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**Prof. Dr. Sahibzada Masood Us Syed**

Chief Editor/

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Sial Journal of Medical Sciences,

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# **EFFECT OF COVID PANDEMIC ON PREVALENCE OF DEPRESSION AMONG MEDICALSTUDENTS OF SIALKOT MEDICAL COLLEGE SIALKOT, PAKISTAN.**

Sahibzada Masood Us Sayed<sup>1</sup>, Omar Imran Butt<sup>2</sup>, Anaba Khan<sup>3</sup>, GulJaved Virk<sup>4</sup>, Taha Khan<sup>5</sup>, Manahil Khalid<sup>6</sup>, Usama Tariq<sup>7</sup>, Usama Maqbool<sup>8</sup>, Ali Raza Azam<sup>9</sup>, Aqsa Rashid<sup>10</sup>, Fatima Mubashir<sup>11</sup>, Maha Javed<sup>12</sup>, Sana Aslam<sup>13</sup>, Kainat Sharif<sup>14</sup>, Shiza Imran<sup>15</sup>, Fiza Imran<sup>16</sup>, Muhammad Shafqat<sup>17</sup>.

## **ABSTRACT**

### **OBJECTIVE**

The objective the study is to assess the percentage prevalence of depression among students of SMC, and the relationship of its severity with the Year of Study (MBBS) after pandemic.

### **MATERIAL AND METHODS**

Beck's Depression Inventory (BDI) – II, In Urdu Translation was filled by the students from each year of study. Variables like year of study and age were mentioned, and the depression in subjects was graded as minimal, mild, moderate and severe based on BDI score. The study was conducted at Sialkot Medical College, Sialkot during pandemic of 04 months from 1<sup>st</sup> August to 30<sup>th</sup> November, 2021.

### **RESULTS**

Out of 100 participants, 46% were suffering from Depression. On scoring and grading, 10% revealed minimal disease, 11% cases showed mild depression, in 15% moderate depression was seen while 10% cases were found to be of severe depression. The prevalence of depression decreased with increasing age and advancing year of study. Analysis showed: 60% of the depressed cases were from 1<sup>st</sup> year MBBS, 45% from 2<sup>nd</sup> year, 55% from 3<sup>rd</sup> year, 40% from 4<sup>th</sup> year, and 30% (least prevalence) in Final Year MBBS.

### **CONCLUSION**

46 % MBBS students, in SMC are suffering from depression in September 2021. This shows that there are an enormous number of stressors faced by medical students. Approaching near professional exams is a great causative factor. While Mental Health effects of Covid 19 on medical students in the post covid period is worth mentioning.

**KEY WORDS:** Depression, Beck's depression inventory, Medical students, covid-19.

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2 – 17. MBBS Students of Sialkot Medical College, Sialkot

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## **INTRODUCTION**

Depression is a common mental disorder, characterized by sadness, loss of interest or pleasure, feelings of guilt or low self-worth, disturbed sleep or appetite, feelings of tiredness and poor concentration.<sup>1</sup>

It is an established fact that medical students across the globe suffer from Mental Health Issues; whereas, Depression is a significant health problem in one third university students.<sup>2</sup> Prevalence of Depressive and Anxiety disorders in students results in poor performance in academics, social withdrawal, and an increased tendency towards substance abuse, thereby leading to a vicious cycle of deteriorating mental and physical health<sup>2</sup>. The stigma associated with Mental Health Issues has made it difficult to nip the evil in the bud, and thus the number of silent sufferers is rising day by day. <sup>2</sup>The Deadly Covid19 Pandemic has also caused a great challenge on mental health of medical students. This adds to the various stressors, including peer pressure, exam stress, lack of facilities, and burn out. All These perils are amplified in a developing country like Pakistan, and especially in students studying on Self-finance in a Private Sector Medical College.<sup>2</sup>

Hence, this study was conducted, to find out the prevalence of depressed medical students, in a private sector medical college of Pakistan, in the post Covid-19 period, with approaching Professional exams (in November 2021). Online published articles are available on prevalence of depression in Pakistan on higher secondary or medical school students.<sup>16, 18, 19</sup>

## **OBJECTIVE**

The objective of our study is to find out the prevalence of depression among medical students in Sialkot especially of Sialkot Medical College after pandemic and

to find the relationship between the prevalence of depression and the years of study (MBBS).

## **METHODOLOGY**

A Cross-Sectional Study was done among students of Sialkot Medical College, in August – November 2021, with a sample size of 100 MBBS Students.

Beck's Depression Inventory –II (BDI-2) was distributed among 20 students from each Year according to systemic random selection. However, the students who refused to be a part of the study were excluded and replaced by volunteer participants. Information like age, gender, year of study, emotional abuse, family composition and possession of cell phones were the variables taken into account.

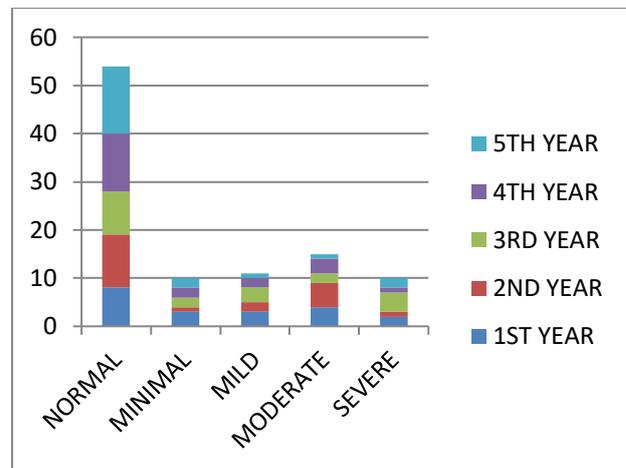
The response forms were then scored and graded according to BDI-II Scoring. The criteria for grading were: Score 1-10; Normal, 11-13; Minimal, 14-16: Mild mood disturbance, 17-20; Borderline clinical depression, 21-30: Moderate Depression, 31-40: Severe Depression, 41-63; extreme depression.

## **RESULTS**

Out of 100 students, 100 Students came up with Filled BDI Forms, (Response Rate = 100%) The BDI Forms revealed, that out of 100 subjects, 46 suffered from depressive illness, among which 10% minimal, 11% showed mild depression, 15% cases showed moderate depression, and 10% revealed severe depression but not a single case fell into extreme depression. However, 54% Students, showed no signs and symptoms of depressive illness according to our study.

The highest percentage prevalence of depression was among the students of 1<sup>st</sup> Year MBBS 60%. With somewhat decreasing fashion as the year of study advances, such that 45% prevalence in 2<sup>nd</sup> year students, 55% in 3<sup>rd</sup> year, 40% in 4<sup>th</sup>

year, and the least prevalence of depression, 30% in Final Year MBBS. The Mean Ages of Students were 18-25 years. It was noteworthy that the majority of depressed subjects fell into the category of Mild Depression (11%). So the prevalence of Moderate Depression (15%, n=15) was one and a half fold more than the severe depression (10%, n=10), and as severity of disease shows suicidal ideation. However this tendency was comparatively low among these subjects. A higher rate of ailment was seen in students of nuclear family system (55%) as compared to joint family system (45%). Sadness (65%) was found to be remarkable symptom of ailment followed by weeping (39%) and lack of concentration in study (31%).



**Figure 1 Severity of Depression**

## DISCUSSION

Our results (46%) prevalence of depression coincides with the study performed in Iran 44%<sup>4</sup>, an international study (30.6%)<sup>7</sup>, Nepal (31%)<sup>20</sup>, US (30.6%)<sup>13</sup> and Brazil (32.8%)<sup>14</sup>. Bulgaria (47.1%)<sup>15</sup>.

However, our study disagreed with the following e.g. Uganda (21.5%)<sup>8</sup>, Vietnam (15.2%)<sup>9</sup>, Ethiopia (21.06%)<sup>10</sup>, and international study (27.2%)<sup>11</sup>, because of different educational standards and policies for students in these countries.

The prevalence of depression among higher secondary school going children estimated by Dr. Sahibzada et al was (19.2%)<sup>19</sup>. This shows that stepping into practical life and the transition from schools to University is the main causative factor where the stress and depression levels of students increase drastically.

In an Indian study<sup>12</sup> more prevalence is shown i.e. (58%) than our study, may be because of more population explosion in India, and likewise more competition in the field of medicine, posing greater stress for students.

Our study also differs from Brazilian Study where prevalence is (28.8%)<sup>21, 14</sup>, and also global index which is (27.2%)<sup>7</sup>, while a UK study shows (8.15%)<sup>15</sup>. All these studies were conducted before the pandemic of covid-19 wrapped its fangs around the world. Our research has more prevalence of depression than these studies because of

| TITLE: NO. OF CASES PER CLASS |        |         |      |          |        |       |
|-------------------------------|--------|---------|------|----------|--------|-------|
| Year                          | NORMAL | MINIMAL | MILD | MODERATE | SEVERE | Total |
| 1 <sup>ST</sup>               | 8      | 3       | 3    | 4        | 2      | 12    |
| 2 <sup>ND</sup>               | 11     | 1       | 2    | 5        | 1      | 9     |
| 3 <sup>RD</sup>               | 9      | 2       | 3    | 2        | 4      | 11    |
| 4 <sup>TH</sup>               | 12     | 2       | 2    | 3        | 1      | 8     |
| 5 <sup>TH</sup>               | 14     | 2       | 1    | 1        | 2      | 6     |
| <b>TOTAL</b>                  | 54     | 10      | 11   | 15       | 10     | 46    |

| Variable                | Percentage |
|-------------------------|------------|
| <b>Age</b>              |            |
| 18-20                   | 27%        |
| 21-22                   | 39%        |
| 23-25                   | 44%        |
| <b>Family</b>           |            |
| Nuclear                 | 55%        |
| Joint                   | 45%        |
| <b>Phone Possession</b> |            |
| Yes                     | 100%       |
| No                      | 0%         |
| <b>Emotional Abuse</b>  |            |
| Yes                     | 82%        |
| No                      | 18%        |
| <b>Location</b>         |            |
| Urban                   | 35%        |
| Rural                   | 65%        |

the more mental health challenges faced by students during and after the pandemic. According to the recent research conducted by WHO, the prevalence of anxiety and depressive disorders was 48%<sup>3</sup> in the post covid period. This is comparable to our research and shows similar results establishing the fact that the pandemic has had drastic effects on the mental health of students and youngsters. Sahibzada et al showed not a single case of severe depression while this study showed 10% which is alarming. Female students had 05 times more likelihood of disease than males under study.

### **LIMITATIONS**

Our study was restricted to a small sample size (100 subjects) due to limited time and human power resources. The study was conducted only in one medical college hence the findings cannot be generalized to all the medical students in all medical institutes.

### **RECOMMENDATION**

Parents and teachers, both should pay attention on the root cause of this ailment to reduce the magnitude and severity of this disease.

### **CONCLUSION**

The findings of our study will be helpful for medical students across the country, to identify the risk of them being depressed, and to identify their stressors effectively. This is also alarming for the policy makers of medical studies, the college administration, and faculty members of this institute, to recognize that counseling desks are an immense need of hour in medical college setups.

Depression exists among the 46% of the students of MBBS relevant to their study years i.e. first professional examination to final professional examination. The most vulnerable population in our study was the

students of the first professional examination. The major contributory factor was the Covid-19 which enhanced the prevalence of the disease. Sadness was the most prominent clinical factor of the problem.

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# FREQUENCY OF IRON DEFICIENCY ANAEMIA AND ITS ASSOCIATION WITH PERSISTENT DIARRHOEA, LOW WEIGHT AND PARASITIC INFESTATION IN CHILDREN VISITING TEHSIL HEADQUARTER HOSPITAL DASKA.

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## ABSTRACT

### BACKGROUND

Iron deficiency anemia (IDA) is a common health problem in Pakistan among younger children. Persistent diarrhea, one of the major causes of malnutrition in children especially under two years of age contributed to IDA resulting in increased mortality and morbidity in developing countries. The incidence and mortality is especially high during infancy in the absences of breast feeding. Number of factors effect prevalence of IDA in this age group, important ones, are low socio-economic status, low weight, worm infestation and persistent diarrhea.

### OBJECTIVES

To find out the frequency of IDA among children 1-2 years of age visiting Out-Patient Department of Tehsil Headquarter Hospital Daska, Sialkot by determining the level of total body iron stores by assessment of the Haemoglobin, Serum Ferritin and Total Iron Binding Capacity in the blood; to determine the parasitic infestation by assessment of ova and cyst in the stool samples; and to find out the association of Iron Deficiency Anemia with persistent diarrhea, low weight and parasitic infestation.

### MATERIAL AND METHODS

It was descriptive cross-sectional hospital based study in which 345 children 1-2 years of age with persistent diarrhea were included. Socio-demographic characteristics of children and their parents were collected with the help of questionnaire while total body iron stores were determined by assessment of the Hb, Serum Ferritin and TIBC in the blood while parasitic infestation was determined by assessment of ova and cyst in the stool samples.

### RESULTS

Among 345 children, 51.0% were one year old, 58.8% males, 85.5% had family monthly income up-to PKR. 20,000 and 67.0% children were living in extended family system. 31.3% of children mothers studied up to grade 10 and 71.0% were housewives/unemployed. 55.9% children were bottle fed, weaning was started among 97.7% children at the age of 6 months, 84.4% were fully vaccinated, 49.0% children had pallor, 44.9% had weight <8 kg and 3.8% had severe dehydration while 9.3% children had Marasmus/Kwashiorkor. According to lab investigations, 53.0% children were anemic, had TIBC >450 µg/dl and serum ferritin level <7 ng/ml while 0.9% children had worm infestation. Data was statistically analyzed using SPSS 20.0. The association of IDA with age, gender, mode of feeding, food allergies and vaccination history was significant

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while the association of IDA with persistent diarrhea, weight and parasitic infestation was not significant.

### **CONCLUSION**

Study concluded that iron deficiency anaemia was prevalent among more than half of children but no significant association was found with persistent diarrhea, low weight and parasitic infestation.

### **KEYWORDS**

Association, Iron Deficiency Anemia, persistent diarrhoea, low weight, parasitic infestation, children, Haemoglobin, TIBC.

### **INTRODUCTION**

Iron is almost necessary for all kinds of living organisms. In an individual body, iron's quantitatively commanding role is as oxygen-binding core of hemoglobin (Hb), blood red pigment and transporting the oxygen to entire tissues from lungs. During development of IDA (iron deficiency anemia), hemoglobin synthesis within bone marrow is limited and low hemoglobin in blood results anemia. Anemia due to iron deficiency is called IDA, differentiating this state from several other reasons of anemia, for example, inflammation, infection, nutritional dearth and hematological disorders.<sup>1</sup>

The IDA is a leading public health issues which is most prevalent in both industrialized and developing countries. The IDA is defined as iron deficiency (serum ferritin <12 ng/ml) with Hb levels less than 11g/dl. As per WHO, the IDA prevalence in developing and developed countries is 50-60% and 10-20%, respectively. Worldwide, IDA is believed a 3<sup>rd</sup> significant cause for disability while thirteenth major risk determinant regarding disability adjusted life years. Majority of the IDA burden is found in the resource poor areas of Asia and Africa.<sup>2,3, 4.</sup>

The IDA is an important and widespread dietary health issue among young children and infants residing in developing countries. The global prevalence of anaemia among children 6 to 59 months old is 43 percent while half is associated with IDA. According to WHO global

database on anemia, 50.9% of Pakistani children were found to be anemic. Pakistan show different IDA prevalence rates 34%, 73% and 41%.<sup>4-6</sup>

It is recognized that among children IDA is major public health issue which adversely impacts on mortality and morbidity of child and effects the mental growth. In Pakistani children, the IDA prevalence shows a reasonable burden which unduly affects the growth retarded and younger children. During the period of childhood, anaemia is significantly related to poor health, physical growth, middle to moderate deceleration and reduced motor growth as well as leading to poor educational accomplishments and work capability thus reducing the earning capability and damaging the country financial growth in coming future. Also, the IDA enhances the chance of complications and death caused by contagious diseases.<sup>7, 8</sup>

In Pakistan, diarrhea is a common problem among children aged less than 5 years. The severity of diarrhea is commonly noted in infants. Diarrhea could be associated with anorexia, significant weight loss, vomiting, blood passage and fever. The ensuing outpouring of the plasma, blood, mucous and serum proteins enhances faecal volume and liquid content. Mal-absorption could be due to secretory or osmotic mechanisms and the conditions which cause small surface area within bowel. Prolonged diarrhea could lead to anaemia in children living in developing states.<sup>9</sup>

Diarrhea could cause anemia in children residing in developing countries. A study carried out among refugee Palestinian children demonstrated that diarrhoea recent episode was related to an enhanced risk of IDA. While another study suggested that anaemia was a significant cause for diarrheal disease. Also, it is probable that association is global and it becomes a vicious cycle that diarrhea enhancing the chances of anemia while anemia enhances the later chance of diarrhea.<sup>2,9</sup>

Infections caused by parasites are an important public health dilemma among developing states and are leading reasons for death and morbidity. These infections are held responsible for persistent diseases for example IDA and diarrheal diseases, that are main cause of child mortality in India, Bangladesh, Pakistan and several other emerging countries of the world.<sup>10</sup>

The identification of IDA is carried out mostly on lab measurements basis. Although, tests commonly utilized have some limitations because of their reduced specificity or sensitivity, or as they are customized by the circumstances other than IDA such as inflammation. Therefore, combining various iron status markers provide optimum evaluation regarding iron status.<sup>11</sup>

The CBC (complete blood count) could indicate low levels of Hb. Serum ferritin reflects total body iron stores. Most helpful single lab value regarding IDA, a diagnosis could be the plasma ferritin<sup>4</sup> but during inflammatory disease it may rise and in Pakistan every child suffers from infection 2 – 4 times a year. The treatment of IDA depends mainly on oral supplements of iron, which are required as a first-line treatment. The most frequently utilized preparations are ferrous fumaroles, ferrous sulfate, ferrous gluconate but their major side effects are gastrointestinal disturbances. Treatment

should be continued for at least 3 months at a dosage of 3-6mg per kg daily, best taken between meals on an empty stomach.<sup>11</sup>

Iron Deficiency anaemia is a common and prevalent health problem in Pakistan among younger children. Persistent diarrhoea may contribute to Iron deficiency anaemia. Persistent diarrhoea is one of the major causes of malnutrition in children especially under two years of age and this leads to great mortality and morbidity in developing countries. The incidence and mortality is especially high in infancy and more so in the presence of malnutrition and lack of breast feeding. A number of factors effect prevalence of IDA in children, major relate to dietary iron intake. However, socio economics status, education and even hygiene can have relevance on prediction and prevalence of IDA among the children in addition to impaired absorption of iron in persistent diarrhea. In Pakistan information on the true prevalence and predictors of IDA is limited. This study will also educate the parents about the different believe regarding the diet selected for the children under two year during diarrhoea and prevention of IDA.

No serious effort has been made to find out the association of hemoglobin level with serum ferritin and TIBC in the children suffering from diarrhea yet. Similarly there was no focus on worm infestation, one of the important cause of anemia. Looking at these and the fact that no such study has been done in peri-urban area where this study was planned. Current study aims to investigate IDA in children 1-2 years of age with persistent diarrhea, low weight and parasitic infestation using data from patients suffering from diarrhoea.

## **OBJECTIVES**

The objectives of this study are to find out the frequency of iron deficiency anemia

among children 1-2 years of age visiting children department, by determining the level of TBI stores by assessment of Hemoglobin, Serum Ferritin and Total Iron Binding Capacity in blood, to determine the parasitic infestation by assessment of ova and cyst in the stool samples, as a co-factor of childhood Anaemia and to find out the association of iron deficiency anemia with persistent diarrhea, low weight and parasitic infestation.

## **MATERIAL AND METHODS**

**STUDY DESIGN:** It was a cross-sectional hospital based study.

**STUDY SETTING:** The study was carried out in Pediatric Department of Tehsil Head Quarter Hospital Daska, District Sialkot in 2018-2019.

**SAMPLING TECHNIQUE:** Non probability convenient random sampling

**SAMPLE SIZE:** Sample size was 345 according to World Health Organization (WHO) sample size calculator using prevalence of iron deficiency anemia i.e. 34%<sup>5</sup> in Pakistan with confidence level 95% and absolute precision of 5%.

**SAMPLE SELECTION:** All patients 1-2 years of age with persistent diarrhea with grade II or more stools and whose parents were willing to participate were included in the study. Patients with co-morbid conditions like cardiac, renal disease, pneumonia, meningitis, and sepsis with abdominal distension were not included.

**DATA COLLECTION PROCEDURE:** The parent, accompanying child was interviewed by the researcher with the help of a semi-structured questionnaire to know the demographic and socioeconomic characteristics of respondents and duration of breast feeding. Questionnaire was pretested and modified before the start of interviews. Weight of child was noted with the help of weighing machine to know failure to thrive/ grow.

Blood sample of the child was taken for assessment of Hemoglobin, Serum Ferritin and Total Iron Binding Capacity to know the level of TBI stores. Stool samples were taken for the assessment of Ova and Cyst to find out worm infestation. Iron-deficiency anaemia was labeled when there was a decreased total iron body content. It occurs when the serum ferritin level and hemoglobin level is <12 ng/ml and <11 g/dl, respectively.<sup>12</sup> Parasite infestation is proved after getting positive laboratory result for ova or any parasite stage in stool examination.<sup>13</sup> Diarrhea is the passage of three or more loose or liquid stools per day.<sup>14</sup> Persistent Diarrhea was defined as the acute episodes of diarrhea that last for 14 days or longer and are presumed to be infectious.<sup>14</sup>

## **RESULTS**

Among 345 children, 176 (51.0%) were 1 year old and 103(29.9%) children were 1.5 years old while 66 (19.1%) children were 2 years old. The mean age of the children was  $1.341 \pm 0.38$  years. Among 345 children, more than half 203 (58.8%) were males and 142 (41.2%) were females. Majority 295 (85.5%) had family monthly income upto 20,000 rupees while only 50 (14.5%) children had family monthly income more than 20,000 rupees. The mean family income was  $20000.40 \pm 6645.30$  rupees. Among 345 mothers of children, 17 (4.9%) were professionals, 245(71.0%) were housewives/unemployed and 83 (24.1%) mothers were skilled workers. Out of 345 mothers of children, 6 (1.7%) were postgraduate, 25 (7.2%) had done their graduation, 31 (9.0%) mothers studied upto intermediate, 108 (31.3%) mothers had matriculation certificates, 87 (25.2%) studied upto middle (Grade-8) and 33 (9.6%) had primary education (Grade-5) while 55 (16.0%) mothers were illiterate. Among 345 children, 114 (33.0%) were living as nuclear families while mainstream

231 (67.0%) of children were living in extended family system. Result shows that among 345 children, 290 (84.1%) were Muslims while 55 (15.9%) children were Non-Muslims. Among 345 children, 89 (25.8%) were on breast feeding and 193 (55.9%) were on bottle feeding while 63 (18.3%) children were on both (breast and bottle feedings). Among 8 (2.3%) children weaning was started at the age of 4 month while among majority 337 (97.7%) weaning was started at the age of 6 months. Result shows that 147 (42.6%) children had food allergies while 198 (57.4%) children had no such problem. Majority 291 (84.4%) were fully vaccinated and 29 (8.4%) children were partially vaccinated while 25 (7.2%) children were unvaccinated and notified to health authorities. Majority of children 263 (76.2%) had fever, followed by dehydration in 271 (78.6%), vomiting 149 (43.2%), weight loss 36 (10.4%), blood in stool on history 35 (10.1%), cough 16 (4.6%), skin rashes 7 (2.0%) and worm infestation 3 (0.9%). Among 345 children, 155 (44.9%) had weight <8 kg and 177 (51.3%) children had 8-10 kg while 13 (3.8%) children had weight 11-12 kg. Out of 345 children, 74 (21.4%) had no dehydration while majority 258 (74.8%) had some dehydration and 13 (3.8%) children had severe dehydration. According to lab investigations, more than half 183 (53.0%) children were anemic (hemoglobin <11 g/dl) while 162 (47.0%) children were normal (hemoglobin  $\geq$ 11 g/dl). Among these children, 183 (53.0%) had TIBC >450  $\mu$ g/dl and 162 (47.0%) children had TIBC  $\leq$ 450  $\mu$ g/dl (normal). Out of 345 children, 183 (53.0%) had serum ferritin level <7 ng/ml while 162 (47.0%) children had serum ferritin level >7 ng/ml (normal). Among 345 children, only 3 (0.9%) had worm infestation on stool examination while majority 342(99.1%) of children had no worm infestation. Result shows that

prevalence of anemia among children was 53.0%. Table 1

Among 176 children who were 1 year old, 79 (22.9%) had IDA while 97 (28.1%) had no IDA. Among 103 children who were 1.5 year old, 59 (17.1%) had IDA and 44 (12.8%) had no IDA. Among 66 children who were 2 years old, 45 (13.0%) had IDA and 21 (6.1%) had no IDA. The result was found statistically significant (P=0.001). Among 203 children who were males, 92(26.7%) had IDA and 111 (32.1%) had no IDA. Among 142 children who were females, 91 (26.3%) had IDA and 51 (14.9%) had no IDA. The result was found statistically significant (P=0.002). Among 295 children who had family monthly income upto 20,000 rupees, 149 (43.2%) had IDA and 146 (42.3%) had no IDA. Among 50 children who had family monthly income > 20,000 rupees, 34 (9.8%) had IDA and 16 (4.7%) had no IDA. The result was found statistically insignificant (P=0.391). Among 245 mothers of children who were housewives, 132 (38.3%) children had IDA and 113 (32.7%) had no IDA. Among 100 mothers of children who were working women, 51 (14.7%) children had IDA and 49 (14.3%) had no IDA. The result was found statistically insignificant (P=0.875). Among 290 mothers of children who were literate, 153 (44.3%) children had IDA and 137 (39.7%) had no IDA. Among 55 mothers of children who were illiterate, 30 (8.7%) children had IDA and 25 (7.3%) had no IDA. The result was found statistically insignificant (P=0.172). Among 114 children who were living as nuclear family, 61 (17.7%) had IDA and 53 (33.0%) had no IDA. Among 231 children who were living in extended family system, 122 (35.3%) had IDA and 109 (31.7%) had no IDA. The result was found statistically insignificant (P=0.903). Among 89 children who had history of breast feeding, 37 (10.7%) had IDA and 52 (15.1%) had no IDA. Among 193

children who had history of bottle feeding, 107 (31.0%) had IDA and 86 (24.9%) had no IDA. Among 63 children who had history of both (breast & bottle feedings), 39 (11.3%) had IDA and 24 (7.0%) had no IDA. The result was found statistically insignificant ( $P=0.028$ ). Among 8 children who were given weaning at the age of 4 months, 5 (1.4%) had IDA and 3 (0.9%) had no IDA. Among 337 children who were given weaning at the age of 6 months, 178 (51.6%) had IDA and 159 (46.1%) had no IDA. The result was found statistically insignificant ( $P=0.588$ ). Among 147 children who had food allergies, all (42.6%) had IDA. Among 198 children who had no food allergies, 36 (10.4%) had IDA and 162 (47.0%) had no IDA. The result was found statistically significant ( $P=0.000$ ). Among 291 children who were fully vaccinated, 143 (41.5%) had IDA and 148 (42.9%) had no IDA. Among 29 children who were partially vaccinated, 21 (6.1%) had IDA and 8 (2.3%) had no IDA. Among 25 children who were unvaccinated, 19 (5.4%) had IDA and 6 (1.8%) had no IDA. The result was found statistically significant ( $P=0.003$ ). Among 155 children who had weight <8 kg, 85 (24.6%) had IDA and 70 (20.2%) had no IDA. Among 177 children who had weight 8-11 kg, 89 (25.8%) had IDA and 88 (25.5%) had no IDA. Among 13 children who had weight 11-12 kg, 9 (2.6%) had IDA and 4 (1.2%) had no IDA. The result was found statistically insignificant ( $P=0.348$ ). Among 3 children who had parasitic infection, 2 (0.6%) had IDA and 1 (0.3%) had no IDA. Among 342 children who had no parasitic infection, 181 (52.4%) had IDA and 161 (46.7%) had no IDA. The result was found statistically insignificant ( $P=0.635$ ).

## **DISCUSSION**

Iron deficiency anemia is a leading health problem among children in both industrialized and developing countries.

During the period of childhood, anemia is significantly associated with physical and mental retardation, causing reduced work capacity and academic achievements. Parasitic infection is also a major health problem among children residing in developing countries like Pakistan and is associated with repeated episodes of diarrhea and iron deficiency anemia. Persistent diarrhoea contributes to IDA and can cause severe weight loss, fever, vomiting, anorexia and passage of blood. If prolonged, dehydration occurs leading to weight loss and growth failure. A number of factors that affect the prevalence of IDA in children are namely low socio-economic status, parents' education and even hygiene in addition to impaired absorption of iron during persistent diarrhea. Current study was carried out to assess the frequency of iron deficiency anemia and its association with persistent diarrhea, low weight and parasitic infestation in children 1-2 years of age, visiting tehsil headquarter hospital Daska, District Sialkot. To achieve these objectives, 345 children aged 1-2 years old were included in the study and their mothers were interviewed.

Our study revealed that more than half of the children (51.0%) were one year old and rest of the children (49.0%) were upto two years old. The findings of a study conducted by Maroof and coworkers (2018) highlighted that most of the children (74.9%) were one year old while 25.1% children were upto 2 years old.<sup>16</sup>

Our study showed that male children were in majority (58.8%) while 41.2% were female children. But the results of a study carried out by Ahmad and associates (2018) showed different scenario that most of the children (55.6%) were females and 44.6% were male children. Similarly Abdel-Rasoul et al also confirmed in their study that female children were more (51.3%) than male children (48.7%). Reason of this difference of this

study with other studies might be conservative society in the study area. People usually do not care for female children so the number of female children suffering from acute diarrhea are less in number in children Out-patient departments<sup>11,17</sup>.

An elevated level of family monthly income is associated with child health as it indirectly prevents children from numerous infectious diseases including diarrhea. This study revealed that significant majority (85.5%) of children had family monthly income up-to PKR 20,000 per month and 14.5% had more than PKR 20,000. The results of a study undertaken by Maroof et al regarding this variable are better than our study results which confirmed that 54.0% children had family monthly income up-to PKR 20,000 per month and almost half (46.0%) of children had family monthly income more than PKR 20,000 per month. Reason of this discrepancy in family monthly income may be due to the fact that present study was carried out in semi-urban area where most of the people were poor.<sup>16</sup>

Like family monthly income, education, profession of mother and family type are also linked with child health. This study showed very encouraging results regarding education level of mothers as most of the mothers (84.0%) were literate and only 16.0% mothers were illiterate. The findings of our study are comparable but exhibited better scenario than a recent study conducted by Dagnev et al who asserted that 77.9% mothers were literate while 22.1 mothers were illiterate. In this study, major proportion (71.0%) of mothers was unemployed and 29.0% were employed. But the same study reported that 55.2% mothers were unemployed and 44.8% mothers were employed. Reason may be that study area in the present study was located in semi urban and rural area where women are mostly house wife. It is culture of rural

society that women were generally discouraged to go out of the house and work.<sup>18</sup>

Role of extended family system cannot be ignored because it is mostly observed that children who belonged to extended family system get better care. Present study indicated that massive portion (67.0%) of children was living in extended family system while 33.0% children were living as nuclear family. Similar results were reported by a study done by Din et al who confirmed that 63 % children were living in extended family system and 37.0% were living as nuclear family.<sup>19</sup>

Breast feeding is very beneficial for children as it protects them from several diseases. It was very encouraging to know that 44.1% were breast fed. But a study carried out by Dagnev et al elucidated that only 16.7% children were breast fed. Reason of this could be cultural difference between the two studies. Culture of the study area is conservative where women in the lactating stage are encouraged to feed their children from breast milk. In addition to that poor socioeconomic conditions compelled them not to purchase costly formula milk.<sup>18</sup>

Weaning is very essential for children. It is the most significant transitional period for babies because they start tasting and eating of food during this period. It is important to mention that weaning was started at 6 months among majority (97.7%) of children. Similarly, previous study also confirmed that among majority (71.2%) weaning was started at 6 months while weaning in remaining proportion (28.8%) was started at the age of <6 months or above.<sup>18</sup>

During study, vaccination status of children was also assessed and found that most of the children (84.4%) were fully vaccinated. Likewise, another study done by Wangusi et al also asserted that massive portion (96.1%) of children was found fully vaccinated. results of this

study are comparable with other studies. It is due to the fact that expanded program on Immunization in most part of the Punjab, Pakistan are working amicably.<sup>20</sup>

Our study showed that for all (100%) children duration of diarrhea was more than 14 days while the numbers of stools were 8-12 per day. A similar study carried out by Quadri et al highlighted the same duration of diarrhea among 31.1% children while 23.2% children had > 6 stools daily.<sup>21</sup>

Study also evaluated the other associated problems with diarrhea and found that majority of the children had dehydration (78.6%), followed by fever (76.2%), vomiting (43.2%), weight loss (10.4%), blood in stool on history (10.1%), cough (4.6%), skin rashes (2.0%) and worm infestation (0.9%). But the results of the study conducted by Murye et al demonstrated that majority of the children had malaria (26.9%) along with diarrhea, followed by cough (22.7%), poor appetite (19.1%), pale eyes and vomiting (0.3%). Study further disclosed that almost half of the children had weight less than 8 kg. Results of this study are comparable with other studies regarding dehydration, fever and vomiting associated with diarrhea.<sup>20,22</sup>

Study revealed that on clinical examination, none of the patients had hepatomegaly, splenomegaly and jaundice. But the study done by Nyeko et al elucidated that hepatomegaly and splenomegaly were identified among 42.0% and 8.0% children, respectively. Reason for this discrepancy may be that majority of patient in this study did not under-go detailed examination.<sup>22</sup>

This study further indicated that 47.0% children had normal levels of Hemoglobin (Hb), TIBC and Serum Ferritin while remaining 53.0% had anemia as well as low level of Hemoglobin (Hb), Serum Ferritin and TIBC is higher than the normal range. The findings of our study

are comparable but showed better situation than the study undertaken by Chandyo et al who reported that 43.0% children had normal levels of Hb and serum ferritin<sup>23</sup>. But a study carried out by Darlan et al highlighted that more than half (58.3%) of the children had normal TIBC level.<sup>24</sup>

In this study, only 0.9% children had worm infestation on stool examination while the study done by Javaid et al confirmed that 17.2% children were found positive for worm infestation on stool examination. Reason of this discrepancy might be due to non-availability of proper stool sample. It was very appalling to note that in this study, Iron Deficiency Anemia (IDA) was prevalent among 53.0% children but the study performed by Abdel-Rasoul et al confirmed that 25.6% children had IDA. Another study undertaken by Darlan et al elucidated that iron deficiency anemia was prevalent in only 7.6% children. Increase level of IDA in this study might be due to increase frequency of stools in patients.<sup>24, 25</sup>

When the association between socio-demographic characteristics and iron deficiency anemia was assessed, study found significant results about age and gender ( $p < 0.05$ ) while insignificant results regarding monthly income, mother occupation, mother education and family type ( $P > 0.05$ ). A similar study carried out by Abdel-Rasoul et al showed significant association ( $p < 0.05$ ) for mother education but insignificant association for child gender ( $P > 0.05$ ). Results of another study performed by Howard et al showed significant association regarding child age, gender and mother education ( $P < 0.05$ ).<sup>9</sup>

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As far as association between nutritional history and iron deficiency anemia is concerned, study found significant association for food allergies ( $P < 0.05$ ) but insignificant association regarding mode of feeding and time of weaning

started ( $P > 0.05$ ). A study carried out by Woldie et al found insignificant association between time of weaning started and iron deficiency anemia. In this study significant association was observed between vaccination status of children and IDA ( $P < 0.05$ ) but a study done by Murye et al showed insignificant association between both variables ( $P > 0.05$ ).<sup>20</sup>

Study further disclosed that there was no significant association regarding persistent diarrhea, weight of child, parasitic infestation and iron deficiency anemia ( $P > 0.05$ ). The findings of a study conducted by Ali et al demonstrated that there were insignificant differences regarding persistent diarrhea, low weight and iron deficiency anemia. A study performed by Darlan et al found insignificant association between parasitic infestation and iron deficiency anemia.<sup>7, 24</sup>

## CONCLUSION

In Pakistan, diarrhea is a significant problem among children aged less than five years. Due to diarrhea, Iron Deficiency Anemia (IDA) is more prevalent due to poor nutritional health issues among infant and children. Present study which assessed the frequency of Iron Deficiency Anemia and its association with persistent diarrhea, low weight and parasitic infestation in children 1-2 years of age, visiting tehsil headquarter hospital Daska, District Sialkot, concluded that Iron Deficiency Anemia was prevalent among more than half (53 %) of the children but no significant association was found with persistent diarrhea, low weight and parasitic infestation. Therefore, further studies are needed on large scale regarding same topic.

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# EARLY BREAST CANCER DETECTION; KNOWLEDGE AMONG FEMALE MEDICAL STUDENTS

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## ABSTRACT

### OBJECTIVE

The objective of this study is to assess the level of knowledge of screening for early detection of breast cancer among female medical students.

### STUDY DESIGN

It is a cross sectional, questionnaire-derived conducted in Sialkot Medical College, Sialkot, Pakistan from January through March, 2022.

### METHOD

One hundred and ten female students (22 per academic year of MBBS syllabus) were recruited using convenience sampling technique. A locally developed questionnaire including two segments viz. sociodemographic information, and knowledge of screening for early detection of breast cancer with 12 close-ended items (total potential score:  $1 \times 12 = 12$ ) was served for self-reporting in open time. The degree of knowledge was classified, as: inadequate (score: 1-9) and adequate knowledge (10-12).

### RESULTS

The response rate of the students (aged:  $20.54 \pm 2.07$  years) was found to be 96.4%. Only five subjects (i.e. 4.7% of total 106) reported history of the cancer in first degree relatives. Almost all the respondents i.e. 105 (99.1%) marked correct option against an item on social media as source of knowledge of the cancer followed by item on mammography. Similarly, they had more knowledge on breast self-examination than clinical breast-examination (maximal correct response: 87.7% vs. 85.8%, respectively). Majority of them ( $n = 94, 88.7\%$ ) had adequate level of knowledge on screening for early detection of the tumor. Moreover, a remarkable difference in rate of adequate knowledge was recorded between rural (97.8%) and urban residents (82.0%).

### CONCLUSION

Female medical students have adequate level of knowledge on screening for early detection of breast cancer.

### KEY WORDS

Breast Cancer, Breast Self-Examination, Early Detection of Cancer, Knowledge, Medical Students.

## **INTRODUCTION**

Breast cancer (BC) is the most common heterogeneous malignancy<sup>1</sup> among women. Unfortunately, it is detected at advanced complicated stages because its initial signs and symptoms progress are not felt seriously. The late detection makes the treatment difficult, costly, and uncertain. Subsequent delay in therapy increases the risks of mortality.<sup>2</sup> Developing countries face this late more frequently than advanced one on account of hospital phobia, and sociocultural barriers beside weak financial resources. A woman with sufficient knowledge on early signs and symptoms of breast cancer can go for its screening-based detection at its initial stages of course for better prognosis as in gastroesophageal cancers.<sup>3</sup> In this context, a screening techniques called breast self-examination<sup>4</sup> is advised for the beginners. Health care professionals are supposed to train the public for this very decisive skill. Low-risk women also experience another effective stand-alone screening modality "clinical breast-examination" especially in low- or middle income countries.<sup>5</sup> Similarly, public campaign is launched periodically for mammography<sup>6</sup> to detect any characteristic masses/micro-calcifications. In women of any age group, Knowledge on screening of early detection of BC precedes its attitude and practice. Surprisingly, university<sup>7</sup> or medical students are found knowledge-deficient; hence, stay under high vulnerability of BC morbidity. On the other side, middle-aged women (25-34 years) possess better knowledge of BC than higher or lower age groups;<sup>8</sup> more probably due to aspiration for healthy family life. Well in time genomic testing<sup>9</sup> of first degree relatives can warn about any upcoming experience of BC. So, adequate level of the

awareness is expected from a female medical student with family history of BC.

In published literature, there is a Syrian article<sup>10</sup> on knowledge and attitude of early detection of BC among female medical student. However, one cannot find a single paper on sole knowledge. This particular study is framed to cover the research gap (particularly with reference to Sialkot) with objective, to assess the level of knowledge on screening for early detection of breast cancer among female medical students. Its findings will support the responsible agencies in making and implementing the knowledge-enhancing policies.

## **METHODOLOGY**

Sialkot Medical College (SMC) was selected from a pool of three medical colleges at Sialkot (Pakistan), purposely. The college had registered students in all the five years of MBBS course with diverse family backgrounds and lifestyles. The present cross sectional questionnaire-derived study was conducted from January through March 2022 after getting permission from ethics committee of the SMC. Findings have no evidence of similar published study. Sample size was set at 110 including 10% non-response risk. From each year of the course, 22 students were recruited (using lottery method). Moreover, all the recruiters gave written participation consent. A questionnaire was designed by a team of medical professionals, human psychologists, and linguistic experts before its development (Cronbach's  $\alpha = 0.87$ ). The tool had spaces for entries of socio-demographic information beside 12 close ended items with options of Yes/No. First four items were on breast cancer (BC)-related general knowledge while 5-12 on its screening techniques for early detection. Correct option carried ONE

MARK; hence, total possible score = 12. The scores were categorized, as: poor score = 0-6; average = 7-9, or good knowledge on BC = 10-12. In broader sense, inadequate knowledge = 0-9, and adequate knowledge (AK) = 10-12. For self-reply, the tool was administered to the subjects for open time clarifying objectives of the study, and secrecy of the responses.

Techniques in descriptive statistics were used to see rate of level of AK on BC. The level of association of AK with socio-demographic variables was seen processing the data for chi-square test in SPSS version 25.0 (SPSS Inc., Chicago, IL). A p-value (<0.05) was considered as significant.

## RESULTS

The response rate i.e. rate of submission of completely filled in purpose-built questionnaire on knowledge of screening for early detection of cancer in open time was found to be 96.4% (n = 106) excluding two participants from each of the 2<sup>nd</sup> and 3<sup>rd</sup> academic years of the MBBS professional course. Their biological age ranged between 17 and 24 (20.54 ± 2.07) years as per Computerized National Identity Card' record. Majority of them (57.5%, n = 61) reported residence in urban areas, and 97.2% (n = 103) were single with respect to marital status. One hundred and one respondents (i.e. 95.3%) had no precedence of breast cancer in the first degree relatives like mother, sister etc.

The line chart (Figure-1) clearly represents the rate of sub levels of knowledge on breast cancer using the data from outputs of SPSS-mediated statistical technique. Remarkably higher rate was noticed against good sublevel (88.7%, n = 94) followed by average category. However, there was just a single

case with poor knowledge. Similarly, the rate of adequate level of the knowledge was noticed, as: 88.7%, n = 94 i.e. equivalent to that of good sublevel.

The rate of correct options against questionnaire's items on knowledge of breast cancer shows variation as displayed in Table 1. Comparatively, higher rate i.e. 99.1% (n = 105) was observed against item No. 1 "Social media is the most suitable source of knowledge on breast cancer". It was followed by 95.3% (101) of item No. 12 on mammography for screening of breast cancer. Whereas, the rate ranged between 79.2 and 87.7% with respect to knowledge on breast self-examination (item No. 5 to 9). A decreasing trend in rate was noticed when items on clinical breast-examination (No. 10 & 11) were statistically analyzed; item No. 11 carried the least rate of correct option.

Data in Table II show a clear picture of significance level of association between rate of adequate knowledge (AK) on breast cancer in the participants using 2x2 cross tabulation technique and chi-square test in SPSS ver. 25.0. A high rate i.e. 97.8% (n = 44) against current rural residence had statistically significant difference with 82.0% (n = 50) of urban background. Similarly, the rate increased with increase in level of category of a variable i.e. age group (>20 years) of biological age or group study year of MBBS (>3) had higher rate than their counterparts. On the other hand, comparatively higher rate AK was noticed among unmarried group or with family history of breast cancer than that of married or with no family history of breast cancer.

**Table-1.** Items on knowledge of breast cancer ( $N = 106$ )

| Type                | No. | Statement                                                                                             | BC screening (5-12)           |
|---------------------|-----|-------------------------------------------------------------------------------------------------------|-------------------------------|
| General (1-4)       | 1.  | Social media is the most suitable source of knowledge on breast cancer                                | <b>Yes;</b><br>99.1%<br>(105) |
|                     | 2.  | Breastfeeding lowers the risk of breast cancer                                                        | <b>Yes;</b><br>92.5%<br>(98)  |
|                     | 3.  | Generally, women perceive breast examination as an unpleasant event                                   | <b>Yes;</b><br>87.7%<br>(93)  |
|                     | 4.  | There is immediate need of doctor's visit on seeing a lump in breast                                  | <b>Yes;</b><br>88.7<br>(94)   |
| BC screening (5-12) | 5.  | Women prefer relatives over lady health visitors for getting training of breast self-examination, BSE | <b>No;</b><br>79.2%<br>(84)   |
|                     | 6.  | The BSE helps in early detection of abnormal changes in breast                                        | <b>Yes;</b><br>86.9%<br>(95)  |
|                     | 7.  | Practice of BSE starts at the age of 40 years                                                         | <b>No;</b><br>87.7%<br>(93)   |
|                     | 8.  | The BSE is needed, monthly                                                                            | <b>Yes;</b><br>87.7%<br>(93)  |
|                     | 9.  | The best time for BSE is 10 days after start of period                                                | <b>Yes;</b><br>87.7%<br>(93)  |
|                     | 10. | Clinical Breast-examination                                                                           | <b>Yes;</b><br>85.8%          |

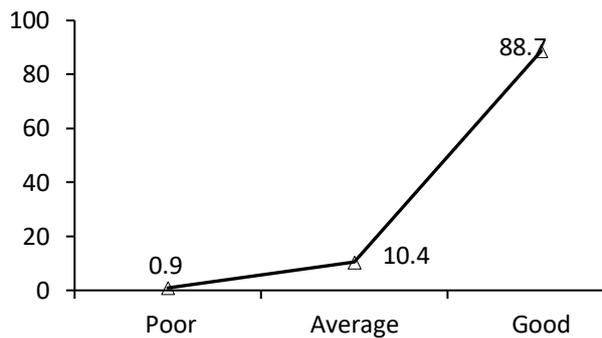
|  |     |                                                |                               |
|--|-----|------------------------------------------------|-------------------------------|
|  |     | (CBE) is done using instrument free hands      | (91)                          |
|  | 11. | A woman can perform CBE herself                | <b>No;</b> 84%<br>(89)        |
|  | 12. | A woman deserves mammography once in two years | <b>Yes;</b><br>95.3%<br>(101) |

BC – breast cancer

**Table II.** Statistical association between rate of adequate knowledge on breast cancer

| Sociodemographic variable; category | Rate of adequate knowledge on BC % of (n) | P value*           |
|-------------------------------------|-------------------------------------------|--------------------|
| Biological age (years)              |                                           |                    |
| 17-20                               | 85.7% (42)                                | .37                |
| >20                                 | 91.2% (52)                                |                    |
| Year of MBBS course                 |                                           |                    |
| 1-3                                 | 87.1% (54)                                |                    |
| >3                                  | 90.9% (40)                                |                    |
| Current residential area            |                                           | .01                |
| Rural                               | 97.8% (44)                                |                    |
| Urban                               | 82.0% (50)                                |                    |
| Marital status                      |                                           | .31<br>(Fisher's)  |
| Unmarried                           | 89.3% (92)                                |                    |
| Married                             | 66.7 % (2)                                |                    |
| Family history of BC                |                                           | 1.0%<br>(Fisher's) |
| No                                  | 88.1% (89)                                |                    |
| Yes                                 | 100% (5)                                  |                    |

**Figure - 1.** Rate of sub levels of knowledge on breast cancer ( $n = 106$ )



## DISCUSSION

Early detection of breast cancer minimizes the risk of painful morbidity whereas any late due to feminine sensitivity complicates it.<sup>11,12</sup> Female medical students with adequate knowledge on this detection play vital role in the community. To assess their knowledge, present research was necessitated. High response rate (i.e. 96.4%) on exclusion of two potential responders<sup>13</sup> in the questionnaire-derived study seems to support in quality and generalization of the findings. Rural background of more than 50% of the subjects advocates the medical education acquiring attitude in this segment of residents. Five students with family history of the cancer are supposed to have good knowledge on very domain because they are at high risk of this problem.<sup>14,15</sup>

Finding of good level of knowledge on early detection of BC (88.7% of 106) is very close to that of a previous similar study (79.7%)<sup>16</sup> on Ethiopian healthcare providers or higher than mean score, 24.8, equivalent to 67%; potential range: 12-36,<sup>17</sup> on Nigerian rural women. The high rate is indication of general trends in getting the knowledge prior to attitude and practice in the series of KAP.

Furthermore, the rate of good sub level of the awareness is at adequate level as per

scoring scheme, scores: 10-12 out of total 12, of another work assessing knowledge Zika virus disease among health professionals.<sup>18</sup> The better knowledge alternates with periodic accurate practice via psychological attitude.

Considering social media as the most suitable source of knowledge on breast cancer by a higher percentage of the respondents (99.1%,  $n = 105$ ) marks the mass assess to this media. According to Plackett and associates,<sup>16</sup> social media improves awareness for early screening of BC. Similarly, knowledge on importance of mammography by most of the subjects is a good sign because such computer-aided imaging can help clinicians in decision-making for tumor management.<sup>20</sup> Better percentage frequency of correct knowledge on breast self-examination is 2<sup>nd</sup> by a study<sup>21</sup> highlighting increase in knowledge of medical students after lecture and activity. The main reason in decline of rate against clinical breast-examination, compared to breast self-examination, may include fear of cancer incidence<sup>22</sup> beside general avoidance attitude.

Compared to urban residents, the medical students from rural side browse the internet for longer time on account of lack of other recreational activities; hence, possess adequate knowledge with higher rate. Such, locality differential trend can also be seen in older adults with respect to internet-mediated depression reduction.<sup>23</sup> Increase in rate of adequate knowledge seems to follow the increasing tendencies of score against female students of a previous similar work<sup>24</sup> on cancer. No doubt, the canvas of intellect broadens with age. Knowledge of medical students also increases with increase in educational year of MBBS even between start and termination<sup>25</sup> of a particular year.

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# TOBACCO AND SHISHA SMOKING AMONG UNIVERSITY STUDENTS.

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## ABSTRACT

### INTRODUCTION

In Pakistan, it is estimated that the prevalence of tobacco smoking is 36% for males and 9% for females. Among young adults especially the university students in Pakistan, the prevalence of smoking is 15% with the majority being male smokers. Approximately 1,200 children start smoking every day.

Smoking is one of the leading causes of preventable death. According to World Health Organization (WHO) tobacco use is currently responsible for the death of one in ten adults worldwide (about 5 million deaths each year)<sup>4</sup>.

### OBJECTIVE:

The main objective of this study is to estimate the prevalence and probable risk factor of tobacco and shisha smoking among university students

### MATERIAL AND METHODS

It was a cross sectional study conducted at Sialkot Medical College, Sialkot among male and female university students. For data collection a self-administered questionnaire was used as a tool. The sampling technique used in this study was convenience sampling a type of non-probability sampling. In this technique the students were selected for questioning on the basis of their availability and self-interest after taking consent. Each student was clearly informed about this study after that they actively participated.

### RESULTS

From this study results we have concluded that Out of 95 medical students of Sialkot medical college, Sialkot, (15.78%) medical students were smokers and in which 12 male medical students (18.18%) out of 66 male medical students and 3 female medical students (10.34%) out of 29 female medical students were smokers. In this cross sectional study out of 100 medical students of Sialkot medical college, Sialkot from 2<sup>nd</sup> year, 3<sup>rd</sup> year and 4<sup>th</sup> year MBBS classes 95 students participated. The overall prevalence of smoking was 15 (15.78%). Among 100 participants 66 (69.47%) were males and 29 (30.52%) were females. Among these males and female medical students 15 medical students were smokers. The ages of participants range from 19-25 years. Age of 21 years is more frequent in frequency distribution table number-2.

### CONCLUSION

The overall knowledge among smoker medical students about smoking and its hazards was about 60%. The good attitude of quitting smoking was present in about 60% of the smoking medical students. About 40% smoking medical students started smoking because of peer pressure and stress and 20% smoke because of curiosity.

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## INTRODUCTION

Smoking is the act of inhaling and exhaling the fumes of burning plant material. A variety of plant materials are smoked, including marijuana and hashish, but the act is most commonly associated with tobacco as smoked in a cigarette, cigar, or pipe. Tobacco contains nicotine, an alkaloid that is addictive and can have both stimulating and tranquilizing psychoactive effects. The smoking of tobacco, long practiced by American Indians, was introduced to Europe by Christopher Columbus and other explorers. Smoking soon spread to other areas and today is widely practiced around the world despite medical, social, and religious arguments against it. At the dawn of the 20th century, the most common tobacco products were cigars, pipe tobacco, and chewing tobacco<sup>1</sup>.

The tobacco epidemic is one of the biggest public health threats the world has ever faced, killing more than 8 million people a year around the world. More than 7 million of those deaths are the result of direct tobacco use while around 1.2 million are the result of non-smokers being exposed to second-hand smoke<sup>2</sup>.

Over 80% of the 1.3 billion tobacco users worldwide live in low- and middle-income countries, where the burden of tobacco-related illness and death is heaviest. Tobacco use contributes to poverty by diverting household spending from basic needs such as food and shelter to tobacco<sup>3</sup>. Smoking leads to disease and disability and harms nearly every organ of the body. More than 16 million Americans are living with a disease caused by smoking. For every person who dies because of smoking, at least 30 people live with a serious smoking-related illness. Smoking causes cancer, heart disease, stroke, lung diseases, diabetes, and chronic obstructive pulmonary disease (COPD), which includes emphysema and chronic bronchitis. Smoking also increases

risk for tuberculosis, certain eye diseases, and problems of the immune system, including rheumatoid arthritis<sup>11</sup>.

Secondhand smoke exposure contributes to approximately 41,000 deaths among nonsmoking adults and 400 deaths in infants each year. Secondhand smoke causes stroke, lung cancer, and coronary heart disease in adults. Children who are exposed to secondhand smoke are at increased risk for sudden infant death syndrome, acute respiratory infections, middle ear disease, more severe asthma, respiratory symptoms, and slowed lung growth<sup>12</sup>.

In Pakistan, it is estimated that the prevalence of tobacco smoking is 36% for males and 9% for females. Among young adults especially the university students in Pakistan, the prevalence of smoking is 15% with the majority being male smokers. Approximately 1,200 children start smoking every day<sup>4</sup>.

Smoking is one of the leading causes of preventable death. According to World Health Organization (WHO) tobacco use is currently responsible for the death of one in ten adults worldwide (about 5 million deaths each year)<sup>4</sup>.

The prevalence of current smoking among selected medical students of Kathmandu Medical College and Teaching Hospital is 34 (30.1%), majority male 26 (23%). Fifty-six (49.4%) of them had ever smoked cigarettes in their life, and 27 (23.9%) had their first cigarette in late adolescence. The number of students who used other forms of tobacco was comparatively lower i.e. 6 (5.3%).

Many of the students 53 (46.9%) were exposed to second-hand smoke both at home and in public, while 18(15.9) exposed only at public places, and 6 (5.3%) only at home<sup>7</sup>.

International companies hold almost all of the cigarette market in Pakistan. In 2017, British American Tobacco led with 65.6% of the retail volume market share, and

Philip Morris International followed with 30%. In Pakistan, 52 billion cigarettes were sold in 2017.

19.1% of adults (age 15+) currently use tobacco in any form (men 31.8%; women 5.8%), 12.4% of adults smoke tobacco, 7.7% use smokeless tobacco, 3% use water pipes (hookah or shisha)<sup>5</sup>. Among youth (ages 13-15), 10.7% use any tobacco product (boys 13.3%; girls 6.6%) and 7.2% smoke tobacco, and 5.3% use smokeless tobacco among youth who have ever smoked, nearly 40% first tried a cigarette before age 10<sup>5</sup>. 72.5% of adults (16.8 million people) who work indoors are exposed to tobacco smoke at the workplace<sup>5</sup>. 86% of adults who visited restaurants in 2014 (49.2 million people) were exposed to secondhand smoke, and 76.2% of adults who used public transport were exposed to secondhand smoke<sup>5</sup>. 37.8% of youth (ages 13-15) are exposed to secondhand smoke in public places, while 21% of youth are exposed to secondhand smoke in their homes<sup>5</sup>. Tobacco kills over 163,000 people each year in Pakistan, almost 31,000 of these deaths are due to exposure to secondhand smoke<sup>5</sup>. Tobacco causes about 16.0% of all male deaths and 4.9% of female deaths. Overall, 10.9% of all deaths are caused by tobacco<sup>5</sup>. Tobacco causes 66.5% of all deaths from tracheal, bronchus, and lung cancer, 53.2% of deaths from chronic obstructive pulmonary disease, 21.9% of deaths from ischemic heart disease, 15.2% of deaths from diabetes mellitus, and 16.8% of deaths from stroke<sup>5</sup>. In 2019, nearly 14 of every 100 U.S. adults aged 18 years or older (14.0%) currently smoked cigarettes. This means an estimated million adults in the United States currently smoke cigarettes. More than 16 million Americans live with a smoking-related disease<sup>13</sup>.

In another study conducted, The prevalence of ever-smoking, currenting

smoking, and ex-smoking was 28.94, 21.08, and 7.86%, respectively. Male participants had a much higher prevalence of ever-smoking and current smoking (67.39 and 48.77%) than females (3.74 and 2.93%). To better illustrate the time trend of smoking prevalence, sex-specific ever-smoking prevalence classified by birth-year groups was calculated. For both sexes, the prevalence of ever-smoking decreased with time (both  $p < 0.001$ )<sup>14</sup>.

#### **OBJECTIVE:**

The main objective of this study is to estimate the prevalence and probable risk factor of tobacco and shisha smoking among university students.

#### **MATERIAL AND METHODS**

It was a cross sectional study conducted at Sialkot Medical College, Sialkot among male and female university students. For data collection a self-administered questionnaire was used as a tool. The sampling technique used in this study was convenience sampling a type of non-probability sampling. In this technique the students were selected for questioning on the basis of their availability and self-interest after taking consent. Each student was clearly informed about this study after that they actively participated.

Sample size was decided to be 100 of medical students of Sialkot Medical College, Sialkot to be convenient and sufficient as duration of study was one (01) month. After consent and selection of students to be participated in the study and approval from institutional review board the IRB the self-administered questionnaire was distributed to the students to be filled it completely. The completed questionnaire data was then entered into the computer software SPSS version 28. The qualitative data regarding qualitative variables as well as quantitative data were analyzed by calculating frequencies for various variables under

study both for male and female medical students, for rural and urban residents and other listed variables. Proportions then compared at these levels and chi square test is applied to compare any difference between the groups P-values less than 0.05 was considered significant. Variables were age, gender, Tobacco or shisha smoking, residency, family smoking, health issues, family issues, smoking sessions. Non-willing and non-cooperative students were excluded.

## RESULTS

In this cross sectional study out of 100 medical students of Sialkot medical college, Sialkot from 2<sup>nd</sup> year, 3<sup>rd</sup> year and 4<sup>th</sup> year MBBS classes 95 students participated.

The overall prevalence of smoking was 15 (15.78%). Among 100 participants 66 (69.47%) were males and 29 (30.52%) were females. Among these males and female medical students 15 medical students were smokers. The ages of participants range from 19-25 years. Age of 21 years is more frequent in frequency distribution table.

**Table: 1** Descriptive analysis of participants' ages

| TABLE -1           |       |       |
|--------------------|-------|-------|
| Years              |       |       |
| N                  | Total | 95    |
|                    |       | 0     |
| Mean               |       | 21.51 |
| Std. Error of Mean |       | .114  |
| Median             |       | 21.00 |
| Mode               |       | 21    |
| Std. Deviation     |       | 1.110 |
| Range              |       | 6     |

**Table: 2** Frequency distribution table of age in years

| Age (years) | Frequency | Percentage % |
|-------------|-----------|--------------|
| 19          | 2         | 2.1          |
| 20          | 12        | 12.6         |
| 21          | 38        | 40.0         |
| 22          | 27        | 1.1          |
| 23          | 13        | 13.7         |
| 24          | 1         | 1.1          |
| 25          | 2         | 2.1          |
| Total       | 95        | 100          |

The percentages of male and female medical students who smoke as compared to those who don't smoke. Out of 95 medical students 12 (80%) are male medical students while 3 (20%) are female medical students who smoke. Similarly the difference between these two variables gender and smoking status was determined by applying chi-square test, which shows that p value is greater than 0.05 and difference is not significant and smoking prevalence is nearly same in both male and female medical students.

Similarly table No. 34 shows the relationship of parent-education with smoking prevalence in medical students. In this table 8(53.33%) students who smoke belong to educated parents while 7(46.66%) students who smoke belong to un-educated parents. Chi-square test shows the p value 0.03 which is less than 0.05 which means that the difference is significant and educated parents have more smoking prevalence among their children.

**Table: 3** Distribution of parent education among smoking students

|                   | Smoker | % age | non-smokers |            |
|-------------------|--------|-------|-------------|------------|
| Parent educated   | 8      | 53.33 | 63          | $X^2=4.32$ |
| Parent uneducated | 7      | 46.66 | 17          | $P=0.03^*$ |
| Total             | 15     | 100   | 80          | $(P<0.05)$ |

\*Difference is significant we reject null hypothesis

The relationship between residency and smoking prevalence among medical students is listed in following table No. 4, which shows that 9(60%) students who smoke they belong to urban areas while 6(40%) students who smoke belong to rural areas. When these variables of residency and smoking status were compared by chi-square test the p value was 0.44 which is more than 0.05 which shows that difference is not significant and residency has no or by chance influence on smoking prevalence.

**Table: 4** Distribution of residency and smoking status

| Residency | Smokers | % age | Non smokers |                                            |
|-----------|---------|-------|-------------|--------------------------------------------|
| Rural     | 6       | 40.0  | 24          | $X^2= 0.585$<br>$P= 0.44^*$<br>$(P> 0.05)$ |
| Urban     | 9       | 60.0  | 56          |                                            |
| Total     |         | 100   | 80          |                                            |

\*Difference is not significant we fail to reject null hypothesis

Another table No. 5 is designed to illustrate the relationship between family socio economic status and smoking status among medical students. The table shows

that 13(86.66%) medical students who smoke have good socio-economic status while 2(13.33%) who smoke have poor socio-economic status. However chi square test shows no significant difference as p value is more than 0.05.

**Table: 5** Distribution of smoking and socioeconomic status of family

| Socioeconomic status | Smokers | % age | Non smoker |                                         |
|----------------------|---------|-------|------------|-----------------------------------------|
| Good                 | 13      | 86.66 | 69         | $X^2=0.002$<br>$P=0.96^*$<br>$(P>0.05)$ |
| Poor                 | 2       | 13.33 | 11         |                                         |
| Total                | 15      | 100   | 80         |                                         |

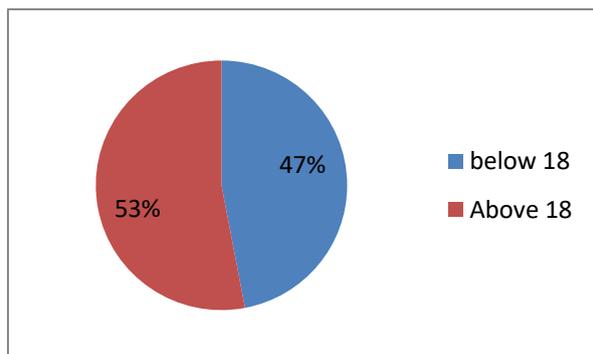
\*Difference is not significant we fail to reject null hypothesis

**Table: 6** Distribution of attitude, knowledge and health issues among smokers

| Smokers              |     | % age |       |
|----------------------|-----|-------|-------|
| Want to quit smoking | Yes | 9     | 60.0  |
|                      | No  | 6     | 40.0  |
| Knowledge            | yes | 9     | 60.0  |
|                      | No  | 6     | 40.0  |
| Health issues        | Yes | 7     | 46.66 |
|                      | No  | 8     | 53.33 |

Table No. 6 shows the different aspects of smoking among smokers that 9(60%) smokers want to quit the smoking. Among smokers 7(46.66%). Students who smoke are facing stomach and lung problems currently. While 9(60%) smokers are having knowledge about the bad effect of smoking on health. In the pie chart given below shows the percentage of smoking

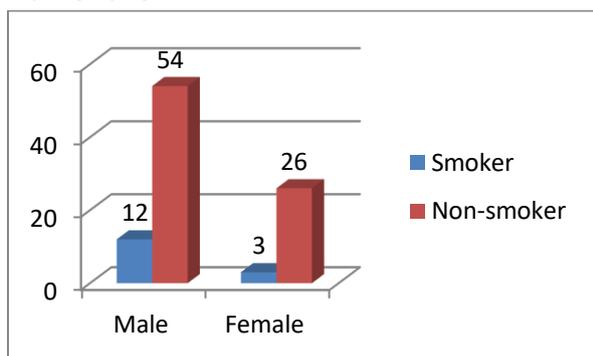
students who started smoking either below 18 years is 53% and above 18 years is 47%.



Pie Chart 1 showing the age of start of smoking in smoking medical students

The following bar chart-1 shows the distribution of male and female medical students among smokers and non-smokers groups, which shows that male medical students involved in smoking are 12 out of 54 non-smoker male students as compared to female students which are 3 out of 26.

**Bar Chart-1**



However, the population of female medical students is about half of the male medical students and the prevalence of smoking is 12(22.2%) in male medical students and 3(11.53%) in female medical students.

Similarly, in this study out of 95 students 31 (32.63 %) have had ever smoked in their life they are not smoking currently. So they are included in the category of non-smokers in this study.

### Practice of smoking:

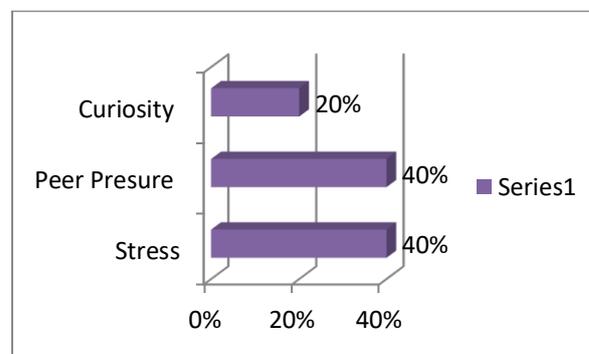
Similarly table no 8 shows that, out of the students who are smoking currently 11 (73.33%) students are Shisha Smokers while 14 (93.33%) students are the cigarette smokers and 10 (67.66%) students are both cigarette and shisha smokers.

**Table No: 7** Modes of smoking among medical students

| Modes                   | Frequency | Percentage % |
|-------------------------|-----------|--------------|
| Cigarette smoking       | 14        | 93.3         |
| Shisha smoking          | 11        | 73.3         |
| Both Cigarette & Shisha | 10        | 66.7         |
| Smokers                 | 15        | 15.8         |

The Bar Chart 1 shows the distribution of causes behind smoking among medical students.

Out of the smoking medical students 6 (40%) were having peer pressure, 6 (40%) were having stress and 3 (20%) were having curiosity as the reason to start smoking.



### DISCUSSION

Smoking is an unhealthy behaviour and it is a risk factor for many cancerous conditions, respiratory diseases, gastro-

intestinal diseases and psychiatric abnormalities. Smoking not only affects the smoker but it is also an environmental hazard for people in proximity to the smoker i.e. second hand smoker.

In current situation the prevalence of smoking is day by day increasing in young adults all over the world. In educational institutes the smoking is very common. In Pakistan smoking is present in all groups of ages.

Medical students smoke due to various causes including peer pressure, stress and curiosity. In this study the peer pressure and stress were found to be the most prevalent causes of smoking in medical students of Sialkot medical college, Sialkot. Student smoke either cigarette or shisha and most of them smoke both of cigarette and shisha. Many of students who smoke are knowledgeable and also have preexisting health problems and they are economically stable. Most of students belong to the urban areas and smoking is 50% more prevalent in male medical students.

In a study, The prevalence of current smoking among selected medical students of Kathmandu Medical College and Teaching Hospital is 34 (30.1%), majority male 26 (23%). Fifty-six (49.4%) of them had ever smoked cigarettes in their life, and 27 (23.9%) had their first cigarette in late adolescence. The number of students who used other forms of tobacco was comparatively lower i.e. 6 (5.3%). Many of the students 53 (46.9%) were exposed to second-hand smoke both at home and in public, while 18(15.9) exposed only at public places, and 6 (5.3%) only at home<sup>7</sup>.

In other study, Overall response rate was 81.6% (922/1130). Median age was 22 years while 50.7% were males and 48.2% were females. The overall prevalence of 'ever smokers' and 'current smokers' was 31.7% and 13.1% respectively. A majority (> 80%) of students asked the patients

about their smoking habits during clinical postings/clerkships. Only a third of them did counseling, and assessed the patients' willingness to quit. Majority of the students agreed about doctors' role in tobacco control as being role models, competence in smoking cessation methods, counseling, and the need for training about tobacco cessation in medical schools. About 50% agreed that current curriculum teaches about tobacco smoking but not systematically and should be included as a separate module. Majority of the students indicated that topics about health effects, nicotine addiction and its treatment, counseling, prevention of relapse were important or very important in training about tobacco smoking<sup>8</sup>. Medical educators should consider revising medical curricula to improve training about tobacco smoking cessation in medical schools. Our results need references from surveys from other medical schools in developing countries of Asia<sup>8</sup>.

Most people who smoke started smoking when they were teenagers. Those who have friends and/or parents who smoke are more likely to start smoking than those who don't. Some teenagers say that they "just wanted to try it," or they thought it was "cool" to smoke<sup>9</sup>.

The tobacco industry's ads, price breaks, and other promotions for its products are a big influence in our society. The tobacco industry spends billions of dollars each year to create and market ads that show smoking as exciting, glamorous, and safe. Tobacco use is also shown in video games, online, and on TV. And movies showing people smoking are another big influence. Studies show that young people who see smoking in movies are more likely to start smoking<sup>9</sup>.

Anyone who starts using tobacco can become addicted to nicotine. Studies show that smoking is most likely to become a habit during the teen years. The younger

you are when you begin to smoke, the more likely you are to become addicted to nicotine<sup>9</sup>.

According to the 2014 Surgeon General's Report (SGR), nearly 9 out of 10 adults who smoke started before age 18, and nearly all started by age 26. The report estimates that about 3 out of 4 high school students who smoke will become adults who smoke – even if they intend to quit in a few years<sup>9</sup>.

Our study shows that smoking is less prevalent in medical students of Sialkot medical college, Sialkot.

Tobacco harms the health, the treasury, and the spirit of Pakistan. Every year, more than 160100 of its people are killed by tobacco- caused disease. Still, more than 125000 children (10-14 years old) and 14122000 adults (15+ years old) continue to use tobacco each day<sup>10</sup>.

Even though fewer men smoke on average in Pakistan than on average in medium-HDI countries, there are still more than 12921300 men who smoke cigarettes each day, making it an ongoing and dire public health threat<sup>10</sup>. Even though fewer boys smoke in Pakistan than on average in medium- HDI countries, there are still more than 86300 boys who smoke cigarettes each day, making it an ongoing and dire public health threat<sup>10</sup>.

From this study results we have concluded that; Out of 95 medical students of Sialkot medical college, Sialkot, (15.78%) medical students were smokers and in which 12 male medical students (18.18%) out of 66 male medical students and 3 female medical students (10.34%) out of 29 female medical students were smokers. The overall knowledge among smoker medical students about smoking and its hazards was about 60%. The good attitude of quitting smoking was present in about 60% of the smoking medical students. About 40% smoking medical students started smoking because of peer

pressure and stress and 20% smoke because of curiosity.

## **CONCLUSION**

The prevalence of smoking in male medical students is 22.2% as compared to female medical students which is 11.53%. which shows that smoking 0.5 times more prevalent in males medical students as compared to female medical students.

## **RECOMMENDATIONS**

1. It is recommended that medical literature should be revised to improve the healthy behaviour of medical students and to stop smoking in medical institutes because smoking is now a public health problem and should be considered at multidisciplinary level.
2. The governing bodies should do an effective legislation to control and stop smoking and to improve quality of living.
3. The medical colleges should design the smoking control committees to effectively stop smoking inside the college.

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## USE OF SURGICAL CONTRACEPTIVES IN WOMEN HAVING AT LEAST TWO ALIVE CHILDREN VISITING GYNAECOLOGY OPD OF CIVIL HOSPITAL

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### ABSTRACT

#### OBJECTIVE:

The objective of this study is to assess the knowledge and use of surgical contraceptive methods among women in Sialkot.

#### METHODS:

The study design was "Cross Sectional Descriptive Study. 100 women patients with different ages, and characteristics who visited Gynecology OPD of Allama Iqbal Memorial Teaching Hospital, Sialkot were included. A Performa including segments related to the patients and her family was designed. Knowledge and use of different surgical contraceptives were assessed. The participants were asked to respond using recall methodology.

#### RESULT:

Of 100 women, 18 have undergone tubal ligation and majority of them were belonging to low socio-economic group and their husbands were either illiterate or having maximum education till intermediate. Most of the women who had undergone tubal ligation had 4 or more than 4 children. 70 (70%) women have knowledge about tubal ligation. 69 (69%) found this procedure safe and 31 (31%) observed side effects. 32 (32%) also recommended this procedure to others. 77 (77%) were satisfied and 23 (23%) had some misconception about this procedure.

#### CONCLUSION:

There is a need to spread mass awareness about tubal ligation and its benefits.

#### KEY WORDS

Contraceptives, Surgical Contraceptives, Surgical Contraceptive methods, Tubal Ligation.

## INTRODUCTION

Contraceptive options for individuals and couples range widely, from barrier methods to short and long-acting reversible contraception to permanent sterilization. Around the world, sterilization is the chosen option for more than 220 million couples desiring contraception<sup>1</sup>. Data from the National Survey of Family Growth shows that from 2006 to 2010, sterilization was the most common method of contraception used in the United States, utilized by 47.3% of married couples<sup>1</sup>. Tubal ligation accounted for 30.2% and vasectomy for 17.1%<sup>1</sup>. For those who have completed family, sterilization using tubal ligation is a safe and effective contraceptive option. Most tubal ligations are performed in an ambulatory setting on an outpatient basis unless performed after cesarean section or in the period immediately postpartum. As with any procedure, the patient must understand the risks, benefits, indications, and alternatives.

Tubal ligation is surgical procedure to prevent pregnancy. It has commonly been called "getting your tubestied". It is also called a female sterilization. During this surgery, both fallopian tubes are blocked or cut. It is usually done in the hospital or in an outpatient surgical clinic. In most cases, you will be able to go home on the day of surgery. Client may have this surgery done under general anesthesia (being asleep), or local or spinal anesthesia (anesthesia that leaves you awake, but unable to feel pain).

Tubal Sterilization is performed at the request of women who have completed childbearing and desires an effective and irreversible form of birth control<sup>2</sup>. It can be performed at anytime during a woman's cycle and in the immediate postpartum or postabortal period<sup>3</sup>. It may be performed via laparoscopy, mini-laparotomy, or hysteroscopy<sup>3</sup>. Apart from contraceptive benefits, there are some

studies that show that tubal ligation procedures are associated with decreased risk of epithelial ovarian cancers as well as an observed reduced risk of pelvic inflammatory disease<sup>4</sup>. Informed consent is very important<sup>5</sup>. It should be emphasized that this procedure is permanent and not meant for reversal<sup>6</sup>. The risk of regret and risk factors for regret including young age at sterilization (less than 30 years), lower parity, sterilization performed in the immediate postpartum period, divorce or remarriage following sterilization, being poor or being of Hispanic origin should be discussed<sup>7</sup>. Young age at the time of sterilization seems to be the strongest predictor of regret<sup>8</sup>. It does not provide 100% protection<sup>9</sup>. According to the CREST study, the 10-year failure rate is 18.5 per 1000 procedures (all procedures aggregated)<sup>10</sup>. The pregnancy rates were highest following laparoscopic Hulka-Clemens clip sterilization and lowest following mono polar coagulation and postpartum salpingectomy<sup>11</sup>. Even bilateral salpingectomy is associated with a risk of failure<sup>12</sup>. If tubal sterilization does fail, there is an increased risk of ectopic pregnancy with a ten-year probability of 7.3 ectopic pregnancies per 1000 procedures<sup>13</sup>.

The rates of ectopic pregnancies also vary by procedure, with the highest rates following laparoscopic sterilization using bipolar coagulation<sup>14</sup>. Patients should, therefore, be counseled to present early if they suspect pregnancy. Serious complications following tubal sterilization are rare, which demonstrate its safety<sup>2</sup>.

As with any procedure, informed consent should be obtained<sup>15</sup>. Therefore, the risks associated with the procedure such as bleeding, infection, injury to nearby organs, wound complications among others should be discussed<sup>15</sup>.

The alternatives such as vasectomy, long-acting reversible contraceptives

(LARCs) like intrauterine devices [IUD]), injection, ring, patch, pills, barrier methods, and abstinence should also be reviewed with the patient<sup>16</sup>.

### OBJECTIVE

The objective of this study is to assess the knowledge and practice about surgical contraceptive methods among females in Sialkot city.

### METHODOLOGY

Study universe was Allama Iqbal Memorial Teaching Hospital, Sialkot. The study design was Cross Sectional Descriptive Study.

The data collected from different age groups ranging from (25-50) years. Every Participant has different characteristics i.e. Socio-economic Status, Educational History, Family Structure, Age, number of children and Ethnic back ground etc. We assessed their knowledge and practice regarding surgical contraceptives and its intervention. This study was done in October 2021. Sample size of this study was 100 female patients visiting Gynecology OPD of Allama Iqbal Memorial Teaching Hospital, Sialkot. Simple Random Sampling, was applied to gather data.

An inclusion criterion was willing and cooperative females having 02 or more alive children visiting Gynecology OPD.

An exclusion criterion was non-willing and non-cooperative female patients, non-cooperative female patients.

The questionnaire form was conveyed to patients by visiting the gynecology department of Allama Iqbal Memorial Teaching Hospital, Sialkot.

After collection of data, it was analyzed using SPSS version 21 Statistical analysis comprised of Descriptive Statics.

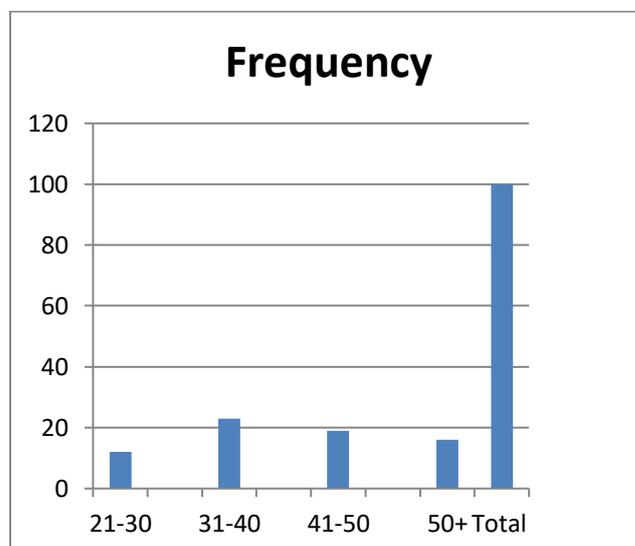
### ETHICAL CONSIDERATIONS

The permission of the study was granted by the Medical Superintendent and Head of gynecology department of Allama Iqbal Memorial Teaching Hospital, Sialkot. Informed Consent was taken from participants. The confidentiality of the respondents and the data gathered from the respondents was ensured.

### RESULT

70 percent of the women under study were having awareness regarding the surgical contraceptive procedure i.e. Bilateral Tubal Ligation and 18% undergone this procedure.

Age of females who have responded to our questionnaire is given in the following figure:



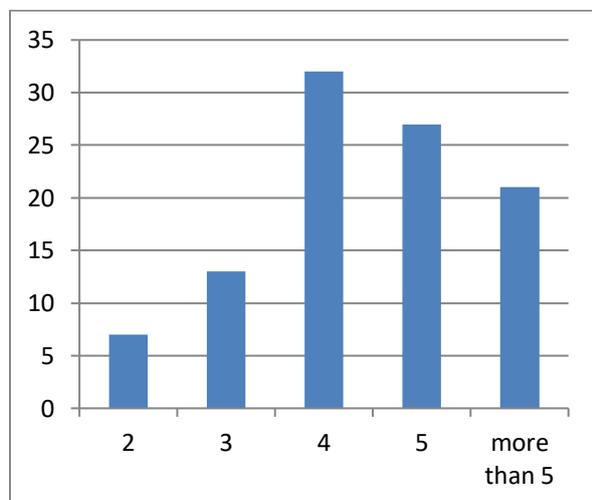
**Figure-1.** About 61% of the total women lie between 31-50 age group who were included in our study.

| AGE OF FEMALES WHO RESPONDED OUR QUESTIONNAIRE |           |
|------------------------------------------------|-----------|
| Age of women                                   | Frequency |
| 21-30                                          | 12        |
| 31-40                                          | 23        |
| 41-50                                          | 19        |
| 50+                                            | 16        |
| Total                                          | 100       |

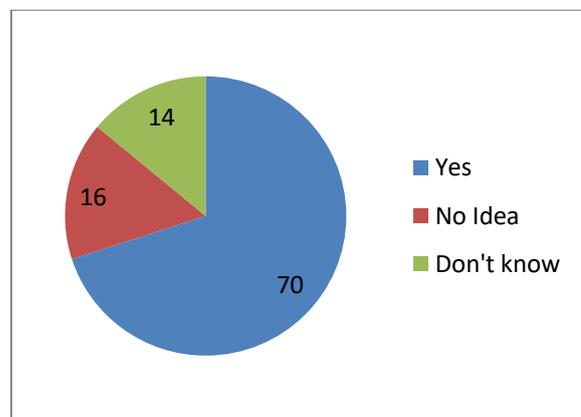
**Figure-2 (a)** Education of husbands of females who participated in our study.

| EDUCATION OF FEMALES WHO HAVE UNDERGONE TUBAL LIGATION |           |
|--------------------------------------------------------|-----------|
| Education                                              | Frequency |
| Illiterate                                             | 4         |
| Under matric                                           | 3         |
| Matric                                                 | 2         |
| Intermediate                                           | 3         |
| Graduation                                             | 4         |
| Others                                                 | 2         |
| Total                                                  | 18        |

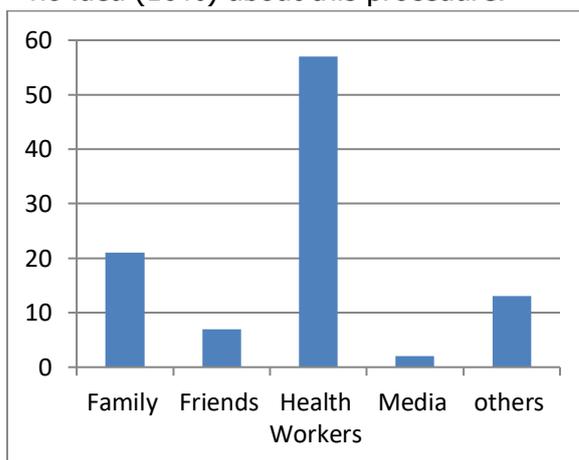
**Figure-2 (b)** Most of the husbands of females who had undergone tubal ligation were illiterate or having education till intermediate level.



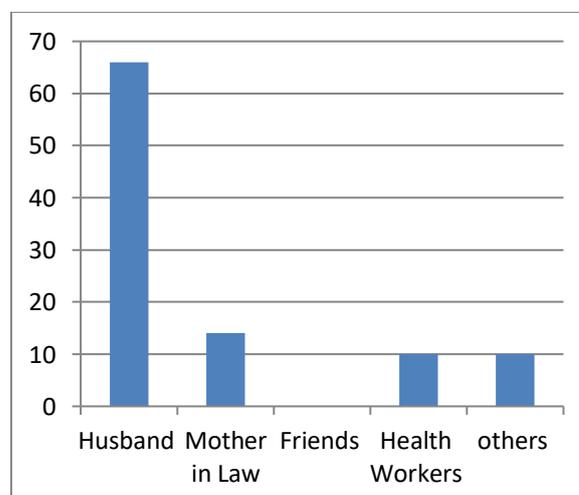
**Figure-3.** As far as number of children of females who have undergone tubal ligation are concerned, most of the females who have undergone tubal ligation have 4 or more than 4 children.



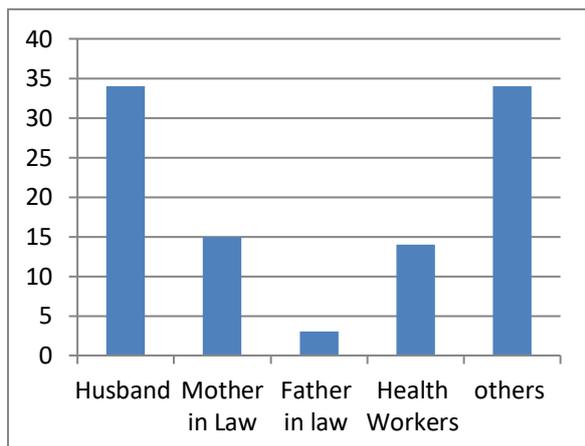
**Figure-4.** 70% of the females have knowledge about tubal ligation while 30% either don't know (14%) or have no idea (16%) about this procedure.



**Figure-5.** 57% of the females who have knowledge about tubal ligation have heard it from health workers.

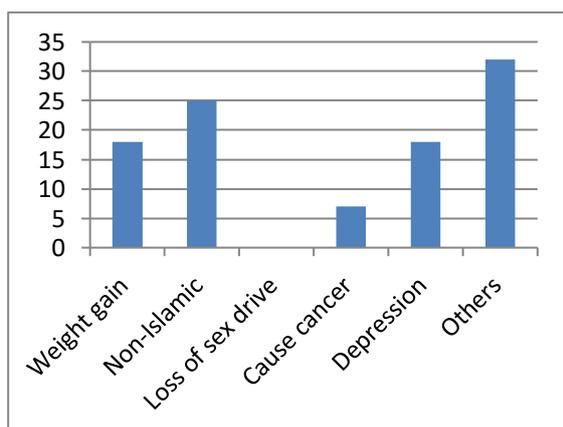


**Figure-6.** 66% of the total women were convinced by their husband to undergo this procedure.



**Figure-7.** Husband, mother-in-law, and others have a dominant role in pressurizing women not to undergo this procedure.

70% of the total women who have undergone tubal ligation found this procedure safe for themselves. 30% of the total women who have undergone this procedure found side effect related to this procedure. 44% of the study group have some other member in their families who have undergone this procedure. 32% of the total females have recommended this procedure to others. 32% of the total women of study group have some misconception about this procedure, discussed in table No. 8.



**Figure-8.** Non-Islamic, weight gain and depression were different perception about this procedure.

## DISCUSSION

Tubal ligation for sterilization is one of the common methods of contraception practiced by women in developing countries like Pakistan. This study was conducted to find out awareness about bilateral tubal ligation and percentage of women who have undergone this procedure.

A similar study was conducted by department of obstetrics and gynecology and RHS center, Jinnah postgraduate medical center Karachi. According to the reference study there were total 4210 clients out of which 1148 have undergone tubal ligation. The mean age of women was 33years with 44.3% already have 6 or more children whereas in our study the data was of 100 clients, out of which only 18 women have undergone this procedure making it 18%. The major age group in which these females undergone bilateral tubal ligation fall in 31-40 years which is 32.8% with majority having more than four kids.

Majority of females who have undergone tubal ligation belongs to low socioeconomic group having husbands either illiterate or having education maximum till intermediate.

The difference between our study and reference study is that sample size of reference study was large i.e. 4210 while our study contains limited number of people which was due to covid pandemic, limited time and resources.

Majority of the women in our study were reluctant for bilateral tubal ligation due to different perceptions about this procedure like un-Islamic aspects, obesity, and other reasons, with satisfaction of 77% with this procedure.

## CONCLUSION

From our survey we conclude that 70% of females have knowledge about tubal ligation whereas 30% don't have any idea about tubal ligation.

Hence there is a need to spread mass awareness about tubal ligation and its benefits.

Also, from our data we concluded that only 18% of women have undergone this procedure whereas 82% have not undergone this procedure due to various reasons. Therefore, to control population increase and promote maternal child health, government should take steps at a grass root levels for bilateral tubal ligation application.

From our study we also concluded that lady health workers are playing their role efficiently in raising awareness about bilateral tubal ligation among illiterate people.

## RECOMMENDATIONS

It is highly recommended that;

1. More awareness through health education campaigns is need of the time.
2. Trained lady health workers should be involved by public health authorities to spread knowledge about bilateral tubal ligation at grass root level.
3. Women education should be promoted.

## LIMITATIONS

1. Resources and time was very limited
2. Due to small sample size, the results of this study cannot be generalized to the whole population.
3. Bias may have occurred, as the study was limited to small group of people due to COVID-19 pandemic circumstances.

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