to refine their research work.

12- POLICY REGARDING RECRUITMENT AND CONTINUATION OF THE EDITORIAL BOARD

The policyfor recruitment and continuation of the editorial board is based on the guidelines discussed in the previous section. The chief editor, managing editor, and executive editors /associate and assistant editors are recruited by the patron in-Chief. Members are then selected by them from amongst the faculty who have an aptitude for research, and their names are endorsed by the patron. The tenure of the editorial board is decided by the Patron after 3 years whether to continue or recruit a new team or member. The editorial advisory board members are recruited for an indefinite period by the editorial team of PMSRJ.

13- PLAGIARISM POLICY

The journal is following the plagiarism policy of the Higher Education Commission of Pakistan, and for this purpose, a plagiarism standing and review committee. The committee has been given the authority to review research papers and plagiarism complaints related to published work in the journal.

14- ALLEGATIONS OF RESEARCH MISCONDUCT

The policies of the COPE, WAME, and ICMJE serve as the foundation for the policy of research misconduct in our journal.

Before submitting, authors must carefully read the journal's author guidelines and research ethical principles and adhere to them.

While authors have the right to recommend potential reviewers for the peer-review process, all potential reviewers will have their credentials and potential conflicts of interest carefully examined before they are invited to review.

A manuscript that is undergoing peer review or a published article may be the subject of a report of research misconduct.

The application and management process for claims of author misconduct should go as follows:

14.1: An article submitted or to be published in the PMSRJ if allegedly suspected of scientific misconduct, an official complaint for the same must be received by the office of the managing editor via email, managingeditor@pmsrj.com. For instance, in case of plagiarism, the copied section should be underlined and the original and suspected sections should be explicitly pointed out. The complaint must specify the particular matter and details of the misconduct.

14.2: an investigation will be carried out by the editorial board and the corresponding author of the suspected article will be kept in contact. An explanation will be asked from the corresponding author in this respect. If the misconduct is accepted, the managing editor will take the following steps:

In the case of published articles, retraction might be considered.

In the case of unpublished articles, the review process may stop or continue depending on the changes suggested to the corresponding author.

If the corresponding author does not respond in the stipulated time or the response is unsatisfactory, the article may be declined or retracted.

14.3: Before reaching any conclusion in case of retraction of an already published article, the editorial team will be in consultation with the experts within or outside the institution.

14.4: If during the review process, suspicion of gifted authorship is identified, the editor in charge of the article may ask the corresponding/principal author about the role of the authors, and if the response is found to be unsatisfactory, the review process may stop or the article may be declined altogether.

15: APPEAL AND COMPLAINT PROCESS

The PMSRJ follows the recommendations of COPE regarding the appeal and complaint process (https://publicationethics.org/appeals) as follows:

15.1: The authors may ask the managing editor for inquiring about the status of the article through the official email of the PMSRJ managingeditor@pmsrj.com citing their official article ID.

15.2: The author may contact the managing editor for inquiring about the reason for the rejection of articles during the review process by the above email link.

15.3: Sometimes, the authors may re-upload an article as a new submission if they have modified the article as suggested by the editors

15.4: For withdrawal of an article during the review process, the corresponding author will write a request through the OJS to the relevant editor for retraction.

15.5: Reconsideration of the decision will be conducted only at the discretion of the managing and chief editors.

16- COPYRIGHT POLICY

17- DATA REPOSITORY

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18- JOURNAL FUNDING

We receive funding from our institute on a need basis. Another source of funding is through a research paper processing fee amounting to Rs: 4,000/-. We also receive funding through annual subscriptions by different national libraries amounting to 5000/- annual (500 US$ for overseas libraries).

19- CONTACT INFORMATION

The office of managing editor or chief editor should be contacted anytime in working hours or can be contacted through their emails for correspondence.

Email: managingeditor@pmsrj.com

REFERENCES:

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