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MAJRAF MEDICAL CENTER,
COMMISSIONER ROAD, SIALKOT
CONTACT # 0333-8605380/
03006180100/ 03237845346

EMAIL:

SAHIBZADADRSYED786@GMAIL.COM/
EDITORINCHIEFSJMS@GMAIL.COM

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ADDRESS FOR CORRESPONDENCE

Prof. Dr. Sahibzada Masood Us Syed
Chief Editor/ Chairman Editorial Board, Sial Journal of Medical
Sciences/Children Specialist, MAJRAF Medical Center,
Commissioner Road, Sialkot
Contact # 0333-8605380/ 03006180100/ 03237845346
Email: [sahibzadadrSyed786@gmail.com/](mailto:sahibzadadrSyed786@gmail.com)
editorinchiefsjms@gmail.com



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8. Please state conflicts of interest of all listed authors.
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الحمد لله وحده، الصلوة والسلام على من لا نبي بعده

FROM THE DESK OF EDITOR IN CHIEF

Alhamdulillah 2nd issue of **Sial Journal of Medical Sciences** is ready for the researchers, faculty and students of the medical fraternity. This is volume-I, Issue II of December, 2022.

Research is the face of every professional institute and specially that for medicine. The world recognition of every member of faculty, student of medicine and the institute itself is depending upon the quality of the research.

Although in our journal most of the articles are based on the research conducted by the students of Sialkot Medical College/ Imran Idrees Teaching Hospital, Sialkot. However this is a beginning of a river, which is always very small in its origin and expands in length and enhances in flow as it covers the distance. More distance it covers more aggression is seen in the flow and more strength in its contents.

May Allah Azzawa Jall give us strength to contribute in the research for the betterment of the mankind.

Prof. Dr. Sahibzada Masood Us Syed

Chief Editor/
Chairman Editorial Board
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Review Article:

MALNUTRITION IN CHILDREN, A STUDY OF TWO DECADES WHERE DO WE STAND YET.

Prof. Dr. Sahibzada Masood Us Syed, Professor & Dean (Research)
Sialkot Medical College, Sialkot- Pakistan

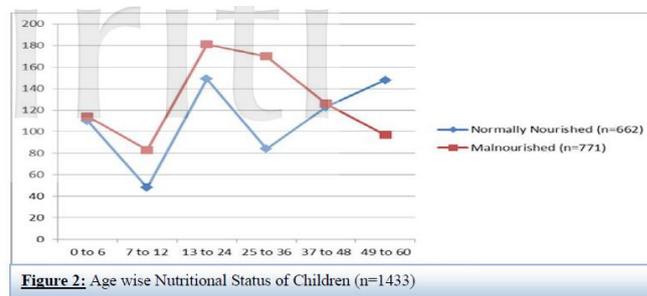
A Study with the title "Nutritional Assessment of Children under the Age of Sixty Months in District Sialkot, Pakistan" was conducted in 2003 and published in 2011 with the primary objective to assess the prevalence and degree of malnutrition in District Sialkot, Pakistan. The secondary objective was to assess the frequency of the risk factors associated with malnutrition.¹ The method of study was: A cross-sectional questionnaire-based community study was conducted in different areas of District Sialkot, from January 2003 to June 2003. Children of ages 0 to 60 months were included in the study. Frequencies and percentages of height/ length/ weight and head circumference were calculated.¹ We found that out of 1433 children (0-60 months of age) 771 (53.8%) children were suffering from malnutrition while 662 (46.2%) were normally nourished. Among the malnourished children, 243 (31.5%) were in the first degree, 265 (34.4%) were in the second degree, and 264 (34.1%) were in the third degree malnutrition according to WHO classification. Mothers of 416 (29%) children and fathers of 281 (19.6%) children had no formal education. Fathers of 1222 (85.2%) children earned less than Rs.8000/month.¹ Mothers of only 207 (14.5%) children exclusively breast fed their children for six months; and only 450 (31.4%) of the children belonged to a small family size ($n \leq 4$).¹

The conclusion of this study was that every second child under the age of five years was malnourished in Sialkot, Pakistan. Illiteracy, large family size, lack of breast feeding, and poverty were the main factors responsible for malnutrition in children of District Sialkot.¹

Duration	Breast-Fed Children (%)	Bottle-fed Children (%)
Up to 6 Months	561 (39.2)	354 (24.7)
Up to 12 Months	300 (20.9)	262 (18.3)
Up to 24 Moths	281 (19.6)	127 (8.9)

Table 1: Duration of Breast-Feeding (n=1433) or Bottle-Feeding (n=1433)

<https://www.who.int/data/nutrition/nlis/info/malnutrition-in-children>



<https://www.who.int/data/nutrition/nlis/info/malnutrition-in-children>

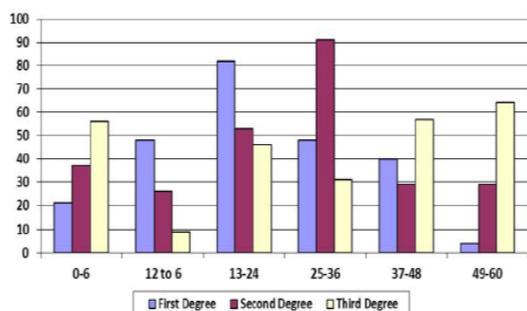


Figure 3: Age in months and the Degree of malnutrition (n=1433)

<https://www.who.int/data/nutrition/nlis/info/malnutrition-in-children>

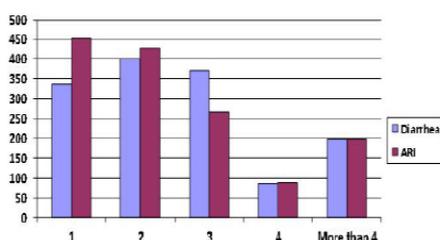


Figure 4: Episodes of Acute Diarrhea (n=1433) and Acute Respiratory Infection (ARI) (n=1433) in children

<https://www.who.int/data/nutrition/nlis/info/malnutrition-in-children>

A study with the title "Prevalence of Iron Deficiency Anemia in Laborer Children and School Children of 10-15 Years Age" was conducted in 2007 and was Published in 2007 to see the prevalence of Iron deficiency anemia in laborer children and school children of 10-15 years age and their comparison with international standards and to assess the dietary intake with special reference to iron rich foods among study population. 100 children from school and 100 from labor of same age were included. 13% school and 52% of laborer were found anaemic. 72% of school and 98% of laborer children showed iron deficiency. 24% of school and 60% of laborer children were not taking poultry one or more time weekly. Consumption of tea with meals was in more than 79% in both classes: We concluded that

prevalence of anemia is more in laborer children than school children. The need of an active effective nation-wide program for supplementation of iron to children is recommended. A large scale study is also required to get the nation-wide status of anemia in children with bio-chemical analysis and nutrition.²

Height of 78% school children and 68% of laborer children were falling below 50th percentile on standards (Government of Pakistan) height percentile charts. 89% of school children and 68% of the laborer children were below 95th percentile drawn on (Government of Pakistan) Weight percentile charts. 24% of school and 60% of laborer children were not taking poultry one or more times/week and 56% of school and 52% of laborer were taking meat (mostly beef) in their diet once or more in a week but not daily. Almost more than 40% of the children from both categories were not taking mutton, even for many months. 88% of school children and 34% of laborer were taking eggs more than one time in a week and dairy products 74% and 59% respectively. Consumption of tea with meals was found in 86% of school children (usually in breakfast) and 79% of laborer children.²

Hence our study concluded that prevalence of anemia is increasing day by day and is more in laborer children than school children.²

A 3rd study with the name of "Frequency of Anaemia in Paediatric Out Patient Department" was conducted in 2003 and published in 2004 with the objective to know the prevalence of anemia among children attending a paediatric outpatient department (OPD) in a District Headquarter Hospital (DHQ). All infants and children between the ages of 1-month to 12- years

were included to analyze their hemoglobin concentration in single day of study.

In our study out of 72 children 32 children i.e. 44.44% of total had hemoglobin of less than 10 gram percent which was cut off point according to WHO classification (for Anaemia). None of the children between the ages of 1-6 months and 6-12 years fell under the 7-gram percent level (cut off point for severe anaemia). Six children, 8.3% had severe anemia i.e. hemoglobin less than 7 G%.³

Indicators of Malnutrition are stunting, wasting, overweight and underweight. The indicators stunting, wasting, overweight and underweight are used to measure nutritional imbalance; such imbalance results in either under-nutrition (assessed from stunting, wasting and underweight) or overweight. Child growth is internationally recognized as an important indicator of nutritional status and health in populations.¹

The percentage of children with a low height-for-age (stunting) reflects the cumulative effects of under-nutrition and infections since birth, and even before birth. This measure can therefore be interpreted as an indication of poor environmental conditions or long-term restriction of a child's growth potential. The percentage of children who have low weight-for-age (underweight) can reflect wasting (i.e. low weight-for-height), indicating acute weight loss or stunting, or both. Thus, underweight is a composite indicator that may be difficult to interpret.¹

Stunting, wasting and overweight in children aged under 5 years are included as primary outcome indicators in the core set of indicators for the Global Nutrition Monitoring Framework to monitor progress

towards reaching Global Nutrition Targets. These three indicators are also included in WHO's Global reference list of 100 core health indicators.¹

These indicators are defined as follows: Stunting - height-for-age <-2 SD of the WHO Child growth standards median; Wasting - weight-for-height <-2 SD of the WHO Child growth standards median; and Overweight - weight-for-height $>+2$ SD of the WHO Child growth standards median.; Underweight - weight-for-age <-2 standard deviations (SD) of the WHO Child growth standards median.

Stunting - Children who suffer from growth retardation as a result of poor diets or recurrent infections tend to be at greater risk for illness and death. Stunting is the result of long-term nutritional deprivation, and often results in delayed mental development, poor school performance and reduced intellectual capacity. In turn, this affects economic productivity at the national level. Women of short stature are at greater risk for obstetric complications because of a smaller pelvis. Also, small women are at greater risk of delivering an infant with low birth weight, contributing to the intergenerational cycle of malnutrition, because infants of low birth weight or retarded intrauterine growth tend be smaller as adults. Wasting - Wasting in children is a symptom of acute undernutrition, usually as a consequence of insufficient food intake or a high incidence of infectious diseases, especially diarrhoea. In turn, wasting impairs the functioning of the immune system and can lead to increased severity and duration of, and susceptibility to, infectious diseases, and an increased risk of death.¹

Overweight - Childhood obesity is associated with a higher probability of

obesity in adulthood, which can lead to a variety of disabilities and diseases, such as diabetes and cardiovascular diseases. The risks for most non-communicable diseases (NCDs) resulting from obesity depend partly on the age at onset and the duration of obesity. Obese children and adolescents are likely to suffer from both short-term and long-term health consequences, the most significant being: cardiovascular diseases, mainly heart disease and stroke, Diabetes, musculoskeletal disorders, especially osteoarthritis and Cancers of the endometrium, breast and colon.¹

Underweight - Weight is easy to measure; hence, this is the indicator for which most data have been collected in the past. The mortality risk is increased in children who are even mildly underweight, and the risk is even greater in severely underweight children.¹

Malnutrition as last updated by Unicef in May 2022 and Next updated in November 2022. Stunting has declined steadily since 2000 – but faster progress is needed to reach the 2030 target. Wasting persists at alarming rates and overweight will require a reversal in trajectory if the 2030 target is to be achieved.⁴

In April 2006, the World Health Organization (WHO) released the WHO Child Growth Standards to replace the widely used National Center for Health Statistics (NCHS)/WHO reference population, which was based on a limited sample of children from the United States of America. The new standards are the result of an intensive study project involving more than 8,000 children from Brazil, Ghana, India, Norway, Oman and the United States.⁴

The Joint Malnutrition Estimates (JME) Methodology; The UNICEF-WHO-World Bank JME Working Group was established in 2011 to address the call for harmonized child malnutrition estimates that would be instrumental in benchmarking progress on child malnutrition. The first edition of the JME was released in 2012 and provided estimates for stunting, wasting, severe wasting, underweight and overweight, as well as a detailed description of the methodology (UNICEF & WHO, 2012). Since its inception, the JME outputs have comprised a harmonized country-level dataset of primary data (e.g., national estimates based on household surveys), as well as regional and global model-based estimates.⁴

The JME process for the 2021 edition involved the following steps: (i) updating of the country dataset of primary sources (e.g., national household surveys); (ii) application of a country level model for stunting and overweight to generate annual estimates; (iii) generation of regional and global aggregates for stunting, wasting, severe wasting and overweight; and (iv) consultation with countries before finalizing and disseminating the 2021 estimates.⁴

These national-level data sources are mainly comprised of household surveys – e.g., Multiple Indicator Cluster Surveys (MICS), Demographic and Health Surveys (DHS), Standardized Monitoring and Assessment of Relief and Transition (SMART) surveys, and Living Standards Measurement Study (LSMS). Some administrative data sources (e.g., from surveillance systems) are also included where population coverage is high. As of the latest review closure on 31 January 2021, the primary source dataset contained

997 data sources from 157 countries and territories, with nearly 80 per cent of children living in countries with at least one data point on stunting, wasting and overweight that is less than 5 years old.⁴

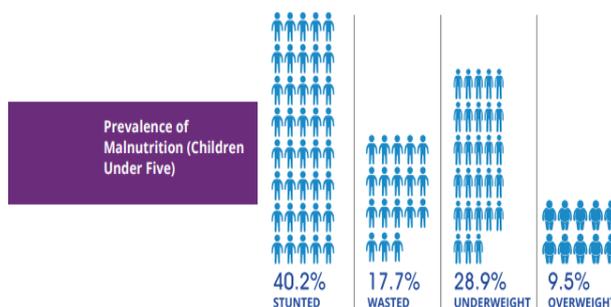
The international definition of 'normal' (two SD from the WHO standards median) defines the first threshold, which includes 2.3% of the area under the normalized distribution. Multipliers of this "very low" level (rounded to 2.5%) set the basis to establish subsequent thresholds.

Prevalence thresholds (%) for severity of malnutrition among children under 5 years

Labels	Prevalence thresholds (%) for:		
	Wasting	Overweight	Stunting
Very low	<2.5	<2.5	<2.5
Low	2.5 – <5	2.5 – <5	2.5 – <10
Medium	5 – <10	5 – <10	10 – <20
High	10 – <15	10 – <15	20 – <30
Very high	≥15	≥15	≥30

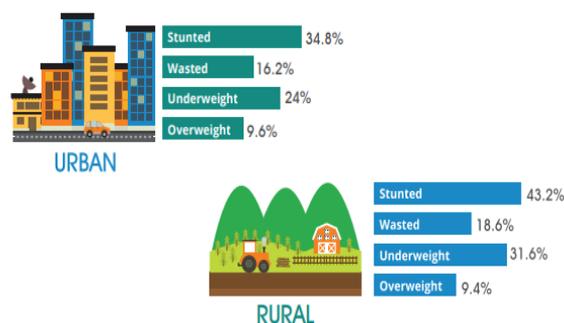
Nutritional status of children under five years of age is; stunting, wasting, underweight and overweight. In Pakistan (40%), four out of ten children under five years of age are stunted while 17.7% suffer from wasting. The double burden of malnutrition is becoming increasingly apparent, with almost one in three children underweight (28.9%) alongside a high prevalence of overweight (9.5%) in the same age group. The prevalence of overweight among children under five has almost doubled over seven years,

increasing from 5% in 2011 to 9.5% in 2018.⁵



National Nutrition Survey Pakistan published in 2018

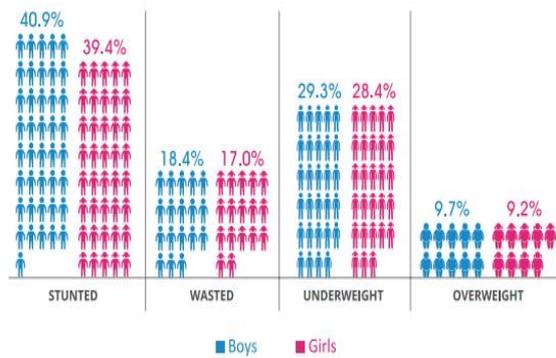
Prevalence of Malnutrition by Locality (Urban/Rural)



National Nutrition Survey Pakistan published in 2018

The pattern of distribution of malnutrition; The pattern of distribution of malnutrition among boys and girls remains the same, with boys being more affected than girls by all forms of malnutrition. Children living in urban areas suffer more from under nutrition (wasting, stunting and under-nutrition) than their peers in rural areas. Overweight affects children equally, irrespective of locality.⁵

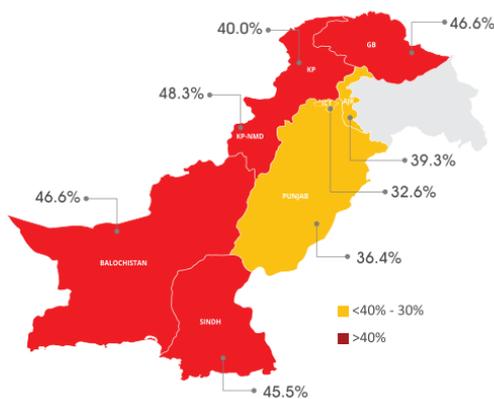
Prevalence of Malnutrition by Gender



National Nutrition Survey Pakistan published in 2018

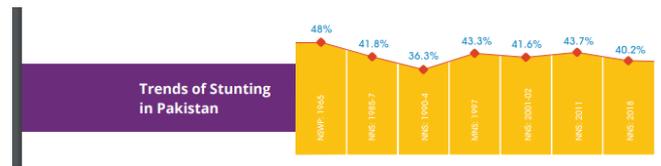
Stunting is a major problem in Pakistan, with 12 million children with low height for age. To ensure that this form of malnutrition does not continue to compromise the human capital required to sustain the socioeconomic development of Pakistan, stunting reduction is a top national priority. The national average (40.2%) masks provincial disparities. The prevalence of stunting varies from 32.6% in ICT to 48.3% in KP-NMD. The prevalence of stunting among young children in Sindh, Balochistan, KP-NMD and GB is higher than the national average.⁵

Prevalence of Stunting by Province/Region



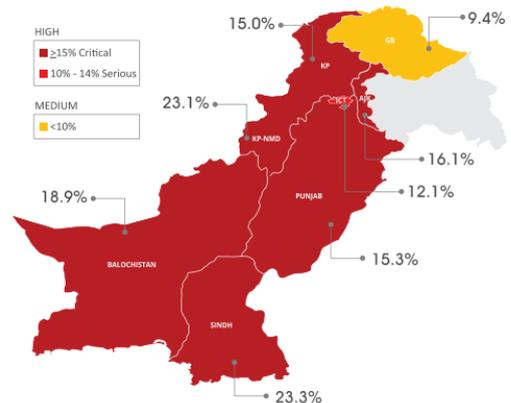
The prevalence of stunting improved from 1965 (48%) to 1994 (36.3%) but deteriorated from 2001 (41.6%) to 2011 (43.7%). In 2018, at 40.2%, it remains at a global critical level. The average annual

reduction rate is estimated at 0.5%, too slow to significantly reduce the stunting rate in Pakistan.



WASTING; Since 1997, the prevalence of low weight for height among young children is on the rise, from 8.6% in 1997 to 15.1% in 2011 and 17.7% in 2018. Despite improvements in other socioeconomic indicators, acute malnutrition remains in a state of nutrition emergency. This is the highest rate of wasting in Pakistan's history.⁵

Prevalence of Wasting by Province/Region

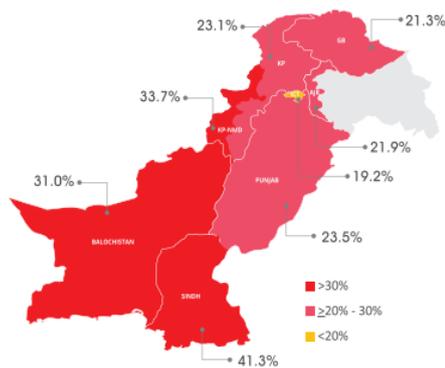


This form of malnutrition is most prevalent in Sindh (23.3%) and KP-NMD (23.1%), whereas GB and ICT have the lowest proportion of children with wasting, at 9.4% and 12.1% respectively. Sindh, Balochistan and KP-NMD have a higher prevalence of wasting than the national average. The prevalence of wasting among children under five in all provinces/regions excluding ICT and GB exceeds the emergency threshold (15%).⁵



UNDERWEIGHT; The prevalence of underweight among children under five years of age (i.e. weight for age below 2 z-score) is high in all provinces/regions, from 19.2% in ICT to 41.3% in Sindh. The prevalence of underweight is below 20% only in ICT.⁵

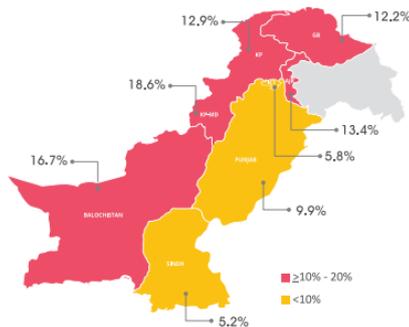
Prevalence of Underweight by Province/Region



National Nutrition Survey Pakistan published in 2018

OVERWEIGHT; The study estimated the proportion of overweight children under five to be 9.5%, twice the target set by the World Health Assembly. Prevalence is highest in KP-NMD (18.7%) and Balochistan (16.7%), and lowest in Sindh (5.2%) and ICT (5.8%). The prevalence of overweight among young children exceeds 10% in KP, Balochistan, KP-NMD, AJK and GB.⁵

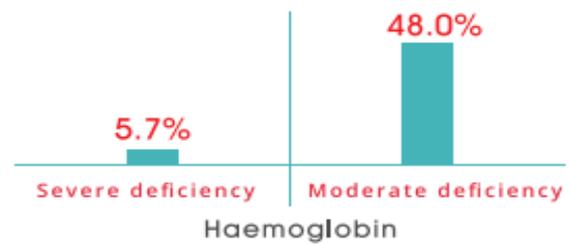
Prevalence of Overweight by Province/Region



National Nutrition Survey Pakistan published in 2018

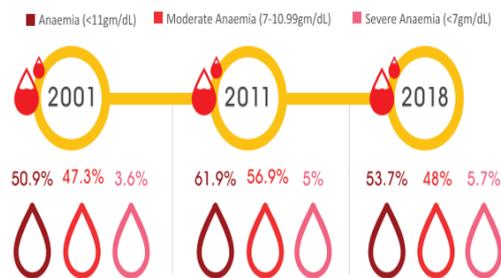
Micronutrient deficiencies in children under five years of age; More than half (53.7%) of Pakistani children are anaemic and 5.7% are severely anaemic. The prevalence of anaemia is slightly higher (54.2%) amongst boys than girls (53.1%). Children in rural areas are more likely to be anaemic (56.5%) than in urban areas (48.9%). A similar pattern was observed for severe anaemia (rural: 5.9%; urban: 5.2%).⁵

Anaemia in Children Under Five



National Nutrition Survey Pakistan published in 2018

Trends of Anaemia in Pakistan; The prevalence of anaemia has been consistently high since 2001 when it stood at 50.9%, then rose to 61.9% in 2011, and declined to 53.7% in 2018.



National Nutrition Survey Pakistan published in 2018

Please think where do we stand after two decades???

REFERENCE

1. Syed SSM et al, Nutritional Assessment of Children under the Age of Sixty Months in District Sialkot, Pakistan, JPMS, April, 2011 Vol-I, Issue-I;
<https://www.who.int/data/nutrition/nlis/info/malnutrition-in-children>
2. Syed SSM et al, Prevalence of Iron Deficiency Anemia in Laborer Children and School Children of 10-15 Years Age; 13th National Conference Hyderabad March 2nd to 4th, 2007 & 15th National Paediatrics Conference Quetta 29th Sep to 2nd Oct, 2011
3. Syed SSM et al, Frequency of Anaemia in Paediatric Out Patient Department; PPJ, 2004 Vol. 28 (1) : 35-36
4. <https://data.unicef.org/topic/nutrition/malnutrition/>
5. National Nutrition Survey, Government of Pakistan (GoP) published in 2018.

DIETARY HABITS AND LIFESTYLE PRACTICES AMONG STUDENTS OF SIALKOT MEDICAL COLLEGE, SIALKOT

Akmal Khurshid Bhatti¹, Anum Imran Butt², Syed Shah Hussain³, Tahir Butt⁴, Rabbia Nawaz⁵, Numera Malik⁶, Rukhsar Shehzadi⁷, Uswa Ahmad⁸, Saba Ghafoor⁹, Saira Anwer¹⁰, Saira Ashraf¹¹, Mahlka Iqbal¹², Irzam Bareera Ubaid¹³, Rida Fatima Mohsin¹⁴, Hira Bakhsh¹⁵, Atiya Zulfiqar¹⁶, Khizar Badar¹⁷, Zaryab Akbar¹⁸, Umer Farooq¹⁹, Umer Bakhsh Butt²⁰, Taimur Javed²¹, Hamid Saeed²², Yasir Ali²³, Momina Ali²⁴, Minahil²⁵,

ABSTRACT:

OBJECTIVE;

The objective of this study is to determine dietary habit and different lifestyle practices among University students

STUDY METHODOLOGY;

The study was conducted between 15th October to 15th December, 2020. Sampling technique was simple random sampling. We selected medical students (MBBS) studying in SMC for which we developed questionnaire based on demographic details and questions in accordance with our research.

A self-administrated questionnaire was distributed among the students of five academic years after taking their informed consent. The questionnaire comprised of four sections. The first section consisted of demographic information (age, sex, year of study, residence). The second section aimed to get knowledge of students regarding balanced diet, importance of nutritional supplements, consciousness about more sugar, caloric in diet, junk food preference and water intake. The third section aimed at determining symptoms related to malnutrition while fourth section was about the lifestyle of students in which regular exercise, stress, eating menu, sleeping hours and smoking habits.

RESULT:

Out of 131 responses, Male to Female ratio recorded was 50.4%: 49.6% as most of them were students belonging to an urban residency. Well-balanced diet was being enjoyed by 55% students where remaining 45% lack one of the nutrients in their diet. Number of students taking supplements for adequate growth and proper functioning was 27.5%. Exercise as habit was lacking in 77.6% students. Water intake was approximately 4 to 6 glass on average in majority of students. Half of students take sugar in proper amount. Although the sleeping hours were adequate but the alarming situation was that 69.2% of them were night persons. Students eat junk food quite often and half of them skip breakfast. However, calories intake in 69.51% was adequate and 49.6% students think that they perform their tasks accordingly. Smoking prevalence was far so less as 85% students were non-smokers. 94% of them think that they enjoy proper diet but according to BMI, 25% students were overweight and 5% were underweight.

Affiliations

1. Professor of Community Medicine, Sialkot Medical College, Sialkot.

2. PGR Sheikh Zayed Hospital, Lahore

3. MS Student, University of Lahore

4. Associate Professor of Community Medicine, Sialkot Medical College, Sialkot.

5 – 25 MBBS Students of Sialkot Medical College, Sialkot.

Corresponding Author:

Prof. Dr. Akmal Khurshid Bhatti

Professor of Community Medicine, Sialkot Medical College, Sialkot.

Contact # 0333-8401907

CONCLUSION;

It is concluded that majority of students in Sialkot medical college enjoy good healthy life. But there are several factors that may contribute to bad health, mental stress, and unhealthy lifestyle due to poor dietary choices at college. As they prefer junk foods, being night person and lack of proper sleep they feel stress in life.

INTRODUCTION:

College students are at risk for making poor dietary choices that can cause significant health problems. In the college, weight gain is likely same as during the transition into university life. These groups of individuals are at higher risk of developing unhealthy eating behaviors with inadequate nutrient intake.

Majority of undergraduate students eat at college dining facilities with limited healthy food options. Being medical students, it is often hard for students to manage time so students adapt unhealthy lifestyle and eating behaviors, some of these behaviors include irregular meals, not eating breakfast, reduced fruit and vegetable intake and increased consumption of junk food. Apart from the change in dietary habits, poor exercising habits, bad time management and the increasing amount of stress from school work also contribute to weight gain. Moreover, if students do not attain adequate nutrition daily, a decrease in academic or physical performance can result.

The opening of numerous fast-food stores, cafés and restaurants provide university students more opportunities to dine outside instead of consuming self-prepared meals. The improper eating habits developed during this stage of life can continue into adulthood.

Studying the change in dietary habits and lifestyle practices among university students can help educate them on the importance of preventing early development of obesity by adopting healthy lifestyles. It is hoped

that this study can increase the awareness of healthy lifestyle and eating among young adults, thereby reducing the risks of developing chronic diseases.

The purpose of the present quantitative study was to investigate college students' eating habits and knowledge of nutritional requirements for health.

OBJECTIVE

The objective of this study is to determine dietary habit and lifestyle practices among students of SMC.

STUDY METHODOLOGY:

A Cross sectional study was conducted at Sialkot Medical College, Sialkot from 15th October to 15th December, 2021. Over 131 students through probability sampling by Simple Random Sampling technique. We selected medical students studying in SMC. We developed questionnaire based on demographic details and questions in accordance with our research. The population is divided into 5 strata according to the year of study. All willing medical students of MBBS attending Sialkot Medical College, regardless of gender were included in this study. All non-willing and non-cooperative students were excluded.

A self-administered questionnaire was developed and distributed to 300 students. Informed consent was taken and students were requested to fill the questionnaire honestly. All the students were asked to return the questionnaire within three days. Confidentiality was ensured. Approval from the ethical committee of SMC was taken. The questionnaire was divided into four sections.

- Section 1: It was related to demographics (age, sex, year of study, residence)
- Section2: It was aimed to get the knowledge of students regarding balanced diet, importance of nutritional supplements, consciousness about more sugar, caloric intake, junk food preferences and water intake.
- Section 3: It aimed at determining symptoms related to malnutrition.
- Section 4: It aimed at determining lifestyle of students which involve regular exercise, stress, eating menu and sleeping hours and smoking habits.

The entire questionnaire was analyzed. Frequencies and percentages were taken and Chi Square test was applied to demonstrate association between different variables. Results were presented in the form of charts and graphs.

RESULTS

Table 1: Demographic details of Subjects.

Demographic	Frequency	Percentage
AGE		
18-20 year	27	20.6
21-25 year	100	76.33
26 and more	4	3.0
Total	131	100
GENDER		
Males	68	51.9
Females	63	48.1
Total	131	100
YEARS OF STUDYING		
1st year	10	7.6
2nd year	10	7.6
3rd year	26	19.84
4th year	70	53.43
5th year	15	11.45
Total	131	100 %

Intake of Junk food per week

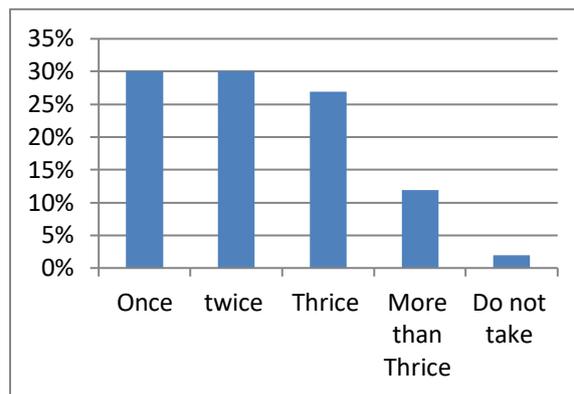


Figure 1: Number of times junk food taken

30% take junk food once a week while 30% twice a week, however 26.9 take thrice a week and 11.1% take very frequently junk food out of them 2% do not take junk/ fast food.

Proper Exercise

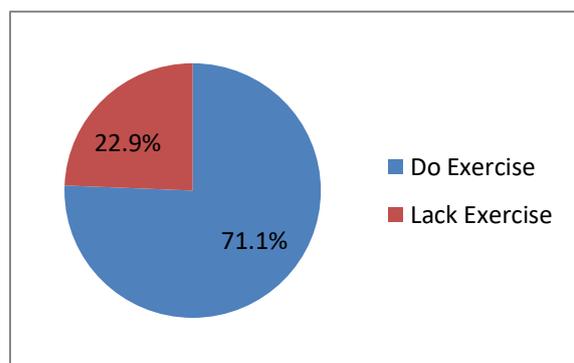


Figure 2, Number of students who perform exercise

101 (77.1%) students out of 131 perform exercise regularly while remaining 30 (22.9) don't do exercise.

Intake of proper Calories per day as required according to age, sex, height and weight.

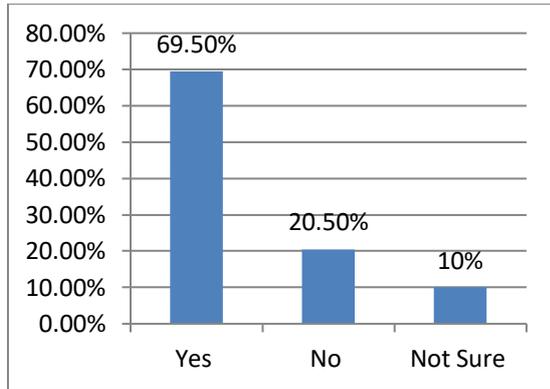


Figure 3: Regular Calories intake

69.5% which means 91 out of 131 students take proper calories daily while 20.5% which means 27 out of 131 don't take proper calories and remaining 10% are not sure about their caloric intake.

Frequency of Smoking

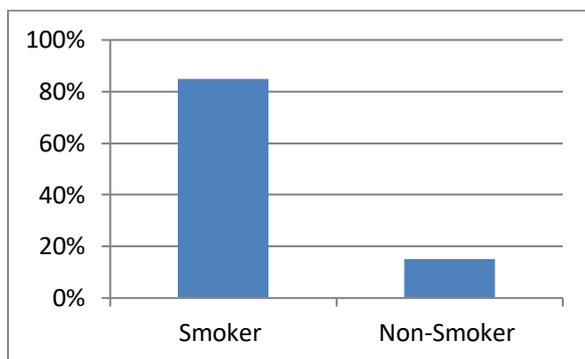


Figure 4, No of students who are non-smokers and smoker

85% students are non- smokers and 15% are smokers.

Knowledge about proper diet

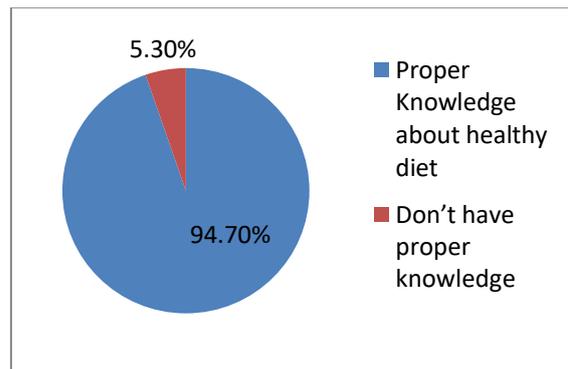


Figure 5, No of students have proper knowledge about healthy diet while remaining don't have

94.7% students have proper knowledge about healthy diet while remaining don't have

Daily Water Intake

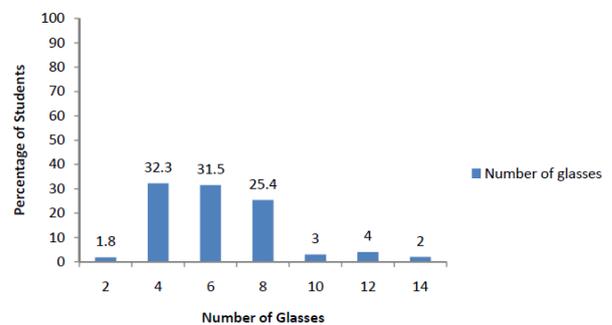


Figure 6, No of students daily water intake

Above findings show that only 25.4% (n= 33) students take 8 glass of water daily while 32.3% (n=42) take 4 glass of water and 31.5% (n=41) take 6 glass of water daily.

Proper daily Breakfast

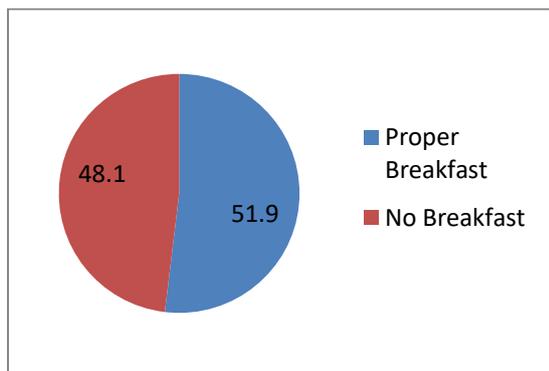


Figure 7, No of students who take proper breakfast regularly or not

51.9% that is 68 by 131 students take proper breakfast regularly while remaining 48.1% (63 by 131) don't.

Weight of students in percentage

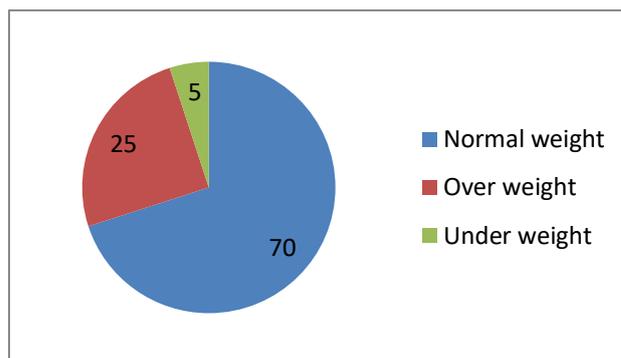


Figure 9, showing weight of students

Weight	%age
Normal weight	70
Over weight	25
Under weight	5

70% of the students were of normal weight, while 25% of students were overweight and 5% were underweight according to the BMI (< 18.5 under wight, > 25 over weight and rest were normal)

Nutritional Supplements: 72.5% (n=95) take nutritional supplements to fulfill their body requirements while 27.5% (n=36) do not take any nutritional supplements. Stress in daily living: 70.8% (93 by 131) feel stress in daily living while 29.2% (38 by 131) are happy and satisfied

Sleeping Habits

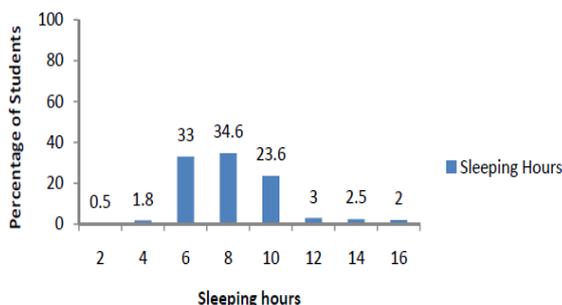


Figure 8, No of students who are taking proper sleep in day/ night

69.2% students are night persons, which mean they perform most of their activities at night. While, 30.8% prefer day for their daily tasks. Apart from day and night, we also calculated data for sleeping hours and we found out that 34.6% sleep 8 hours daily, 33% 6 hours daily, 26.3% sleep 10 hours daily. While, remaining sleep either less than 6 or more than 10 hours per day depending upon their activities.

DISCUSSION

Majority of our students of SMC belong to urban areas, they have been adopting the Western choices and they are unaware of their effects. During the last few decades, the Kingdom of Saudi Arabia (KSA) experienced rapid socio-cultural changes caused by the accelerating economy in the Arabian Gulf region⁸. That was associated with major changes in the food choices and eating habits which, progressively, became

more and more "Westernized". Such "a nutritional transition" has been claimed for the rising rates of overweight and obesity which were recently observed among Saudi population. So a research was conducted among college students in Saudi Arabia on obesity and eating habits and it was published in January 2010. The objectives of the current work were to determine the prevalence of overweight and obesity in a sample of male college students in KSA and to determine the relationship between the students' body weight status and their eating habits. Total of 357 male students aged 18-24 years were randomly chosen from College of Health Sciences at Rass, Qasim University, KSA for the present study. A Self-reported questionnaire about the students' eating habits was conducted. Results indicated that 21.8% of the students were overweight and 15.7% were obese. The total body fat exceeded its normal limits in 55.2% of the participants. The most common eating habits encountered were eating with family, having two meals per day including breakfast, together with frequent snacks and fried food consumption. Vegetables and fruits, except dates, were not frequently consumed by most students. Findings of their study and our research suggest the need for strategies and coordinated efforts at all levels to reduce the tendency of overweight, obesity and elevated body fat, and to promote healthy eating habits in their youth.

Medical students are more aware of nutritional values and they know what actually a healthy diet mean but as they have to face stress and burdened by study system they prefer what is available for them. Lack of choices in the college additionally made them limited to think over.

A group of researchers studied dietary habits and lifestyle practices among university students in University Brunei Darussalam in March 2018¹. The aim of this study was to find out changes in lifestyle and dietary habits during this transition to university life. Data was collected from January to April 2016. Total 303 students were recruited during study period, of which 27.4% were male, and 72.6% were females. The prevalence of overweight/obesity among this population of university students was 28.8% and affected males and females equally (28.9% versus 28.6%). Although most university students reported having good knowledge of the food pyramid and balanced nutrition, the majority did not adhere to and practiced such healthy eating habits. Most of them skipped breakfast, snacked frequently, consumed fried food often and had a low intake of daily fruits and vegetables. The transition from homemade food to increased dependence on outside food such as fast food is common among the respondents especially among the overweight/obese population. Physical activity was low among students and less than WHO recommended levels. Almost 72.5 % students take supplements and 94.7 percent have proper knowledge about well-balanced diet including vegetables, fruits, protein etc but only 55 percent take proper diet¹. The majority of students don't exercise regularly and the available opportunities to them are mostly junk. 32% students take junk food once in a weekend the other ratio takes twice or thrice in a week while a minimal percentage of students avoid junk food⁹. The findings of the Saudi study and Brunai study are almost similar to our study. Age 18-25 coincides with a research which was published in February 2005 on Nutritional knowledge, food habits and health attitude of Chinese university

students⁵. The study showed that 80.5% of students had a normal BMI and 16.6 % of students were underweight with the prevalence of BMI>30 obesity being very low in this study sample which is in agreement with our study. Young Chinese female students had a greater desire to be thinner (62.0%) than males (47.4%). Majority of students were classified into the normal BMI group, with the prevalence of BMI >30 obesity being very low in this study sample. Habits involving regular eating patterns and vegetable intake were found and represent practices that ought to be encouraged. Snack patterns in Chinese students were very similar to the, traditional eating pattern, although diets are changing rapidly in China and other low-income countries.

Our research shows that the maximum number of students has healthy meals and the others do not may be due to some environmental issues or food choices. 25% of students drink 8 to 10 glasses of water daily and 10 % students has less than 4 glasses intake of water. A research was conducted on social and psychological factors affecting eating habits among university students in a Malaysian medical school. It was published in 2012⁹. A cross sectional study was conducted among 132 medical students of pre-clinical phase at a Malaysian university. A self- administered questionnaire was used which included questions on socio-demography, anthropometry, eating habits and psychosocial factors. Mean (\pm SD) age of the respondents was 22.7 (\pm 2.4) years and (the age) ranged from 18 to 30 years. More than half had regular meals and breakfast (57.6% & 56.1% respectively). Majority (73.5%) consumed fruits less than three times per week, 51.5% had fried food twice or more a week and 59.8% drank water

less than 2 liters daily. Eating habits score was significantly low among younger students (18–22 years), smokers, alcohol drinkers and those who did not exercise. ($p<0.05$). Four psychological factors out of six, were significantly associated with eating habits ($p<0.05$). In multivariate analysis, age and 'eating because of feeling happy' were significantly associated with eating habits score ($p<0.05$). Most of the students in this study had healthy eating habits. Social and psychological factors were important determinants of eating habits among medical students age of this study and our study matches it in all respects.

52% students take their breakfast daily which depicts to a healthy ratio in a tough routine for medical students. Medical students in addition to tough routine in SMC are enjoying a healthy lifestyle as the big ratio of students 95% are aware of nutritional values and benefits concludes that they are handling their physical matters as well. 30.8% students are day persons otherwise 69.2% percent students are night persons which disturbs their life cycle. It has drastically increased the risks of unhealthy lifestyle which can lead to certain harms to their body. Only one study from USA which is probably the first longitudinal study. Research was conducted at College Of Nursing, University of Cincinnati, USA on health status and lifestyle habits of US medical students. It was longitudinal study data were collected from 2006-2011 and analyzed in 2013-2014 with SAS version 9.3. It was published in 2016. The aim of study was to assess changes in students' health and lifestyle behaviors during medical school. Data of 125 medical students (55 males and 70 females; 99 Caucasians, 4 African Americans, and 22 Asians) were enrolled in the study, reflecting 46.5 percent (67/144) of the 1st-year students in 2006 and 40.8 percent

(58/142) of the 1st-year students in 2007. Seventy-eight percent (97/125) of the enrolled participants completed both visits. Best of our knowledge, this is the first longitudinal study that assessed anthropometric and metabolic measures and lifestyle behaviors of medical students. Students' clinical measures and lifestyle behaviors remain generally healthy throughout medical school; yet some students' exhibit cardio metabolic risk, and diet and activity habits not aligned with national recommendations, the number of students in American study was 125 and of our study were 131, almost same and in the both studies the students were from medical background.

BMI Body Mass index is a simple calculation using a person's height and weight. The formula is $BMI = \frac{kg}{m^2}$ where kg is a person's weight in kilograms and m^2 is their height in meters square. A BMI of 25.0 or more is overweight, while the healthy range is 18.5 to 24.9. BMI applies to most adults 18-65 years. One study was conducted in Sudan in which a group of researchers studied correlation between physical activity, eating behavior and obesity among Sudanese medical students and their research was published in February 2019^[3]. The aim of this study was to determine the relationship between physical activity, eating behavior, and obesity among medical students at Al-Neelain University. This was a cross sectional study conducted among 216 medical students at Al-Neelain University selected by stratified random sampling. Data were collected by self-administered questionnaire, which included background data. The prevalence of obesity among students was 6.5% and overweight was 22.2%. The study showed that 44.9% of medical students had low activity level while 32% of students had moderate activity level and 23.1% had high physical

activity level. There was no significant relationship between physical activity and body mass index (BMI) in this study. The common eating pattern among students was controlled eating (45.8%). There was significant relationship between eating behaviors and BMI. The study revealed eating habits has stronger impact on BMI than physical activity. Disturbing figures regarding overweight and low physical activity among medical students, identified in this study, encourages implementation of health programs emphasize on importance and benefits of physical activity and eating habits in medical curricula.

In our study we also selected students from different class of MBBS like in the Cameron study where students of different department were selected.

Research regarding nutritional status in college students in Western Maharashtra, India, has been found lacking. Therefore, this study was undertaken to ascertain the dietary habits in the undergraduate students of a health institute⁴. The cross-sectional survey was conducted for 100 medical students at a health university. A total of 130 students comprising 74 girls and 56 boys from the Health University participated in the study. All the students were staying in the hostel of the university. Eighty-three (68%) responders out of 130 said that they had breakfast daily. Daily consumption of fruits and vegetables was only 1–2 portions for 98 (75%) of the participating students. Out of 130 Students studied regarding snacks preference, fried snacks were the most popular with 51 (39%) students, followed by various. Bakery items by 30 students. Only 9 (7%) students preferred salads and soups for snacking.

A research was conducted among students of a private medical college university

Karachi in February 2009⁷. The objective of this study was to determine the dietary habits and lifestyle of the students of Baqai Medical University. A total of 384 medical students participated in this study. Out of the total participants, 53.4% were male and 46.6% were female students. The mean age was 20 +/-

1.58 years. The average income of the household of students was 50,000 Pakistani rupees per month. Only 7% students were tobacco users. About 33% students had a history of diabetes mellitus among their parents. Nearly ninety-seven percent reported consumption of junk food while 60% reported use of whole grain food in their diet. Seventy percent students walked 30 minutes and 47% exercised daily. According to the body mass index, 58.3% students were of normal weight and 41.7% were overweight. No significant difference was found among male and female students when dietary habits and life style were compared by sex. Junk food and soft-drink consumption was associated with being overweight. Eating whole grain food and doing exercise showed a protective association against overweight. It was concluded in the research that Unhealthy lifestyle and poor dietary habits were highly prevalent in the overweight study population. Type-2 diabetes mellitus was common among parents and grandparents of the students making them prone to this disorder.

LIMITATIONS:

As we know that in recent years, we all are facing corona pandemic, so it was very difficult for us to collect data from all the students. We made online forms and send them to fill it out. On serious attitude of students in filling the form is also an important limitation. Since it was a self-administrated questionnaire, students might

have exaggerated certain features. This study was carried out in a single institute comprising of only medical students. The findings of this study must be deduced in a practically wise and shrewd manner in the light of these limitations and can't be generalized.

RECOMMENDATIONS

Students should properly take their meals and exercise regularly to become strong enough to fight with their busy schedules. An unbalanced diet can lead to negative outcomes including weight gain, diabetes, food neo-phobia, obesity etc. However the role of dietary habits on weight gain and other health measures in students need to be further explored. Our findings highlight the need for university nutrition policies and nutrition service providers to recognize the real nutrition needs of students. However the role of dietary habits and lifestyle on weight gain and other health measures in students' needs to be further explored.

CONCLUSION

In this study, it is concluded that majority of students in Sialkot medical college enjoy good healthy life. But there are several factors that may contribute to bad health, mental stress, and unhealthy lifestyle due to unsatisfactory hygienic campus environment. As they prefer junk foods, being night person and lack of proper sleep they feel stress in life.

REFERENCES

1. Yun TC., Ahmad SR., and Quee DKS.; Dietary Habits and Lifestyle Practices among University Students in University of Brunei Darussalam, 2019
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6422551/>
2. Loveline L. Niba, Mary B. Atanga &

- Lifoter K. Navti; A cross sectional analysis of eating habits and weight status of university students in urban Cameroon by published in July 11th, 2017
<https://bmcnutr.biomedcentral.com/articles/10.1186/s40795-017-0178-7>
3. Yousif MM., Kaddam LAG. and Humeda HS, Correlation between physical activity, eating behavior and obesity among Sudanese medical students Sudan; BMC Nutrition, 2019; volume 5, Article number: 6 Cite this article. <https://bmcnutr.biomedcentral.com/articles/10.1186/s40795-019-0271-1>
 4. Vibhute NA., Baad R., Belgaumi U., Kadashetti V., Bommanavar S. and Kamate W.; Dietary habits amongst medical students: An institution-based study; Journal of Family Medicine and Primary Care, January 2018; 7(6):1464. https://www.researchgate.net/publication/329393506_Dietary_habits_amongst_medical_students_An_institution-based_study
 5. Sakamaki R., Toyama K., Amamoto R., Liu CJ. and Shinfu N.; Nutritional knowledge, food habits and health attitude of Chinese university students – a cross sectional study- Feb 2005; https://www.researchgate.net/publication/8030006_Nutritional_knowledge_food_habits_and_health_attitude_of_Chinese_university_students-A_cross_sectional_study
 6. Brehm BJ., Summer SS, and Heubi JE.; Health Status and Lifestyle Habits of US Medical Students: A Longitudinal Study by 2016
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5423333/>
 7. Nisar N. et al.; Dietary habits and life style among the students of a private medical university Karachi J Pak Med Assoc. 2009 Feb.
 8. Ganasegeran K., Al- Dubai S.AR., Qureshi A.M., Al-Abed AA., Rizal AM., Al-junid SM.; Social and psychological factors affecting eating habits among university students in a Malaysian medical school: a cross-sectional study Nutrition journal, 2012; 11 (1), 1-7, https://scholar.google.com.pk/scholar?q=research+related+dietary+habit+and+obesity+in+university+students&hl=en&as_sdt=0&as_vis=1&oi=scholar#d=gs_qabs&u=%23p%3D0sAFBUdXUHQJ
 9. Al-Rethaiaa AS., Fahmy AEA., Al-Shwaiyat NM.; Obesity and eating habits among college students in Saudi Arabia: a cross sectional study- Nutrition journal, 2010; 9 (1), 1-10
https://scholar.google.com.pk/scholar?q=research+related+dietary+habit+and+obesity+in+university+students&hl=en&as_sdt=0&as_vis=1&oi=scholar#d=gs_qabs&u=%23p%3D0sAFBUdXUHQJ

FACTORS RELATED TO POSTPARTUM DEPRESSION AMONG WOMEN IN SIALKOT

Tahir Butt¹, Shahrukh Farrukh², Sahibzada Masood us Syed³, Rehana Mushtaq⁴, Ahmed Ali⁵, Alina Saleem⁶, Asif Arshad⁷, Atif Javaid⁸, Hadiqa Iftikhar⁹, Haris Ullah Arshi¹⁰, Kawish Ah\$med¹¹, Mahnoor Arif¹², M.Khalil ur Rehman¹³, Zahra Mudasar¹⁴, Zanib Ahsan¹⁵

ABSTRACT:

OBJECTIVE: To assess the factors related to postpartum depression among women in Sialkot

METHODS: A cross-sectional multi-centers study conducted in 10 hospitals like Imran Idrees Teaching Hospital, Idrees Hospital, Islam Centre Hospital, Bashir Hospital, Allama Iqbal Memorial Teaching Hospital, Government Sardar Begum Civil Hospital, Tehsil Headquarter(THQ) Pasrur, Combined Military Hospital(CMH), Dr. Abdul Sattar Hospital, Amina Hospital, located in Sialkot, Punjab, Pakistan from June 2022 - August 2022. According to Edinburgh postnatal depression scale the women were interviewed from different hospitals of Sialkot. The depression in participants was graded as mild, moderate and severe based on the Edinburgh postnatal scale score.

RESULTS: 200 participants were included in the study; 20 each belonging to 10 different hospitals. The evaluations revealed that 134 out of 200 participants suffered or likely have a chance to suffer from depressive illness. Among them 22% showed possibility of depression, 13% showed fairly high possibility of depression and 27% cases showed probable depression. However in 38% of women no sign and symptoms of postpartum depression (according to Edinburgh postnatal depression scale) were seen. High risk factors responsible for possible postpartum depression among women were C-section (74%) prevalence, previous abortion/miscarriage history (38.7%), unplanned pregnancy (35.5%) and others. High risk factors that caused fairly high possibility of postpartum depression among women were C-section (76.9%), Dissatisfaction with in-laws (53.8%) depression during first trimester (46.1%), financial issues (75%), abortion history (30.8%) and others. Factors related to probable depression were untreated depression during pregnancy, any mental disorder, domestic violence, C-section, dissatisfaction with in-laws and financial issues.

CONCLUSION: There is high prevalence of PPD among women in Sialkot (62%). The wide range of factors include untreated depression during first trimester, unplanned pregnancy, dissatisfaction with in-laws, antidepressants taken before pregnancy, bad gynecological history, mode of delivery, discrimination between baby boy/girl and others.

KEYWORDS: Postpartum Depression, Edinburgh postnatal depression scale, Risk factors.

Affiliations

1. Associate Professor of Community Medicine, Sialkot Medical College, Sialkot

2. Medical Officer BHU, Ludhaky Uchy

3. Professor & Dean Research & Academics, Sialkot Medical College, Sialkot

4 – 15. MBBS Students of Sialkot Medical College, Sialkot

Corresponding Author:

Dr. Shahrukh Farrukh

Address: 143 HH , street 6 , phase 4 DHA , Lahore.

Telephone: 0332-0467947

Email: srfim1994@gmail.com

INTRODUCTION:

Depression is often observed as earnest medical ailment that negatively impacts how you feel, think and act. Depression causes feeling of sadness, loss of interest in activities (once you enjoyed). Postpartum means the time after childbirth.

Depression suffered by a mother after childbirth, typically arising from the combination of hormonal changes, psychological adjustment to motherhood, and fatigue results in postnatal/postpartum depression. Postpartum depression (PPD) is the incapacitating but treatable mental malady that represents one of the frequent complications of child bearing.¹

In the American Psychiatric Associations diagnostic and Statistical Manual of Mental Disorder 5th edition (DSM-5) PPD was included as major depressive episode "with Peripartum onset if onset of behavior symptoms occurs during parturiency or within 4 weeks following childbirth."² PPD affects up to 1 in 7 women (about 15%). Symptoms of PPD often include sleep disturbance, anger, impatience, having devastated feelings and obsessional pre-occupation with babies' health and feeding suicidal ideation and apprehensions about causing harm or impairment to the baby have been reported³

The predicted prevalence of PPD ranges from 6.5 to 12.9% or even higher in developing countries^{1,4}. The universal prevalence of PPD was found to be approximately 17.22% (95% CI 16.00-18.51) in largest meta-analysis of PPD⁵. Studies conducted in Malawi, South Africa and Ethiopia identified a high prevalence of

PPD 26 %, 34% and 33% correspondingly^{6,7,8}. Southern Asia, Western Asia, Eastern Asia, South Eastern Asia having the PPD prevalence 22.32%, 19.83%, 17.39% and 13.53% respectively. Prevalence in New Zealand, Ghana, Egypt, Korea, Afghanistan, India and Pakistan is 10.58%, 3%, 22.99%, 9.29%, 60.93% ,18.81% and 35.45% respectively.⁵ In rural areas, prevalence of PPD in civilized countries is (21.5%) which is less than that of developing countries (31.1%)⁹. The dominant risk factor is untreated depression and anxiety during pregnancy³. After childbirth PPD was contributed by rapid decrease in the reproductive hormones, despite a specific pathology is unknown. Additional to hormone changes¹⁰ genetic factors^{11,12} negative life events^{1,13} and others contribute to postpartum depression. Diminished functioning, increases the risk of marital conflicts, impaires infant caregiver attachments and creates flaws in emotional, social and cognitive development of a child¹⁴ in serious cases may leads to suicide or infanticide.^{15,16} as the results of PPD.

MATERIALS AND METHODS:

To assess the factors related to postpartum depression among women in Sialkot, A cross-sectional multi-centers study was conducted among women who were in postpartum period with a sample size of 100 women.

Edinburgh postnatal depression scale was interviewed among 20 women from each hospital (total 10 hospitals from where data was collected). The participants were selected on the basis of Systematic Random Sampling. However, the women who refused

to be a part of the study were excluded and replaced by volunteer ladies.

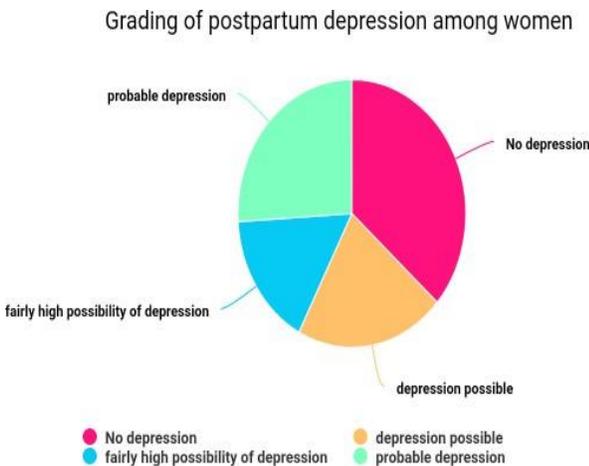
The response forms were then scored and graded according to Edinburgh postnatal depression scale grading criteria. Total score 30.

1. Less than 8 showing no depression
2. 9-11 points showing possible depression
3. 12-13 points showing fairly high depression
4. 14 or higher scores show probable depression

5. RESULTS:

There were 200 participants in the study; 20 each belonging to 10 different hospitals. The evaluation revealed that 134 out of 200 participants were suffered or likely had a chance to suffer from depressive illness. Among them 22% showed possibility of depression, in 13% fairly high possibility of depression was evaluated and 27% cases revealed probable depression. However, 38% women confirmed depression according to Edinburgh postnatal depression scale.

Figure-1



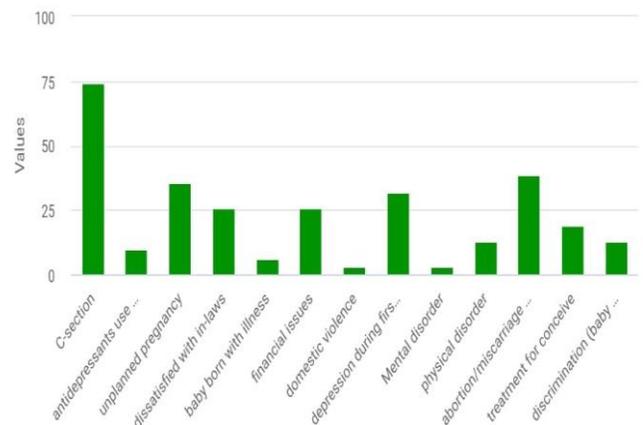
Different factors responsible for different grades of depression were evaluated and given in the table with their relative frequencies.

High risk factors responsible for possible postpartum depression among women are C-section (74%) prevalence, previously abortion/miscarriage history contributes 38.7%, unplanned pregnancy 35.5% and others. All factors with their relative frequencies are shown below.

Figure-2

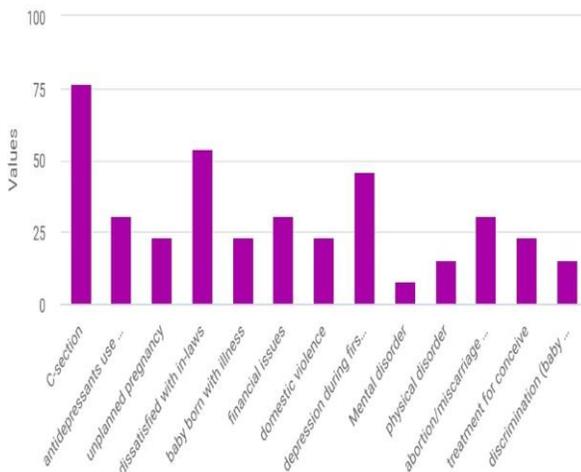
Sr. No.	Features	Depression possible	Fairly high possibility of depression	Probable depression
1.	C-section	74%	76.9%	50%
2.	Antidepressants used before pregnancy	9.6%	30.8%	25%
3.	Unplanned pregnancy	35.5%	23.1%	35%
4.	Dissatisfied with in-laws	25.8%	53.8%	75%
5.	Baby born with illness	6.4%	23.1%	
6.	Financial issues	25.8%	30.8%	80%
7.	Domestic violence	3.2%	23.1%	60%
8.	Depression during 1 st trimester	32.2%	46.1%	90%
9.	Mental disorder	3.2%	7.7%	23%
10.	Physical disorder	12.9%	15.38%	11%
11.	Abortion / miscarriage history	38.7%	30.8%	30%
12.	Treatment for conception	19.3%	23.1%	11%
13.	Discrimination (baby boy/ girl)	12.9%	15.38%	100%

Figure-3



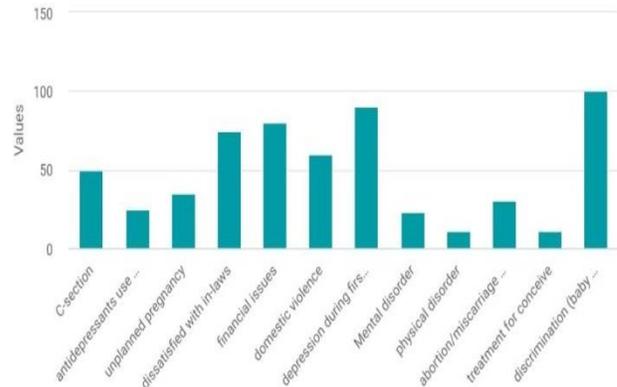
High risk factors that cause fairly high possibility of postpartum depression among women are cesarean section (76.9%), Dissatisfaction with in-laws (53.8%), depression during first trimester (46.1%), financial issues (75%), abortion history (30.8%) and others. All factors with their relative frequencies are shown in the graph.

Figure-4



Factors related to probable depression are untreated depression during pregnancy, any mental disorder, domestic violence, cesarean, dissatisfaction with in-laws and financial issues etc.

Figure-5



DISCUSSION:

PPD affects women all around the world. So, it's a vital public health issue ¹⁷. Prevalence rate of PPD is 28-63% among Pakistani women. ¹⁸ Studies conducted by us in different hospitals of Sialkot City showed that out of 200 subjects, 134 subjects were suffering from depressive illness. Among them 22% showed possible postpartum depression, 13% fairly high possibility of postpartum depression and 27% cases revealed probable postpartum depression. Meanwhile 38% childbearing women showed no sign and symptoms of postpartum depression.

Studies conducted in Peshawar showed mild 27%, moderate 15.4% and high risk patients 12.9% for developing postpartum depression ¹⁹. In Karachi PPD prevalence within the time span of one year of childbirth was 28.8% (77 women; 95% C.I.: 23.4 to 34.2). ²⁰ In Rawalpindi 56% mothers were having PPD. ²¹ Comparing the results of these 4 cities of Pakistan which had showed that prevalence of PPD among

women has attained the alarming situation, which places Pakistan among the highest in Asia.¹⁸

In our studies, 65% women belongs to Urban areas who are suffering from PPD and 35% belongs to rural areas, so prevalence of PPD is higher among the women of urban areas. Age is considered as an important factor. Our study showed 35% women having age ranging from 18-25 years, 55% women in 26-35 years and 10% in between 36-55 years who are suffering from PPD. So, middle aged women are more prone towards development of PPD in Sialkot. Analysis of studies conducted in Peshawar showed age ($p < 0.001$), education ($p < 0.001$), socioeconomical class ($p = 0.013$), Abortion/miscarriage history ($p = 0.009$) and mode of delivery ($p = 0.011$).¹⁹ PPD development among women having bad gynecological history had higher ratios such as 24%.

Any disability in child also leads to development of postpartum depression among mothers (9%). Studies in Karachi showed disability in child is related to PPD among mothers.²⁰ C-section is a trend now a days but it also increases the risk of development of postpartum depression among mothers (41%). Women having C-section were more depressed than those having vaginal delivery.²² Women belonging to low socio-economic class had higher risk of developing postpartum depression. In Rawalpindi, studies showed that those women who belong to lower socio-economic class had more psychological symptoms during and also after pregnancy.²¹ Discrimination between baby boy and baby

girls in most areas of Pakistan leads to development of PPD among mothers. Strong association was found between giving birth to female infant and development of PPD in South Asia.²³ Relationship with in-laws is another factor which leads to development of depression among women.²³

Behavior of different members of in-laws influence the health of mother and infant and it has close relationship with development of PPD among mothers.²⁴

In developing countries, major issue is financial problems in families which builds up stress²⁵ and leads to PPD (75%) according to our data. Domestic violence and abusive behavior of husband strongly influence mother's health^{26,27,28}. Data analysis showed 9% women suffering from PPD are the victim of domestic violence.

Unplanned pregnancies is also involved in development of PPD^{29,30,31}. Out of 63% of mothers having PPD 18% have unplanned pregnancy.

CONCLUSION:

There is high prevalence of PPD among women in Sialkot (62%). The wide range of factors include untreated depression during first trimester, unplanned pregnancy, dissatisfaction with in-laws, antidepressants taken before pregnancy, bad gynecological history, mode of delivery, discrimination between baby boy/girl, financial issues and others.

RECOMMENDATION

Increasing preferred PPD is also alarming for the policy makers to recognize the growing prevalence of PPD earlier and develop a sustainable public health strategy like counselling desks that are an immense need of hour in hospitals and other social setups.

REFERENCES:

1. Howard LM, Molyneaux E, Dennis C-L, Rochat T, Stein A, Milgrom J. Non-psychotic mental disorders in the perinatal period. *Lancet* 2014;384:1775-1788
2. American Psychiatric Association. Diagnostic and statistical manual of mental disorders, 5th ed.: DSM-5. Arlington, VA: American Psychiatric Publishing, 2013.
3. Wisner KL, Sit DKY, McShea MC, et al. Onset timing, thoughts of self-harm, and diagnoses in postpartum women with screen-positive depression findings. *JAMA Psychiatry* 2013;70:490-498
4. Gaynes BN, Gavin N, Meltzer-Brody S, et al. Perinatal depression: prevalence, screening accuracy, and screening outcomes. *Evid Rep Technol Assess (Summ)*2005:1-8
5. Wang, Z., Liu, J., Shuai, H. et al. Mapping global prevalence of depression among postpartum women. *Transl Psychiatry* 11, 543 (2021). <https://doi.org/10.1038/s41398-021-01663-6>
6. Tomlinson M, Cooper P, Murray L. The mother–infant relationship and infant attachment in a south African peri-urban settlement. *Child Dev.* 2005;76(5):1044–54.
7. Harpham T, Huttly S, De Silva MJ, Abramsky T. Maternal mental health and child nutritional status in four developing countries. *J Epidemiol Community Health.* 2005;59(12):1060–4.
8. Stewart RC, Umar E, Kauye F, Bunn J, Vokhiwa M, Fitzgerald M, et al. Maternal common mental disorder and infant growth—a cross-sectional study from Malawi. *Matern Child Nutr.* 2008;4(3):209–19.
9. Villegas L, McKay K, Dennis CL, Ross LE. Postpartum depression among rural women from developed and developing countries: a systematic review. *J Rural Health.* 2011;27:278–88.
10. Mehta D, Newport DJ, Frishman G, et al. Early predictive biomarkers for postpartum depression point to a role for estrogen receptor signaling. *Psychol Med* 2014;44:2309-2322
11. Couto TCE, Brancaglioni MYM, Alvim-Soares A, et al. Postpartum depression: a systematic review of the genetics involved. *World J Psychiatry* 2015;5:103-111
12. Guintivano J, Arad M, Gould TD, Payne JL, Kaminsky ZA. Antenatal prediction of postpartum depression with blood DNA methylation biomarkers. *Mol Psychiatry* 2014;19:560-567
13. Norhayati MN, Hazlina NHN, Asrenee AR, Wan Emilin WMA. Magnitude and risk factors for postpartum symptoms: a literature review. *J Affect Disord* 2015;175:34- 52
14. Stein A, Pearson RM, Goodman SH, et al. Effects of perinatal mental disorders on the fetus and child. *Lancet*

- 2014;384:1800-1819
15. Esscher A, Essén B, Innala E, et al. Suicides during pregnancy and 1 year postpartum in Sweden, 1980-2007. *Br J Psychiatry* 2016;208:462-469
 16. Lindahl V, Pearson JL, Colpe L. Prevalence of suicidality during pregnancy and the postpartum. *Arch Women Ment Health* 2005;8:77-87
 17. Fisher J, Mello MCd, Patel V, Rahman A, Tran T, Holton S, et al. Prevalence and determinants of common perinatal mental disorders in women in low and lower- middle income countries: a systemic review. *Bull World Health Organ* 2012; 90: 139- 49.
 18. Sulaiman, Salima & Shaikh, Kiran & Chagani, Jehanara. (2013). Postpartum Depression in Pakistan. *Nursing for women's health*. 17. 147-52. [10.1111/1751-486X.12024](https://doi.org/10.1111/1751-486X.12024).
 19. Afsheen A, Khan KA, Nosheen J, Mehreen S, Anwar R, Iftikhaar B. Postpartum depression and its accomplices in Peshawar; a metropolitan yet traditional city of Pakistan. *Professional Med J* 2021; 28(8):1147-1155. <https://doi.org/10.29309/TPMJ/2021.28.08.6078>
 20. Ali, N.S., Ali, B.S. & Azam, I.S. Post partum anxiety and depression in peri-urban communities of Karachi, Pakistan: a quasi-experimental study. *BMC Public Health* 9, 384 (2009). <https://doi.org/10.1186/1471-2458-9-384>
 21. Rahman, A. and F. Creed, Outcome of prenatal depression and risk factors associated with persistence in the first postnatal year: Prospective study from Rawalpindi, Pakistan. *Journal of affective disorders*, 2007. 100(1): p. 115-121.
 22. Malik, Madeeha & Hussain, Azhar & asim, zirwa & Hashmi, Ayisha. (2017). Assessment of Postpartum Depression Among Women Having Different Modes of Delivery: A Cross-Sectional Study From. 1719 1729.
 23. Patel V., Rodrigues M., DeSouza N. Gender, poverty, and postnatal depression: a study of mothers in Goa, India. *Am. J. Psychiatry*. 2002;159:43-47.
 24. Green K, Broome H, Mirabella J. Postnatal depression among mothers in the United Arab Emirates: socio-cultural and physical factors. *Psychol Health Med*. 2006;11:425-31.
 25. Gelaye B, Rondon MB, Araya R, Williams MA. Epidemiology of maternal depression, risk factors, and child outcomes in low-income and middle-income countries. *Lancet Psychiatry*. 2016;3:973-82.
 26. Upadhyay RP, Chowdhury R, Aslyeh S, Sarkar K, Singh SK, Sinha B, et al. Postpartum depression in India: a systematic review and meta-analysis. *Bull World Health Organ*. 2017;95:706-717C.
 27. Patel HL, Ganjiwale JD, Nimbalkar AS, Vani SN, Vasa R, Nimbalkar SM. Characteristics of postpartum depression in Anand District, Gujarat, India. *J Trop Pediatr*. 2015;61:364-9.
 28. Ongeru L, Wanga V, Otieno P, Mbui J, Juma E, Stoep AV, et al. Demographic, psychosocial and clinical factors

- associated with postpartum depression in Kenyan women. *BMC Psychiatry*. 2018;18:318.
29. Bener A, Gerber LM, Sheikh J. Prevalence of psychiatric disorders and associated risk factors in women during their postpartum period: a major public health problem and global comparison. *Int J Women's Health*. 2012;4:191–200.
30. Parsons CE, Young KS, Rochat TJ, Kringelbach ML, Stein A. Postnatal depression and its effects on child development: a review of evidence from low- and middle- income countries. *Br Med Bull*. 2012;101:57–79.
31. Bell AF, Carter Davis JM, Golding J, Adejumo O, Pyra M, et al. Childbirth and symptoms of postpartum depression and anxiety: a prospective birth cohort study. *Arch Women's Ment Health*. 2016;19:219–27.CS,

KNOWLEDGE AND ATTITUDE ABOUT OBESITY AMONG MBBS STUDENTS

Akmal Khurshid Bhatti¹, Anum Imran Butt², S. Shah Hussain³, Alia S⁴, Ayesha R⁵, Atia A⁶, Bilal I⁷, Daud J⁸, Ghulam F⁹, Hamza¹⁰, Humaiya¹¹, Maryam N¹², Memona W¹³, Ramshatul B¹⁴, Sehar B¹⁵, Shahbaz S¹⁶, Sheharyar A¹⁷, Syeda R F¹⁸, Umar I¹⁹, Wajiha A²⁰, Akram S²¹, Tahir B²², M. I. Mazhar²³, Ashir Ahtesham²⁴

Affiliations

1. Professor of Community Medicine, Sialkot Medical College, Sialkot.

2. PGR Sheikh Zayed Hospital, Lahore

3. MS Student, University of Lahore

4. – 20 MBBS Students of Sialkot Medical College, Sialkot.

21 – 22 Faculty Community Medicine, Sialkot Medical College, Sialkot.

23 – Professor of Paediatrics, Sialkot Medical College, Sialkot.

24 – Final Year MBBS student, Ameer Uddin Medical College, PGMI, Lahore.

Corresponding Author:

Prof. Dr. Akmal Khurshid Bhatti
Professor of Community Medicine, Sialkot Medical College, Sialkot.

Contact # 0333-8401907

ABSTRACT

INTRODUCTION

Obesity carries significant health implications for both chronic diseases and mortality. The importance of obesity as a health problem in the US is an increasing evident. Studies undertaken in metropolitan cities of Pakistan had revealed an increased incidence of obesity in school children. The lives of medical students are shaped by work, college and social environment that promote inactivity and overeating, leading them to become obese. This study was carried out to evaluate knowledge and attitude of medical students regarding obesity.

METHODOLOGY:

A Cross Sectional Descriptive Study was conducted in October 2020. Students of all five classes of MBBS (first year to final year). Consent was taken and online questionnaire was filled due to Covid Restrictions. Data was analyzed using SPSS version 21.

RESULTS:

262 students participated in the study, aged between 17-25 years. About one third of the students (30.3%) considered themselves as obese. Majority (92.4%) have the basic knowledge about obesity. Majority (91%) have the knowledge about Obesity being a disease. About 78% of participants strongly agreed Obesity as a Health indicator. More than one third (41%), were likely to do exercise while others do try to exercise in different intervals to keep themselves protected against obesity. About two third (66%) of the students use various interventions to keep in good shape.

CONCLUSION:

Majority of medical students have knowledge and an appreciable attitude towards obesity. Awareness of medical students should be focused on healthy diet and positive effects of physical activity.

KEY WORDS:

Obesity, medical students, knowledge & attitude

INTRODUCTION

Obesity carries significant health implications for both chronic diseases and mortality. The occurrence of overweight and obesity have risen globally and in the list of such countries, US is at the top because more than 2/3rd of adult population in USA is overweight or obese⁶. Nearly 60% adults in Canada and Australia were overweight and obese⁷. In European Countries, prevalence of overweight and obesity were recorded in 10% to 27% in males. However, this trend is slightly ascending 10% to 38% in females⁸.

The problem of obesity is also increasing in developing countries. In Saudi Arabia, 16% male and 24% females were obese, relatively higher prevalence was found in Kuwait 32% and 44% respectively. Prevalence of obesity and overweight in Chinese and Iranian populations were 27.3% and 26.3% respectively. Overall 25% of general population in Pakistan is also affected by overweight and Obesity⁹. Studies undertaken in metropolitan cities of Pakistan had revealed an increased incidence of obesity in school children.

Besides general population, a notable prevalence of overweight and obesity is also found among nurses, medical students and professionals. This percentage is greater than general population^{10,11}. A study conducted in America in 2007, exhibited mean BMI of nurses was 27.2 and almost 54% nurses were obese¹². Another study from America showed that 24.3% and 18.4% of the undergraduate students were identified as overweight and obese respectively¹⁵. A study in Indian students showed mean BMI of 23, and 25.6% &

17.4% obese and overweight respectively¹³. Another cross-sectional study among nursing students in Kuwait to assess the association between Body Mass Index and wealth promoting lifestyle showed females who were overweight and obese secured the prevalence of 24.1% and 11.1% respectively and 31.6% & 14% male were overweight and obese respectively¹⁴. A Malaysian study showed that 30.1% of the students were overweight and obese¹⁶. A similar study in Sudanic Medic Students showed 17.8% and 9.2% were overweight and obese respectively¹⁷. A study from nursing students in Nigeria showed prevalence of overweight (142/1000) and obesity (41/1000)¹⁸.

An emergent body of research, suggests there may be common biological mechanisms underlying a cluster of adverse health effects i.e. Obesity, Hypertension, altered lipid levels and other metabolic abnormalities referred to as Metabolic Syndrome. The data demonstrates the relevance of Metabolic Syndrome in obese for both Type 2 Diabetes Mellitus and Cardiovascular Diseases. The consideration of Metabolic Effects as a group is supported by finding in laboratory animals where early life exposure to certain Organophosphate pesticides can disrupt lipid metabolism induce weight gain and cause other metabolic responses that mimic those seen in Diabetes Mellitus and Obesity¹⁹. A recent study reported that prenatal exposure to Hexachlorobenzene was associated with increased BMI (Body Mass Index) and weight in children at 6.5 years. A study in Adult Occupational exposure to Organophosphate pesticide reported an

increased risk of Diabetes Mellitus in exposed worker. Several animal and cellular studies suggest that endocrine disrupting chemicals (i.e. Diethylstilbestrone) contribute to increased weight and diabetes^{20,21}.

The relationship between characteristics of build environment and obesity is most likely significant in children than adults as children are less able to leave their local environment without the help of adult. Build environment that provide exercise through the inclusion of nearby recreational areas, walk able communities and those that provide healthy eating options through reducing the number of food restaurants while providing access to fresh products are thought to reduce the frequency of obesity in children. Green environments that contain greater number of natural environment and features like parks and tracks may contribute to increased levels of physical activity in children that reduce the risk of obesity²². Another study reviewed that children living in Suburban Community with higher socioeconomic status may spend greater amount of time commuting in a car rather than walking which may also contribute to sedentary lifestyle that promote obesity^{23,24}.

In 1912, The Association of life Insurance Medical Directors and the Actuarial Society of America studied the longevity related to ideal weight in insured population under the article "Report of the Joint Committee on the Medico-Actuarial Mortality Investigation" with the main prospective of "Average weight may not have the lowest mortality"-What is ideal Weight? This study resulted in the outcome that "Ideal weight based on longevity"²⁵. In 2000,WHO defined

overweight and obesity as "the disease in which excess body fat has accumulated to such an extent that health may be adversely affected" and underscored that practical definition of obesity is based on the level of BMI(Body Mass Index)²⁶.

An emergent body of research suggests that the people who are most likely to be overweight are those who have a high genetic risk of developing obesity and whose lives are also shaped by work, school and social environments that promote overeating and inactivity. People who live in deprived areas often experience high level of stress including major life challenges and trauma, often their neighborhoods offer a few opportunities and incentives for physical activity and options for accessing affordable healthy food are limited. Psychological experiences play a big role up to half of adults attending specialist obesity services have experienced childhood adversity²⁶.

Some research studies were also found in Pakistani population. A study was conducted among 404 medical students of CMH Lahore Medical College in 2011. The study showed that there were only 8.2% and 2.4% of students were overweight and obese²⁷. A study conducted among postgraduate trainee doctors in Karachi, found 31.6% and 28.2% were overweight and obese respectively²⁸. Another cross-sectional study from Karachi conducted among 428 medical students from two public medical institutes showed that prevalence of overweight and obese was 14.7% and 12.4% respectively²⁹. The aim of this study is to create "awareness about obesity among medical students.

The objective of this study is to assess knowledge and attitude about obesity in medical students of Sialkot Medical College, Sialkot.

METHODOLOGY:

The study design is "Cross Sectional Descriptive Study". This study was done in October 2020.

Out of 500 MBBS students of Sialkot Medical College, Sialkot, and 262 students gave consent and enrolled in the study. Every participant has different characteristics i.e., socio-economic status, educational history, family structure, ethnic background and body weight composition.

DATA COLLECTION & ANALYSIS:

Simple Random Sampling, A type of Probability Sampling was employed. Data was collected with online Questionnaire having questions in 6 sections.

1. Questions about demographic details.
2. Questions about basic knowledge about obesity.
3. Questions about risk factors/causes of obesity.
4. Questions about Comorbidities related to obesity.
5. Questions about use of obesity as a health indicator.
6. Questions about the interventions that can prevent obesity.

The online questionnaire form was conveyed to medical students through social media platforms like Whatsap, Facebook, Instagram and gmail and was received through the same channel. Various variables were collected and analyzed, like age,

gender, weight, number of meals taken/day, frequency of exercise/day/week, type of diet consumed, obesity as a health indicator.

Data was analyzed using SPSS version 21. Statistical analysis comprised of descriptive statistics and Chi-Square Test. The permission of the study was granted by the Institutional Review Board (IRB), of Sialkot Medical College, Sialkot. The study was done online because of the restrictions of COVID-19 pandemic. The confidentiality of the respondents and the data gathered from the respondents was ensured.

RESULTS:

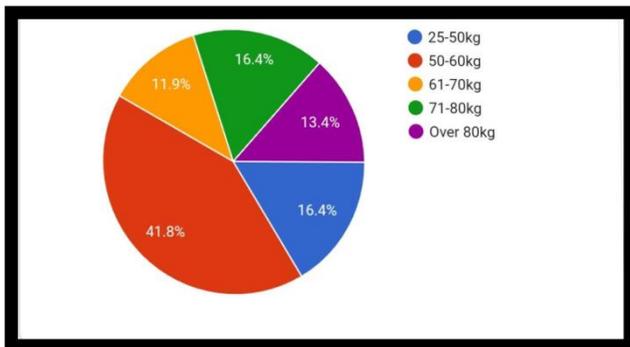
262 students participated in the study from the following classes.

Year of MBBS	Number of Students	Percentage
First Year	32	12.2
Second Year	45	17.1
Third Year	60	22.9
Fourth Year	80	30.53
Final Year	45	17.1
Total	262	100

AGE & SEX OF MEDICAL STUDENTS:

All the medical students who participated were aged 15-25 years. 66% were females and 34% were males

Figure-1, WEIGHT OF MEDICAL STUDENTS

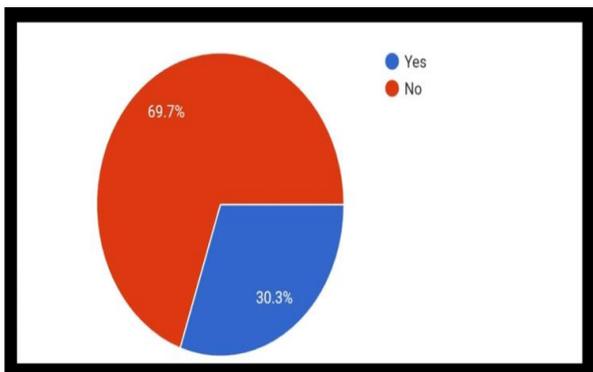


The weight of most (53.7%) of the students was between 50-70 kg as shown in the table.

OBESITY PREVALENCE:

About one third (30.3%) of the participated students consider themselves obese while the remaining do not.

Figure-2,



BASIC KNOWLEDGE ABOUT OBESITY:

According to our study, 92.4% of participants have the knowledge about obesity that it is increase in fat cells of the body while 7.6% of the participants are lacking in the basic knowledge about Obesity.

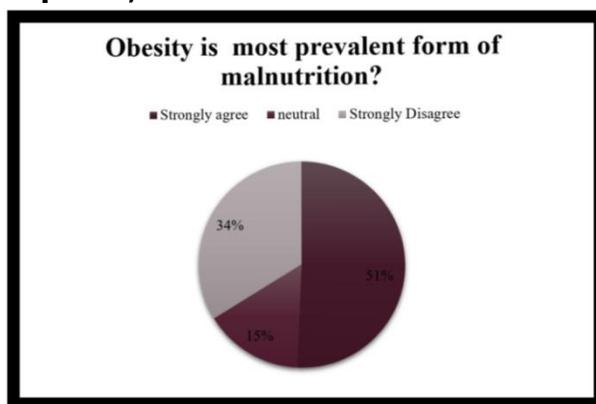
OBESITY AS A DISEASE:

Majority (91%) of the participants have the knowledge about Obesity being a disease while the remaining do not bother to consider obesity as a disease.

OBESITY AS MOST PREVALENT FORM OF MALNUTRITION:

About half (51%) of medical students strongly agree that obesity is most prevalent form of malnutrition and only one third (34%) disagree.

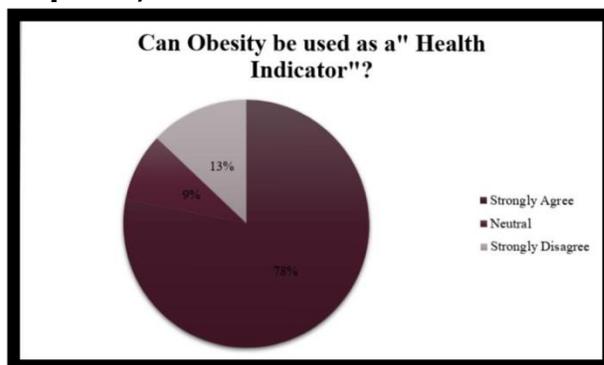
Figure-3,



OBESITY AS A HEALTH INDICATOR:

More than two third (78%) strongly agreed with obesity as a Health Indicator and only 13% disagree with it.

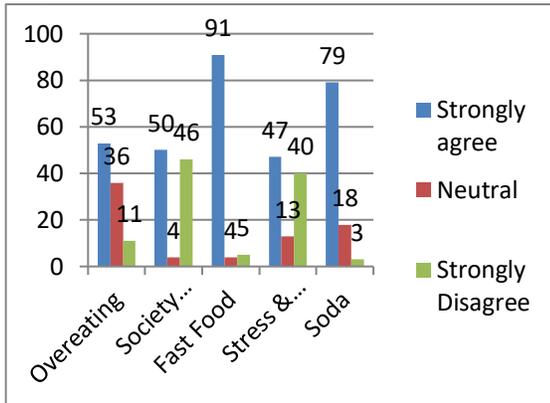
Figure-4,



RISK FACTORS/CAUSES OF OBESITY:

Majority of the students strongly agreed about fast food and soda being one of the causes of obesity. About half of the students believed over-eating and society modernization as causes of obesity.

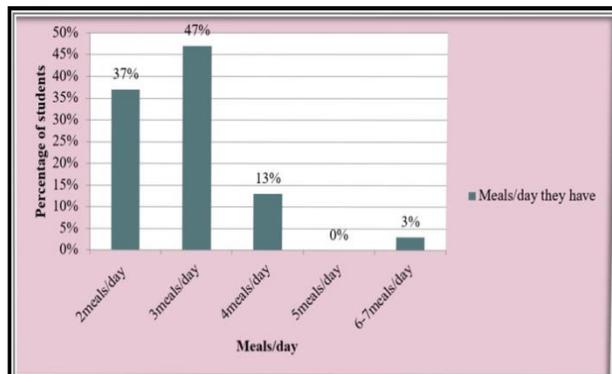
Figure-5,



NUMBER OF MEALS TAKEN BY STUDENTS:

Majority (84%) of the students were taking 2-3 meals/day and only 13% were having 4 meals/day

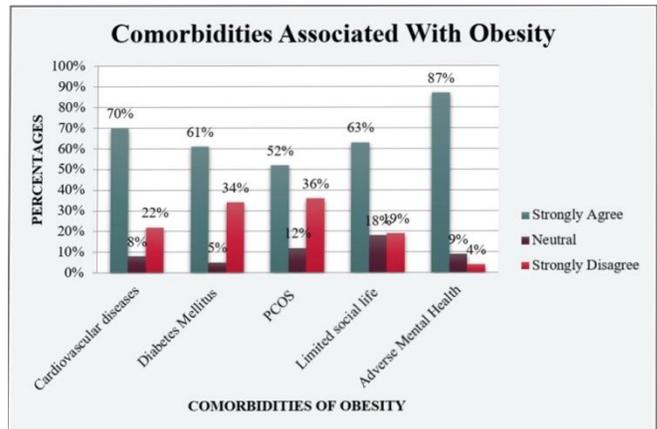
Figure-6,



CO-MORBIDITIES RELATED TO OBESITY:

Majority (>60%) of students have knowledge about the comorbidities related to obesity.

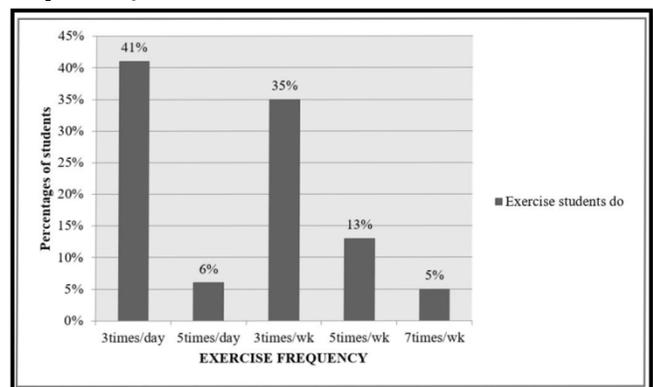
Figure-7,



ATTITUDE OF STUDENTS REGARDING OBESITY:

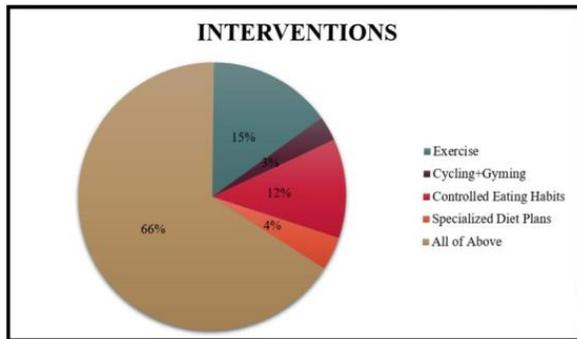
More than one third (41%) of the involved participants are likely to do exercise 3times/day to prevent themselves from obesity while others participants do try to exercise in different interval to keep themselves protected against obesity.

Figure-8,



INTERVENTIONS:

Following interventions are followed by the participants to keep themselves in shape. Majority (66%) do all the necessary interventions to keep themselves in good shape.

Figure-9,

DISCUSSION

Obesity is usually defined in terms of Body Mass Index (BMI). Adults with BMI of 25 to 29.9 are identified as overweight and those with a BMI more than 30 as obese. These cut-offs are based on an epidemiological evidence.² Waist Circumference and waist to hip ratio are the common adjuvant measures used to classify the distribution of body fat in people who are overweight, as obesity related complications are most closely correlated with abdominal fat distribution³⁻⁵.

A study was conducted to identify the prevalence of overweight and obesity and associated factors among young undergraduate nursing students of Health University in Karachi, Pakistan. It was a cross-sectional study that was accomplished at Institute of Nursing, Dow University of Health Sciences from December 2015-2016. Information was collected from 146 students via pretested questionnaire and standard tools were used for height and weight measurement while in our survey, information was collected from 262 students via online questionnaire.

In the referenced study, there were 44.5% males and 55.5% females subjects

respectively while in our survey 33.8% males and 66.2% females participated.

In the referenced study, approximately 35% of the involved population has the basic knowledge about obesity while in our study; a majority of population about 92.4% has the basic knowledge regarding obesity.

In the referenced study, Majority of nursing students about 58.2% considered eating snacks between meals was the major cause that leads to obesity but in our survey 88% of the participants came to the fact that excessive consumption of junk/fast food and Soda drinks is the major junk food now-a-days which is excessively leading to obesity.

In the referenced study 65% of nursing students perform physical activity at least 30 minutes daily to prevent obesity while in our survey, about 41% of medical students perform physical activity (exercise) 3 times/day to keep themselves safe from being obese.

Only Physical activity was being used as an intervention against obesity while in our survey, 66% of the medical students performed all of the below mentioned interventions to protect themselves from obesity and hence from all the other comorbidities related to it.

The interventions are exercise, cycling and gym, controlled eating habits and specialized diet plans.

CONCLUSION AND RECOMMENDATIONS:

From our Survey, we conclude that majority (91%) of medical students considered obesity as a disease and becoming more prevalent. We conclude that majority of medical students have outstanding

knowledge and an appreciable attitude towards obesity. Majority of the students are keen to keep a healthy and an active lifestyle to keep them protected from the comorbidities related to obesity. There are certain factors in their life like stress, studies, lack of healthy food opportunities at college, and the ways to tackle these factors needs to be addressed in the medical students. Awareness to medical students should be focused on healthy diet, positive effects of physical activity.

LIMITATIONS OF STUDY:

- Due to small sample size, the results of this study cannot be generalized to the whole population.
- Bias may have occurred, as the study was limited to online method of data collection due to COVID-19 pandemic circumstances.

REFERENCES:

1. U.S.Department of Health and Human Services, Public Health Services, Office of the Surgeon General, The Surgeon General's call to Action to prevent and decrease Overweight and obesity. Rockville, Md; 2001 U.S. Government printing office, Washington.
2. U.S. Preventive Services Task Force. Guide to Clinical Preventive Services.2nd ed. Alexandria, Virginia: International Medical Publishing, Inc;1996 :219-229.
3. NHLBI Obesity Education Initiative. Clinical guidelines on Identification, Evaluation and treatment of overweight and Obesity in adults: The Evidence Report. Bethesda ,MD: U.S. Department of Health and Human Services, Public Health Services, National Institute of Health, National Heart, Lungs, and Blood Institute 1998; NIH Publication No. 98-4083.
4. Depres JP, Moor Janis , Lupien PJ, Tlemlay A, Nadeau A, Bouchard C. Regional distribution Plasma Lipoprotein and Cardiovascular disease. Arteriosclerosis.1990; 10:497-511.
5. Alexander, B., The roots of addiction in free market society in "Expanding addiction: Critical Essay".Granfield, R. And Reinerman, C.[eds], London, Routledge. 2015; 107-126.
6. Shewfelt RL. Why is America so Fat? In defence of Processed Food: Springer; 2017; p.1-15
7. Caballero B. The global epidemic of obesity ; an overview Epidemiologic reviews. 2007; 29(1):1-5.
8. Lien N, Hensiksen HB, Nymoer LL, Wind M, Klepp K-I. Avail ability of data assessing the prevalence and trends of overweight and Obesity among European adolescents. Public Health Nutrition 2010; 13 (10A) : 1680-7.
9. Jafar TH, Chaturvedi N, Pappas G. Prevalence of overweight and obesity and their association with hypertension and Diabetes mellitus in an Indo-Asian Population. Canadian Medical Association Journal.2006; 175(9):1071-7.
10. Zafar S, Haque lu, Butt AR, Mirza HG, Shafiq F, Rehman Au. Relationship of Body mass index and waist to hip ratio measurement with Hypertension in young adults medical students. Pakistan Journal of Medical Sciences. 2007;23(4):547.

11. Mahmood S, Najjad MKR, Ali N, Yousaf N, Hamid Y. Predictors of Obesity among Postgraduate trainee doctors working in a tertiary care hospital of public sector in Karachi, Pakistan. *JPMA the Journal of Pakistan Medical Association*. 2010;60 (9): 758.
12. Miller SK, Alpert PT, Cross CL. Overweight and Obesity in Nurses, advanced practice nurses and nurses educators. *Journal of the American Academy of Nurse Practitioners*. 2008; 2005:259-65.
13. Chhaya S, Jadav P. Dietary and lifestyle pattern in relation to overweight and Obesity among the Medical and Nursing Students. *Nursing*. 2012;53:21.9.
14. Al-kandai F, Vidal VL, Thomas D. Health promoting lifestyle and Body Mass Index among college of Nursing students in Kuwait : A correlational study. *Nursing and Health Services*. 2008; 10(1):43-50.
15. Beatrice Addeley-Kelly PhDR. The prevalence of overweight and obesity among undergraduate health Sciences Students *ABNF Journal*. 2007; 18(2):16.
16. Boo N, Chia G, Wang L, Chew K, Chang W, 100 R. The prevalence of obesity among clinical students in a Malaysian medical school. *Singapore medical journal*. 2010; 51(2):126.
17. Abdalla SM, Mohammed EY. Obesity among Medical students of Ribat University, Khartoum 2008. *Sudan J Pub Heal*. 2010; 5:16-9.
18. Emmanuel A, Oyedele EA, Gimba SM, Goshit JD, Gaji LD, Dashen N. Prevalence of overweight and obesity among undergraduate nursing students in Nigeria, 2015.
19. Weiss, R., J.Dziura, T.S.Burgert, W.V. Tamborlane, S.E. Taksali, C.W.Yeckel, K.Allen, M. Lopes, M. Savoye, J. Morrison et al.. Obesity and Metabolic Syndrome in Children and adolescents. *New England Journal of Medicine*. 2004 350(23):2362-74.
20. Lassiter , T.L., and S. Brimijion. Rats gain excess weight after developmental exposure to the Organophosphorothionate pesticide, Chlorpyrifos. *Neurotoxicology and Teratology*. 2008. 30 [2]:125-30.
21. Lassiter, T.L., I.T.Ryde, E.A Mackillop, K.K.Brown,E.D.Levin, F.J.Siedlu and T.A.Slotkin. Exposure of neonatal rats to parathion elicits sex-selective reprogramming of metabolism and alters the response to a high fat diet in adulthood *Environmental Health Prospective*. 2008; 116(11):1456-62.
22. McCurdy, L.E., K.E.Winterbottom, S.S.Mehta, J.R.Roberts. Using nature and outdoor activity to improve Children's Health. *Current Problems in Paediatric and Adolescent Health Care*. 2010; 40 [b]:102-17.
23. Ewing, R., T.Schmid, R.Killingsworth, A.Zlot, and S.Raudenbush. Relationship between Urban Sprawl and physical activity, Obesity, and Morbidity. *American Journal of Health Promotion*. 2003; 18[1]:47-57.
24. Ewing, R., R.C. Brownson, and D. Berrigan. Relationship between Urban sprawl and Weight of United States

- youth. American Journal of Preventive Medicine. 2006; 31[6]:464-74.
25. Medico-Actuarial Mortality Investigation Vol.1; 1912, Association of life Insurance Medical Directors ;The Actuarial Society of America, New York, NY, USA.
26. WHO, "Obesity: Preventing and Managing the global Epidemic", WHO Technical Report Series 894,World Health Organization, Geneva, Switzerland, 2000.
27. Ashraf M. Frequency of overweight and Obesity in students of Medical College of Lahore, Ann park Inst Med Sci 2012; 8(2); 137-40.
28. Sajid Mahmood S, Najjad M, Ali N, Yousaf N, Hamid Y. Predictors of Obesity among postgraduate trainee doctors working in Tertiary Care Hospital of Public sector in Karachi, Pakistan J Park Med Assoc. 2010;601 758-61.
29. Mahmood S, Perveen T, Najjad M, Yousaf N, Ahmed F, Ali N. Overweight and obesity among Medical Students of Public Sectors. Institution in Karachi, Pakistan. Journal of obesity and weight loss therapy. 2013.3(157).

PATIENTS SATISFACTION REGARDING CARE PROVISION IN MEDICAL OPD OF A TEACHING HOSPITAL OF SIALKOT

Akram Saeed¹, Sahibzad Masood us Sayed², Hassan Shahzad³, Mohammad Hamza Shahzad⁴, Momina Zahra⁵, Abaid Ur Rehman⁶, Balqees Fatima⁷, Faizan Haider Ali⁸, Kinza Fiaz⁹, Mahnoor Ali¹⁰, Minahil Nayyar¹¹, Muhammad Waqar Ahmad¹², Pakeeza Naeem¹³, Rameen Fatima¹⁴, Rumaisa Pervaiz¹⁵, SanaUllah¹⁶, Sawera Pervaiz¹⁷, Shiza Sagheer¹⁸, Syeda Khaula¹⁹

Affiliations

1. Head of Community Medicine Department, Sialkot Medical College, Sialkot.

2. Professor & Dean research, Sialkot Medical College, Sialkot.

3. MBBS Students of Islam Medical College, Sialkot.

4. MBBS Students of Akhtar Saeed Medical College, Sialkot.

5 – 19 MBBS Students of Sialkot Medical College, Sialkot.

Corresponding Author:

Prof. Dr. Akram Saeed
Professor of Community Medicine, Sialkot Medical College, Sialkot.

Contact # 0333-3544577

Email: draksaeed@gmail.com

ABSTRACT

OBJECTIVE:

The aim of the study is to evaluate the level of patient satisfaction about medical OPD services and accessibility of SMC Teaching Hospital and to find out the factors affecting patient satisfaction.

METHODOLOGY:

A cross-sectional study was conducted at medical OPD of SMC Teaching Hospital Sialkot during the month of October, 2021 on 200 patients who were registered in medicine outpatient department of Imran Idrees Teaching Hospital over a period of one month. The research instrument for data collection was "structured questionnaire" for assessing the level of patient satisfaction. The experiences of patients were categorized into 05 criteria 1. extremely satisfied, 2. satisfied, 3. neutral, 4. dissatisfied and 5. extremely dissatisfied. Convenient sampling was done for selection of patients registered in medical OPD. The data was analyzed on statistical software SPSS 26.

RESULTS:

Patients described their experience about medical OPD; doctors' attitude towards the patient's; 21% were extremely satisfied, 59% satisfied and remaining were dissatisfied. Availability of medicines from hospital pharmacy 71% said yes and 29% said No. Cleanliness of OPD, Sitting area and Washrooms 22% were extremely satisfied, 39% satisfied and 39% were dissatisfied. Behavior of OPD supporting staff; 13% were extremely satisfied, 57% were satisfied and 30% were dissatisfied. Overall medical care which patients received; 17% were extremely satisfied, 55% were satisfied and 28% were dissatisfied.

CONCLUSION:

Maximum number of respondents had good experience and were satisfied with doctors' attitude and time given by doctors for patient care, waiting time before checkup and services provided to them.

INTRODUCTION

Hospital is an institute that provides a broad range of medical services to sick and needy people. It employs paramedical, nursing, supporting staff and doctors in order to provide proper care to people who requires close medical monitoring and outpatient care to people who need ambulatory care. Hospital provides diagnostic and medical treatment for health problems.

Outpatient department is one of the departments of hospital which care for the ambulatory patients who come for the diagnosis and treatment but do not stay overnight in hospital.¹

Patient satisfaction constitutes a significant indicator of the health care quality. Patient satisfaction survey can be a tool for learning as this point out the problem area and makes a reference point for management during taking the decisions. This also serves as a mean of holding physicians' accountability and physicians can be compelled to show that they have acceptable level of patient satisfaction. Patient satisfaction data can be used to document health care quality in order to provide and improve the weakened areas of hospital.²

Patient is the person in distress and he expects comfort, care and cure from the hospital. Patients come to hospital with certain expectations and once they come to hospital and experience the facilities, they may become either satisfied or unsatisfied. Different treatment, unofficial payment, inadequate medicine, lack of patient privacy and longtime waiting are the major problems that are faced by the patients.³

Health care consumers today are more sophisticated and now they demand more accurate and valid evidence of health plan

quality. Facilities provided to patients have taken central stage as primary mean of measuring the effectiveness of health care delivery.

With this intention we have evaluated patient satisfaction level in medical OPD of Imran Idrees Teaching Hospital affiliated with Sialkot Medical College, Sialkot. Outpatient department are the main point of dealing and a prime source of interaction with patients and serve as a mirror to any health care services provided in the community.

SATISFACTION WITH MEDICATION:

Patients' satisfaction is one of the indices to examine the accomplishment of its services from patients' perspective. Besides this, it helps patient to have trust on doctors. It also helps the patient to respect the norms and value the procedures of hospitals. The efficiency and quality of care should be examined through patients' opinion and experiences. As a matter of fact, satisfied patient will always share experiences only to the people of his concern where as a doctors dissatisfied patient always criticize about the hospital services publicly with everyone and it is noted that spread of bad experience is always greater in number.³

In Pakistan patients' satisfaction has enumerated many factors which includes: Quality of services, proper patient appointment system, limited waiting time for doctor, maintenance of patient's confidentiality and dignity, responsible attitude of receptionist and staff, availability of labs and diagnostic facilities, safe and clean environment, clean washrooms and sitting area, availability of proper pharmacy services, comfortable seating and availability.

According to research done in 2009 Jan (Int.J Qual health care), Doctor's technical skill is

the most critical attribute of primary care quality for both overall satisfaction and recommendation, followed by doctor's interpersonal skill. Staff care and access are associated with improved overall satisfaction but not related to increasing the likelihood of recommending a clinic to relatives and friends. Doctor's technical and interpersonal skills rather than staff care and access can be the essence of quality competition in the primary care market. Providing patient education during the visit on how to prevent or control diseases may also relate to improved patient satisfaction and recommendation.⁴

A study of NCR 2020; quality in healthcare services is the major determinant of patients' satisfaction in government and private hospitals. In general, it is understood that the quality of treatment, medicines and medical equipment's affect the level of patient satisfaction. The results of factor analysis reported that clinical care, personal attention, physical structure and technical capabilities are the main determinants of patient satisfaction towards government hospitals of NCR. The results of regression analysis reported personal attention to have maximum effect on patient satisfaction.⁵

In a research of a tertiary hospital in South east Nigeria (2018): patients' views of the services they receive in a healthcare service help identify critical areas that may need improvement. This survey set out to determine patients' satisfaction with quality of general services and specifically with staff attitude and the hospital environment.⁶

OBJECTIVE

- To evaluate patients' level of satisfaction at OPD regarding services provided by

hospital and to find out the factors affecting patients' satisfaction in Imran Idrees Teaching Hospital, Sialkot.

METHODOLOGY

This study was conducted at medical OPD of Imran Idrees Teaching Hospital, during the month of October, 2021 on 200 patients with convenient sampling, however non-willing and patient in emergency were excluded. It was cross-sectional and descriptive study. A structural questionnaire was designed for this purpose.

Data analysis was performed manually. Percentage was collected for different factors and presented in the form of tables and figures. After taking the consent from the patients exiting out of OPD, we individually went to the patients and presented before them our questionnaire. Mostly we ourselves narrated the questions and they answered them orally. The language of questionnaire was both English and Urdu as per convenience.

RESULTS:

Among the patients of Imran Idrees Teaching Hospital, Sialkot male to female ratio was 3 : 2. 60% were females and 40% were males. Overall satisfaction level of patient was good.

Table 1:
Demographic details of Subjects.

AGE GROUP	Frequency	Percentage
20-30	90	45
30-40	38	19
40-50	22	11
51-60	32	16
61-70	12	6
71-80	06	3
Total	200	100
GENDER		
Males	80	40
Females	120	60
Total	200	100
RESIDENCE		
Urban	126	63
Rural	74	37
Total	200	100
FAMILY INCOME		
Below average	64	32
Average	78	39
Above Average	68	29
Total	200	100

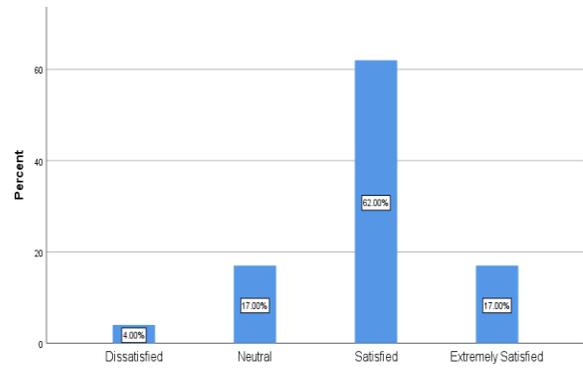


Figure-1;
Patients’ satisfaction about complain listening by physician:

- Out of 200 patients 17% patients were extremely satisfied, 62% patients were satisfied, 17% patients were neutral and 4(%) patients were dissatisfied that doctor listened to their complain.

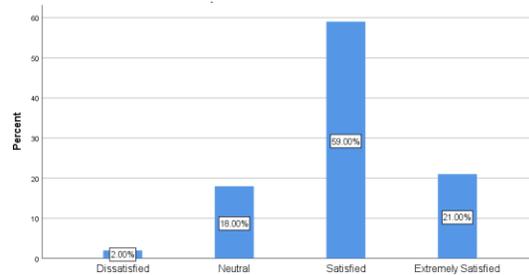


Figure-2,
Patients’ satisfaction about behavior of the doctor:

- Out of 200 patients 21% patients were extremely satisfied, 59% were satisfied, 18(%) were neutral and 2% patients were dissatisfied with the behavior of the doctor.

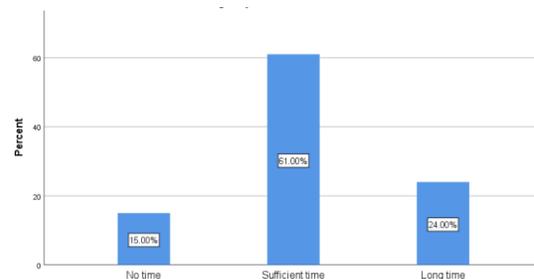


Figure-3, Patients' satisfaction with reference to waiting time:

- Out of 200 patients 15% patients did not wait for the doctor while 61% patients waited for sufficient time and 24% patients waited for long time.

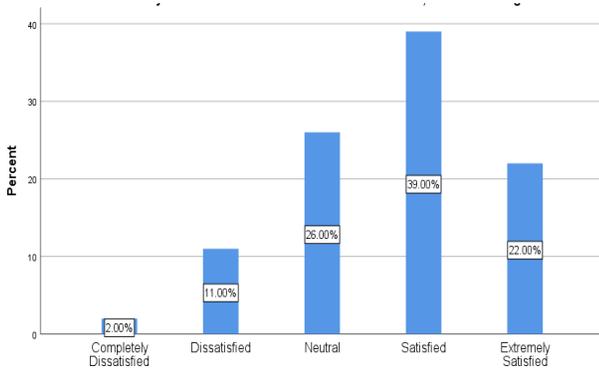


Figure-4, Patients' satisfaction regarding confidentiality/privacy of patient:

- Out of 200 patients 22% were extremely satisfied, 39% was satisfied, 26% were neutral and 15% patients were dissatisfied that the doctor guarded their privacy.

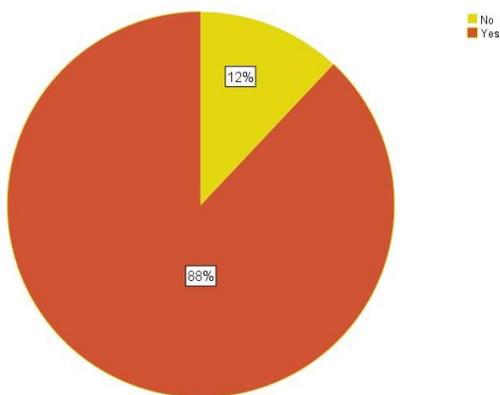


Figure-5, Patients' satisfaction about the guidelines of prescribed medicines by consultant:

- Out of 200 patients 88% patients said that doctor provided complete guideline about the medicines he prescribed while 12% patients said that doctor didn't provide complete guideline about the medicines he prescribed.

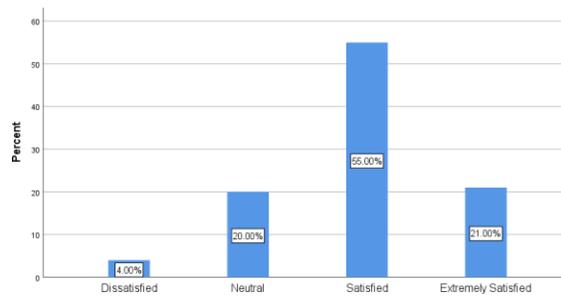


Figure-6, Patients' satisfaction with reference to cleanliness:

- Out of 200 patients 20% were extremely satisfied with the cleanliness of washrooms, OPD and waiting area, 46% were satisfied, 20% were neutral, 12% were dissatisfied and 2% were completely dissatisfied with the cleanliness of washrooms OPD and waiting area of the hospital.

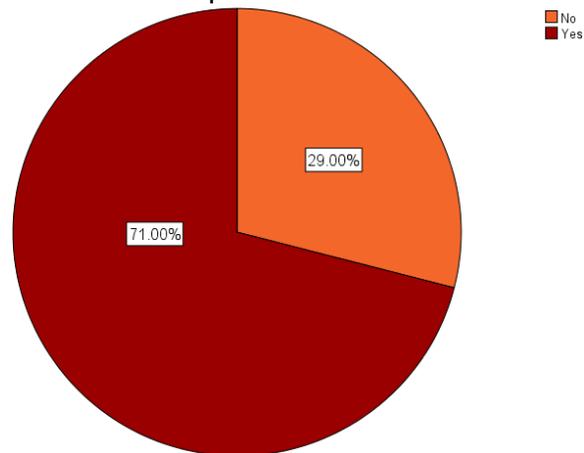


Figure-7, Patients’ answer whether prescribed medicines were available from the hospital pharmacy:

Out of 200 patients 71% patients were able to find the prescribed medicines from the hospital pharmacy while 29% patients were not able to find the prescribed medicines from the hospital pharmacy.

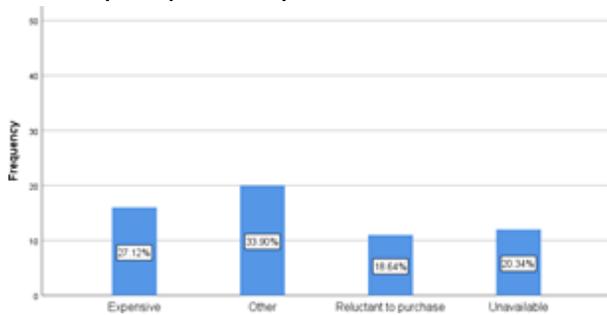


Figure-8, Reason of dissatisfaction on non-availability of medicine:

27.1% found them expensive, 18.6% were reluctant to purchase medicines from pharmacy, 20.34% said medicines were unavailable and 33.90% had other reasons of not purchasing the medicines from hospital pharmacy.

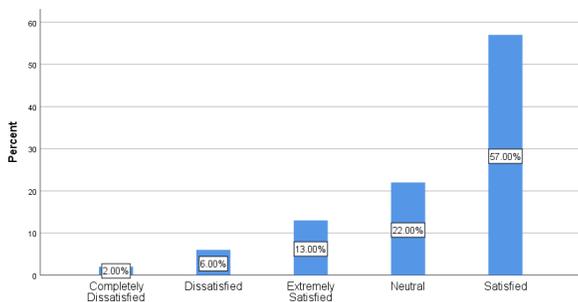


Figure-9, behavior of supporting staff and patients’ satisfaction:

- Out of 200 patients 57% were satisfied with the behavior of supporting staff of OPD, 22% patients were neutral, 6% were dissatisfied and 2% were completely dissatisfied with the behavior of supporting staff of OPD.

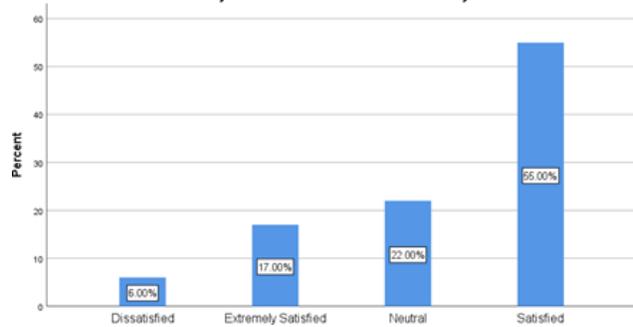


Figure-10, Distribution of overall satisfaction among respondents:

- Out of 200 patients 17% were extremely satisfied with the overall medical care they received, 55% were satisfied, 22% were neutral and 6% patients were dissatisfied with the overall medical care they received.

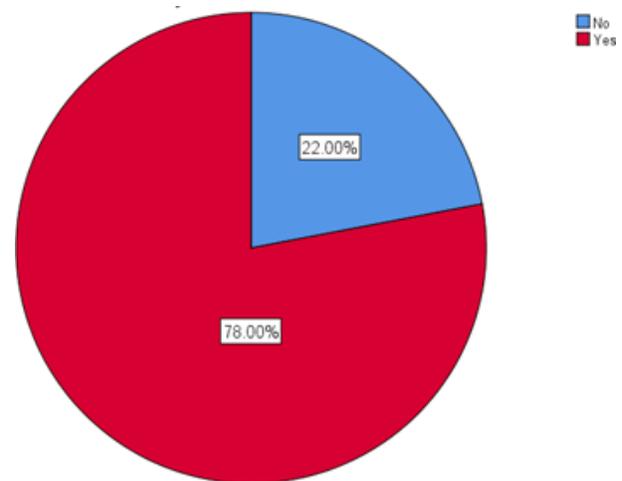


Figure-11, Answers of query whether you want to recommend this hospital for others.

- Based on their experience 78% patients out of 200 patients will recommend this hospital to their relatives and friends while 22% will not recommend this hospital to their friends.

DISCUSSION

Total experience of 200 patients was computed to determine their experiences regarding different services provided by the OPD of the medical department.

The patients with good experience showed higher proportion as compared to those who had poor experience. Females are found to be more satisfied as compared to males may be due to lack of awareness which is more seen in females. Similar findings were observed in the study conducted by Galhotra et al in which the respondents were satisfied with basic amenities.³ The cause of poor experience was the high prices of the medicines and hospital expenditures.

Component wise dissatisfaction of patients was; almost majority had good experience from all components but for doctors' services for the patient had highest level of satisfaction while pharmacy service showed poor satisfaction. This is likewise to the study conducted by Bacondale et al in which overall participants were quite satisfied with other services as well and cleanliness received highest satisfaction level.⁷

After analysis it was found that more than half 61% of patients agreed that waiting time for them was appropriate. Whereas 24% didn't agree with above statements. So, this area needs attention by the hospital administration. Similar, findings were observed in study conducted by Andrati and Syed Arshad to measure the satisfaction of patients attending the OPD in tertiary care hospital in Srinagar.⁸ A large number of the patients were satisfied by the cleanliness of the waiting area and OPD and only 11% were dissatisfied.

Majority of the patients consider registration and receptionist process satisfactory.

Maximum number of patients agreed that required medical staff and supporting team were available during working hours of OPD. Majority of the patients i.e., 78% were willing to recommend the hospital to their friends and family.

Similarly in a study conducted by Amin Khan et al, they described patient satisfaction towards OPD services provided by medicine department in Banphees Autonomous Hospital, Samutsakhon Province, Thailand in which 225 respondents were interviewed and showed similar results that behavior of receptionist and paramedical staff was partially satisfying. This showed that educational status matters a lot while dealing with patients.⁹

CONCLUSIONS

After the experiences of the patients, the study indicated that the patients had good satisfaction level from all items like cleanliness of OPD, waiting time, the examination by the doctors and paramedical staff and overall medical care provision. While some patients complained about the high price of medicines. Maximum number of respondents had good experience while only few had bad experience.

In accessibility, the highest proportion of the respondents agrees that the required medical staff was available during working hours of OPD, schedule of working hours was adequate. Majority of patients had good satisfaction regarding time, service process and working hours. The major satisfaction level among the patients was due to the good behavior of the doctor and the time provided by him to listen the complaints. The major issue of disapproving the recommendation of

this hospital was its high fee and expenditure otherwise the responses were satisfactory.

RECOMMENDATIONS

- This study recommended that there is a need for patients' instruction regarding facility utilization, this should be upgraded.
- Attitude of paramedical staff and doctors was satisfactory but the biased attitude shouldn't be kept between a regular patient and a protocol patient. All must be dealt equally and fairly.
- A training of receptions/admission, OPD staff be conducted for dealing with patients particularly.
- It is recommended that strategic marketing of OPD is needed (inside and outside hospitals).
- Proper information should be provided regarding consultations, OPD timing and should be displayed in various places like information counter and OPD areas for the convenience of the patients.
- Quality control in areas of cleaning procedure requires a bit attention.
- It seems patients are unaware about their rights. This fact must be dealt immediately

REFERENCES

1. Joshi S, Joshi Mk. A study on patient satisfaction in outpatient's department of secondary care hospital of Bhopal. *Int J Community Medicine*, 2011.
2. Merkousis A, Andreadous A, Athini E, Hatzimtalasi M, Rovithis M, Papastavrov E. Assessment of patient satisfaction in public hospital in Cyprus: a descriptive study. *Health Sci J*. 2013; 7:28
3. Galhota A, Sarpal SS, Gupta S, Goel NK. A cross sectional study on patient

satisfaction toward services received at rural health center Chandigarh, North India. *Ann Trop Med public health*. 2013; 6:240-4

4. Yu-Chi Tung. Patient satisfaction with and recommendation of a primary care provider: associations of perceived quality and patient education. *Int J Qual Health Care*. 2009 Jun
5. Dr. Jitender Kumar. Measuring Patients' Satisfaction towards Inpatient Departments (IPDs) of Government Hospital: A study of NCR. 2020 Jan
6. Obi, A. Ndu, B. Omotowo, C. Agunwa, Arthur C. Ioko. Patient satisfaction with services at a tertiary hospital in south-east Nigeria. *Malawi Medical Journal*. 2018.
7. Bamidele AR, Hoque ME and Van der Heever H. Patient satisfaction with quality of care in a primary care setting in Botswana. *S Afr Fam Pract* 2011; 53(2):170-5
8. Arshad AS, Shamila H, Jabeen R, pazli A. Measuring patients' satisfaction: A cross sectional study to improve quality of care at tertiary care hospital. *Health line* 2012;3(1):43-6
9. Mandokhail AK, keiwkarnka B, Ramasoota P. Patient satisfaction towards outpatient department services of medicine department in Bampheeo Community Hospital SamutSakhon Province, Thailand. *J Public Health Development*. 2001;(5) (3):97-105
10. W Qureshi, G Naikoo, A Baba, F Jan, N Wani, G Hassan, N Khan. Patient satisfaction at tertiary care hospital in Kashmir: A study from the LalaDed Hospital Kashmir India. *Int J Health* 2008;8(2):1-3.