World Family Medicine Journal
incorporating the Middle East Journal of Family Medicine

ISSN 1839-0188

October 2020 - Volume 18, Issue 10

UNICEF Pakistan

Perceptions of parents regarding polio vaccination in Karachi

... page 66

Table of Contents

4 **Editorial**
Dr. Abdulrazak Abyad
DOI: 10.5742MEWFM.2020.93868

Original Contribution

5 General Population Awareness Regarding Colorectal Cancer and its Determinants in Aseer region, Saudi Arabia
Shehata Farag Shehata, Mohammed Saeed Alqahtani, Nawaf Ahmad Yahya, Abdullah Ali Aseeri, Mohammed Ali Alotaif, Abdulaziz Ali Abdullah
DOI: 10.5742/MEWFM.2020.93868

13 Knowledge, attitudes and practices of school teachers regarding acute complications of type 1 diabetes mellitus in Abha city, southwestern Saudi Arabia
Razan S. Al Humayed
DOI: 10.5742/MEWFM.2020.93869

20 Knowledge, Attitude and Practices of Type 2 Diabetic patients attending a tertiary care hospital in Karachi
Kanza Baig, Tafazzul Hyder Zaidi, Kiran Mehtab, Marium Farid, Shajeeya Khaliq, Wajiha Mukhtar, Shiza Tariq, Fozia Zaidi
DOI: 10.5742/MEWFM.2020.93870

29 Prevalence and predictors of depression among medical students in Jeddah, Saudi Arabia
Yousria Badawy, Areej Alsaggaf, Amani Bardi, Omnia Alganmi , Turki Alshehri
DOI: 10.5742/MEWFM.2020.93871

Population and Community Studies

36 Assessment of knowledge and practice of mothers regarding breastfeeding and contraception in the postpartum period in primary care centers, King Abdulaziz Medical City, Riyadh, Saudi Arabia
Aida AlDughaither, Hadeel AlMutairi
DOI: 10.5742/MEWFM.2020.93873

50 Family History of Cancer, Trend of Genetic Counselling and Screening in Karachi: A Survey among Students of Jinnah Sindh Medical University
Nazish Jaffar, Syeda Ghadeer Zehra Naqvi, Rohma Momna, Maria Raza, Aliza Babar, Aliya Jafri
DOI: 10.5742/MEWFM.2020.93874

67 Prevalence of primary headache among King Khalid University students in 2019
Shehata Farag Shehata, Adnan Q. Al-Malki, Abdulrahman J. Alqahtani, Anas Ali Abo Tamraa, Ahmed Hussain Almutlaq, Ali Saad Alshamrani, Abdulelah Eed Alotaibi, Khalid Mohammed Alotaibi, Khalid Hussein Almutairi, Sultan Ali Alqahtani
DOI: 10.5742/MEWFM.2020.93875

66 Perceptions of parents regarding polio vaccination in Karachi
Hareem Arshad, Tafazzul Hyder Zaidi, Kiran Mehtab, Jibraeel Khan Durrani, Amna Anam, Ruqqiya Wahid, Aiman Nisar, Aroosa Hussain, Alia Mehboob, Shujaat Husain, Nadia Rubab Zaidi, Fozia Zaidi
DOI: 10.5742/MEWFM.2020.93876

77 Awareness and Pattern of Utilizing Family Planning Methods in Married Women of Duwakot, Nepal
Raut Binod, Kharel Sushil
DOI: 10.5742/MEWFM.2020.93877

84 'A positive thing by mentioning it': a qualitative study of experiences of brief physical health interventions for individuals diagnosed with severe mental illness in primary care
Hassan Awan, Mohsin Allah Ditta, Mick McKeown, Karen Whittaker
DOI: 10.5742/EWFM.2020.93878

Education and Training

91 Difficulties facing family physicians in primary health care centers in Abha City, Saudi Arabia
Hatim Mohammed Ali Alsharafi, Bassam Mousa Khalawy Mokali
DOI: 10.5742/MEWFM.2020.93879

103 Remote consultations; what you need to know
Rubena Ali Malik, Philip Sadler
DOI: 10.5742/MEWFM.2020.93880

107 Bridging The Gap: A review of communication skills challenges for expatriate doctors in the Arabian Gulf
Asif Parvez Malik, Ameer Muhammad Khan
DOI: 10.5742/MEWFM.2020.9381

Review

112 Recognising depression in elderly patients in general practice
Mohammed Ansary
DOI: 10.5742/MEWFM.2020.93882

Case Report

115 CADASIL (Cerebral Autosomal Dominant Arteriopathy with Subcortical Infarcts and Leukoencephalopathy) in a young adult with migraine
Mohammed Ansary
DOI: 10.5742/MEWFM.2020.93883

Editorial

This issue is rich with papers spanning the World from Bangladesh to Australia to UK , Qatar, Yemen, Saudi Arabia, Pakistan, Jordan, Nepal and others.

AlDughaither, & AlMutairi assessed the knowledge and practice of breastfeeding and contraception for post-partum women. They used a Questionnaire based cross-sectional study for postpartum women in 3 primary health care centers, Riyadh, Saudi Arabia. Only 12.8% were exclusively breastfeeding their babies, while others were on mixed feeding (45%) or formula milk alone (42.2%). The authors concluded that the prevalence of exclusive breastfeeding was low(12.8%) despite the good knowledge in 67.8% of the participants. Higher knowledge about breastfeeding and contraception were found with older age, having more than 3 children and receiving antenatal clinical advices.

Alsharafi et al did a cross-sectional study was carried out among a sample of Saudi family physicians at primary health care (PHC) centers belonging to the Ministry of Health (MOH)in Abha City. The objective was to determine the difficulties facing family physicians in Abha City, Saudi Arabia and to assess their satisfaction regarding their workplaces.

The study included 87 Saudi family medicine physicians.The authors concluded that family physicians working at PHC centers in Abha city, face several difficulties, which significantly affect their satisfaction with workplace and could impair quality of care delivered to patients.

BADAWY, et al., did an institutional based cross-sectional study was conducted among medical students at Ibn Sina National College of Medical Science of Jeddah, Saudi Arabia. The presence of depression and its severity was based on PHQ depression scale (PHQ-9) 19, using Google form link . and factors associated with depression among medical students in Jeddah, Saudi Arabia. Depression was detected in 75.31% of the studied population , considering 10 score as a cut off point for depression. The authors concluded that depression is highly prevalent among medical student populations. Implication of depression is of serious concern that could result in loss of potential to handle various stressors at college, impairment of functioning in classroom performance and later in clinical practice.

Jaffar et al., did a cross sectional, questionnaire-based survey was conducted at Jinnah Sindh Medical University from June to September 2019. A total of 162 MBBS, BDS and PHARM D students were included in the study. The aim was to observe the trend of genetic counseling and screening tests in subjects with documented positive family history of cancers and to identify the knowledge of familial cancers and related hereditary mutations among MBBS, BDS and Pharm D students. The authors concluded that most common reported familial malignancy was breast carcinoma and least frequent was retinoblastoma. Documentation of family history of cancer, advised screening and genetic counselling was found to be inadequate in our clinical setup. Students of MBBS had a good knowledge of familial cancer and related hereditary mutations in comparison to dentistry and pharmacy students.

Malik & Sadler stressed that the Covid-19 pandemic has hurried the need for health services to consult remotely; this is to ensure the safety of health professionals and patients by reducing disease transmission rates. This review and useful guide will increase confidence with remote consulting. A health professional can feel overwhelmed and worry about risks to consulting on the telephone or via videocall. Most clinicians have experience in telemedicine and virtual consults, there are many benefits which range from convenience, less time consuming and cost effectiveness.

Shehata et al., tried to assess Prevalence of primary headache among King Khalid University students in 2019. He used a descriptive cross-sectional approach. Data were collected from participants using electronic pre-structured questionnaire. The study included 421 students whose ages ranged from 18 to 30 years with mean age of 21.7 ± 1.9 years old. The authors concluded that , more than three quarters of the students complained of moderate to severe headache attacks which was mainly related to sleeping disturbance, studying hours, and stressful lifestyle. Students should be learned strategies for stress management training for headache

Malik & Khan stressed that good interpersonal communication has always been a part of everyday life, and is imperative for an effective doctor-patient relationship, not least for those practising Family Medicine. The aim of their review is to focus on the Arabian Gulf, was to see the potential communication challenges faced between expatriate doctors and patients of an Arabic-speaking background. Their review has added to the existing literature by finding that language-barriers are just the beginning of the communication challenges that can inhibit the relationship between health professional and patient. Although there is enough to highlight awareness of the problem, among a lack of research, there is a lack of perspective found from expatriate doctors. Future research, best directed across the Arab-speaking world, can guide the implementation of improved language and communication skills training, leading to the delivery of better quality healthcare across the region.

Shehata et al., followed a descriptive cross-sectional approach was used targeting all accessible population in Aseer region, Southern of Saudi Arabia. The aim was to assess population awareness regarding colorectal cancer and its risk factors in Aseer region. A total of 513 participants completed the study survey. Participant's ages ranged from 18 to 75 years old with mean age of 27.3 ± 10.9 years.

Exact of 383 (74.4%) participants heard about colorectal cancer. The authors concluded that , the study revealed that public awareness regarding CRC in Aseer region was poor specially for check-up timing and frequency. Also, check-up behaviour to screen for CRC was poor and majority of the population recorded their need to improve their awareness level.

Baig et al., did a Cross sectional study was conducted using a non-probability sampling technique to select the diabetic patients. A total of 244 diabetic patients were interviewed, coming to the medical OPD at Jinnah Post Graduate Medical Center. The data was collected via interviews using a structured questionnaire. A total of 220 individuals participated in this study with ages ranging from 10 years to 78 years with highest number of individuals, 21 (9.5%) in 50 year old age group (continued page 117)

General Population Awareness Regarding Colorectal Cancer and its Determinants in Aseer region, Saudi Arabia

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Received: August 2020; Accepted:September 2020; Published: October 1, 2020.
Citation: Shehata Farag Shehata et al. General Population Awareness Regarding Colorectal Cancer and its Determinants in Aseer region, Saudi Arabia. World Family Medicine. 2020; 18(10): 5-12 DOI: 10.5742/MEWFM.2020.93868

Abstract

Background: Colorectal cancer (CRC) is when malignant cells form in the large intestine or the rectum usually due to old age and lifestyle habits and rarely due to genetic factors, or other risk factors. Colorectal cancer (CRC) is considered to be the second cause of death all around the world. The incidence of colorectal cancer, as estimated by the cancer incidence report of Saudi Arabia in 2013 accounted for 11.9% of all cancers that were diagnosed in 2013 with males affected by 53.1% and females by 46.9%.

Aim: to assess population awareness regarding colorectal cancer and its risk factors in Aseer region, Saudi Arabia.

Methodology: A descriptive cross-sectional approach was used targeting all accessible population in Aseer region, southern Saudi Arabia. Data were collected from participants using an electronic pre-structured questionnaire. The tool covered participants' socio-demographic data, participants' medical and family history, awareness and practice regarding colorectal cancer and screening.

Results: A total of 513 participants completed the study survey. Participant's ages ranged from 18 to 75 years old with mean age of 27.3 ± 10.9 years. Exactly 383 (74.4%) participants had heard about colorectal cancer. About 55% of the participants agreed that early-stage colorectal cancer is curable and 204 (39.8%) agreed that early-stage colorectal cancer can be asymptomatic. Regarding screening methods, 45% of the participants were not aware of them while 48% told about colonoscopy. In total, good awareness regarding colorectal cancer was detected among very few portions of the participants. Awareness was significantly associated with middle ages and high level of education.

Conclusions: In conclusion, the study revealed that public awareness regarding CRC in Aseer region was poor especially for check-up timing and frequency. Also, check-up behaviour to screen for CRC was poor and the majority of the population recorded their need to improve their awareness level.

Key words: Colorectal cancer, cancer colon, population, awareness, practice, Risk factors

Background

Colorectal cancer (CRC) is considered to be the second cause of death all around the world. It is caused by uncontrolled irregular cell growth with the ability to regenerate and spread which harms the organ and the whole body [1]. Colorectal cancer is when malignant cells form in the large intestine or the rectum usually due to old age and lifestyle habits and rarely due to genetic factors. Risk factors include : obesity, tobacco smoking, lack of physical activity, inflammatory bowel disease, and dietary factors which include lack of fibre intake, consumption of processed meat and alcohol [2]. Colonoscopy is the gold standard for diagnosing colorectal cancer; other methods include flexible sigmoidoscopy, faecal occult blood test, and CT colonography [3].

The incidence of colorectal cancer as estimated by the cancer incidence report of Saudi Arabia in 2013 accounted for 11.9% of all cancers that were diagnosed in 2013 with 53.1% males affected and 46.9% of females [4]. Colorectal cancer is the most common cancer in males and third most common in females in Saudi Arabia with the median age around 60 years for men and 55 years for women with a death rate as estimated in 2004 by World Health Organization of 8.3%. Moreover, Saudi patients are more likely to present at a younger age and more advanced disease compared to western countries, thus colorectal cancer is a major concern to the health care system and the community [5, 6].

In a a study in Riyadh city in which 1,070 participants completed the survey the result was most participants believed that the screening should begin when the symptoms start (42.9%); 20% of participants believe that polyps are a risk factor for CRC,and the majority of educated persons answered correctly (less than 50% and 34% of all) that family history is a personal risk factor for CRC (5). A second study conducted at the outpatient department of a tertiary hospital in the western region of KSA to assess the awareness of colon cancer included 619 participants, whereby 55.3% of them agreed to do screening while the remaining wanted to do radiological screening by using barium. The conclusion of the study showed there is a decrease in awareness of colorectal screening that related to decreased individual knowledge not related to age and gender [7].

Methodology

A descriptive cross-sectional approach was used targeting all accessible population in Aseer region, southern Saudi Arabia. All those with ages of 18 years or more living in Aseer region were invited to participate in the survey. A total of 700 individuals received the study survey. Exactly 513 respondents completed the study questionnaire with a response rate of 73.3%. After obtaining permission from the Institutional ethics committee, data collection started. Data were collected from participants using electronic pre-structured questionnaire. The questionnaire was uploaded online using social media platforms by the researchers and their relatives during the period from 15th March till 30th of April 2020. All accessible and eligible population in the study setting were invited to fill in the attached tool. The researchers constructed the survey tool after an intensive literature review and expert's consultation. The tool was reviewed using a panel of 5 experts for content validity. Tool reliability was assessed using pilot study of 30 participants with reliability coefficient (α-Cronbach's) of 0.78. The tool covered the following data: participants' socio-demographic data like age, gender, residence, education, participants' family history of colorectal cancer, and participants' practice regarding screening for CRC. Awareness was assessed using 8 questions with multiple allowed answers for 3 of them.

Data analysis

After data were extracted, it was revised, coded, and fed into statistical software IBM SPSS version 22(SPSS, Inc. Chicago, IL). All statistical analysis was done using two tailed tests. P value less than 0.05 was considered statistically significant. For awareness items, each correct answer was scored one point and total summation of the discrete scores of the different items was calculated. A patient with a score less than 60% (21 points) of the maximum score was considered to have poor awareness while good awareness was considered if they had a score of 60% (22 points or more) of the maximum. Descriptive analysis based on frequency and percentage distribution was done for all variables including demographic data, awareness items and participants' practice. Cross tabluation was used to assess distribution of awareness according to participants' personal and medical data. Relations were tested using Pearson chi-square test.

Results

A total of 513 participants completed the study survey. Participant's ages ranged from 18 to 75 years old with mean age of 27.3 ± 10.9 years. Male respondents were 310 (60.4%) and 395 (77%) participants were from an urban area. Regarding education, 342 (66.7%) were university graduated and monthly income was averaged among 321 participants (62.6%). Family history for colorectal cancer was reported among 55 (10.7%) participants (Table 1).

Table 2 demonstrates distribution of public awareness regarding colorectal cancer. Exactly 383 (74.4%) participants had heard about colorectal cancer. About 55% of the participants agreed that early-stage colorectal cancer is curable and 204 (39.8%) agreed that early-stage colorectal cancer can be asymptomatic. Regarding risk factors of colorectal cancer, most identified by the study participants were alcohol abuse (61.2%; 314) followed by positive family history (47.6%; 244), low intake of fruits and vegetables (45.6%; 234), high intake of red and grilled meat (45.2%; 232), and high-calorie diet, particularly fat-rich (31.4%; 161). About symptoms, the most identified by participants were blood in stool (57.3%; 294) followed by strong, crampy abdominal pain (54.8%; 281), change in bowel habits (54.2%; 278), rectal bleeding (52.6%; 270), and bloating (46.6%; 239). Regarding screening methods,

45% of the participants were not aware of them while 48% referred to colonoscopy and 33.7% mentioned faecal occult blood test while Sigmoidoscopy was reported by 28.1% of the participants. Also, 104 (20.3%) selected the recommended age for starting colorectal cancer screening to be at 50 years or above and 36 (7%) of the participants reported it should be every three years. In total, good awareness regarding colorectal cancer was detected among 72 (14%) participants.

Table 4 demonstrates distribution of public awareness regarding CRC according to participants personal data. Good awareness was reported among 22.3% of those aged 20-29 years in comparison to 9.1% of those aged 40 years or more with recorded statistical significance (P=.001). Also, 17.8% of participants with university level of education had good awareness level compared to 8.3% of those who were at secondary level or less (P=.002). Exactly 36% of participants who had their information from medical staff had good awareness level compared to 1.6% of those who had no specific source (P=.001).

Table 1: Personal data of public participants in the study survey

Personal data	No	%
Age in years		
< 20 years	138	26.9%
20-29	229	44.6%
30-39	69	13.5%
40+	77	15.0%
Gender		
Male	310	60.4%
Female	203	39.6%
Residence		
Urban area	395	77.0%
Rural area	118	23.0%
Education		
Below secondary	24	4.7%
Secondary	147	28.7%
University/ more	342	66.7%
Monthly income		
Insufficient	48	9.4%
Just sufficient	321	62.6%
More than sufficient	144	28.1%
Family history of cancer colon		
Yes	55	10.7%
No	403	78.6%
Don't know	55	10.7%

Table 2: Distribution of public awareness regarding colorectal cancer in Aseer region, Saudi Arabia

Colorectal cancer awareness items		No	%
Heard about colorectal cancer?	Yes	383	74.7%
	No	130	25.3%
Early-stage colorectal cancer is curable	Yes	280	54.6%
	No	7	1.4%
	Don't know	226	44.1%
Early-stage colorectal cancer can be asymptomatic	Yes	204	39.8%
	No	39	7.6%
	Don't know	270	52.6%
Risk factors contributing to the development of colorectal cancer	Don't know	8	1.6%
	Low intake of fruit and vegetable	234	45.6%
	High intake of red and grilled meat	232	45.2%
	Poultry meat consumption	59	11.5%
	Alcohol abuse	314	61.2%
	High fluid intake	23	4.5%
	High-calorie diet, particularly fat-rich	161	31.4%
	Positive family history	244	47.6%
	Age above 50 years	176	34.3%
	Overweightness	153	29.8%
	Inflammatory bowel diseases	145	28.3%
	Intestinal infections	101	19.7%
	Smoking	94	18.3%
	High blood pressure	21	4.1%
	Sedentary lifestyle	24	4.7%
	Oral contraceptives	5	1.0%
	Use of painkillers	7	1.4%
	Superficial polyps in the colon	56	10.9%
Symptoms of colorectal cancer	Strong, crampy abdominal pain	281	54.8%
	Unintentional weight loss	232	45.2%
	Change in bowel habits	278	54.2%
	Weakness or fatigue	209	40.7%
	Frequent nausea, vomiting	172	33.5%
	High blood pressure	50	9.7%
	Elevated level of blood glucose	33	6.4%
	Bloating	239	46.6%
	Blood in stool	294	57.3%
	Fever	82	16.0%
	Dizziness	78	15.2%
	Poor appetite	168	32.7%
	A lump around the anus	171	33.3%
	Rectal bleeding	270	52.6%
Cancer colon screening methods	Faecal occult blood test	194	37.8%
	M2-PK isoenzyme test	84	16.4%
	Sigmoidoscopy	144	28.1%
	Colonoscopy	246	48.0%
	Don't know	205	40.0%
Recommended age to start screening for cancer colon	Above the age of 40 years	173	33.7%
	Above the age of 50 years	104	20.3%
	Above the age of 60 years	5	1.0%
	Don't know	231	45.0%
Frequency of undergoing cancer colon screening	Every 6 months	81	15.8%
	Annually	122	23.8%
	Biannually	38	7.4%
	Every three year	36	7.0%
	Don't know	236	46.0%

Table 3: Participants practice regarding CRC in Aseer region, Saudi Arabia

Practice regarding CRC screening	No	%
How often do you visit your doctor and specialists for check-up?		
Never	340	66.3%
Every 1-3 months	24	4.7%
Every 3 months	28	5.5%
Annually	47	9.2%
Every 2-5 years	74	14.4%
If recommended to have colonoscopy, what will you do?		
Will pay (own money) and have a test within a week	330	64.3%
Will wait for 6-8 months for free test	117	22.8%
Not prefer to have test at all	66	12.9%
Would you like to get more information about colorectal cancer screening?		
Yes	414	80.7%
No	99	19.3%

Figure 1. Source of information regarding colorectal cancer among population in Aseer region, Saudi Arabia

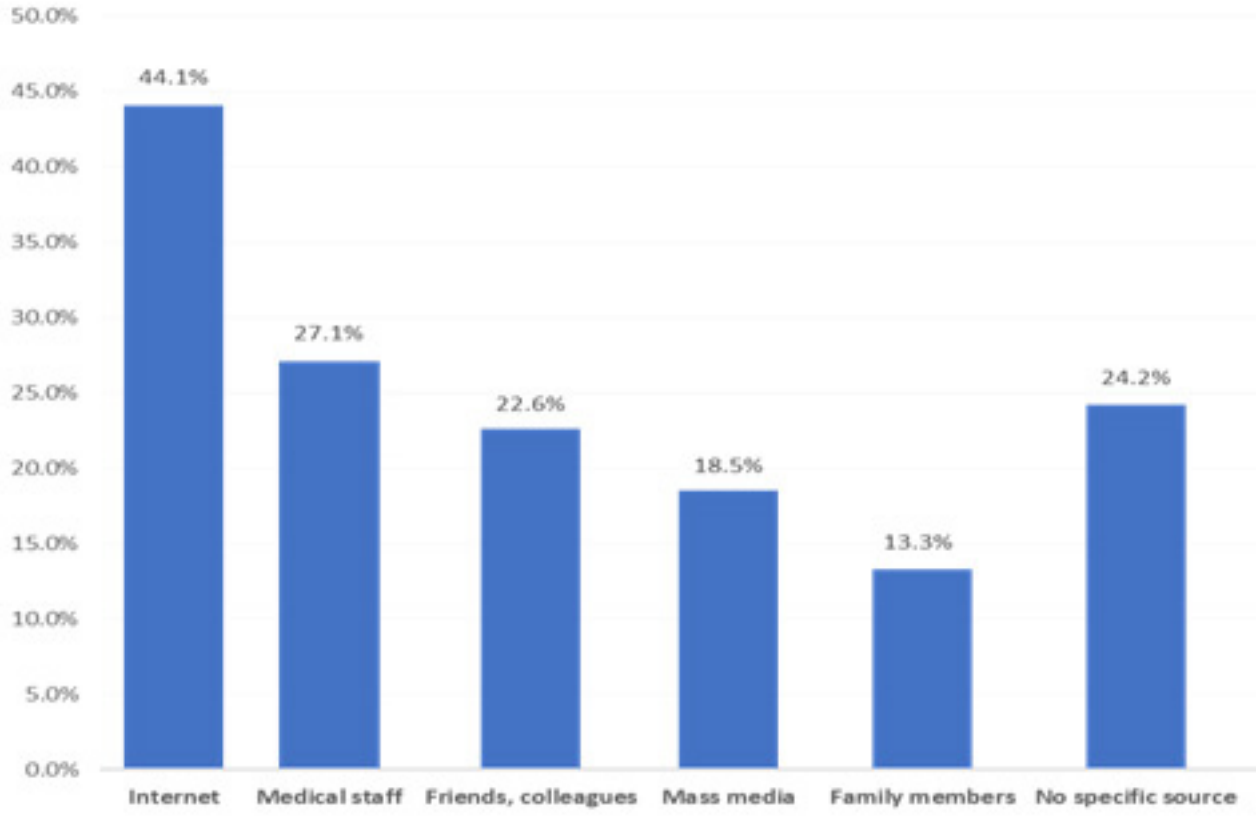

Table 4: Distribution of public awareness regarding CRC according to participants personal data

Personal data		Awareness level				P-value
		Poor		Good		
		No	%	No	%	
Age in years	< 20 years	130	94.2%	8	5.8%	.001*
	20-29	178	77.7%	51	22.3%	
	30-39	63	91.3%	6	8.7%	
	40+	70	90.9%	7	9.1%	
Gender	Male	274	88.4%	36	11.6%	.051
	Female	167	82.3%	36	17.7%	
Residence	Urban area	337	85.3%	58	14.7%	.439
	Rural area	104	88.1%	14	11.9%	
Education	Below secondary	22	91.7%	2	8.3%	.002*
	Secondary	138	93.9%	9	6.1%	
	University/ more	281	82.2%	61	17.8%	
Monthly income	Insufficient	44	91.7%	4	8.3%	.066
	Just sufficient	281	87.5%	40	12.5%	
	More than sufficient	116	80.6%	28	19.4%	
Family history of cancer colon	Yes	48	87.3%	7	12.7%	.400
	No	349	86.6%	54	13.4%	
	Don't know	44	80.0%	11	20.0%	
How often do you visit your doctor and specialists for check-up?	No	297	87.4%	43	12.6%	.204
	Yes	144	83.2%	29	16.8%	
Would you like to get more information about colorectal cancer screening?	Yes	354	85.5%	60	14.5%	.541
	No	87	87.9%	12	12.1%	
Source of information	Medical staff	89	64.0%	50	36.0%	.001*
	Friends, colleagues	89	76.7%	27	23.3%	
	Family members	60	88.2%	8	11.8%	
	Mass media	79	83.2%	16	16.8%	
	Internet	189	83.6%	37	16.4%	
	No specific source	122	98.4%	2	1.6%	

P: Pearson X^2 test
* P < 0.05 (significant)

Discussion

The current study aimed to assess public awareness regarding colorectal cancer (CRC) and its determinants in Aseer region, Saudi Arabia. The study findings were that nearly 3 out of each 4 heard about colorectal cancer which means that they may be exposed to a case or relative with the cancer but family history was positive among only 10% of the survey respondents. Early stage curability and clinical presentation was also reported by nearly half of the participants. Regarding risk factors, not all were detected correctly by the study participants as two thirds told about alcohol abuse and nearly half of the study respondents know about positive family history as one of the major risk factors. Dietary habits including low intake of fruits and vegetables besides high intake of fat rich food was selected as cancer colon risk factors by nearly 40% of the study participants. Old age (above 50 years), inflammatory bowel diseases and overweight were also selected by a considerable portion of the respondent population.

Considering symptoms, blood in stool, rectal bleeding, and crampy abdominal pain with change in bowel habits either diarrhoea or constipation were the most reported by the participants. General cancer symptoms and signs including weight loss, fever, loss of appetite were reported by nearly 30% of the survey respondents which means they were knowledgeable regarding the specific clinical features that aid proper seeking of medical care in case of having similar clinical presentations. The worst area in public awareness was for diagnostic and screening methods for colorectal cancer as nearly 40% said that they don't know about it but colonoscopy was reported by nearly half of the participants which may be by chance of linking cancer colon with colonoscopy, not actual awareness regarding this method. Also, public awareness regarding the proper age to start screening for cancer colon was questionable, which is a very important finding, as this item if well known by public will be the main motivator for screening behaviour helping in early detection and management of the cancer at its curable stages. Only 20% (1 out of each 5) reported for the age of 50 years or more. The situation was worse regarding frequency of screening for CRC as only 7% selected every 3 years which needs more effort to improve

public awareness regarding check-up related behaviour. In general, a very low percentage of the population had good awareness level regarding CRC (14%) which necessitates establishing intervention and health education policies. The awareness level was significantly higher among middle aged participants which may be due to their concern as old aged mostly are poorly educated and young aged participants don't care about the health problem. Also, females were more aware than males. This can be explained by that females by default seek screening for different cancers programs including breast cancer screening or cancer of cervix screening, so they are exposed to higher doses of information. Highly educated participants also showed higher awareness level besides they had their information from medical staff.

About public practice regarding check-up behaviour for CRC, two thirds of the study participants said that they never visited doctors or physicians for check-up purposes which is mostly due to their poor knowledge regarding this area. But also, two thirds reported that they may pay their own money to do the screening test if recommended but this misleading answer does not mean they have good awareness or educational attitude bur fear of a 'ghost' named cancer and its sequelae. The promising finding that may be used as a stimulator was their own perception of having poor awareness and readiness to get more information about colorectal cancer.

Sources of information reported by the study participants explain the poor awareness level as 24% of the respondents had no specific source of information regarding CRC while 27% had their information from physicians or nurses but the main bulk recorded internet as the main source of information (44%).

Poor knowledge especially for modifiable and non-modifiable risk factors has been found previously in different studies [8-12]. Improving public awareness can significantly affect healthy lifestyle practices; in turn these practices will participate in reducing cancer incidence as well as other chronic morbidities [13]. The community awareness may lead to increased healthy behaviours and that could assist in reducing the overall burden of ill-health on the population [14, 15]. Al-Maghrabi AA et al conducted a survey in Makkah, Saudi Arabia to assess the level of knowledge and awareness of colorectal cancer among the general population of Makkah residents [16]. About 85% of the participants had heard of colorectal cancer. However, nearly half (49.1%) of the participants had received information regarding colorectal cancer as part of their school curriculum. More than half of the students (53.5%) recognized that colorectal cancer can start without any obvious symptoms. More than one-third (37.9%) of participants believed that men are more likely than women to suffer from colorectal cancer, while almost one-third (29.4%) said they knew nothing about the symptoms, and 21.8% thought that men and women have an equal chance of contracting colorectal cancer. Regarding screening, nearly all participants (92.2%) had never had an early screening for tumours of the colon and rectum. Only 3.6% answered that they had undergone such screening.

Study limitation

Irrespective of results that coincide with previous similar studies' findings regionally and internationally the main limitation was using an online electronic questionnaire and including survey participants consecutively which may violate to some extent the generalizability of study results as those who are educated and have internet access will be the only participants. But due to the current situation of COVID-19 pandemic and lockdown, no other method was available to collect survey data.

Conclusions and Recommendations

In conclusion, the study revealed that public awareness regarding CRC in Aseer region was poor, especially for check-up timing and frequency. The highly educated middle-aged group who had their information from medical staff recorded the highest awareness level. Also, check-up behaviour to screen for CRC was poor and the majority of the population recorded their need to improve their awareness level. Researchers recommend initiating health education awareness programs to improve public screening programs to cover all the citizens irrespective of their demographics.

Ethical considerations:

The study was conducted in accordance with the Declaration of Helsinki, and the Ethics and Research Committee of the College of Medicine of King Khalid University approved the protocol. Approval number (ECM#2020-147)—(HAPO-06-B-001).

Conflict of interest:

There is not any conflict of interest associated with this manuscript to be declared.

Funding disclosure:

No funding received for this manuscript.

Acknowledgment:

We kindly appreciate the role all participants in the study.

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Knowledge, attitudes and practices of school teachers regarding acute complications of type 1 diabetes mellitus in Abha city, southwestern Saudi Arabia

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Received: August 2020; Accepted:September 2020; Published: October 1, 2020.
Citation: Razan S. Al Humayed. Knowledge, attitudes and practices of school teachers regarding acute complications of type 1 diabetes mellitus in Abha city, southwestern Saudi Arabia. World Family Medicine. 2020; 18(10): 13-19
DOI: 10.5742/MEWFM.2020.93869

Abstract

Background: Type 1 diabetes mellitus (T1DM) is one of the most frequent chronic disorders of childhood. Teachers' awareness regarding diabetes and its complications, besides emergency care of their diabetic children, can save their lives.

Aim: To assess knowledge, attitude and practice of school teachers regarding T1DM and its acute complications.

Methodology: A descriptive cross-sectional survey was conducted in the schools of Abha city. Data were collected using self-administered questionnaires distributed to all participants. Data collected covered teachers' socio-demographic data, work related data including work years and educational level. Teachers' awareness, practice and attitude twowardsT1DM were included in the questionnaire.

Results: The present study included 499 teachers. With regards to teachers' awareness regarding T12DM among students, 91.2% of the teachers mentioned that T1DM leads to polyuria in diabetic students, 89.6% reported that DM leads to polydipsia, and 77.6% said that tremors and sweating means hypoglycaemia in a diabetic student. The study showed that 63.5% of the teachers had good general awareness level regarding T1DM. As for their awareness regarding consequences, 90.4% of the teachers reported that in case of hypoglycaemia, the diabetic student should take sweet juice. About 95% of the teachers reported that they support T1DM students in their classes and 47.1% mentioned that their schools appointed someone to look after T1DM children.

Conclusions & recommendations: The present study documented a good level of knowledge, practice and positive attitude of school teachers towards T1DM students. It is suggested to increase the role of schools by establishing educational and training programs for teachers, especially teachers who showed their willingness to join such programs. More trained personnel should be present in schools to deal with T1DM students.

Key words: T1DM, teachers, awareness, knowledge, practice, attitude, complications

Background

Type 1 diabetes mellitus (T1DM) is considered one of the most common chronic diseases of childhood (1). It is an autoimmune disease which may be diagnosed at any age (2). It accounts for only about 5 to 10% of all cases of diabetes. However, worldwide T1DM increases (3). The immune system of the body destroys the Beta cells of the Pancreas which affect the production of insulin (2). T1DM is more common in males (4). T1DM incidence may vary with seasonal changes and also with the birth month. More cases were diagnosed in autumn and winter (5). People are born in the spring to have a higher chance of T1DM (6). T1DM is considered to have an immune-association. If T1DM is not directly immune-mediated, it causes the destruction of insulin-producing pancreatic β cells (7, 8). It was considered a disorder in children and adolescents, but over the past decade, this opinion has changed. Polydipsia, polyphagia, and polyuria are commonly known as the classic trio of symptoms which are associated with the disease onset (9). Over the past decade, the technological improvements in insulin pumps and the continuous glucose monitors can help patients with T1DM to manage the challenge of lifelong insulin administration (10). T1DM complications are all related to poor blood glucose control. To manage the symptoms and prevent further damage, controlling blood glucose levels is a must (11). Hypoglycaemia, diabetic ketoacidosis (DKA) and severe hypoglycaemia are the major acute complications of T1DM (12).

Teachers' awareness regarding T1DM, its complications and emergency care of their diabetic children can save their lives. This can be achieved through assessing teachers' awareness level, to detect gaps and manage through periodic training programs and health education sessions. The current research objectives were to study school teachers' awareness regarding T1DM, its acute complications and emergency management.

Methodology

A descriptive cross-sectional survey was conducted in the schools of Abha city, Aseer region during the period from late November 2018 through to February 2019. The study targeted teachers from different schools. Two-stage stratified cluster random sampling technique was performed. Schools were stratified into kindergarten, primary, intermediate or secondary. In the first stage, within each stratum, 5 schools were randomly chosen. In the second stage, all accessible teachers in the selected schools were invited to participate after explaining the study purpose and assuring that their data will be confidential. After having permission from the school authority, self-administered questionnaires were distributed to all participants with explanations about the questionnaire by the investigator and class teacher. Then, questionnaires filled in by teachers were collected at the school after 30 minutes. The study questionnaire was developed by the researcher after intensive literature review and after experts' consultation for tool validity and clarity. Response rate exceeded 95%. Incomplete questionnaires were not included. Data collected covered teachers' socio-demographic data, work related data including work years, educational level, teachers' awareness regarding diabetes mellitus including general awareness data (7 questions) and diabetes consequences awareness (6 questions). The last part included school practice and teacher behaviour and attitude towards diabetic students.

Data analysis

Data were extracted, revised, coded and fed into statistical software IBM SPSS version 22 (SPSS, Inc. Chicago, IL). All statistical analysis was done using two tailed test. P value less than or equal to 0.05 was considered to be statistically significant. For awareness items, each correct answer was scored one point and total summation of the discrete scores of the different items was calculated. A teacher with score less than 60% of the maximum score was considered to have poor awareness while good awareness was considered if they had score of 60% of the maximum or more. Descriptive analysis based on frequency and percent distribution was done for all variables including teachers' demographic data, awareness items and practice and attitude. Cross tabulation was used to assess distribution of awareness according to teachers' personal data, practice and attitude. Relations were tested using Pearson chi-square test.

Results

The present study included 499 teachers. Their age ranged from 20 to 60 years with an average of 40 ± 7.3 years. The study showed that 67.1% of the teachers were females and 85.8% had Bachelor's degree while 6.8% had postgraduate master or doctorate degrees. About 65% of the teachers had teaching experience of 10 years or more and 46.3% worked at primary schools (Table 1).

With regards to teachers' awareness regarding T1DM among students (Table 2), 91.2% of the teachers mentioned that T1DM leads to polyuria in a diabetic student, 89.6% reported that T1DM leads to polydipsia, and 77.6% said that tremors and sweating means hypoglycaemia in a diabetic student. The study showed that 63.5% of the teachers had good general awareness level regarding diabetes mellitus. As for their awareness regarding T1DM consequences, 90.4% of the teachers reported that in the case of hypoglycaemia, the T1DM student should take sweet juice, 79.4% reported that T1DM children were eligible to attend the physical education session, while 49.1% agreed that T1DM affects the student's academic performance. Generally speaking, 58.5% of teachers had good awareness level regarding consequences of T1DM while overall good awareness regarding diabetes among teachers amounted to 68.3%.

Figure 1 illustrates teachers and schools' practices towards T1DM students. About 95% of the teachers reported that they support diabetic students in their classes, 47.1% mentioned that their schools appointed someone to look after diabetic children, and 25.8% reported having a

training program for dealing with diabetic children while 15.2% mentioned that their schools provide special meals for diabetic students.

Considering teachers' attitude (Table 3), 99.4% of the teachers supported presence of a school nurse, 80.2% stated that they would like to join a training program for dealing with diabetic students, and 78% were willing to have diabetic children in their class.

Table 4 illustrates distribution of teachers' awareness by their background data. All teachers who had doctorate degree had good awareness level regarding diabetes mellitus among students compared to 66.4% of those with Bachelor's degree. This difference was statistically significant (P=0.048). Also, 71.2% of the teachers with teaching experience exceeding 10 years had good awareness level compared to 63% of those whose experience is less than 10 years with recorded statistical significance (P=0.049). Exactly 75.4% of teachers whose school has a training program for dealing with diabetic students had good awareness level compared to 65.5% of those who did not (P=0.034). Also, 71% of the teachers who would like to join a training program for dealing with diabetic students had good awareness level compared to others who would not (P=0.012).

Table 1.:Personal data of survey teachers in Abha, Saudi Arabia

Personal data		No	%
Age in years	20-29	48	9.6%
	30-39	163	32.7%
	40-49	240	48.1%
	50-60	48	9.6%
Gender	Male	164	32.9%
	Female	335	67.1%
Educational level	Bachelor's degree	428	85.8%
	Diploma	37	7.4%
	Master degree	32	6.4%
	Doctorate degree	2	.4%
Years of experience	<10 years	173	34.7%
	>10 years	326	65.3%
Education sector	Kindergarten school	76	15.2%
	Primary school	231	46.3%
	Intermediate school	88	17.6%
	Secondary school	104	20.8%

Table 2: Teachers' awareness regarding diabetes among their school students in Abha, Saudi Arabia

Domain	Awareness items	Yes		No		Don't know	
		No	%	No	%	No	%
General Awareness	DM leads to polyuria in diabetic student	455	91.2%	11	2.2%	33	6.6%
	DM leads polydipsia in diabetic student	447	89.6%	19	3.8%	33	6.6%
	DM leads to fatigue and lack of concentration in diabetic student	362	72.5%	44	8.8%	93	18.6%
	DM leads to loss of weight in diabetic student	297	59.5%	73	14.6%	129	25.9%
	Type 1 DM is treated with insulin	264	52.9%	88	17.6%	147	29.5%
	Tremors and sweating means hypoglycaemia in diabetic student	387	77.6%	20	4.0%	92	18.4%
	The diabetic student should take sweets or juice before physical activities class	205	41.1%	129	25.9%	165	33.1%
	Total awareness		**Poor**		**Good**		
			182 (36.5%)		317 (63.5%)		
Diabetic consequences awareness	School children are usually affected by type 1 DM	221	44.3%	81	16.2%	197	39.5%
	DM affects the student academic performance	245	49.1%	161	32.3%	93	18.6%
	DM increases absence rate of diabetic student	281	56.3%	138	27.7%	80	16.0%
	Diabetic children eligible to attend the physical education session	396	79.4%	29	5.8%	74	14.8%
	In case of hypoglycaemia, should the diabetic student take sweet juice	451	90.4%	19	3.8%	29	5.8%
	In case of coma, can small amount of jam or honey be put into the mouth of the diabetic student	269	53.9%	72	14.4%	158	31.7%
	Total awareness		**Poor**		**Good**		
			207 (41.5%)		292 (58.5%)		
Overall awareness			**Poor**		**Good**		
			158 (31.7%)		341 (68.3%)		

Figure 1. Teachers and school practice towards diabetic students in Abha, Saudi Arabia

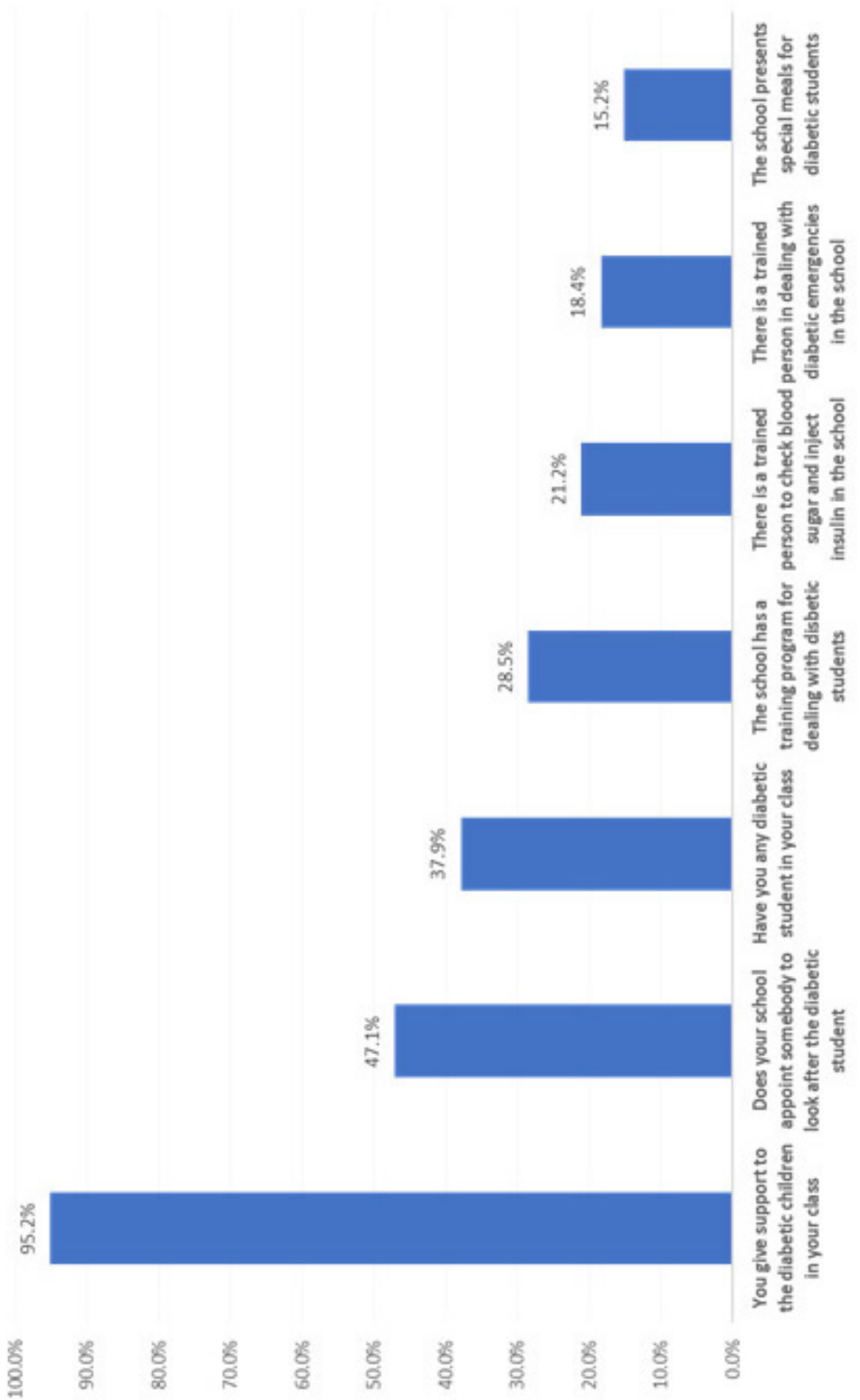

Table 3: Teachers' attitude towards diabetic students in Abha, Saudi Arabia

Attitude	Yes		No		Unsure	
	No	%	No	%	no	%
Willing to have diabetic children in your class	389	78.0%	60	12.0%	50	10.0%
Would you like to join training program for dealing with diabetic student	400	80.2%	57	11.4%	42	8.4%
Support presence of school nurse	496	99.4%	2	.4%	1	.2%

Table 4: Distribution of teachers' awareness level regarding diabetes among students according to their personal data, practice and attitude

		Overall awareness level				p-value
		Poor		Good		
		No	%	No	%	
Age in years	20-29	19	39.6%	29	60.4%	.538
	30-39	54	33.1%	109	66.9%	
	40-49	71	29.6%	169	70.4%	
	50-60	14	29.2%	34	70.8%	
Gender	Male	60	36.6%	104	63.4%	.098
	Female	98	29.3%	237	70.7%	
Educational level	Bachelor's degree	144	33.6%	284	66.4%	.048*
	Diploma	10	27.0%	27	73.0%	
	Master degree	4	12.5%	28	87.5%	
	Doctorate degree	0	0.0%	2	100.0%	
Years of experience	<10 years	64	37.0%	109	63.0%	.049*
	>10 years	94	28.8%	232	71.2%	
Have you any diabetic students in your class	Yes	59	31.2%	130	68.8%	.867
	No	99	31.9%	211	68.1%	
The school has a training program for dealing with diabetic students	Yes	35	24.6%	107	75.4%	.034*
	No	123	34.5%	234	65.5%	
Would you like to join training program for dealing with diabetic student	Yes	116	29.0%	284	71.0%	.012*
	No	42	42.4%	57	57.6%	

P: Pearson X2 test
* P < 0.05 (significant)

Discussion

Studies in Saudi Arabia showed low level of knowledge and awareness of DM among the Saudi population (13). The present study included 499 teachers; the awareness of teachers was studied regarding general awareness about T1DM and consequences among students. The general awareness of teachers was good among more than half of them (63.5%), only 36.5% had poor general awareness, whereas regarding diabetic complications, a lower percentage of teachers had good awareness 58.5%, whereas 41.5% had poor diabetic complications awareness. The overall awareness of teachers was good among 68.3%. A recent study from Al-Jouf conducted on teachers of primary and intermediate schools, reported that 75.4% of participants had adequate general knowledge, whereas 43.78% only had diabetic specific knowledge (14). Another study from Riyadh revealed that 70% of teachers had fair knowledge (15). On the other hand, a study from Al-Khobar that was conducted on female diabetic school teachers reported that there was low knowledge regarding the symptoms of hypoglycaemia (16). Moderate knowledge was reported from another Saudi study conducted on school teachers (17).

In the present study, educational level of teachers, years of experience, presence of training programs in schools and the willingness of teachers to join training programs significantly affected the level of teachers' awareness. Good awareness was significantly associated with having bachelor degree, teaching experience more than 10 years, no presence of training program in school and this reflects the self-effort of teachers to know about DM and to care for their students. Also, good awareness was associated with the willingness of teachers to join training programs. A recent study from Al-Baha, Saudi Arabia showed that the experience of teachers had a positive impact on the diabetic students (18). In contrast to our findings, another Saudi study reported that age and gender were associated with awareness level of teachers (17).

The practice of teachers in the present study was the highest regarding giving support to the diabetic children in the class (95.2%), followed by presence of someone to look after the diabetic students in school (47.1%). Only 28.5% of teachers reported the presence of a training program for dealing with diabetic students and 21.2% reported the presence of a person to check blood sugar for diabetic students and inject insulin in the school, if necessary. Very few (15.2%) reported the presence of special meals for diabetic students. The above-mentioned results point out that practice of teachers was good, but the practice of schools should be improved by providing periodical educational and training programs about DM and its complications and how to deal with diabetic students. In one Saudi study only 16% of teachers reported presence of training programs in schools (14). Low practice was reported by another Saudi study, where only 18.6% of teachers had a good total score of Diabetes practice management (15).

Regarding attitude of teachers in the present study, it was found to be positive and excellent. The majority of teachers (78%) were willing to have diabetic children in their class, 80.2% agreed to join training programs and 99.4% supported the presence of school nurses to deal with diabetic students. Our findings were in agreement with a the previous Saudi study in Al Jouf, where 94% of teachers were willing to join training programs, and the majority (66.5%) supported presence of nurses at schools (14). On the other hand a study from Riyadh reported unfavourable attitudes of teachers toward taking responsibility for diabetes care and education in schools (15). This may reflect the need for a national program to deal with this issue.

Conclusion and recommendations

The present study documented good level of knowledge, practice and positive attitude of school teachers towards diabetic students. It is suggested to increase the role of schools by establishing educational and training programs for teachers, especially teachers who showed their willing to join such programs. More trained personnel should be present in schools to deal with diabetic students. Further studies are recommended to clarify in depth this important issue.

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Knowledge, Attitude and Practices of Type 2 Diabetic patients attending a tertiary care hospital in Karachi

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Received: August 2020; Accepted:September 2020; Published: October 1, 2020.
Citation: Kanza Baig et al. Knowledge, Attitude and Practices of Type 2 Diabetic patients attending a tertiary care hospital in Karachi. World Family Medicine. 2020; 18(10): 20-28 DOI: 10.5742/MEWFM.2020.93870

Abstract

Introduction: Type 2 Diabetes Mellitus (DM) has become a global epidemic with patients suffering significant disabilities and potential premature death. Due to a lack of education regarding diabetes, most patients suffer from diabetic complications. This study was conducted to determine the knowledge, attitudes and practices among patients with type 2 diabetes. Methods: A cross-sectional study was conducted using a non-probability sampling technique to select the diabetic patients. A total of 244 diabetic patients coming to the medical OPD at Jinnah Post Graduate Medical Center, were interviewed. The data was collected via interviews using a structured questionnaire. The data was collected using Non Probability Purposive Sampling technique and analyzed using Statistical Package SPSS software version 20.0. The patients' knowledge about the disease, their attitudes and practices were the main outcome measures. A chi square test was run at 95 % confidence interval (CI).

Methodology: A Cross sectional study was conducted at the Medicine OPD and Ward of Jinnah Post Graduate Center, Karachi from April 2019 and August 2019. The sample size was calculated to be 220. The sample was selected using non probability purposive sampling technique. A structured questionnaire with close ended questions was our data collection tool. It was translated into simple Urdu and divided into 4 sections pertaining to: demographic details, knowledge about DM 2, attitude and practices adopted for DM 2. It was handed out to our data collectors who, after obtaining verbal consent, conducted personal interviews amongst patients coming to Medicine OPD and Ward of JPMC, diagnosed with DM type 2. Patients not diagnosed with DM type 2 or those unwilling to participate were excluded.

Data collected was analyzed using the SPSS software version 20.0 and a chi square test performed. Frequencies and percentages were taken out. The statistical analysis was conducted with a 95% confidence interval and a p-value of <0.05 as threshold of statistical significance. All ethical considerations

were observed while seeking legal permission of concerned authorities to assess data. Any research misconduct was avoided and rights and well-being of research participants were protected.

Results: A total of 220 individuals participated in this study with ages ranging from 10 years to 78 years with the highest number of individuals, 9.5% (n=21) in the 50 year old age group. Of the diabetic patients 55.9% (n=123) of them were female and 44.1% (n=97) were males. Among the patients 85.5% (n=188) were married, 4.5% (n=10) were unmarried and 10% (n=22) were widowed. Regarding their level of education, 22.3% (n=49) were not formally educated, 15.9% (n=35) were primary educated, 20.5% (n=45) were secondary educated and 41.4% (n=91) were graduates. Most of the females who were 34.7% (n=75) were house wives while males represented all professions including government jobs 4.7% (n=10), Engineers 4.1% (n=9), drivers 2.3% (n=5) and labourers 4.1% (n=9). Regarding the monthly income of the participants about 34.5% (n=76) earned from Rs 1000/- to Rs 29,999/- per month, 22.7% (n=50) earned from Rs 30,000/- to Rs 99,999/- per month and 6.8% (n=15) earned up to or more than Rs 3,00,000/-. Regarding their time since onset of diabetes, 11.4% (n=25) had it for less than one year. About 30.5% (n=67) had it for the last 1-5 years, 23.6% (n=52) had it from 6-10 years, 15.5% (n=33) had it for the last 11-15 years and 19.5% (n=43) had it for more than 15 years. When asked about any prior knowledge about diabetes, 60.9% (n=134) knew somewhat about diabetes and 39.1% (n=86) had no prior knowledge. Regarding the source of their knowledge, the majority who were 46.8% (n=103) had learnt from family and friends and 28.6% (n=63) had learnt about it from health care providers and only 4.1% (n=9) had learnt about it through the media. Of the patients, 77.3% (n=170) of them had the belief that diabetes was a genetic disease and 22.7% (n=50) did not believe it to be a genetic disease. 28.2% (n=62) of the diabetic patients correctly identified the symptoms of their disease such as increased thirst, appetite and urination. 92.3% (n=203) of diabetic patients declared their disease as a dangerous one while 56.4% (n=124) believed it is a preventable illness; 23.2% (n=51) did not think of it as preventable and 20.5% (n=45) were not sure of terming diabetes as preventable. Responding to the question whether blood sugar levels rise in diabetes, 82.7% (n=182) knew about it and 17.3% (n=38) did not know about it. Almost 66.4% (n=146) patients knew how to measure sugar levels with a glucometer and 33.6% (n=74) did not know how to use a glucometer. 15.5% (n=34) patients daily checked their sugar levels, 57.7% (n=127) checked irregularly and 12.3% (n=27) did not check at all. Almost 50.5% (n=111) had their blood pressure checked a few days before, 26.4% (n=58) had it checked a few weeks ago, 15.5% (n=34) had it checked a few months ago and 7.7% (n=17) had it checked one year ago. Regarding the type of treatment, 17.3 (n=38) patients were on oral hypoglycemic agents and insulin, 63.2% (n=139) were on oral hypoglycemic, 10.5% (n=23) were on insulin only, 5.9% (n=13) were on dietary control and 3.2% (n=7) did not take any treatment. 67.3% (n=148) monitored diet regularly and 76.4% (n=168) did not ever miss taking their medicines. 18.2% (n=4 used to miss taking regular medication and 5.5% (n=12) were not sure about their regularity. 65.5% (n=144) termed insulin as the last level of treatment therapy for diabetes and 71.4% (n=157) knew that exercise can help prevent occurrence of diabetes complications. When the patients were asked whether insulin was an addiction, 34.5% (n=76) said yes, 49.1% (n= 108) said no and 16.4% (n=36) said may be.

Conclusion: The majority had good overall knowledge and attitude towards their disease. Despite that, self-care practices were mediocre. We still have miles to go in ensuring that every patient, regardless of their education, not only fully comprehends but also implements their self-care practices rigorously via educational and awareness programs.

Key words: Type 2 Diabetes Mellitus (DM), Patients, Attitude, Self Care

Introduction

Diabetes Mellitus has become a major health concern that has been particularly growing in developing countries (1). According to NDSP 2016–2017, the prevalence of Diabetes mellitus is 26.3%. Hence, Pakistan has around 27.4 million people >20 years of age suffering with diabetes (2).

It is widely acknowledged that poor control of Diabetes leads to remarkably elevated risks for heart disease, stroke, blindness, kidney failure, leg amputation and premature death [3-4]. These potential complications may largely be avoided in future by proper management of Diabetes [5]. This may be achieved by optimal glycemic control which aims to delay both micro vascular and macro vascular complications[6]. This involves lifestyle modification that includes routine exercise, healthy diet, weight loss, and drug therapy. Therefore, adequate health education is a cornerstone of diabetes management. Patients who are well aware and knowledgeable regarding diabetes and its adverse complications seek proper treatment and care, and are proactive regarding their health [7]. Therefore such individuals, who are diligent with their diabetes self-care, achieve better and long-lasting diabetic control [8, 9].

Furthermore, incorrect attitude and beliefs regarding Diabetes, hinders proper guidance about the disease. For future effective education programs to be better planned, we need to explore patients' awareness about diabetes,

misconceptions about the disease itself and its treatment especially diet and insulin (10). In view of the projected rise in the incidence of type 2 Diabetes and the resultant morbidity and mortality in a country like Pakistan, there has been a dearth of KAP studies in Pakistan in recent years. As of now, Pakistan currently lacks large scale structured educational and awareness programs regarding diabetes and its complications. This study aims to ascertain current knowledge, mindset and self-care practices prevalent amongst people suffering from Type 2 DM.

The information gained could subsequently be helpful to design and initiate comprehensive programs for control of diabetes and help prevent its sufferers from developing debilitating complications and achieve better health control.

Methodology

A Cross sectional study was conducted at the Medicine OPD and Ward of Jinnah Post Graduate Center, Karachi from April 2019 and August 2019. The sample size was calculated to be 220. The sample was selected using non probability purposive sampling technique. A structured questionnaire with close ended questions was our data collection tool. It was translated into simple Urdu and divided into 4 sections pertaining to: demographic details, knowledge about DM 2, attitude and practices adopted for DM 2. It was handed out to our data collectors who, after obtaining verbal consent, conducted personal interviews amongst patients coming to Medicine OPD and Ward of JPMC, diagnosed with DM type 2. Patients not diagnosed with DM type 2 or those unwilling to participate were excluded.

Data collected was analyzed using the SPSS software version 20.0 and a chi square test performed. Frequencies and percentages were taken out. The statistical analysis was conducted with a 95% confidence interval and a p-value of <0.05 as threshold of statistical significance. All ethical considerations were observed while seeking legal permission of concerned authorities to assess data. Any research misconduct was avoided and rights and well-being of research participants were protected.

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Figure 1: Depicting level of education of diabetic patients showing 22.3% (n=49) were not formally educated, 15.9% (n=35) were primary educated, 20.5% (n=45) were secondary educated and 41.4% (n=91) were graduates

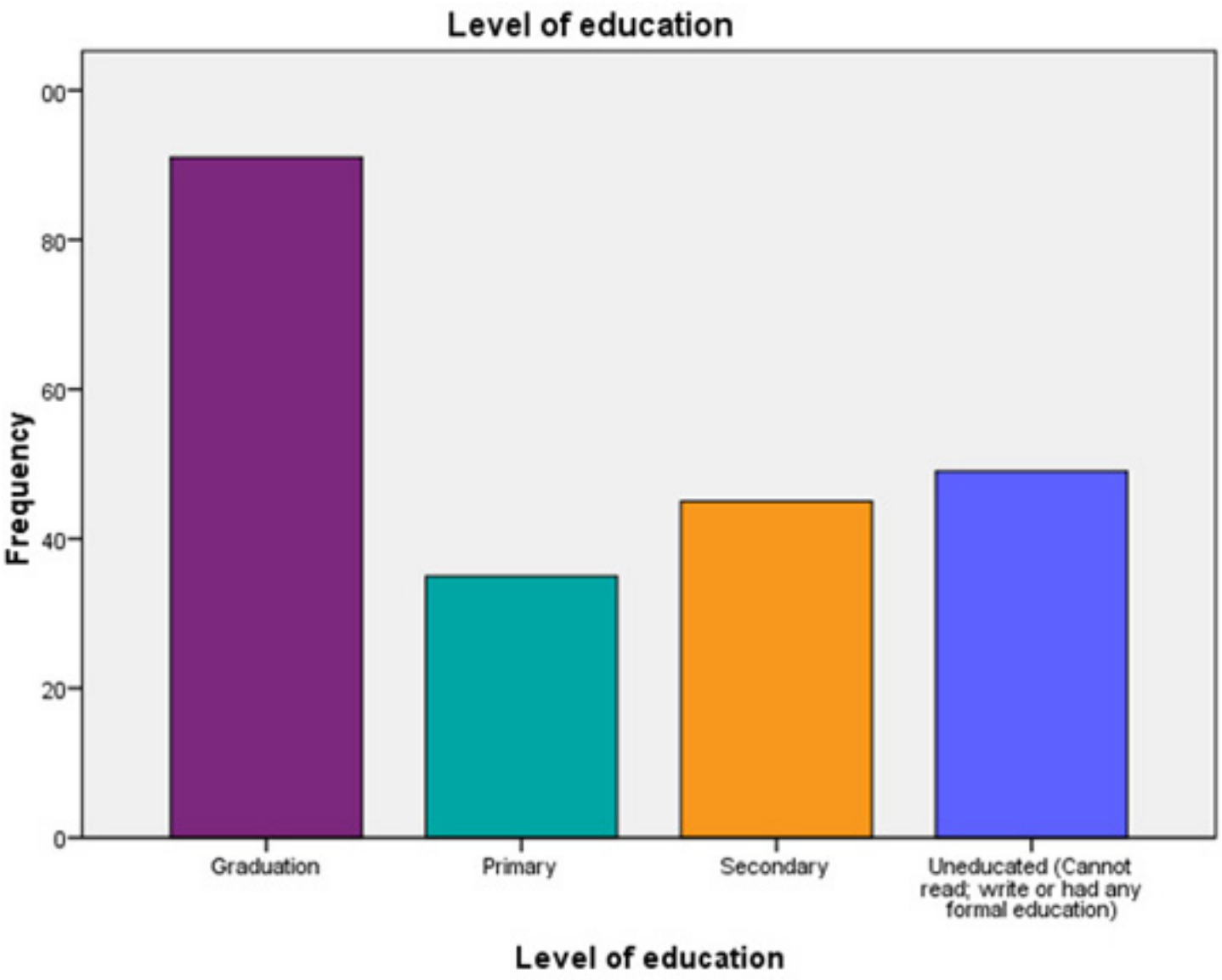


Figure 2: Percentage of participants who follow regular self-practice routines. The figure shows that 67.3% (n=148) of the patients monitored diet regularly , 15.5% (n=3) patients daily checked their sugar levels and 76.4% (n=168) did not ever miss taking their medicines.

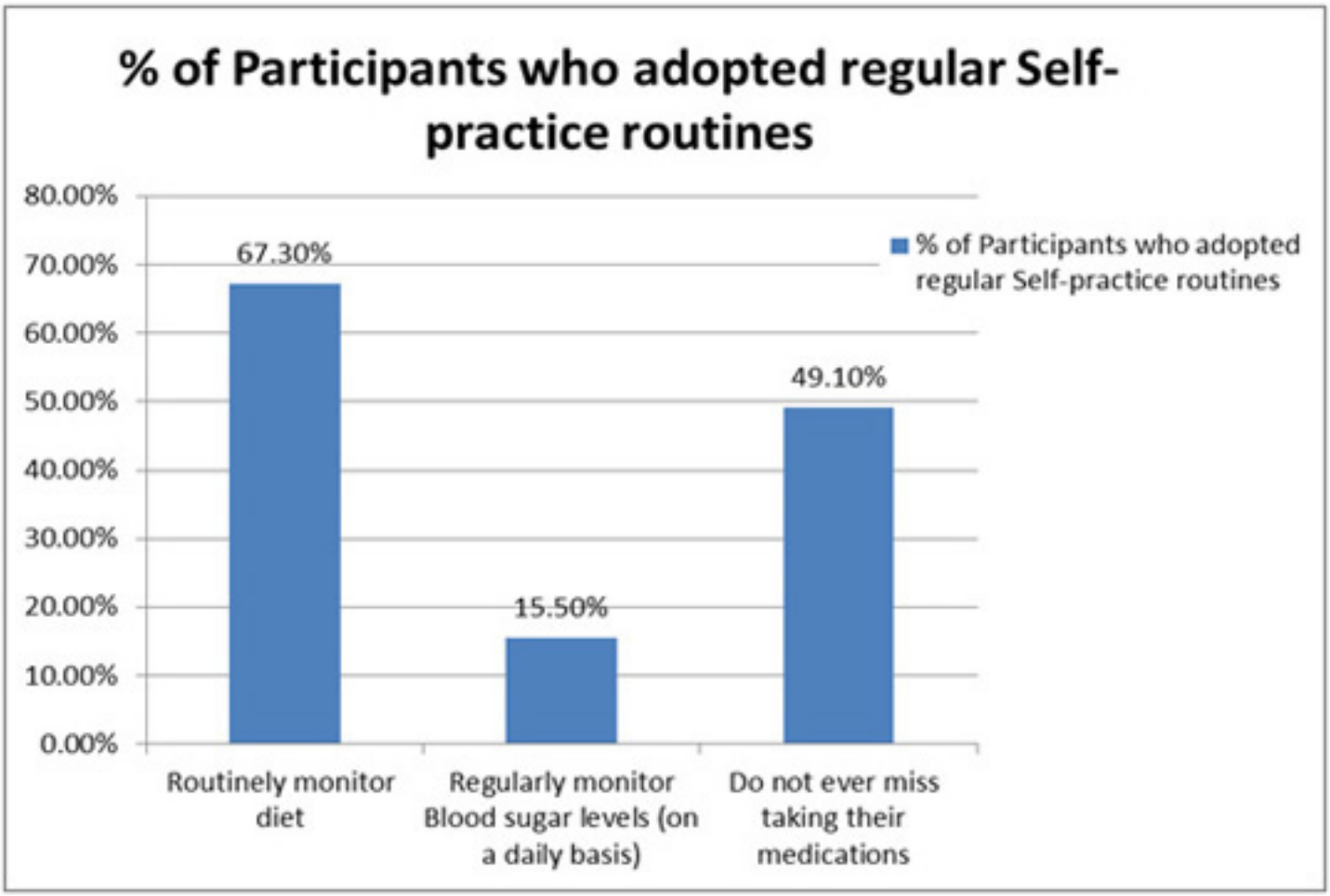


Figure 3 showing the patients' type of treatment; 17.3 (n=38) were on oral hypoglycemic and insulin, 63.2% (n=139) were on Oral hypoglycemic, 10.5% (n=23) were on insulin only, 5.9% (n=13) were on dietary control and 3.2% (n=7) did not take any treatment.

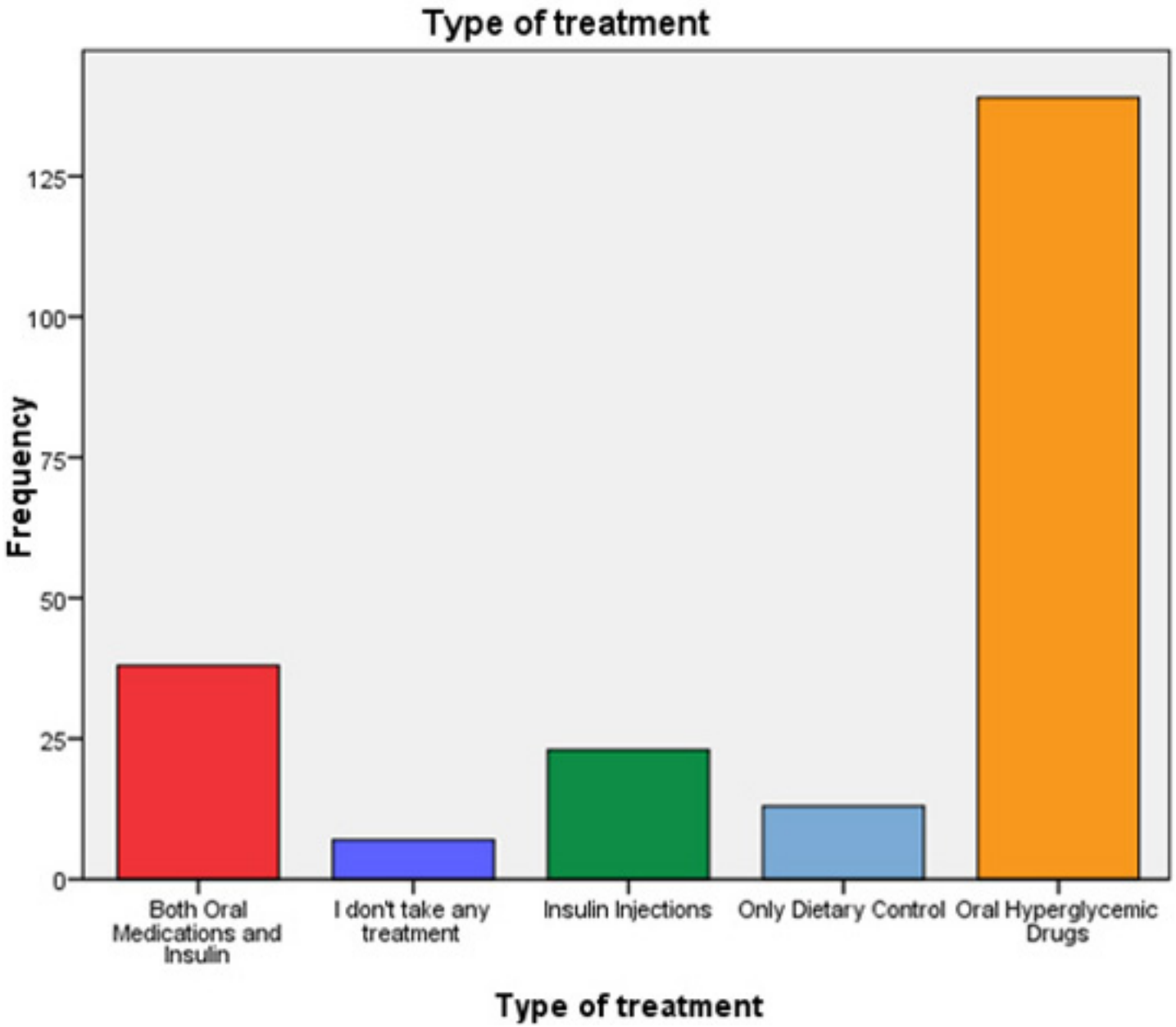
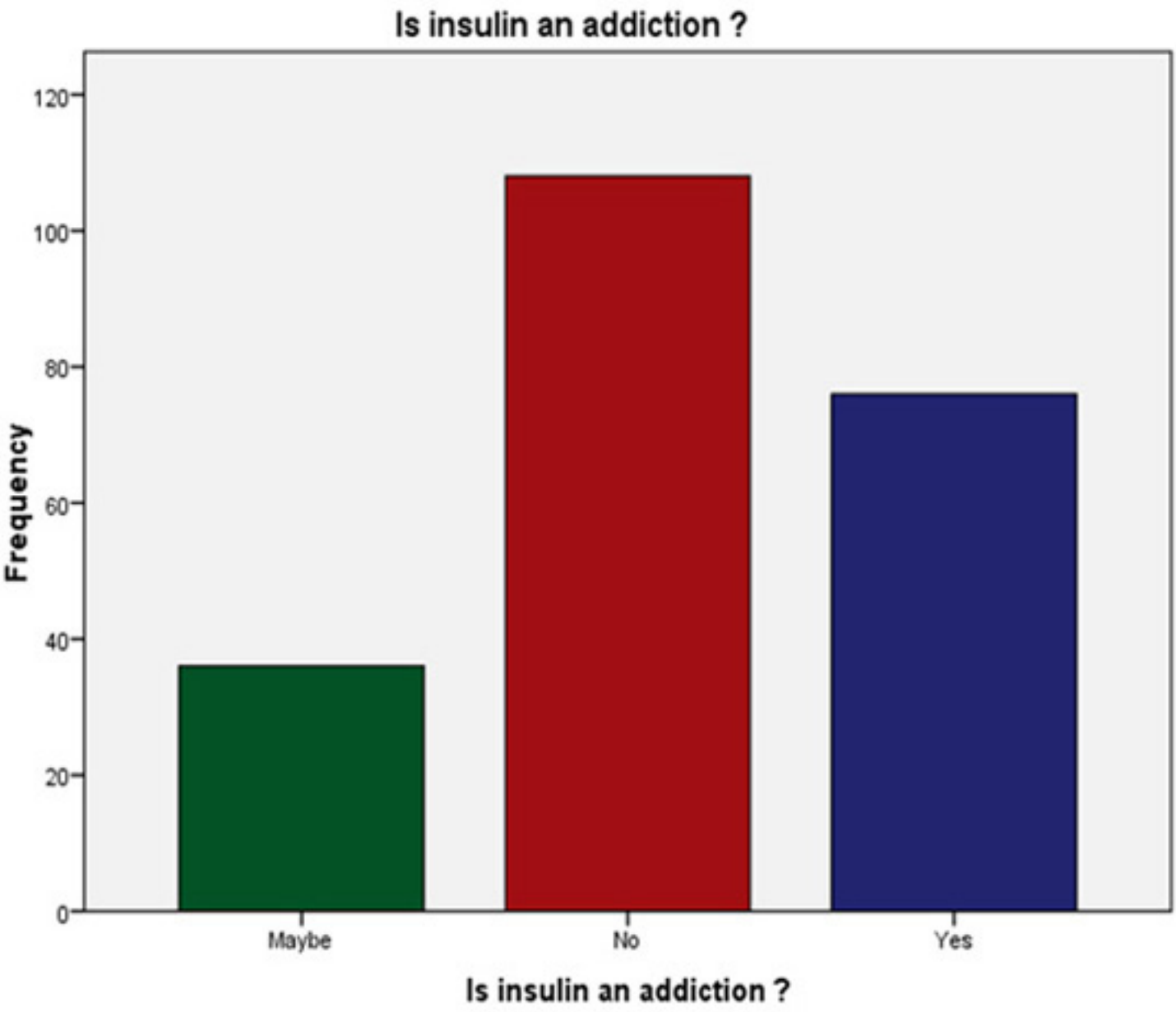


Figure 4 showing that when patients were asked whether insulin was an addiction, 34.5% (n=76) said yes, 49.1% (n= 108) said no and 16.4% (n=36) said may be.



Discussion

This cross sectional study was conducted primarily in Jinnah Postgraduate Medical Center, with 220 type 2 diabetics participating in the study. According to this study when asked about any prior knowledge about diabetes, 60.9% knew somewhat about diabetes and 39.1% had no prior knowledge. A majority of our population had good knowledge regarding the disease; they knew what diabetes was, knew about the symptoms, and the complications. This is a significant improvement to one our parent researchers did in Islamabad in 2010 where half of their participants didn't even know what diabetes was (11). In this study regarding diabetic patients' level of education, 22.3% were not formally educated, 15.9% were primary educated, 20.5% were secondary educated and 41.4% were graduate An obvious parallel that we noticed was that the education level had a major role to play in the knowledge regarding the disease with most people with higher education being well informed. Also the use of a glucometer to monitor the disease was also tied to the education level. These findings were also confirmed by a study conducted in Uganda in 2010 (12). It was a little disheartening how a less number of respondents got their information from medical professionals, indicating the need to further bridge this gap as in this study it was found that regarding the source of their knowledge, the majority, which was 46.8%, had learnt from family and friends and 28.6% had learnt about it from health care providers and only 4.1% had learnt about it through the media.

This study showed that the attitude towards the disease was good as well, with the majority of the participants knowing this to be a dangerous condition that required changed diet and regular exercise and constant monitoring. This was confirmed by another study conducted in China (13).

In addition to having a sound knowledge of diabetes, self-management of diabetes is also vital for patients. Previous researchers have assessed the attitudes and self –care practices of each patient in order to maintain their disease condition (14,15).

In this study, the majority of individuals were found to exercise adequate control over their diet, and adopt healthier food alternatives. This could be a potent indicator of the growing mindset rampant in the general populace, of relying on healthier diets to keep Type 2 Diabetes at bay. However, a worrisome statistic has come to surface with regards to checking routine Blood sugar levels. Only 15.5% of individuals regularly monitored their blood sugar levels, as is consistent with the findings of a previous research paper (16) where 14.5% reported checking of their S=sugar levels once disease showed worsening symptoms and 12.3% did not monitor at all. 57.7% participants did monitor their sugar levels, although irregularly (on a weekly/ monthly basis). Despite a moderate decline in the number of individuals who do not monitor, it is a concerning issue nonetheless that even those who did monitor sugar levels, did so infrequently and this imparts little or no health benefit in the long run. This was also confirmed by a study conducted in Indonesia in 2018 (17). In this study 67.3% monitored diet regularly and 76.4% did not ever miss taking their medicines whereas 18.2% used to miss taking regular medication and 5.5% were not sure about their regularity. With regard to medication compliance, a satisfactory number of individuals never missed a dose of their medications indicating the individuals' earnest belief in drug therapy and their proactive, disciplined attitude towards their health. A few, who did miss their doses, did so infrequently, and this partial compliance might be corrected by health professionals who can counsel and place emphasis on strict adherence to medication. Furthermore, our data showed a majority of individuals who had received general formal education seemed to know how to operate a glucometer while a large set of those with no education, did not know. These findings were also similar to a study conducted in Iran (18). This might imply a greater sense of awareness regarding self-management practices amongst the educated class and their increased capability in handling technological gadgets to monitor diabetes better. Those not educated, are at a disadvantage and perhaps may benefit from educational programs and practical demonstrations by health care professionals.

Conclusion

The majority of our respondents had a good overall knowledge and attitude towards their disease while self-care practices were moderate. Despite an obvious increase in awareness and know how about the disease in recent times, we still have miles to go in ensuring that every patient regardless of their education, not only fully comprehends but also implements their self-care practices rigorously. It seems that it is imperative that patients of lower socioeconomic status and education are not restricted by their circumstances, with the principal of equity rather than equality being used to ensure better results. Educational and awareness campaigns run on different social media platforms, TV and print media may help generate greater know how about Type 2 Diabetes in people of all different backgrounds. This will encourage them to have regular follow ups, get checked for various complications, and to live a lifestyle that allows their body to be the best it can be.

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Prevalence and predictors of depression among medical students in Jeddah, Saudi Arabia

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Received: August 2020; Accepted:September 2020; Published: October 1, 2020.
Citation: Yousria Badawy et al. Prevalence and predictors of depression among medical students in Jeddah, Saudi Arabia. World Family Medicine. 2020; 18(10): 29-35 DOI: 10.5742/MEWFM.2020.93871

Abstract

Background: Estimates of the prevalence of depression or depressive symptoms among medical students varies across studies from 1.4% to 73.5%. Studies also report conflicting findings about if student depression vary by undergraduate year, sex, or other characteristics.

Objective: to assess the prevalence and factors associated with depression among medical students in Jeddah, Saudi Arabia.

Methods: Institutional based cross-sectional study was conducted among medical students at Ibn Sina National College of Medical Science of Jeddah, Saudi Arabia. The presence of depression and its severity was based on PHQ depression scale (PHQ-9) 19, using Google form link. Data was collected using data on the outcome of interest (depression), socio-demographic characteristics (age, sex, source of income and marital status), academic-related factors (academic year of study).

Results: Depression was detected in 75.31% of the studied population , considering 10 score as a cut off point for depression. Among those depressed groups 23.44% were scored as having moderate depression (10-14) while those who had moderately severe (15-19) and severe (20 or more) were 28.93% and 22.94% respectively. The present study showed that depression was significantly more prevalent among female medical students compared to male medical students. The prevalence of depression was more in the second year medical students followed by the sixth year and the difference found between the severity of depression and year of studying was statistically significant.

Conclusion: Depression is highly prevalent among medical student populations. Implications of depression are of serious concern that could result in loss of potential to handle various stressors at college, impairment of functioning in classroom performance and later in clinical practice.

Key words: Saudi. Depression, medical students, prevalence & severity

Introduction

The WHO considers mental health as a fundamental aspect of human health and published an action plan for 2013–2020 to promote the prevention, treatment, and overcoming of mental health disorders(1). Depression is considered an important indicator for mental health, and the inability to detect and address this psychological disorder negatively affects individuals(2,3).

University students face various stressors such as academic requirements, time pressure and social adjustments, and medical students in particular, may face additional challenges such as the large workload, the time commitment and the number of assessments, as well as the pressures of a clinical environment(4). Studies have suggested that medical students experience high rates of depression(5). However, estimates of the prevalence of depression or depressive symptoms among medical students vary across studies from 1.4% to 73.5%(6,7). Studies also report conflicting findings about if student depression vary by undergraduate year, sex, or other characteristics(8-11).

A recent meta-analysis showed that depression affects approximately one third of medical students worldwide, (12). It is also likely that the overall prevalence of depressive symptoms among medical students is higher than that reported in the general population(13). As most of the studies revealed that depression is common in university students especially high among medical students they also found no preponderance between males and females and is higher in single students than married ones(14,15). It may be a significant hidden problem in medical students and mechanisms to identify and help students with mental health problems should be seriously considered(16).

Depression has a huge effect on society and individuals, which can lead to suicidal tendency, relationship problems, medical dropouts, and impaired work ability. Therefore, proper counseling services are required for the psychological well-being of medical students to improve their quality of life(17).

Even though depression is found to be remarkably high among medical students coupled with its impacts in causing poor academic performance, disability and poor quality of life, to our knowledge only a few studies are available in the study area (Saudi Arabia). A better understanding of the magnitude and correlates of depression is essential for planning appropriate intervention for those population groups.

Therefore, this study aimed to assess the prevalence and factors associated with depression among medical students in Jeddah, Saudi Arabia.

This study aimed to determine the prevalence and associated factors of depression among undergraduate medical students at Ibn Sini National Medical college, Jeddah, Saudi Arabia.

Methodology

Study design and setting:
Institutional based cross-sectional study was conducted among medical students at Ibn Sina National College of Medical Science of Jeddah, Saudi Arabia. The study was conducted between October to December 2019.

Sample population:
The Sample size was determined based on a single population formula using Epi-info version 7 with a 95% confidence interval and 5% margin of error taking the prevalence of depression as 27.7% . By considering a 10% non-response rate and applying sample correction formula a total sample size of 400 undergraduate medical students were involved in the study. The study population consisted of male and female medical students , attending the medicine program of all academic stages (from year one till year six). Students with known depression or under anti-depressive medications were included. Students with other known psychiatric illnesses other than depression,and chronic medical conditions known to be associated with depression (diabetes, rheumatoid. etc) were excluded.

Data collection:
The presence of depression and its severity was based on PHQ depression scale (PHQ-9) (18), using Google form link developed by Kroenke et al to measure depression. It was self-administered, and facilitated diagnosis of major depression and also provided assessment of symptom severity. The PHQ-9 is the depression module, which scores each of the nine criteria as “0” (not at all) and “3” (nearly everyday). Validity of this test has been assessed against an independent structured mental health professional (MHP) interview. PHQ-9 score of ten or more had a sensitivity of 88% and a specificity of 88% for major depression. It has been validated for use in primary care. Data was collected using data on the outcome of interest (depression), socio-demographic characteristics (age, sex, source of income and marital status), academic-related factors (academic year of study). The screening instrument assesses depressive symptoms based on nine questions for screening ,diagnosing, monitoring and measuring the severity of depression level using the cutoff values of 10 to 14 dysthymia (minor depression) and 15 or above were considered to define major depression among medical students. According to the cutoff scores, students were classified as normal(0-4), mild (5-9), moderate (10-14), severely moderate (15-19) and severe (20 or more) depression

Ethical consideration:
Approval for this study was obtained from the ethics committee of Ibn Sini National College of Medical Science. All information obtained was kept confidential. Data collection sheet also included a consent to participation.

Data analysis:
The data was analyzed by using Statistical Package for Social Sciences (SPSS-22). The frequency and percentages for qualitative variables were calculated. The

association of depression with age , gender, marital status, having income and level of education were calculated by using Chi-square test. The P value less than 0.05 was considered as statistically significant.

Results

Table 1 revealed the distribution of the studied medical students who shared in the study. A total of 401 medical students participated in the study with a response rate of 85 %. Among the respondents the majority 186 (46.4%) were in the age range of 18-21 years, 134 (33.4%) were males and 267 (66.6%) were females. Most of the students (96%) in the sample were single and 314 (78.3%) had no additional source of income. Students from all the years participated in this study ,however,, the majority were from second year (30.9%) and the sixth year (29.9%).

Figure 1 shows the distribution of depression severity among undergraduate medical students at Ibn Sini National College , Jeddah, Saudi Arabia. The study revealed that a minority (6.98%) were normal (0-4) whereas the distribution of mild depression (4-9) was 17.71%. However, depression was detected in 75.31% of the studied population , considering 10 score as a cut off point for depression. Among those depressed groups 23.44% were scored as having moderate depression (10-14) while those who had moderately severe (15-19) and severe depression (20 or more) were 28.93% and 22.94% respectively.

Table 2 reveals that moderate to severe depression was more common in the youngest group. The majority (84.98%, 158/186) of those aged 18 – 21 were depressed followed by 21 – 24 years (67.74%, 65/155) and those of age 25 years or more (65%, 39/60). The association between the severity of depression and age was statistically significant (P= .002).

The present study showed that depression was more prevalent among female medical students (79.4%, 212/276)compared to male medical students (67.16%, 90/134). The association between the severity of depression and gender was statistically significant (P .033)

Depression symptoms were found to be not associated with marital status and presence or absence of a source of income.

The prevalence of depression was more in the second year medical students (85.48%, 106/124) followed by the sixth year (65.55%, 78/119) and the difference found between the severity of depression and year of studying was statistically significant (P = .010).

Table 1: Sociodemographic characteristics of undergraduate medical students at Ibn Sini National College , Jeddah, Saudi Arabia

Value	Number	Percentage %
Age		
18-21 years old	186	46.4%
22-24 years old	155	38.7%
25 and above	60	15%
Sex		
Male	134	33.4%
Female	267	66.6%
Marital status		
Married	16	4%
Non-married	385	96%
Source of income		
Yes	87	21.7%
No	314	78.3%
Level of education		
First year	55	13.7%
Second year	124	30.9%
Third year	33	8%
Fourth year	25	6.3%
Fifth year	45	11.2%
Sixth year	119	29.9%

Figure 1: Distribution of depression severity among undergraduate medical students at Ibn Sini National College, Jeddah, Saudi Arabia

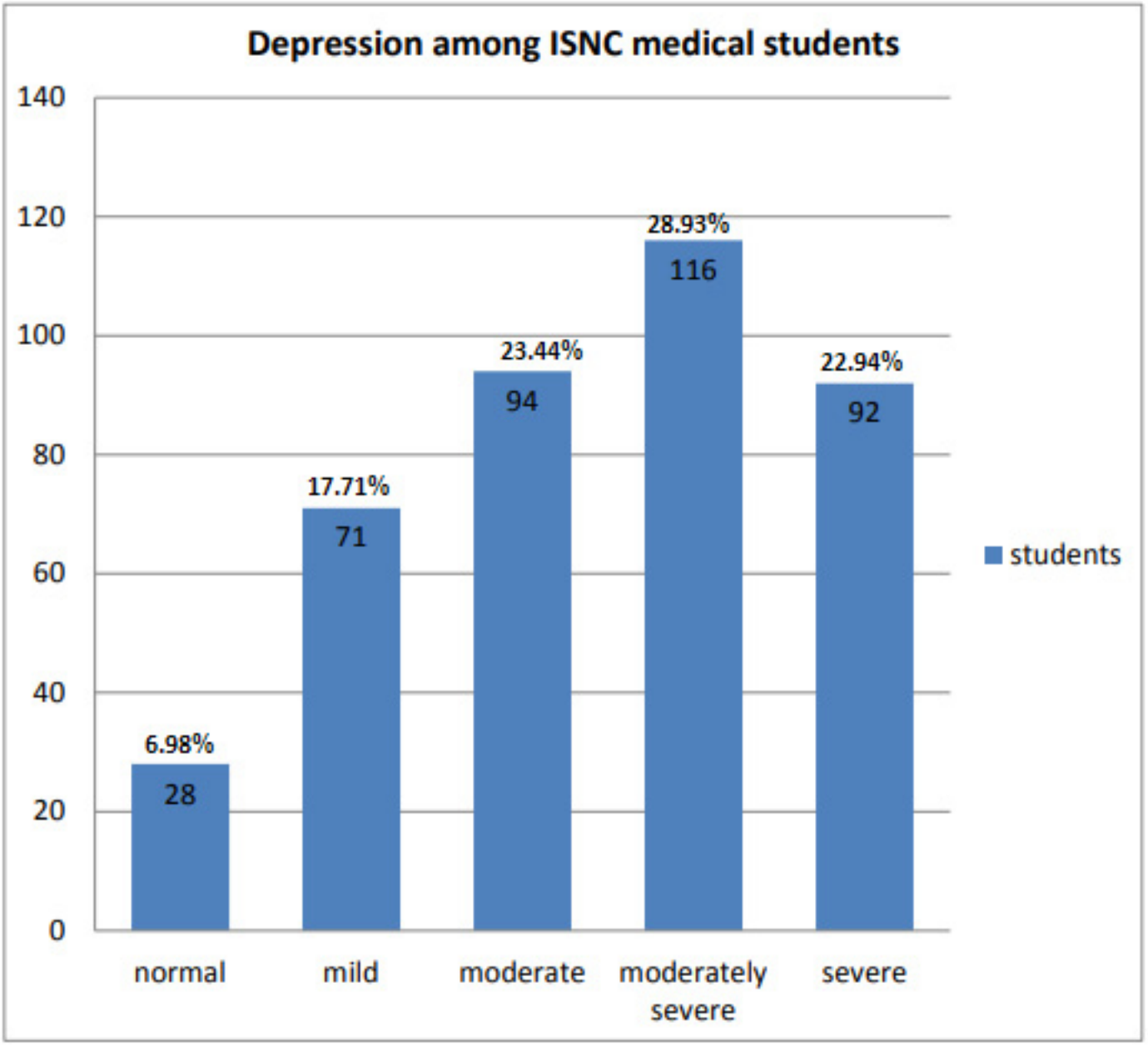

Table 2: Severity of depression according to sociodemographic factors and level of education among undergraduate medical students at Ibn Sini National College, Jeddah, Saudi Arabia

	Normal (0 – 4)	Mild (5 – 9)	Moderate (10 – 14)	Moderately severe (15 - 19)	Severe (20 – 27)	Total	*P-value*[a]
Age							
18 - 21	8 (4.30%)	20 (10.75%)	47 (25.27%)	56 (30.11%)	55 (29.57%)	186 (100%)	.002*
22 – 25	14 (9.03%)	36 (23.23%)	35 (22.58%)	48 (30.97%)	22 (14.19%)	155 (100%)	
25 and above	6 (10.00%)	15 (25.00%)	12 (20.00%)	12 (20.00%)	15 (25.00%)	60 (100%)	
Gender							
Male	16 (11.94%)	28 (20.9%)	27 (20.15%)	33 (24.63%)	30 (22.38%)	134 (100%)	.033*
Female	12 (4.49%)	43 (16.1%)	67 (25.09%)	83 (31.09%)	62 (23.22%)	276 (100%)	
Marital state							
Single	25 (6.78%)	68 (17.66%)	88 (22.85%)	110 (28.87%)	90 (23.84%)	385 (100%)	.511
Married	2 (12.5%)	3 (18.75%)	4 (25.00%)	5 (31.25%)	2 (12.5%)	16 (100%)	
Source of income							
Have source of income	6 (6.90%)	20 (22.99%)	18 (20.69%)	27 (31.03%)	16 (18.39%)	87 (100%)	.813
No source of income	22 (7.01%)	51 (16.25%)	76 (24.20%)	89 (28.34%)	76 (24.20%)	314 (100%)	
Education level							
First year	4 (7.27%)	9 (16.36%)	15 (27.27%)	17 (30.91%)	10 (18.19%)	55 (100%)	.010*
Second year	7 (5.65%)	11 (8.87%)	26 (20.96%)	36 (29.03%)	44 (35.48%)	124 (100%)	
Third year	1 (3.04%)	7 (21.21%)	8 (24.24%)	9 (27.27%)	8 (24.24%)	33 (100%)	
Fourth year	0 (00%)	2 (8.00%)	10 (40.00%)	6 (24.00%)	7 (28.00%)	25 (100%)	
Fifth year	4 (8.89%)	13 (28.89%)	7 (15.56%)	15 (33.33%)	6 (13.33%)	45 (100%)	
Sixth year	12 (10.00%)	29 (24.17%)	28 (23.33%)	33 (27.50%)	17 (15.00%)	119 (100%)	

Discussion

Prevalence of depression among medical students is a matter of great concern as it may impair behavior of students, affect academic performance, lead to diminished learning and therefore affect patient healthcare upon employment of these students.

In this study , the prevalence of depression among medical students and their possible association with various variables were assessed using patient health questionnaire (PHQ-9) which measure the severity of depression level using the cutoff values of 10 to 14 dysthymia (minor depression) and 15 or above were considered to define major depression. The results from the current survey revealed that a remarkable proportion of medical students (75.31%)had depression (taking all levels of depression together). Three out of four students were found to have depression. A recent study of the prevalence of overall depression rate was found to be higher than the present study for the medical students of Karachi which was 92% (19), whereas it was previously recorded at 70 % in a study of the same country several years ago(20). Regarding the prevalence, the current finding was similar to other studies carried out at Taif University, Saudi Arabia using the patient health questionnaire (PHQ-9) scoring. The overall percentage of depression in that study was seen in 75.7% of the students(21). However, the current study result is higher than the studies conducted in Madinah (Saudi Arabia) which was 28.3%(22) , in Egypt which was 63.6% (23) , in Tabriz (Iran) which was 62.7%(24), in Malaysia which was 64.4% (25).. The variation might be due to the difference in sample size and data collection tool which was PQ-2 with 60 participant in Madinah, Saudi Arabia (22), DASS-21 with 412 participant in Egypt(23) (12), , BDI with 175 participant in Tabriz (Iran) (24), DASS-21 with 194 participants in Malaysia(25), and AKUADS in Karachi (Pakistan) (20).

The present study showed that students who were in the age interval of 18-21 years were significantly more likely to have depression as compared to other age groups. This result is similar to a study conducted in the International Islamic University of Malaysia (25).

The present study showed significant differences in depression scores between males and females. Similar to our results, some previous studies showed higher levels of depression among female

students. Some western studies (26,27) have also shown female gender to be significantly correlated with depression. However, findings of some studies (28) are contrary to our results and found no differences in depression among male and female students.

Regarding educational level, those who are in the second and sixth year were more likely to have depression compared to those in the other educational levels. The current findings are similar partially with the Indian study (29) which revealed that depression was more (66.3%) among second year medical students. This observation of the current study may be because of difference in the number of respondents as the highest response was from second and sixth year. This might be due to other factors such lack of social interaction; unfamiliar types of exam schedule; lower grades than anticipated; lack of vacation or break(30)or language problem(31).

Conclusion

Depression is highly prevalent among medical student populations. Implication of depression is of serious concern as it could result in loss of potential to handle various stressors at college, impairment of functioning in classroom performance and later in clinical practice. In the light of the high percentage of depression seen in this study, actions must be taken to figure out the causes and solutions to these problems. It is very important to address the issue through effective counseling and instituting appropriate measures. Future recommendation is to conduct a larger scale study across Saudi Arabia to highlight the prevalence and causes of depression among medical students.

The strength and limitation of the study:

The Current study had several strengths: Firstly using adequate sample size from a well-defined catchment area and secondly using a standard and valid instrument. However the present study also had some limitations such as not measuring the effects of other morbid psychiatric disorders.

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Assessment of knowledge and practice of mothers regarding breastfeeding and contraception in the postpartum period in primary care centers, King Abdulaziz Medical City, Riyadh, Saudi Arabia

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Received: August 2020; Accepted:September 2020; Published: October 1, 2020.
Citation: Aida AlDughaither, Hadeel AlMutairi. Assessment of knowledge and practice of mothers regarding breastfeeding and contraception in the postpartum period in primary care centers, King Abdulaziz Medical City, Riyadh, Saudi Arabia. World Family Medicine. 2020; 18(10): 36-49 DOI: 10.5742/MEWFM.2020.93873

Abstract

Introduction: Women's health is of particular concern due to reproduction which affects their health. The Saudi community has changed recently in regard to women's rights and education. Those changes are expected to have a great impact on breastfeeding practice and contraception use.

Objectives: To assess knowledge and practice of breastfeeding and contraception for post-partum women.

Methods: Questionnaire based cross-sectional study for postpartum women in 3 primary health care centers, Riyadh, Saudi Arabia.

Results: 382 participants were included. Only 12.8% were exclusively breastfeeding their babies, while others were on mixed feeding (45%) or formula milk alone (42.2%). The most common barrier against breastfeeding was insufficiency of breastmilk in 51.8% of mothers. Women with three or less children were able to breastfeed their babies more than women with more than three children, (P-value=0.012). Vaginal delivery was significantly associated with a higher percentage of breastfeeding than C-section, (P-value=0.045). Almost half of the participants (49%) were using contraception; 45% of them chose their contraception based on their physicians' recommendations, 42.8% were using combined oral contraceptive pills. More than half the participants (67.8%) had good knowledge about breastfeeding and contraception. Older age was significantly related to higher knowledge; 75% of women who were 30 years and above had good knowledge (P-value=0.003). Women with three children or more (76.7%) have better knowledge than those with less than three children (P-value=0.01). The majority of mothers who received antenatal clinical advice about breastfeeding and contraception (72%) had better knowledge, (P-value=0.003).

Conclusion :The prevalence of exclusive breastfeeding was low (12.8%) despite the good knowledge in 67.8% of the participants. Around half of the participants were using contraception; the most common method was combined oral contraceptive pills (42.8%). Higher knowledge about breastfeeding and contraception were found with older age, having more than 3 children and receiving antenatal clinical advice.

Key words: knowledge, practice, breastfeeding, contraception, postpartum, Saudi Arabia

Introduction

There are some biological differences between men and women that lead to differences in their health status. Women's health is of a particular concern due to their reproductive role which has great impact on their health and wellbeing (1). Contraception is defined as: "the prevention of pregnancy by interfering with the normal process of ovulation, fertilization, and implantation" (2). It has been reported that global contraceptive use is about 48% (3). The use of contraception has several advantages on both women and children as it prevents unintended pregnancies and reduces the occurrence of high risk pregnancies especially for women in older age groups. It has been found that contraception reduces the need for unsafe abortions (4). There are several contraceptive methods that are used currently; for example, combined oral contraceptive pills, implants, intrauterine devices, and female or male condoms (4,5).

With the availability of various contraceptive methods, the individual choice of each method is different. The choice depends on multiple factors: the effectiveness of the method, related side effects, the cost and the availability of the contraceptive method as well as patient's preference (5). The most effective reversible methods according to the Centers of Disease Control and Prevention (CDC) are the implants and the intrauterine devices, which have a rate of 1 unintended pregnancy in every 100 women in a year. Secondary in effectiveness are the combined injectable contraceptives, oral pills, patches, the ring and the diaphragm. These methods have a rate of 6-12 unintended pregnancies in every 100 women in a year. The least effective are male and female condoms, the withdrawal method, the sponge, the fertility-awareness based methods, and spermicide. These methods have a rate of 18 or more unintended pregnancies in 100 women in a year(6). In addition, some types contraceptive methods have more benefits than for contraception use only; condoms are an example. Females and males who are seeking contraceptive advice should always know the importance of condom use in the prevention of sexually transmitted disease including HIV(5).

Breastfeeding benefits for both mothers and children are well proven. For child health, breastfeeding reduces child morbidity and mortality rates. It also contributes in protecting infants from different infections and helps in faster recovery of infants after sickness(7). For women's health, breastfeeding contributes in reducing weight after delivery, lowering the chance of developing anemia and decreases the risk of postpartum depression (8). In addition, for later life; breastfeeding helps to reduce the risk of ovarian and breast cancer. It is advised as per updated WHO guidelines that the child's nutrition for the first six months of age depends on exclusive breastfeeding, then continuing breastfeeding with the addition of suitable complementary foods until 2 years of age (7). Breastmilk contains all the nutrients that the infants need for the first months, then after six months it provides the child with about more than half of the nutritional needs (7). Feeding patterns are defined according to the WHO criteria as follows:

Exclusive breast feeding: infants who received only breast milk without any additional food, formula, liquids, or even water, with the exception of oral rehydration solution, drops or syrups consisting of vitamins, minerals supplements or medicines.

Bottle-feeding: infants who did not breastfeed and received only milk formula since birth (9,10).

Internationally a study conducted in Italy found that 57% of mothers at time of discharge after birth were exclusively breastfeeding their children(11). This number declined after 6 months to reach 5.5% (11). Also, a cross sectional study conducted in India, showed low levels of exclusive breastfeeding in postnatal mothers (12). Hong Jiang et al study found that the practice of breastfeeding of first-time mothers in Shanghai, China is affected directly by the awareness of mothers and their knowledge about WHO guidelines; as the awareness increases the intention and duration of breastfeeding will increase (13). On the other hand, there was a gap between the awareness of contraception and the compliance of child bearing age women in the Ambareen Khan et al study conducted in Karachi City, Pakistan (14). The most important reason for not using contraception was the fear of side effects (14). Similar results were found in another study conducted in India (15).

Recently the Saudi community has changed rapidly in regard to women's rights, education, employment and their social role and participation. Those changes are expected to have greater impact on breast feeding practice and contraception use. In this study we assessed the knowledge and practice of postpartum mothers regarding exclusive breast feeding and their use of contraceptive methods and to explore different reasons for mother's feeding practices and contraception use. We aimed to develop appropriate measures to improve knowledge and practice of mothers toward breast feeding and proper contraception use.

Methodology

This is a cross-sectional study for postpartum women in primary care centers, Ministry of National Guard, Riyadh, Saudi Arabia. It was questionnaire based. The study was conducted at 3 primary health care centers at King Abdul-Aziz Medical city in Riyadh. The data was collected in the outpatient well-baby and post-partum clinics of each center. Health Care sSpecialty Centre (HCSC), King Abdul-Aziz City Housing (Iskan clinic), and National Guard Comprehensive Specialized Clinic (NGCSC) serving a population of around 91,300 females in the child bearing age group from 15-45 years. We included all postpartum women who had follow up in the primary care centers postpartum clinic that is usually 6 weeks after delivery, and postpartum women who attended well baby clinic with their babies either at 2 months or 4 months of the baby's age. On the other hand, postpartum women who

did not agree to participate were excluded. The updated definition of exclusive breast feeding by WHO was used for this study (9,10).

The sample size was calculated using OpenEpi version 3, epidemiologic calculator based on the 28.5% prevalence of contraception used among women found as per the 2016 Saudi Arabia demographic survey (16). Using a 95% confidence interval and 5% margin of error, the calculated minimum sample size was estimated to be 313 and this was adjusted to 380 to compensate for incomplete questionnaires.

Convenience sampling technique was used and data was collected on assigned clinic days as per clinic schedule for postpartum and well-baby clinics per week for each center. Each family medicine center was covered separately until the required number of questionnaires were collected. The sample size needed was 380 participants and that was taken from the three centers proportionately.

This study was approved by King Abdullah International Medical Research Center, Riyadh. A self-administered questionnaire was distributed among participants attending either postpartum clinic or well-baby clinic for 2 and 4 months of baby age. The questionnaire was delivered to the patients and was collected by the nursing staff assigned in the screening room of the clinics.

The questionnaire was prepared with reference to previous studies in the literature. The content validity of the tool was ensured by consulting experts both in family medicine and obstetrics/gynecology specialty. It was initially written in English, then translated into Arabic and then back to English for validation. The completed questionnaire was checked and pretested for clarity and suitability in a small pilot study of ten participants and then necessary corrections were made. The questionnaire included 24 questions. The questionnaire consisted of 3 parts:

Part 1: included 7 questions about demographics characteristics (age, gender, level of education and income), 4 questions about last pregnancy and delivery, and 2 questions about postpartum education for breast feeding and or contraception. Part 2: included 4 questions to assess knowledge and practice of postpartum mothers toward breastfeeding. Part 3: included 7 questions about knowledge and practice of mothers toward contraception. The time needed to fill this questionnaire was around 10 minutes.

Statistical Analysis:
All data were coded, entered and analyzed using Statistical Package for the Social Sciences software, version 20. Continuous variables were reported in terms of means and standard deviation, while categorical variables were described using frequencies and percentages. Analytic statistics were carried out using the Chi-square (x2) test for associations and/or the difference between 2 categorical variables. T- test and ANOVA were used for mean comparisons. A P-value ≤ 0.05 was considered statistically significant. Any incomplete questionnaire was removed from data analysis.

Results

Baseline demographics of the participants :
The socio-demographic characteristics of the studied participants are shown in Table 1. The study included 382 women, (56.6%) were 30 years and above with a mean age of 31±6. Most of our participants had a university degree and higher education (56.6%), with 2.6% illiteracy. Almost two thirds of them (71%) were housewives. For participants' husbands, 56.7% were 35 years and above with a mean age of 36±7. Most husbands (59.8%) were school educated with no illiteracy. The majority of our participants (65%) have less than 3 children and 66.8% of the families in our study have an income of less than 10,000 Saudi Riyals.

Last pregnancy and delivery:
The details of participant's last pregnancy and delivery are shown in Table 2. Complications in last pregnancy were found in 19% of participants; 32% of the complications were gestational diabetes mellitus. The remaining complications are shown in Figure 1.

Of the deliveries, 72% of the participants had vaginal delivery, 88% of them had an uncomplicated mode of delivery. For the complicated delivery, postpartum hemorrhage was the most common in 28% of the patients. The remaining delivery complications are shown in Figure 2. Moreover, during their pregnancies 80% of the participants received antenatal advice about breastfeeding. Conversely , only 54% received advice about contraception use.

Breastfeeding knowledge and practice:
A significant percentage of mothers were using mixed milk (breast and formula milk) to feed their babies (45%), 42.2% were using formula milk alone, and only 12.8% were breastfeeding exclusively. Among women who used mixed feeding, 94.7% believed that breast milk alone is better, and 91.1% of women using formula milk alone believed that breastfeeding the baby exclusively is better. Many barriers were against exclusive breastfeeding as shown in Figure 3. The commonest barrier was the concerns about the insufficiency of breast milk reported by 51.8% of participants. Another 10.3% complained of conflicts between their work times and breastfeeding, and 8% had no time to breastfeed their babies. In our study, there was a significant association between the number of children and type of feeding. We found women with 3 or less children breastfed their children more than women with more than 3 children (p-value=0.012). Additionally, vaginal delivery was significantly associated with higher percentage of breastfeeding than C-section (p-value=0.045).

Respondents' knowledge was evaluated using a list of 19 general facts about breastfeeding (Figure 4). No respondent answered all questions correctly. The highest number of correct answers was 18, while the lowest was 0. Twenty-one answered 18 questions correctly (5.5%),

and 61 answered 17 questions correctly (16%). The mean number of correct answers was 13.

Contraception:

The next point in our study was contraception; 60.1% of the women used contraception before their last pregnancy, with most (42.8%) using combined oral contraceptive pills. The rest were using other options (Figure 4). Almost half the participant (49%) were currently using contraception; 45% of the contraceptive users chose their contraception method based on their physician's recommendation, 31% chose based on previous experience, while 16% chose based on advice from a friend or relative (Figure 5). However the commonest cause for not using contraception was the desire for more children, reported by 28.9% of the respondents. Also, 18.9% believed that breastfeeding is enough as a contraceptive method while 12.2% said their husbands disagreed about using contraception. Respondents' knowledge about contraception was evaluated using eight general questions about contraception. Surprisingly, 60% believed that Intrauterine devices cannot be used during breastfeeding and 76% thought that progestin only pills can also not be used. Additionally, 61.8%, 76.7% thought that withdrawal and condoms, respectively, cannot be used during breastfeeding. However, 89.5% found combined contraceptive pills not compatible with breastfeeding. Moreover, 65.7% of our respondents did not know the right time to start contraception after birth. These results show the lack of knowledge about appropriate contraception use.

The association between their knowledge and several factors:

Our respondents' knowledge was measured using 28 basic general questions related to breastfeeding and contraception, as mentioned above. The knowledge score was calculated by counting each correct answer as 1 point and other answers as 0 points. The highest grade among our respondents was 23 out of 28, with a mean of 15. We classified the results into two categories, poor knowledge (lower than 15) and good knowledge (15 and more). In this survey, 32.2% of patients had poor knowledge and 67.8% good knowledge.

We made comparisons between several factors and the knowledge score. Firstly, older age was significantly related to higher knowledge; 60% of those younger than 30 had good knowledge and 75% of those 30 and older had good knowledge (p-value = 0.003). The mean knowledge score was 15 for women younger than 30 and 17 for women aged 30 and older. The husband's age was also related with higher knowledge: 62.7% of those younger than 35 years have good knowledge and 73.4% aged 35 and older have good knowledge (p-value = 0.028). Moreover, women with three or more children have better knowledge than those with fewer than three (p-value = 0.01): 76.7% of women with three or more children had good knowledge but 60% of women with fewer than three children had good knowledge. Additionally, antenatal advice in clinics related significantly to higher knowledge: about 72% of those who received antenatal advice about breastfeeding had good knowledge compared with about 53% of those who did not (P-value = 0.003). Additionally, exclusive breastfeeding was significantly associated with higher knowledge (84%) compared with exclusive formula milk use (64%; p-value = 0.046). Moreover, contraception use was significantly related to higher knowledge; 75% of women currently using contraception have good knowledge, whereas 63% of women who are not have poor knowledge (p-value = 0.23). Other assessed factors are listed in Table 4.

Discussion

Breastfeeding:

Our study showed that only 12.8% of mothers breastfed exclusively; this correlates with the local low prevalence of exclusive breastfeeding. AlSulaimani's recent study in Taif City, in western region of Saudi Arabia found a low prevalence of exclusive breastfeeding (16.3%), which is similar to our finding (17). Another study, which was conducted in Makkah, a city located in the western region of Saudi Arabia, showed a similar low prevalence (18.5%)(18). An even lower prevalence rate, 7.3%, was found in another study conducted in Abha, a city located in the southern region of Saudi Arabia (19). However, much higher percentages have been found in other local studies (20,21). As the majority of our participants were housewives (71%), maternal employment was not a barrier in this study. This difference in rates of exclusive breast feeding among local studies may be explained by the finding of a systematic review for 17 cross-sectional Saudi studies about breastfeeding, which concluded that it was difficult to determine the prevalence of exclusive breastfeeding depending on the included studies because of differences in the definitions of "exclusive breastfeeding" used and the nature of study design (22).

Internationally, a study conducted in Spain concluded that the exclusive breastfeeding rate is 25.4%(23). Another study conducted in India showed a prevalence of 62% (24). Similarly, exclusive breastfeeding of 58% was found in Bhutan (25). Additionally, studies conducted in Austria, Luxemburg and the Netherlands found the rates of exclusive breastfeeding to be 46%, 54% and 37% respectively (19). Our result is much lower than the results of these studies, which may be explained by differences in socioeconomic status, education level and cultural beliefs and the rapid modernization move in the Saudi community especially in regard to women's role.

In our population we found a correlation between vaginal delivery and breastfeeding. A 2016 study by Fehintola et al. found the same correlation. In fact, they found that women who delivered by C-section are 70% less likely to breastfeed exclusively (26). A similar correlation was found in another study in Canada (27). Additionally, we found that mothers in our population with three or fewer children are more likely to practice breastfeeding. This result contradicts several studies that found that lower number of children is associated with failure to practice exclusive breastfeeding (18, 28).

Table 1: Baseline demographics of the participants

Demographical Data		*N*	*%*
Age	Below 30 years	150	43.4%
	30 years and above	196	56.6%
	Mean ± SD	31±6	
	Range	19-50	
Education	Illiterate	10	2.6%
	School level	156	40.8%
	University Degree	215	56.3%
Career	Housewife	268	70.9%
	Employee	110	28.8%
Number of children	Up to 3 children	247	64.8%
	More than 3 children	134	35.2%
Husband's Age	Below 35 years	158	43.3%
	35 years and above	207	56.7%
	Mean ± SD	36±7	
	Range	23-73	
Husband's Education	School level	226	59.8%
	University degree and above	152	40.2%
Family income	Up to 10,000	250	66.8%
	More than 10,000	124	33.2%

Table 2: Last pregnancy and delivery.

The questions		*N*	*%*
Regular antenatal follow up	Yes	360	95.2%
	No	18	4.8%
Antenatal advice about breastfeeding.	Yes	302	79.9%
	No	76	20.1%
Antenatal advice about contraception.	Yes	206	54.5%
	No	172	45.5%
Pregnancies complications	Yes	76	19.9%
	No	306	80.1%
The mode of delivery of last pregnancy	Vaginal delivery	272	72.2%
	C-section	102	27.3%
Delivery complications	Yes	44	11.7%
	No	331	88.3%

Table 3: Knowledge of breastfeeding

The statements	Right answer	
	N	%
Breastfeeding and baby's health:		
It protects infants from gastroenteritis and diarrhea	331	86.6%
It protects infants from chest infections	296	77.5%
It protects infants from allergies	274	71.7%
It protects babies from diabetes	258	67.5%
It increases the baby's intelligence	10	2.6%
Using mixed feeding(both formula and breast milk) is the ideal way to ensure better nutrition for the baby	112	29.3%
Breastfeeding and mother's health:		
It protects mothers from breast cancer.	340	89%
It protects mothers from ovarian cancer.	273	71.5%
Exclusive breastfeeding is beneficial in spacing birth	244	63.9%
Breastfeeding can improve the mother–baby relationship and bonding	349	91.%
Breastfeeding practices:		
Breastfeeding should be initiated within 30 minutes after delivery	277	72.5%
Colostrum is the mother's early milk, which is thick and yellowish in color	337	88.2%
Feeding colostrum is very good for the baby's immune system	344	90.1%
Baby should be allowed to breastfeed for at least 10–20 minutes for each feeding	288	75.4%
The infant should be breastfed on demand after delivery (whenever the infant desires) during the day and night	311	81.4%
No other food and drinks are needed for up to six months of infant's age	305	79.8%
Breast milk can expressed by hand or breast bump to be used at later time	312	81.7%
Expressed breast milk can be stored in the fridge for up to 5 days	209	54.7%
Expressed breast milk can be stored in the deep freezer for 6-12 months	147	45.5%

Table 4: Knowledge about contraception

The questions	Right answer	
	N	%
Do you think Intrauterine device can be used safely while breastfeeding?	151	39.5%
Do you think Condoms can be used safely while breastfeeding?	91	23.8%
Do you think Combination oral contraceptives can be used while safely breastfeeding?	20	5.2%
Do you think progestin-only pills can be used while safely breastfeeding?	5	1.3%
Do you think Implants can be used while safely breastfeeding?	146	38.2%
Do you think Injectable methods can be used while safely breastfeeding?	89	23.3%
Do you think withdrawal can be used while safely breastfeeding?	342	89.5%
When to start contraceptives after delivery?	131	34.3%

Table 5: Association between the knowledge score and several factors

The associated factor		Poor knowledge N(%)	Good knowledge N(%)	P- value
Age	Below 30 years	60 (40%)	90 (60%)	0.003
	30 years and above	49 (25%)	147 (75%)	
Number of children	Up to 3 children	91 (36.9%)	156 (63.2%)	0.01
	More than 3 children	32 (23.8%)	102 (76.1%)	
Education	Illiterate	4 (40%)	6 (60%)	0.643
	School level	53 (34%)	103 66%)	
	University degree and higher	65 (30.2%)	150 (69.8%)	
Husband's Age	Below 35 years	59 (37.3%)	99 (62.7%)	0.028
	35 years and above	55 (26.6%)	152(73.4%)	
Husband's Education	School level	72 (31.9%)	154 (68.1%)	0.945
	University degree and above	48 (31.6%)	104 (68.4%)	
Family income	Up to 10,000	89 (35.6%)	161 (64.4%)	0.057
	More than 10,000	32 (25.8%)	92 (74.2%)	
Antenatal breastfeeding consultation	Received	85 (28.1%)	217 (71.9%)	0.003
	Not received	35 (46.1%)	41 (53.9%)	
Antenatal contraception consultation	Received	57 (27.7%)	149 (27.3%)	0.062
	Nor received	63 (36.6%)	109 (63.4%)	
Baby feeding type	Exclusive breastfeeding	8 (16.7%)	40 (83.3%)	0.046
	Formula milk only	56 (35.7%)	101 (64.3%)	
	Mixed feeding	55 (32.2%)	116 (67.8%)	
Contraception use	Yes	48 (25.9%)	137 (74.1%)	0.023
	No	71 (36.8%)	122 (63.2%)	

* P-value more than or equal 0.05 is considered significant

Figure 1: Pregnancy complications

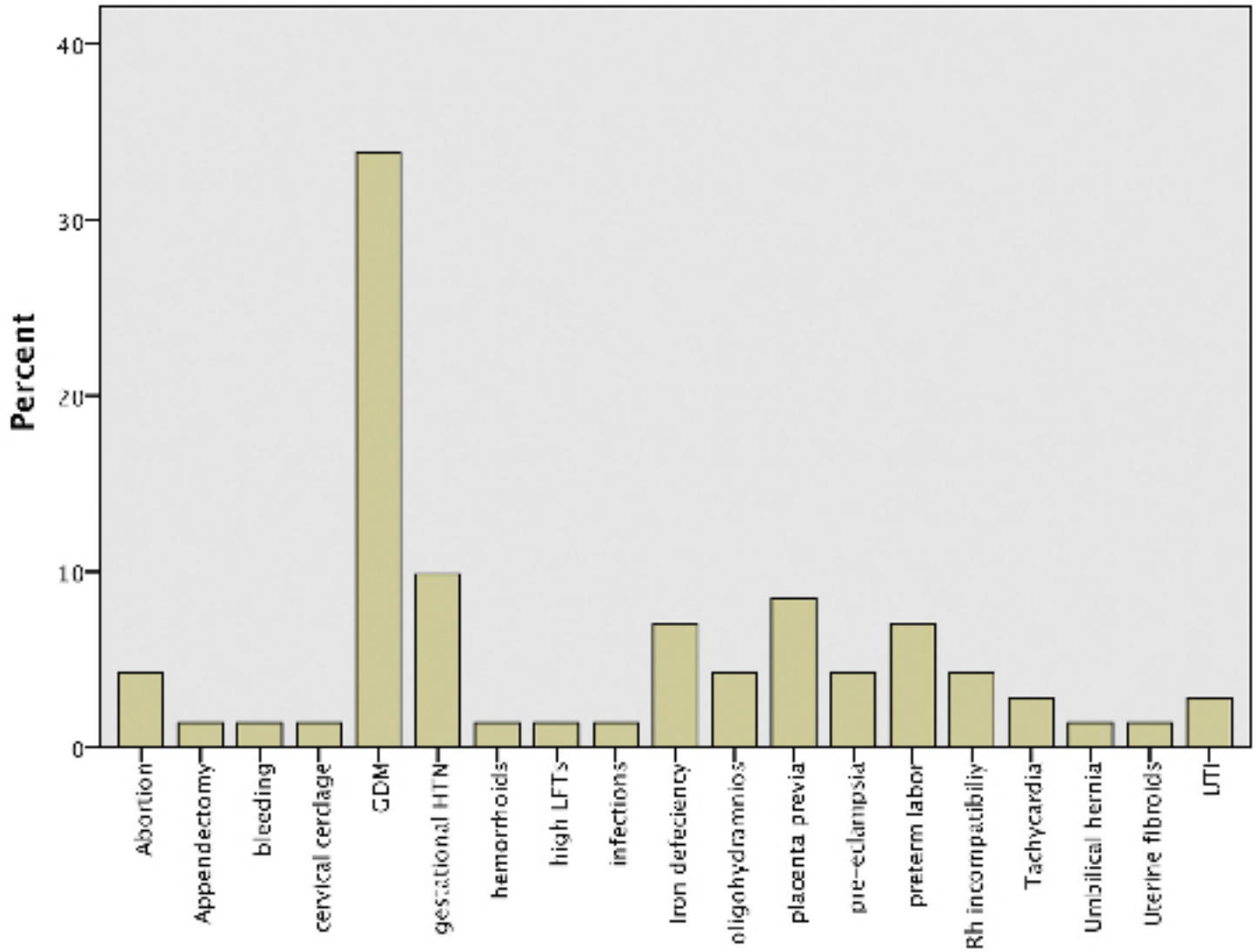


Figure 2: Delivery complications

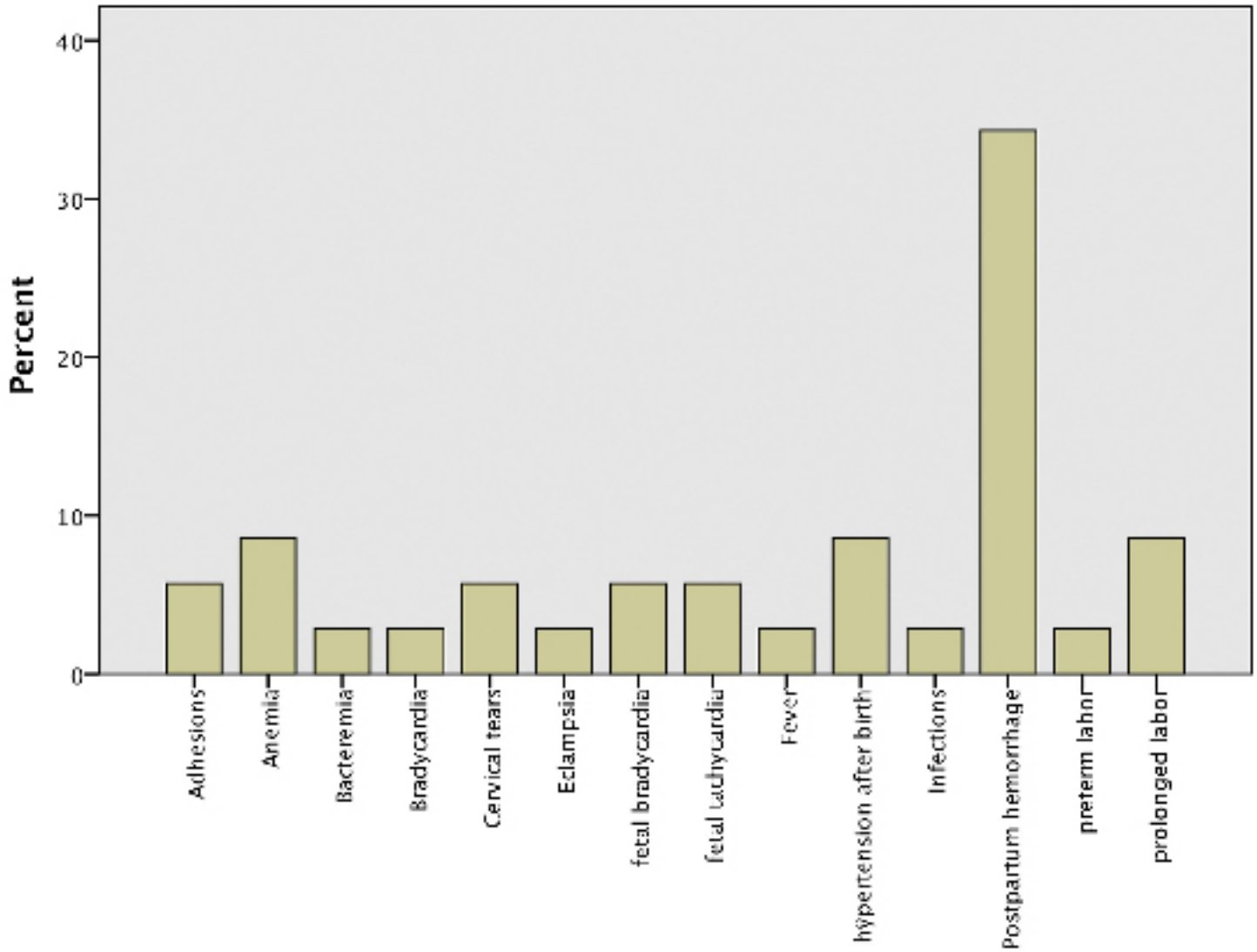


Figure 3: Barriers against exclusive breastfeeding

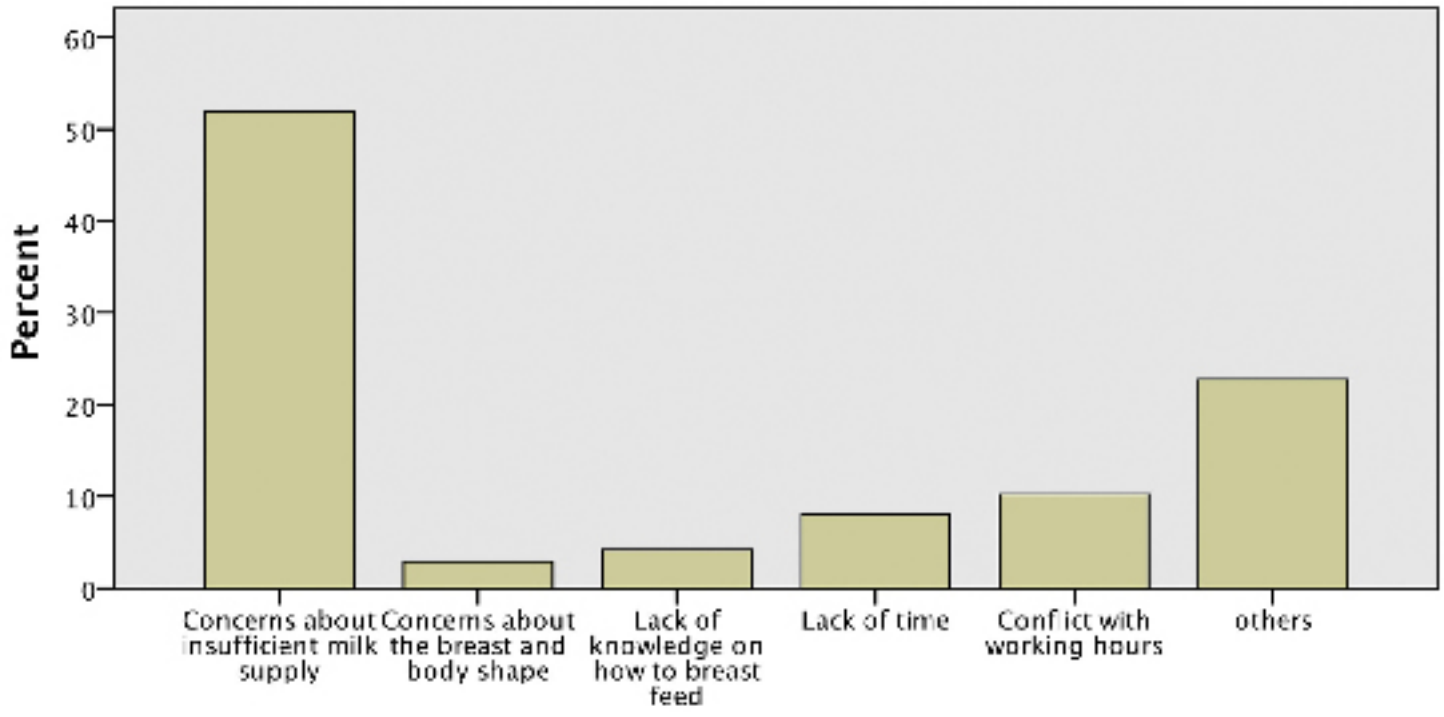


Figure 4: Contraception methods

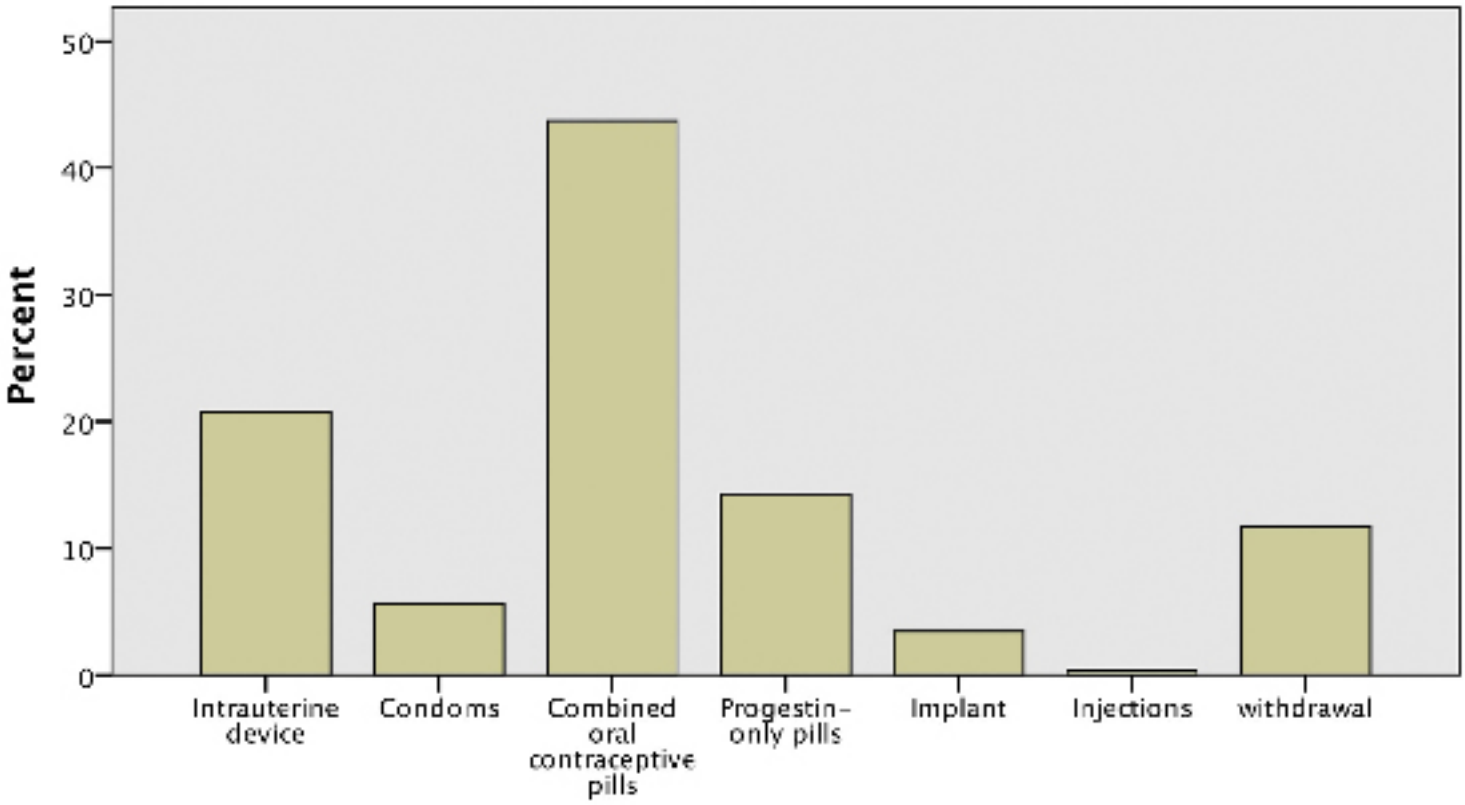
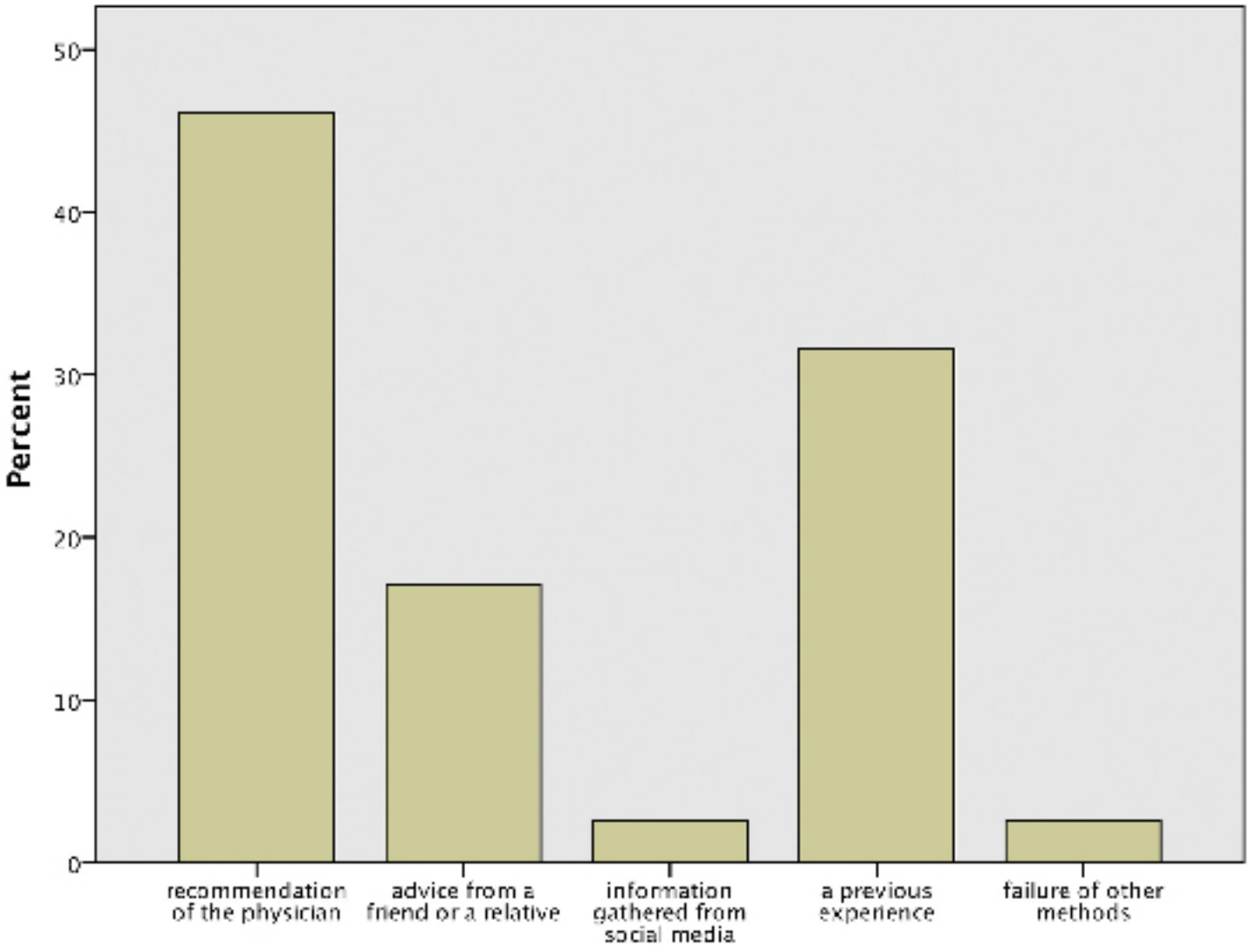


Figure 5: Reasons behind contraception method choice



The most common barrier against exclusive breastfeeding in our population was concerns about insufficient milk supply (51.8%) followed by conflict with working hours and lack of time and knowledge. This is similar to the results of Li et al., who found that 51.7% of women in the United States stopped exclusive breastfeeding because of insufficient milk production (29). Also, concerns about insufficient milk supply were a frequent reason for stopping exclusive breastfeeding in several other studies(30,31). Milk insufficiency can be due to poor maternal nutrition or lack of knowledge about the techniques of breastfeeding (32). However, in some cases, lack of confidence and lack of good knowledge about lactation can lead to an incorrect perception that insufficient milk is being produced(33). These results emphasize that we should increase knowledge related to all aspects of breastfeeding, including appropriate techniques and practice, to increase mothers' confidence about breastfeeding.

Contraception:
We found that 49% of our population are using contraceptives; this percentage is similar to several local and international studies(34,35). Also, combined contraceptive pills are the most common method used in our population, followed by the intrauterine contraceptive device. This is similar to the results of a 2017 systematic review about contraceptive knowledge and use in Saudi Arabia(36). Another study in Qatar showed similar results(37). Additionally, the knowledge source of almost half of our respondents was physicians. Conversely, the knowledge source about contraception knowledge and use in Saudi Arabia for most of the population in the 2017 systematic review was family members and friends(36). However, we found that only 54% of our population received antenatal contraception advice. This number may show a lack of education and consultation about contraception because every women has the right to receive proper education regarding contraception use. The low percentage of antenatal contraception advice may be the reason for the lack of knowledge in our population.

Knowledge regarding breastfeeding and contraception:
Although 67.8% of our population had good knowledge, their practice did not match WHO recommendations. This is similar the results of a study by Ayed et al(19). Another study showed a similar gap between knowledge and practice(17). Maternal age greater than 30 years was associated with higher knowledge in our study. The same correlation was also found in another local study(38). Older maternal age is also associated with a higher likelihood of exclusive breastfeeding(19,39,40). This finding, combined with our finding, may indicate that older women have a higher level of knowledge and practice, which may be because they have more experience. Additionally, having more than three children was associated with higher knowledge in our population. This is the opposite of the findings of a study in the UAE in which in Alketbi found women with one child to have higher knowledge (41).

Antenatal clinical advice was significantly associated with increasing knowledge among women. This expected correlation is seen in several other results(19,38,41). Mattar et al. investigated the correlation between counseling and education during antenatal follow ups and found that education and counseling were significantly associated with improved breastfeeding practices (42).

Conclusion and Recommendations

The prevalence of exclusive breastfeeding in our population was low (12.8%) despite the good knowledge in 67.8% of the population. The main barriers to exclusive breastfeeding were insufficiency of breast milk for 51.8% and conflicts between their working hours and breastfeeding for 10.3%. Vaginal delivery and parity of three or fewer were significantly associated with exclusive breastfeeding. Almost half of our population were using contraception at the time of the study; 45% of the participants who were using contraception depended on their physicians' recommendations to choose. The commonest method was combined oral contraceptive pills, used by 42.8%. Our respondents' knowledge regarding contraception was low. Higher general knowledge about breastfeeding and contraception was significantly associated with older maternal age, having more than three children, antenatal clinical advice and exclusive breastfeeding practice.
We recommend greater efforts to reduce the gap between mothers' knowledge and practice of exclusive breastfeeding. This can be done by increasing education programs and awareness to educate all women specifically targeting the younger population and ensuring availability of proper facilities to help mothers breastfeed their babies anywhere, especially at work, public places and hospitals. Additionally, proper education regarding appropriate contraception use can be done as a part of school education about reproductive health, premarital counseling and early on during pregnancy. Accordingly, a national survey is recommended to study breastfeeding and contraception knowledge and practice to improve mothers' and children's health and wellbeing.

Limitations:
This study includes mothers attending postpartum or well-baby clinics at different family medicine centers in King Abdulaziz Medical City, Riyadh, which may not represent the whole community of Saudi Arabia. Additionally, the study was limited to mothers of infants from birth to 4 months of age.

A**cknowledgements:**
We would like to express our appreciation and thanks to Dr. Imadaddin Abdulmajeed for his great support during the statistical analysis of this research work and Dr.Abdulaziz Alosail for his help in final editing of the manuscript.

Financial support and sponsorship:
Nil

Conflict of interest:
There are no conflicts of interests

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Family History of Cancer, Trend of Genetic Counselling and Screening in Karachi: A Survey among Students of Jinnah Sindh Medical University

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Received: August 2020; Accepted:September 2020; Published: October 1, 2020.
Citation: Nazish Jaffar et al. Family History of Cancer, Trend of Genetic Counselling and Screening in Karachi: A Survey among Students of Jinnah Sindh Medical University. World Family Medicine. 2020; 18(10): 50-56
DOI: 10.5742/MEWFM.2020.93874

Abstract

Background: Family history is a significant tool to identify at risk population. For cancer, about 22% positive family history has been reported which includes breast, ovarian, endometrial, prostate and colorectal carcinoma. Documentation of family history of cancer facilitates the decision of screening test and counselling in susceptible subjects.

The aim of the present study was to observe the trend of genetic counseling and screening tests in subjects with documented positive family history of cancers and to identify the knowledge of familial cancers and related hereditary mutations among MBBS, BDS and Pharm D students.

Methods: A cross sectional, questionnaire-based survey was conducted at Jinnah Sindh Medical University from June to September 2019. A total of 162 MBBS, BDS and PHARM D students were included in the study. Data were analyzed by SPSS version 22.

Result: Approximately 42(25.9%), 67(41.4%) and 60(37.0%) participants had positive family history of cancer in first, second- and third-degree relatives, respectively. Most commonly reported familial malignancy 45(27.8%) was breast carcinoma. BRCA gene screening and mammography was prescribed to 6(3.7%) and 20(12.3%) subjects respectively with positive familial history of breast cancer. Family history of hereditary nonpolyposis colorectal carcinoma was positive in 16(9.9%). However, colonoscopy was prescribed to 7(4.3%) subjects. About 44(27.2%) subjects reported documentation of family history and 36(22.2%) of participants were advised genetic counselling or referred to a genetic counsellor (p= 0.000). Students of MBBS were more aware of familial cancers and hereditary mutations in comparison to dentistry and pharmacy students.

Conclusion: The most common reported familial malignancy was breast carcinoma and the least frequent was retinoblastoma. Documentation of family history of cancer, advised screening and genetic counselling was found to be inadequate in our clinical setup. Students of MBBS had a good knowledge of familial cancer and related hereditary mutations in comparison to dentistry and pharmacy students.

Key words: cancer; family history; screening; genetic counselling; documentation.

Introduction

Cancer is the primary cause of mortality in high income states and an ultimate cause of mortality in middle and low-income countries (1). It is estimated that by 2020 the incidence of cancer would constitute 10 million deaths and 15 million new cases per year (2). Proportion of the commonly diagnosed malignancies varies globally (3).

Family history is a health risk element for a number of diseases and has acquired global importance in genetics science for preventive medicine and public health. Reported positive family history was 22% for cancers, inclusively breast, ovarian, endometrial, prostate and colorectal carcinomas (4). In addition to environmental factors, positive family history and associated genetic mutations have a predominant role in development of cancer risk. Researchers have used family history of first-degree relatives as a marker for hereditary risk of cancer. Family history identifies outcomes of genetic mutations, environment factors and associated life style. Individuals with first-degree relatives are more prone to suffer from malignancies in comparison to general population (5).

Specific genetic mutations can multiply risk of certain cancers. For instance, hereditary non polyposis colorectal carcinoma is associated with mutated MLH1 and MSH2 genes. These mutated genes elevate the risk in family members up to 80%. In a similar manner, mutated BRCA1 and BRCA2 genes constitute 5–10% of breast and ovarian cancers and associated with familial risk of these malignancies (6). Breast cancer is the most common cancer of females in Karachi, Pakistan. However, mutations of BRAC1, BRAC2 have not been sufficiently studied in the local population. Cancer control programs emphasizing on population screening, routine breast clinical checkup of females and control of breast cancer are required (7). Cancers of breast, ovary, uterus and colorectal region are associated with familial risk and a screening test may be required for first- and second-degree relatives (8).

Cancer risk assessment includes documentation of history, identification of susceptible subjects, cancer screening recommendation and genetic screening test (9). Documentation and assessment of family history is a primary step which a family physician can take in reporting candidates who will obtain advantage from screening. Family physicians should emphasize on family history documentation and risk factors assessment (10). Studies demonstrate that family history of malignancy is not only significant in identifying first-degree relatives but second and occasionally third-degree relatives of cancer patients may also require screening and genetic counseling (11).

Furthermore, genetic education, counseling and screening are essential in cases with positive family history with genetic susceptibility to a particular cancer. Genetic counseling is required before performance of genetic screening. Subjects prone to inherited mutations and cancer syndromes should seek genetic counseling that will be useful in evaluation of risk of underlying cancer and need for preventive medicine and screening test (12).

The current study was designed to identify the prevailing clinical approach towards recording of family history of cancer, genetic counseling and screening tests in the relatives of cancer patients. Furthermore, this survey may prove to be a useful tool in assessing knowledge of familial cancers and related hereditary mutations among the medical students of Jinnah Sindh Medical University.

Materials and Methods

Study design, period and area: A student based cross sectional study was conducted in Jinnah Sindh Medical University (JSMU) during the period of June to August 2019. JSMU is one of the oldest and prestigious medical institutes of Karachi, which offers undergraduate program in Bachelor of Medicine and Bachelor of Surgery (MBBS), Bachelors of Dental Surgery (BDS) and Doctor of Pharmacy (PHARM-D) among a few others. Authorization to conduct the study was ascertained by Institutional Review Board of JSMU (JSMU/IRB/2019/-200).

Study population: Undergraduate medical students of Sindh Medical College (SMC), Sindh Institute of Oral Health Sciences (SIOHS) and Institute of Pharmaceutical Sciences (IPS) of JSMU with age range of 19 to 25 years were included in the current study. Students of JSMU enrolled in non-medicinal fields were excluded.

Sample size and sampling techniques: Sample size was calculated on open EPI software using population of 2550 (total population of above-mentioned institutes of JSMU was 2550, MBBS= 1750, BDS= 300, PHARM-D= 500). Anticipated % frequency was 12.9% (8), confidence level was 95% with 5% margin of error. With this calculation, the final sample size obtained was 162. Simple random sampling technique was applied to select the study subjects. All volunteers were asked to fill out the questionnaire in their free time within the university premises. Written informed consent was obtained from participants.

Data Collection: A self-administered structured questionnaire was used to collect the data. It consisted of open and close ended multiple-choice questions that have met the objectives of the study. Clinical oncology consultant assessed validity of the content of questionnaire. Furthermore, the questionnaire was pretested on 15 students (excluded in sampling) to certify the accuracy of content. The questionnaire was distributed to respondents. Participants were guaranteed the provision of anonymity. Theirs f part includes demographic data. The second part contains questions that were structured to assess the knowledge of students regarding hereditary cancers and particular genes mutated in familial cancers. The third part assessed prevalence of familial cancers in relatives of participants. The fourth part emphasizes on cancer history taking attitude from their family physicians, subsequent routine examinations, genetic counselling and screening.

We assigned one point (1) to a correct answer and zero (0) for don't know or an incorrect answer.

Data Analysis: Collected data was entered, coded and processed in SPSS Statistics version 22.0 for analysis. The current study is a descriptive study. Therefore, results were calculated in percentages. Chi-square test was applied to observe the association of different variables. A $P < 0.05$ was considered as statistically significant.

Results

A total of 162 medical students were interviewed. Distribution of medical students from the disciplines of MBBS, BDS and Pharm D was equal. Mean age was 21.3±1.52. Males were 38(23.5%) and females were 124 (76.5%). Approximately 42(25.9%), 67(41.4%) and 60(37.0%) participants have positive family history of cancer in first, second- and third-degree relatives, respectively. Moreover, 44(27.2%) participants reported that family history with respect to malignancy was documented by general physicians. Subsequently, 49(30.2%) of participants were advised for screening of cancers and 36(22.2%) were referred for genetic counselling. (Table 1)

Prescription of genetic counselling and screening test by physicians in subjects with positive family history of particular cancer was questioned. Comparative analysis of documentation of family history and advised genetic counselling and screening revealed a significant association. About 44(27.2%) subjects reported documentation of family history and 36(22.2%) of participants were advised genetic counselling or referred to a genetic counsellor (p= 0.000). Knowledge of familial cancers and related hereditary mutations among MBBS, BDS and Pharm D students was evaluated. Medical students had better knowledge in comparison to dentistry and pharmacy students (p=0.006). (Table 3)

Table 1: Family history of cancer, trend of genetic counseling and screening tests in subjects with documented positive family history of cancers. (n= 162)

Variables	Responses n (%)
Do your first-degree relatives have a history of cancer?	42(25.9%)
Do your second-degree relatives have a history of cancer?	67(41.4%)
Do your third-degree relatives have a history of cancer?	60(37.0%)
Which type of familial cancer did they suffer from?	
Breast	45(27.8%)
Ovarian	13(8.0%)
Prostate	19(11.7%)
Colorectal	16(9.9%)
Endometrial	6(3.7%)
Retinoblastoma	5(3.1%)
Medullary thyroid cancer	9(5.6%)
Total	110(67.9%)
Documentation of family history, advice of genetic counseling and screening test:	
Has physician ever documented your medical and family history concerning cancer?	44(27.2%)
Has physician advised genetic counseling or referred you, your relatives or family members to a genetic counselor considering the positive familial risk of cancer?	36(22.2%)
Has physician ever explained to you or any of your relatives about routine examination and screening relevant to your cancer family history?	49(30.2%)
Opinion regarding modes of improved attitude and practice of genetic counseling and screening	
Online familial cancer registration application Advertisement on media to create mass awareness Awareness programs in educational institution Family physician should document familial history and do counseling for familial risk of cancer	27(16.7%) 46(28.4%) 50(30.9) 39(24.1%)

Table 2: Advised genetic counselling and screening test by Physicians in subjects with positive family history of particular cancer. (n=162)

Diagnosed cancer types N (%)	Advised cancer screening	N (%)	P value*
Breast 45(27.8%)	Breast cancer screening: Breast self-examination Mammography Breast MRI BRCA screening No advised screening	 17(10.5%) 20(12.3%) 3(1.9%) 6(3.7%) 30(18.5%)	0.000
Colorectal 16(9.9%)	HNCP screening: Stool test for occult blood Sigmoidoscopy Colonoscopy CT Colonography No advised screening	 9(5.6%) 2(1.2%) 7(4.3%) 4(2.5%) 30(18.5%)	0.000
Ovarian 13(8.0%)	Ovarian cancer screening: CA 125 Screening Transvaginal Ultrasound No advised screening	 6(3.7%) 8(4.9%) 32(19.8)	0.000
Endometrial 6(3.7%)	Endometrial cancer screening: Transvaginal Ultrasound Endometrial biopsy No advised screening	 3(1.9%) 12(7.4%) 26(16.0%)	0.014
Retinoblastoma 5(3.1%)	Retinoblastoma screening: Regular eye examination from birth to 3 years No advised screening	 6(3.7%) 31(19.1%)	0.000
Prostate 19(11.7%)	Prostate cancer screening: Digital rectal examination Prostate specific antigen No advised screening	 3(1.9%) 15(9.3%) 31(19.1%)	0.000
Thyroid 9(5.6%)	Thyroid cancer screening: Ultrasound FNAC MEN2 screening No advised screening	 3(1.9%) 5(3.1%) 6(3.7%) 28(17.3%)	0 .000

Table 3: Knowledge of familial cancers and related hereditary mutations among MBBS, BDS and Pharm D students. (n=162)

	Students of various sub-specialties			
Knowledge Variables:	MBBS n (%)	BDS n (%)	Pharm D n (%)	P value
Do you believe cancer can be hereditary?	52(38.2%)	44(32.4%)	40(29.4%)	0.006
Which of the following cancers are hereditary?				
Prostate Cancer	33(44.6%)	23(31.3%)	18(24.3%)	0.000
Breast Cancer	48(40.0%)	30(27.5%)	31(28.4%)	0.001
Ovarian Cancer	43(44.8%)	27(28.1%)	26(27.1%)	0.001
Colorectal Cancer	39(54.9%)	18(25.4%)	14(19.7%)	0.000
Thyroid Cancer	29(37.7%)	23(29.9%)	25(32.5%)	0.015
Endometrial Cancer	41(46.1%)	26(29.2%)	22(24.7%)	0.001
Retinoblastoma	35(49.3%)	17(23.9%)	19(26.8%)	0.000
Mutations: Genes mutated in familial cancers				
Breast: BRCA1 and2	41(50.0%)	27(32.9%)	14(17.1%)	0.000
Prostate: BRCA1,2 and HOXB13	18(54.5%)	4(12.1%)	11(33.3%)	0.013
Colorectal: APC	27(56.3%)	10(20.8%)	11(22.9%)	0.000
Endometrial: PTEN, PIK3CA, TP53	23(76.7%)	1(3.3%)	6(20.0%)	0.000
Ovarian: BRCA1,2 and TP53	32(51.6%)	17(27.4%)	13(21.0%)	0.000
Medullary thyroid: MEN	24(63.2%)	7(18.4%)	7(18.4%)	0.000
Retinoblastoma: RB	29(57.3%)	15(27.8%)	10(18.5%)	0.002

Discussion

Family history is a health risk element for cancer. Genetic education, counselling and screening are essential in cases of positive family history with genetic susceptibility to a particular cancer. In the current study a considerable number of responses from students showed varying frequency of malignancy in first, second- and third-degree relatives. The most commonly reported malignancy was breast cancer 27.8%. A study conducted in Pakistan agrees by reporting 25.6% of cancer patients who had positive family history of malignancy with breast cancer as the most frequent type (13). However, oral cancer has also been frequently reported (14). Prostatic carcinoma was reported as 11.7% in our survey. In Europe and North America however, the reported frequency (39%) was much higher (15). Another study conducted on a large scale in Pakistan recorded the following frequencies of malignancies including prostatic 2.4%, colorectal 5.9%, ovarian 2.5%, thyroid 1.4% and endometrial 4.8% carcinomas (16). Proportion of familial medullary thyroid cancer in our survey was 5.6% which is comparable with a past study suggesting that familial medullary thyroid cancers are underestimated (17). These data enlighten the region wide distribution of various malignancies, globally. Physicians can play a fundamental role in genetic risk evaluation, counselling and screening (18). According to our findings, 27.2% and 30.2% participants acknowledged documentation of family medical history and subsequent screening tests of cancer by general physicians, respectively. Mammography and colonoscopy were advised in a small number i.e. 12.3% and 2.5% of family members of breast and colorectal cancer patients, respectively. Moreover, only a few respondents related to ovarian cancer patients were advised CA125 screening (3.7%) and transvaginal ultrasound (4.9%). Scheuner et al. is in agreement with inadequate documentation of family history in clinics by primary care practitioners (19). However, research published in the American Journal of Oncology showed a comparatively higher frequency (42.7%) of patients being referred for genetic counselling and testing with a positive family history of breast and colon cancer (20). Another study reported advised colonoscopy in 50.4% of participants (21). This comparative analysis shows the difference in approach and practices of general practitioners between advanced and less developed countries.

Studies on ovarian cancer revealed about 11%–65% risk of acquiring this malignancy in first- and second-degree relatives, respectively. Genetic mutations in BRCA1, BRCA 2 genes, Lynch II syndrome, and Li-Fraumeni syndrome have shown significant association. Currently in Pakistan, CA 125 levels and transvaginal ultrasound are being advised for ovarian cancer screening. However, both of these are not considered as satisfactory screening markers due to a low sensitivity and specificity (22).

Conclusion

The most common reported familial malignancy was breast carcinoma and the least frequent was retinoblastoma. Documentation of family history of cancer, advised screening and genetic counselling was inadequate in our clinical setup. Students from the discipline of medicine possessed comparatively better knowledge of familial cancer and related hereditary mutations in comparison to dentistry and pharmacy students.

Recommendations

A mobile application inquiring family history of cancer from individuals may help physicians and oncologists to identify at risk population. This may also be useful in preventing a large number of deaths occurring due to familial cancer each year.

Limitation

Study population included students from only one public sector university.

Conflict of interest: None to declare
Financial support: None to declare

Ethical consideration: Study is ethically approved by Institutional review board (IRB) of JSMU.

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Prevalence of primary headache among King Khalid University students in 2019

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Received: August 2020; Accepted:September 2020; Published: October 1, 2020.
Citation: Shehata Farag Shehata et al. Prevalence of primary headache among King Khalid University students in 2019. World Family Medicine. 2020; 18(10): 57-65 DOI: 10.5742/MEWFM.2020.93875

Abstract

Background: Headache is one of the most common complaints among medical students more than the general population, as a result of multiple physical and psychosocial stressors. Also the degree of headache severity has a great impact on quality of life, psychological behavior, academic performance and work. The pathophysiology of the primary headache is not clear, but several hypotheses suggest that neurovascular disorders can result in migraine and cluster headache; overactivity of pericrania or cervical muscles result in tension type headache.

Aim: to assess prevalence of primary headache among King Khalid University students in 2019.

Methodology: A descriptive cross-sectional approach was used targeting all accessible student population in Aseer region, southern Saudi Arabia. Data were collected from participants using electronic pre-structured questionnaire. The questionnaire data included student's socio-demographic data such as age, gender, faculty nature (medical, non-medical), and family history as well as , causes and risk factors of different types of headache among students, and co-morbidities. Headache data including duration, complaint, type of headache, medical intervention and outcome.

Results: The study included 421 students whose ages ranged from 18 to 30 years with mean age of 21.7 ± 1.9 years old. Males were 71.5% of the sample and 56.3% were from medical colleges. Generalized headache pain was the most recorded (45%) followed by migraine (31.2%) while frontal headache was recorded among 21% of the students. Headache started suddenly in 29.6% of the attacks and it was more in the evening and night times (63.8%). The most recorded Prodroma signs were blurred vision (37.8%) followed by drowsiness (24.6%) while no Prodroma was recorded among 44.2% of the students.

Conclusions: In conclusion, more than three quarters of the students complained of moderate to severe headache attacks which were mainly related to sleeping disturbance, studying hours, and stressful lifestyle. Students should be taught strategies for stress management training for headache.

Key words: headache, primary, students, university, prevalence, risk factors

Background

Headache is a pain of the head that can be confined to a specific site of head or is diffuse across the head from one point or affecting one or both sides [1]. It could start gradually or be of abrupt onset, with duration ranging from several minutes up to many days, and has different manifestations that are revealed as throbbing, sharp or dull pain [2]. Also, headache can be episodic or chronic (headache that occurs for 15 days or more than a month) [3]. The total socioeconomic cost of headache to society is about $14 billion per year [4]. Lifelong prevalence of headache is 96% [5]. According to the 3rd edition of the International Classification of Headache disorders published by the International Headache Society, headache can be classified as primary headache that includes migraine, tension-type headaches, trigeminal autonomic cephalgia and other primary headache disorder (headache not of the other 3 groups and that does not have a secondary cause). Secondary headache results from a clinical condition or underlying disease [3]. Headache is one of the most common complaints among medical students, moreso than the general population, as a result of multiple physical and psychosocial stressors [6]. The degree of headache severity has a great impact on quality of life, psychological behavior, academic performance and work [7].

The pathophysiology of primary headache is not clear, but several hypotheses suggest that neurovascular disorders can result in migraine and cluster headache; overactivity of pericrania or cervical muscles result in tension type headache [8, 9]. Several hypotheses have emerged to explain the specific causes of Migraine, such as a mutation in a calcium gene channel that makes the individual more sensitive to environmental factors, and accordingly, migraine is considered s complex familial disorder [10]. Also, a clear association between headache and releases of calcitonin gene-related peptide have been demonstrated, as well as additional release of vasoactive intestinal peptide in cluster and chronic paroxysmal headache [11].

Globally, according to the American Journal of Medicine, the prevalence of tension-type headache is approximately 40%; migraine is 10% and 3 times more common in females; cluster headache which is a type of trigeminal autonomic cephalgia is 0.1% and chronic daily headache at 3%-5% and mostly in the form of chronic migraine [5]. A study done in Sweden on an elementary school, reports that about 22% of pupils had a headache at least once a week, and this study shows a great association between smoking and headache in both sexes [12]. A study was done in 2015 among nursing staff in North China (n= 1102), noted that the prevalence of primary headache was 45.3%, in which tension type headache was 26.2%, migraine was 14.8% (3.4% with aura and 11.4% without aura) and chronic daily headache in 2.7%. Only 10 nurses were diagnosed with two primary headache types, and two nurses with both chronic daily headache and medication over use headache [13]. The current study aimed to assess the prevalence of primary headache and its subtypes among students in King Khalid University.

Methodology

A descriptive cross-sectional approach was used targeting all students in King Khalid University, Abha, Saudi Arabia, during academic year 2019-2020. The study was conducted during the period from March 2019 to June 2020. Students with chronic psychological disorders, chronic deviated nasal septum, and visual disturbance were excluded. Data were collected using structured questionnaire which was developed by the researchers after intensive literature review and experts' consultation. The questionnaire data included student's socio-demographic data such as age, gender, faculty nature (medical, non-medical), and family history. Also, causes and risk factors of different types of headache among students, as well as co-morbidities. Headache data including duration, complaint, type of headache, medical intervention outcome was recorded. A panel of 3 experts reviewed the questionnaire independently for content validity and all suggested modifications were applied till the final tool was achieved. The questionnaire was uploaded online using social media platforms by the researchers and their relatives and friends to be filled out by all the student population in Aseer region. A consecutive convenience sampling method was used due to the current lockdown and lack of physical contact due to COVID-19 pandemic. All those who received the electronic questionnaire during the study period and fulfilling the inclusion criteria were invited to participate through filling out the questionnaire.

Data analysis

After data were extracted, it was revised, coded and fed into Statistical Software IBM SPSS version 22(SPSS, Inc. Chicago, IL). All statistical analysis was done using two tailed tests. P value less than 0.05 was considered to be statistically significant. Descriptive analysis based on frequency and percent distribution was done for all variables including demographic data, headache related data and its risk factors. Cross tabulation was used to assess univariate analysis for different risk factors of headache among students. Relations were tested using Pearson chi-square test. Multiple logistic regression model was used to assess the most significant adjusted determinants of students' headache complaints. Factors extracted were based on backwards LR model.

Results

The study included 421 students whose ages ranged from 18 to 30 years with mean age of 21.7 ± 1.9 years old. Males were 71.5% of the sample and 56.3% were from medical colleges. Insufficient family income was recorded among 28.7% of the students and 15% were smokers.
Headache during the last 3 months was recorded among 362 students (86%). Headache was recorded among 90% of the students aged less than 20 years and among 87.8% of those aged 25 years or more with no statistical significance (P=.600). As for gender, 82.7% of the male students complained of headache in the last 3 months compared to 94.2% of the females with a statistically significant difference (P=.002). Considering faculty nature, headache was recorded among 84.4% of the medical college students compared to 88% of non-medical college students (P=.284). All married students complained of headache during the last 3 months compared to 85.5% of single students. Smoking and family income were not significantly related with headache complaint (Table 1).

Table 2 demonstrates the characteristics of the headache episodes among the students. Generalized headache pain was the most recorded (45%) followed by migraine (31.2%) while frontal headache was recorded among 21% of the students. Headache started suddenly in 29.6% of the attacks and it was more in the evening and night times (63.8%). The most recorded Prodroma signs were blurred vision (37.8%) followed by drowsiness (24.6%) while no Prodroma was recorded among 44.2% of the students. Regarding aggravating factors, stress was the most reported (83.7%) followed by sleep disturbance (76%), and tiredness (30.4%). Sleeping was the most identified relieving factors (75.4%) followed by having analgesics (55.8%), sitting in a quiet dark room (45.6%), and having coffee (1.7%). With regard to pain severity, it was moderate among 55.8% of the students and severe among 29.8% of them. Daily activities performance was affected among 76% of the students who had headache and 47% of them used drugs to overcome pain.

With regard to predictors of headache among the students (Table 3), headache was reported by all students who studied for more than 12 hours daily compared to 82.6% of those who studied for 1 to 5 hours daily with recorded statistical significance (P=.001). As for skipping meals daily, headache was reported by 90.4% of the students who skipped one of their daily meals, especially breakfast, compared to 77% of those who didn't (P=.001). Also headache was reported by 91.1% of the students who have stimulants (coffee or tea) regularly compared to 71% of those who didn't (P=.001). Sleep duration was also significantly associated with headache as it was reported by 95.5% of the students who sleep for less than 5 hours daily compared to 68.3% of those who sleep for more than 8 hours (P=.001). All students who usually experienced unexpected events during the last period of their life had headache attacks compared to 37% of those who were rarely exposed (P=.001). Also 99.5% of the students who had a permanent feeling of stress had headache compared to 20.6% of those who rarely feel stressed. Ability to control trouble source was associated with less frequent headache than others (70.6% vs. 91%).

Finally, logistic regression model revealed that among all included headache predictors (Table 4), study hours, having stimulants, exposure to stressful conditions, and ability to control trouble sources were the most important determinants of headache attacks. Studying for more hours daily was associated with 3 times more likelihood for headache (OR: 3.25; 95% CI: 1.0-10.6). Having stimulants was associated with increased likelihood for headache attacks by about 2.5 times more (OR: 2.5; 95% CI: 1-7.1). Also experience stressful unexpected events was associated with increased likelihood for headache by about 5 times (OR: 4.75; 95% CI: 1.5-15.4). Ability to control trouble source was associated with decreased likelihood for headache by about 57% (OR: 0.37; 95% CI: 0.18-0.76).

Table 1. Distribution of age according to students' socio-demographic data, KKU, Saudi Arabia

Socio-demographic data		Total (%)	Headache during last 3 months				P-value
			Yes (n=362)		No (n=59)		
			No	%	No	%	
Age in years	<20 years	42 (10.0%)	38	90.5%	4	9.5%	.600
	20-24	330 (78.4%)	281	85.2%	49	14.8%	
	25-30	49 (11.6%)	43	87.8%	6	12.2%	
Gender	Male	301 (71.5%)	249	82.7%	52	17.3%	.002*
	Female	120 (28.5%)	113	94.2%	7	5.8%	
Faculty	Medical	237 (56.3%)	200	84.4%	37	15.6%	.284
	Non-medical	184 (43.7%)	162	88.0%	22	12.0%	
Marital status	Single	406 (96.4%)	347	85.5%	59	14.5%	.111
	Married	15 (3.6%)	15	100.0%	0	0.0%	
Family income	Insufficient	121 (28.7%)	107	88.4%	14	11.6%	.589
	Just sufficient	189 (44.95)	162	85.7%	27	14.3%	
	More than sufficient	111 (26.4%)	93	83.8%	18	16.2%	
Smoking	Smoker	63 (15.0%)	52	82.5%	11	17.5%	.694
	Ex-smoker	30 (7.1%)	26	86.7%	4	13.3%	
	Non-smoker	328 (77.9%)	284	86.6%	44	13.4%	

P: Pearson X^2 test
* P < 0.05 (significant)

Table 2: Characteristics of headache among KKU students, Saudi Arabia

Headache data		No (n=362)	%
Headache site	Migraine	113	31.2%
	Frontal	76	21.0%
	Occipital	10	2.8%
	Generalized	163	45.0%
Onset of headache	Sudden	107	29.6%
	Gradual	255	70.4%
Time of peak	Morning	131	36.2%
	Evening	231	63.8%
Prodroma	Others	4	1.1%
	Extremities numbness	36	9.9%
	Drowsiness	89	24.6%
	Nausea	84	23.2%
	Blurred vision	137	37.8%
	Nothing	160	44.2%
Aggravating factors	None	1	.3%
	Stress	303	83.7%
	Sleep disturbance	275	76.0%
	Tiredness	110	30.4%
	Cough	39	10.8%
	Others	90	24.9%
Relieving factors	Sleeping	273	75.4%
	Quiet dark room	165	45.6%
	Analgesics	202	55.8%
	Others	65	18.0%
	Coffee	6	1.7%
Pain severity	Mild	44	12.2%
	Moderate	202	55.8%
	Severe	108	29.8%
	Intractable	8	2.2%
Pain affects daily activity	Yes	275	76.0%
	No	87	24.0%
Use drugs for the pain	Yes	170	47.0%
	No	192	53.0%

Table 3: Determinants of headache among KKU students, Saudi Arabia

Risk factors		Headache during last 3 months				p-value
		Yes		No		
		No	%	No	%	
Daily study hours	1-5	266	82.6%	56	17.4%	.001*
	6-9	66	95.7%	3	4.3%	
	> 12 hrs	30	100.0%	0	0.0%	
Work besides study	Yes	18	90.0%	2	10.0%	.596
	No	344	85.8%	57	14.2%	
Pregnant	Yes	1	100.0%	0	0.0%	.803
	No	112	94.1%	7	5.9%	
OCP at last 3 months	Yes	5	100.0%	0	0.0%	.570
	No	108	93.9%	7	6.1%	
Skip meals during day	Yes	255	90.4%	27	9.6%	.001*
	No	107	77.0%	32	23.0%	
Have coffee/ tea	Yes	286	91.1%	28	8.9%	.001*
	No	76	71.0%	31	29.0%	
Sleep duration	< 5 hours	212	95.5%	10	4.5%	.001*
	5-8 hours	122	77.2%	36	22.8%	
	> 8 hours	28	68.3%	13	31.7%	
Stress due to unexpected event at last month	Rarely	30	37.0%	51	63.0%	.001*
	Sometimes	189	95.9%	8	4.1%	
	Usually	143	100.0%	0	0.0%	
Feeling stressed during last month	Rarely	13	20.6%	50	79.4%	.001*
	Sometimes	168	95.5%	8	4.5%	
	Usually	181	99.5%	1	.5%	
Feeling trust to deal with troubles	Rarely	45	86.5%	7	13.5%	.001*
	Sometimes	150	92.6%	12	7.4%	
	Usually	167	80.7%	40	19.3%	
Can control troubles source	Rarely	71	91.0%	7	9.0%	.001*
	Sometimes	195	94.2%	12	5.8%	
	Usually	96	70.6%	40	29.4%	
Accumulated troubles feeling	Rarely	48	49.0%	50	51.0%	.001*
	Sometimes	185	95.9%	8	4.1%	
	Usually	129	99.2%	1	.8%	

P: Pearson X^2 test, * P < 0.05 (significant)

Table 4. Multiple stepwise logistic regression results for predictors of headache among KKU students, Saudi Arabia

Factor	B	S.E.	P-value	OR	95% C.I for OR	
					Lower	Upper
Study hours	1.18	0.60	0.05	3.25	1.00	10.62
Having stimulants	0.90	0.54	0.05	2.47	1.00	7.12
Unexpected events	1.56	0.60	0.01	4.75	1.47	15.35
Stress during day	3.49	0.68	0.00	32.81	8.69	123.87
Can control trouble source	-0.99	0.36	0.01	0.37	0.18	0.76
Constant	-6.53	1.41	0.00	0.00		
Model Pseudo R^2; significance				.76; .001		
AUC				.97		

B: regression coefficient; SE: standard error; OR: adjusted odds ratio; CI: confidence interval; AUC: area under curve

Discussion

Headache is the symptom of pain in the face, head, or neck. It can occur as a migraine, tension-type headache, or cluster headache [14]. Frequent headaches can affect relationships and employment [15]. There is also an increased risk of depression in those with severe headaches [16]. Headaches can occur because of many conditions. Causes of headaches may include dehydration, fatigue, sleep deprivation, stress, and the effects of medications, the effects of recreational drugs, viral infections, loud noises, common colds, head injury, rapid ingestion of a very cold food or beverage, and dental or sinus issues [17, 18].

The current study aimed to assess the headache as a disabling factor among the university students and also to assess its determinants and effects. The study revealed that about 4 out of each 5 included students complained of chronic headache during the last months before the study onset. This assessed prevalence is nearly close to that recorded by many researchers who assessed the prevalence ranging from 41.2% to 98% [19-21]. Nearly half of the students had generalized headache all over the head and couldn't detect its main site. Migraine was the second most reported type which is not the situation in the literature as classical migraine is the most recorded. The generalized headache recorded for the study students is mostly tension headache which is more common among university students as reported by Ferri-de-Barros et al, 2011 and by Ghorbani A et al in Iran, 2013 [6, 21]. Among more than half of the student migraine started gradually and with no Prodroma. The most recorded aggravating factor for the headache was sleep disturbance which is consistent with this age group who are hyperactive with more outdoor time. This in turn confirms that sleeping was the most important relieving factor followed by having analgesics as the pain was moderate to severe among more than three quarters of the students.

Headache attacks were more recorded among female students which is the trend in most of the literature due to physiological and psychological factors including menstruation with higher incidence of anaemia and also females are more susceptible to stress conditions including university academic affairs [22, 23]. Also, headache was more reported by married students who had extra life responsibilities outside the university environment due to family requirements. The most surprising finding was that headache was reported more by non-medical college students which is against what is known as medical students had more affairs and more stressful study requirements. This may be explained by that non-medical students spend more time outdoors with friends due to their lower study commitment requirement making them more liable for less sleeping and inadequate dietary habits. Medical college students spend more time at home studying and fulfilling academic requirements which may help to have more organized daily life activities and dietary habits. Skipping meals was also recorded as a main predictor especially skipping breakfast which in some literature is named as fasting headache. This headache is usually diffuse or located in the frontal region, and the pain is non-pulsating and of mild or moderate intensity matching what is reported by the current study participants [24]. Also having coffee or other stimulants was significantly associated with headache which was confirmed by Milde-Busch A et al, 2010 [25], and by Moschiano F et, 2011 [26]. Stress exposure with the ability to deal with stress sources were also among the most important determinants of headache attack and its type. Much of the literature confirmed the association between stress and having headache episodes or even transforming headache from episodic to a chronic condition [27-29].

A study was done in King Saud University which showed that, among 4,943 who responded to questions about headache, 4,158 had recurring headache, and among them 1,333 had migraine headache, and 2,691 with non-migraine headache [30]. Also there was a cross-sectional study of headache prevalence among medical students in Umm al-Qura university on a total 758 participants with 82.2% responses (623 responses). The one year headache prevalence was 89.6% (558) with predominance of Tension type headache (n=173, 31%) then probable infrequent Tension type headache (n=114, 20.4%) then probable frequent Tension type headache (n=63, 11.3%) while migraine was (n=2, 40.0%; n=14, 34.4%; n=11, 33.3%) [31].

Another study was done among Arab countries (Saudi Arabia, Qatar and Oman) with two papers in Saudi Arabia and one paper in Qatar and one paper in Oman. The prevalence of headache in Saudi Arabia in the first paper was 12.1, 5% migraine, 9.5% Tension type headache while 2.4% mixed migraine and Tension type headache. In the second paper with 8% headache prevalence, 2.6% migraine, 3.1% tension type headache and 2.3% with mixed migraine and tension headache, while the prevalence of headache in Oman was 83.6% and 10.1%, 11.2% and 16% for migraine, Tension type headache, and Mixed migraine tension headache respectively, and in Qatar the prevalence was 72.5% while for migraine was 7.9% [32].

Headache is an annoying health condition which may be exaggerated from just episodic attacks to a low grade life lasting health condition affecting students' quality of life including daily activities, scholastic achievement, and absenteeism up to depression with its consequences.

Conclusions and Recommendations

In conclusion, more than three quarters of the students complained of moderate to severe headache attacks which was mainly related to sleeping disturbance, studying hours, and stressful lifestyle. Students should be taught strategies for stress management training for headache that teaches them more adaptive ways of interpreting and managing stress through the application of coping skills. These strategies are significantly helpful for improving stress management and are likely to be similarly effective in the prevention/treatment of headache progression.

Conflict of interest:
There is not any conflict of interest associated with this manuscript to be declared.
Funding disclosure:
No funding received for this manuscript.
Contributions:
All authors approve that the manuscript has been read and approved. All authors participated equally in the preparation of this manuscript by completing the questionnaires of the patients, preparing, and writing the final manuscript preparing it for publishing.
Acknowledgment:
We kindly appreciate the role of all participants in the study.

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Perceptions of parents regarding polio vaccination in Karachi

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Received: August 2020; Accepted:September 2020; Published: October 1, 2020.
Citation: Hareem Arshad et al. Perceptions of parents regarding polio vaccination in Karachi. World Family Medicine. 2020; 18(10): 66-76 DOI: 10.5742/MEWFM.2020.93876

Abstract

Introduction: Since the launch of the Global Polio Eradication Initiative (GPEI) in 1988, the number of annual polio cases has decreased by >99%. As of March 2013, circulation of indigenous wild poliovirus (WPV) continued in only three countries: Afghanistan, Nigeria and Pakistan. Pakistan is one of only three endemic countries in the world still struggling to interrupt poliovirus transmission and meet the target of global polio eradication by 2012. The failures to successfully immunize the population of Pakistan has impacted child mortality in the country and is an important area of research for the progression of child healthcare. Children who are under the age of five make up 15% of the population of Pakistan. Unfortunately, this demographic makes up 50% of the mortality rate in this country. Polio is an acute viral disease that is still endemic in Pakistan mainly due to failure of efforts to promote community participation. The polio vaccination program is facing many challenges that result in an increased number of new cases in the country. This research was conducted to find out the parents' knowledge, attitudes and practices regarding polio vaccination. Pakistan is still not polio free and findings of this research reflect the mindset of parents regarding polio vaccination.

Objective: To determine the perceptions of parents regarding polio vaccination at National Institute of Child Health in Karachi.

Methodology: A Cross sectional study was conducted at the OPD of National Institute of Child Health in Karachi from April 2019 to August 2019. The participants were the parents of children under five years of age who had brought the latter for treatment at the hospital. The sample size was calculated to be 385. The sample was selected using non probability purposive sampling technique. A structured questionnaire with close ended questions was the data collection tool. It was translated into simple Urdu. It was handed out to our data collectors who after obtaining verbal consent, conducted personal interviews amongst the parents of children who had come to the OPD. Data collected was analyzed using the SPSS software version 20.0. Frequencies and percentages were taken out for categorical variables. The statistical analysis was conducted with a 95% confidence interval and a p-value of <0.05 as threshold of statistical significance. All ethical considerations were observed. Any research misconduct was avoided and rights and well-being of research participants were protected.

Results: Out of the 385 parents of children under five years, their frequencies and percentages with respect to their age ranges, 63.9% (n=246) were 18-22 years, 23.4% (n=90) were 23-26 years, 8.8% (n=34) were 27-30 years, 3.1% (n=12) were 31-40 years and 0.8% (n=3) were more than 40 years. Regarding the relationship status with the under five children the participants accompanying them, 51.4% (n=198) were fathers and 48.6% (n=187) were mothers. According to the literacy status, 43.4% (n=167) of the parents were educated and 56.6% (n=218) were uneducated. When asked what polio was, 68.1% (n=263) called it a disease, 18.7% (n=72) called it fate, 4.4% (n=17) termed it as a superstitious happening and 8.5% (n=33) did not know what it was. Stating their source of information about polio, 31.1% (n=120) learnt about it from TV, 11.4% (n=44) from the internet , 48.2% (n=186) through their surroundings and 9.1% (n=35) learnt about polio from polio workers. Describing polio severity, 110(28.5%) called polio severe, 56.6% (n=216) termed it extremely severe, 6% (n=23) regarded it as moderate and 9.3% (n=36) as mild. When asked about any relative of the parents who suffered from polio , 25.1% (n=97) said yes and 74.4% (n=287) said no. Responding to the question about mode of spread of polio, according to 30.3% (n=117) by food and water, 16.8% (n=65) airborne, 11.7% (n=45) by vector and 40.9% (n=158) did not know the mode of spread of polio. According to 65.8% (n=264) a vaccine existed for polio, 13.2% (n=51) denied existence of polio vaccine, 5.2% (n=20) were not sure and 15.5% (n=60) did not know about such a vaccine. About the mode of administration of polio vaccine, 74.1% (n=286) thought it was oral, 6.7% (n=26) thought it was parenteral and 68 (17.6%) did not know. When asked at what age should a child get polio vaccine, according to 33.4% (n=129) it was at birth, 51.8% (n=200) during childhood, 5.2% (n=20) during adulthood and according to 9.3% (n=36) parents a child could get polio vaccine at any age. Responding to the question regarding polio vaccine effectivity, 58% (n=224) termed it as good, 19.4% (n=75) called it normal, 11.9% (n=46) referred to it as not effective and 10.4% (n=40) had no idea.

When asked whether their child can become sterile after taking polio vaccine, 23.6% (n=91) said yes, 50.5% (n=195) said no, 12.7% (n=49) said maybe and 13% (n=50) said that they did not know. Replying to question if polio can be caused by malnutrition, 23.6% (n=91) said yes, 39.1% (n=151) said no, 16.1% (n=62) said maybe and 21%(n=81) did not know. When asked whether polio vaccine was haraam or forbidden in religion, 72.5% (n=279) said no and 27.5% (n=106) said yes. Responding to the question whether there were proper preventive measures against polio in Karachi, 58% (n=224) said yes, 20.7% (n=80) said no, 7.5% (n=29) said maybe and 13.5% (n=52) did not know. Giving answers to how many times did polio workers had visited the parents' houses, 9.6% (n=37) said monthly, 33.4% (n=129) said twice a year, 43.8%

(n=169) said once a year and 12.4% (n=48) said that polio workers never visited their homes. When asked whether there were any preventive measure available against polio other than vaccination, 20.2% (n=78) said yes, 49% (n=189) said no and 28.2% (n=109) said maybe; replying to the question was polio a contagious disease, 28.2% (n=109) said yes, 69.7% (n=269) said no and 1% (n=4) said maybe. Giving answer to the question whether polio as a disease was treatable, 38.3% (n=148) said yes, 59.8% (n=231) said no and 1.6% (n=6) said maybe. When asked if any member of their family was suffering from polio, 22% (n=85) said yes and 76.9% (n=297) said no. When asked the question if those suffering from polio in their family received polio drops at the time of vaccination, 39.6% (n=153) said yes and 60.1% (n=232) said no.

Conclusion: Pakistan is among three countries in which polio is still endemic. Most of the cases sprouting up in the city are from slum areas where the majority of the population is uneducated. Several religious and fictional beliefs and misconceptions have been playing a pivotal role in keeping polio endemic in the area despite many sincere efforts of government. More efforts are needed to be done in this respect particularly in educating parents of children and carrying out social campaigns to spread awareness among every single parent and make them affirm that polio is preventable and by only vaccinating their children they can save them from this disease .

Key words: polio vaccination, endemic, parents, misconceptions

Introduction

Poliovirus (PV), an enterovirus belonging to the Picornaviridae family is the etiological agent of poliomyelitis, an acute paralytic disease. This disease results from lower motor neuron damage and is characterized by asymmetric persisting weakness (flaccid paralysis) (1). In May 2012, the World Health Assembly of the World Health Organization (WHO) declared the completion of polio eradication a programmatic emergency (2). Since the launch of the Global Polio Eradication Initiative (GPEI) in 1988, the number of annual polio cases has decreased by >99%. As of March 2013, circulation of indigenous wild poliovirus (WPV) continued in only three countries: Afghanistan, Nigeria, and Pakistan (the last case in India had onset in January 2011). This report provides an update on progress toward global polio eradication during January 2011–March 2013, using data reported as of April 23, 2013 (3). Pakistan is one of only three endemic countries in the world still struggling to interrupt poliovirus transmission and meet the target of global polio eradication by 2012. Polio supplementary immunization activities (SIAs) for the home delivery of oral polio vaccine (OPV) were initiated in the country in 2000, when 119 cases of polio were reported. Although the number of cases declined to 32 in 2007, it has been rising steadily since 2008(4). According to a study conducted in Pakistan by Mangrio, he states “the ways in which various immunization efforts, for a range of vaccine-preventable diseases, have achieved success or failure and the reasons why this plays a part in the disease burden of Pakistan “ (5).

Immunization is the most cost-effective public health intervention that has had the greatest impact on health of the people. According to a study in Pakistan, the proportion of incompletely immunized children in Pakistan varies from 37-58%, and this has recently resulted in outbreaks of measles and polio. Despite the efforts of national and international organizations, polio has not been eradicated from Pakistan. The failures to successfully immunize the population of Pakistan has impacted child mortality in the country and is an important area of research for the progression of child healthcare. Children who are under the age of five make up 15% of the population of Pakistan. Unfortunately, this demographic makes up 50% of the mortality rate in this country. For comparison, the world average for under-five mortality as a percentage of overall mortality is around 8% (6). Another study in Pakistan states that 10-20% of the children who have received their first dose of trivalent polio vaccine were deprived of their 2nd and 3rd dose because of poor performance of EPI and lack of information about immunization. The number of global polio cases has fallen dramatically and eradication is within sight, but despite extraordinary efforts, polio retains its grip in a few areas (7).

Parental attitudes and level of awareness are of key importance to promote successful polio vaccination. A study conducted in Jordan showed that vaccination coverage rate was high; however, some aspects of knowledge, attitudes, and practice of vaccination needed to be improved. Knowledge and attitudes of mothers were directly associated with their practice of vaccination (8).

Polio is an acute viral disease that is still endemic in Pakistan mainly due to failure of efforts to promote community participation. The polio vaccination program is facing many challenges that result in an increased number of new cases in the country. The success of polio vaccination has been threatened in different parts of Pakistan. In the past, the immunization program was affected by different factors including insecurity, inducing mass migration and displacement, life threats to polio workers, and restricted access to the vulnerable population. In addition to that, misconceptions and misunderstanding about the polio vaccine are a major obstacle in polio eradication which need to be erased by organized effects of increasing vaccine awareness (9). This research was conducted to find out the parents knowledge, attitudes and practices regarding polio vaccination. Pakistan is still not polio free and findings of this research reflect the mindset of parents regarding polio vaccination.

Objective

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Methodology

A Cross sectional study was conducted at the OPD of National Institute of Child Health in Karachi from April 2019 to August 2019. The participants were the parents of children under five years of age who had brought the latter for treatment at the hospital. The sample size was calculated to be 385. The sample was selected using non probability purposive sampling technique. A structured questionnaire with close ended questions was the data collection tool. It was translated into simple Urdu. It was handed out to our data collectors who, after obtaining verbal consent, conducted personal interviews amongst the parents of children who had come to the OPD. Data collected was analyzed using the SPSS software version 20.0. Frequencies and percentages were taken out for categorical variables. The statistical analysis was conducted with a 95% confidence interval and a p-value of <0.05 as threshold of statistical significance. All ethical considerations were observed. Any research misconduct was avoided and rights and well-being of research participants were protected.

Results

Out of the 385 parents of children under five years, their frequencies and percentages with respect to their age ranges 63.9% (n=246) were 18-22 years, 23.4% (n=90) were 23-26 years, 8.8% (n=34) were 27-30 years, 3.1% (n=12) were 31-40 years and 0.8% (n=3) were more than 40 years. Regarding the relationship status with the under five children the participants accompanying them, 51.4% (n=198) were fathers and 48.6% (n=187) were mothers. According to the literacy status, 43.4% (n=167) of the parents were educated and 56.6% (n=218) were uneducated. When asked what polio was, 68.1% (n=263) called it a disease, 18.7% (n=72) called it fate, 4.4% (n=17) termed it as a superstitious happening and 8.5% (n=33) did not know what it was. Stating their source of information about polio, 31.1% (n=120) learnt about it from TV, 11.4% (n=44) from the internet , 48.2% (n=186) through their surroundings and 9.1% (n=35) learnt about polio from polio workers. Describing polio severity, 110 (28.5%) called polio severe, 56.6% (n=216) termed it extremely severe, 6% (n=23) regarded it as moderate and 9.3% (n=36) as mild. When asked about any relative of the parents who suffered from polio, 25.1% (n=97) said yes and 74.4% (n=287) said no. Responding to the question about mode of spread of polio, according to 30.3% (n=117) it was by food and water, 16.8% (n=65) airborne, 11.7% (n=45) by vector and 40.9% (n=158) did not know the mode of spread of polio. According to 65.8%(n=264) a vaccine existed for polio, 13.2% (n=51) denied existence of polio vaccine, 5.2% (n=20) were not sure and 15.5% (n=60) did not know about such a vaccine. About the mode of administration of polio vaccine, 74.1% (n=286) said it was oral, 6.7% (n=26) it was parenteral and 68 (17.6%) did not know. When asked at what age should a child get polio vaccine, according to 33.4% (n=129) it was at birth, 51.8% (n=200) during childhood, 5.2% (n=20) during adulthood and according to 9.3% (n=36) parents a child could get polio vaccine at any age. Responding to the question regarding polio vaccine effectivity, 58% (n=224) termed it as good, 19.4% (n=75) called it normal, 11.9% (n=46) referred to it as not effective and 10.4% (n=40) had no idea.

When asked whether their child can become sterile after taking polio vaccine, 23.6% (n=91) said yes, 50.5% (n=195) said no, 12.7% (n=49) said maybe and 13% (n=50) said that they did not know. Replying to question if polio can be caused by malnutrition, 23.6% (n=91) said yes, 39.1% (n=151) said no, 16.1% (n=62) said maybe and 21%(n=81) did not know. When asked whether polio vaccine was haraam or forbidden in religion, 72.5%(n=279) said no and 27.5% (n=106) said yes. Responding to the question whether there were proper preventive measures against polio in Karachi, 58% (n=224) said yes, 20.7% (n=80) said no, 7.5% (n=29) said maybe and 13.5% (n=52) did not know. Giving answer to how many times had polio workers visited the parents' houses, 9.6% (n=37) said monthly, 33.4% (n=129) said twice a year, 43.8% (n=169) said once a year and 12.4% (n=48) said that polio workers never visited their homes. When asked whether there were any preventive measure available against polio other than vaccination, 20.2% (n=78) said yes, 49% (n=189) said no and 28.2% (n=109) said maybe, replying to the question was polio a contagious disease, 28.2% (n=109) said yes, 69.7% (n=269) said no and 1% (n=4) said maybe. Giving answer to the question whether polio as a disease was treatable, 38.3% (n=148) said yes, 59.8% (n=231) said no and 1.6% (n=6) said maybe. When asked if any member of their family was suffering from polio, 22% (n=85) said yes and 76.9% (n=297) said no. When asked the question if those suffering from polio in their family received polio drops at the time of vaccination, 39.6% (n=153) said yes and 60.1% (n=232) said no.

Figure 1 showing the ages of the children's parents as 63.9% (n=246) were 18-22 years, 23.4% (n=90) were 23-26 years, 8.8% (n=34) were 27-30 years, 3.1% (n=12) were 31-40 years and 0.8% (n=3) were more than 40 years.

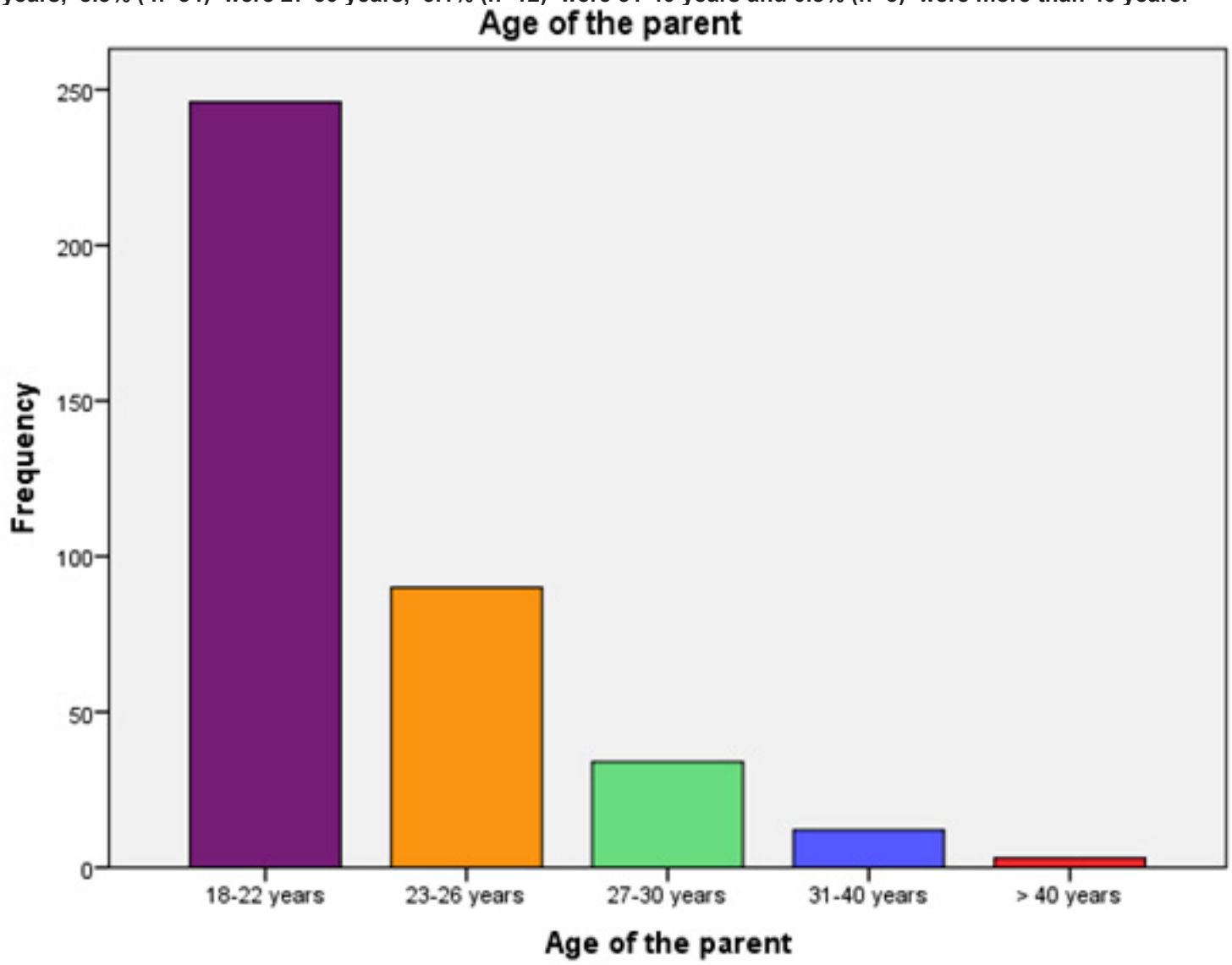


Figure 2 showing the relationship status of the parents with the under five children who they were accompanying, 51.4% (n=198) were fathers and 48.6% (n=187) were mothers.

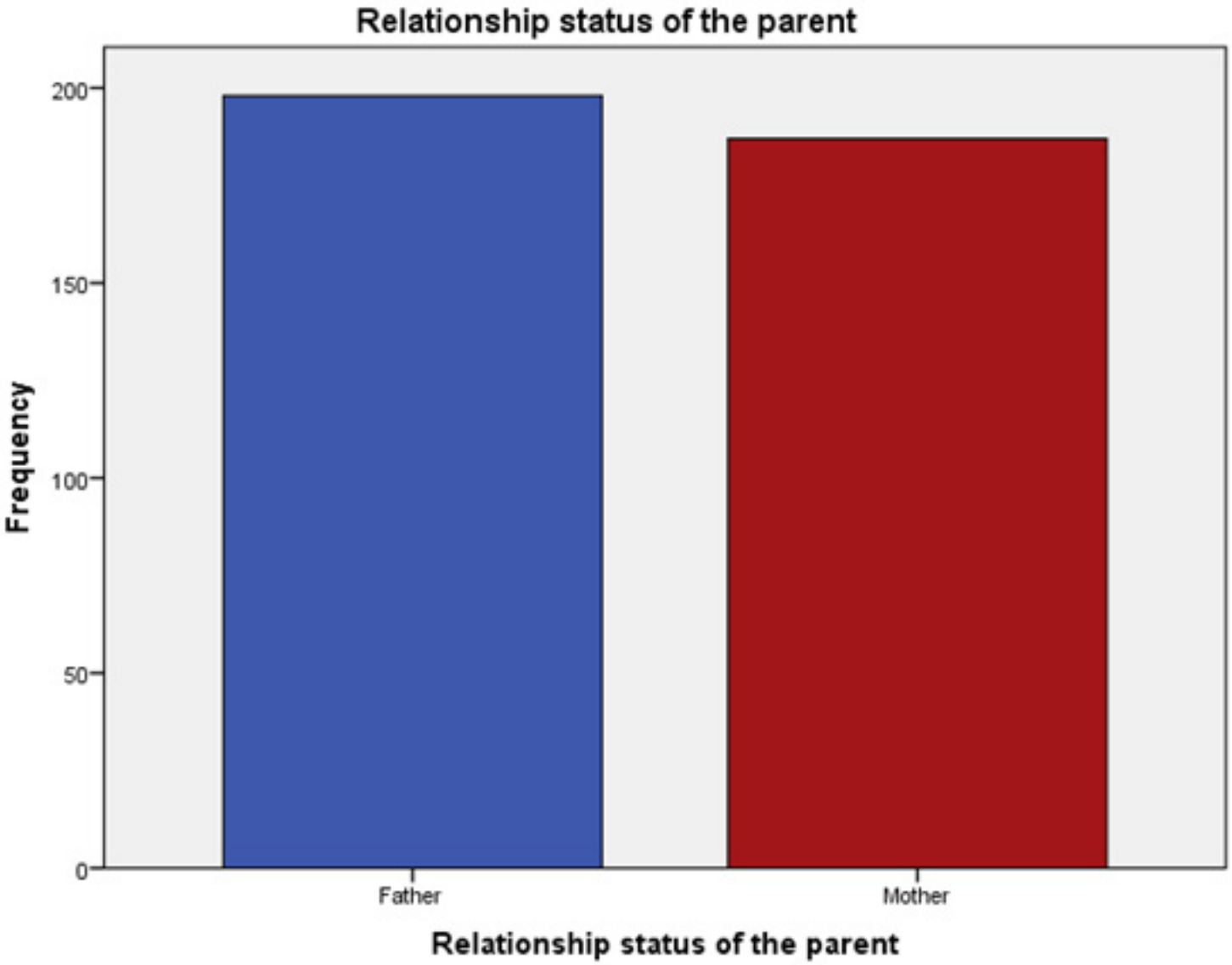


Figure 3 showing literacy status of the parents which was 43.4% (n=167) of the parents were educated and 56.6% (n=218) were uneducated.

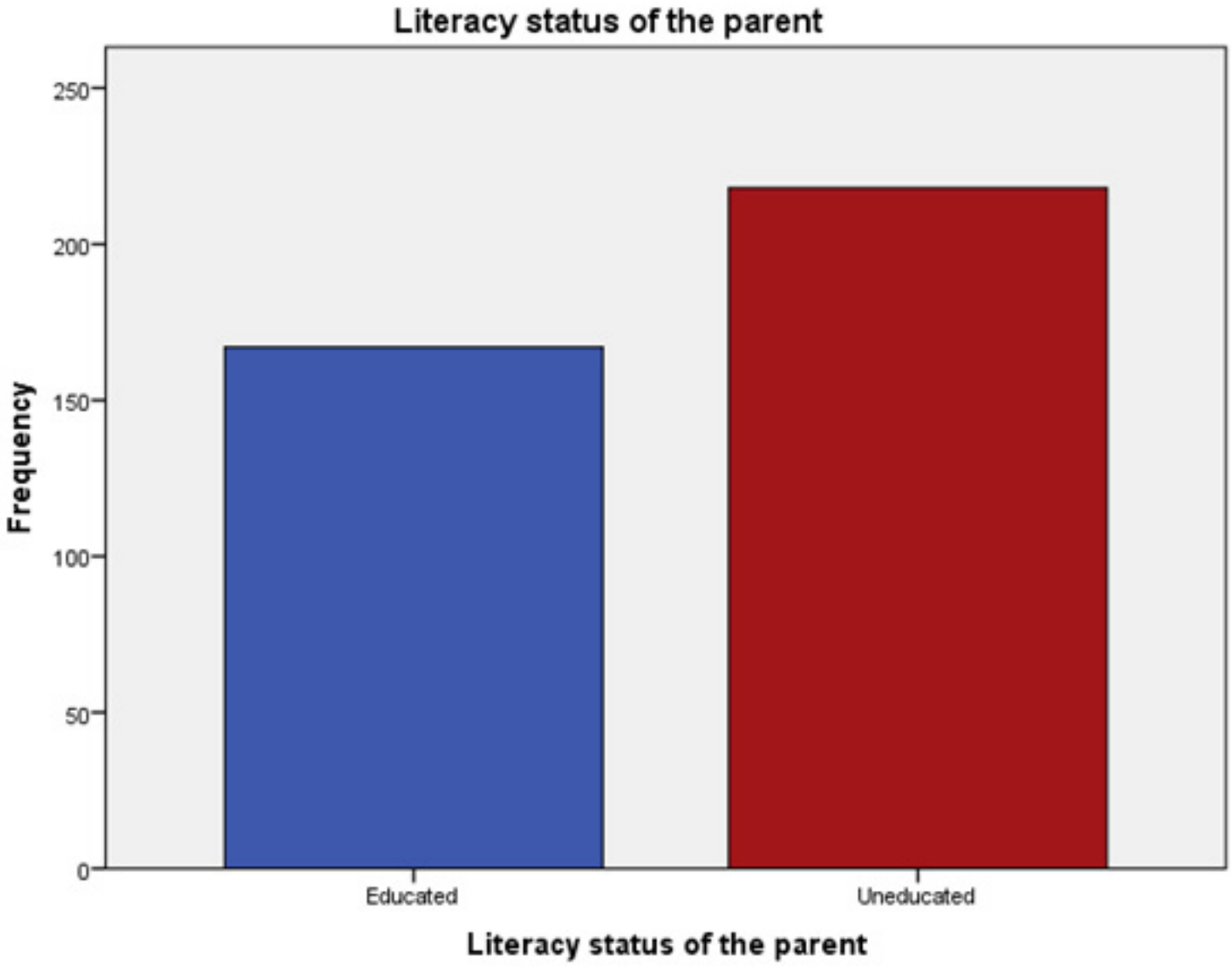


Figure 4 showing parents responses when asked what polio was, 68.1% (n=263) called it a disease, 18.7% (n=72) called it fate, 4.4% (n=17) termed it as a superstitious happening and 8.5% (n=33) did not know what it was

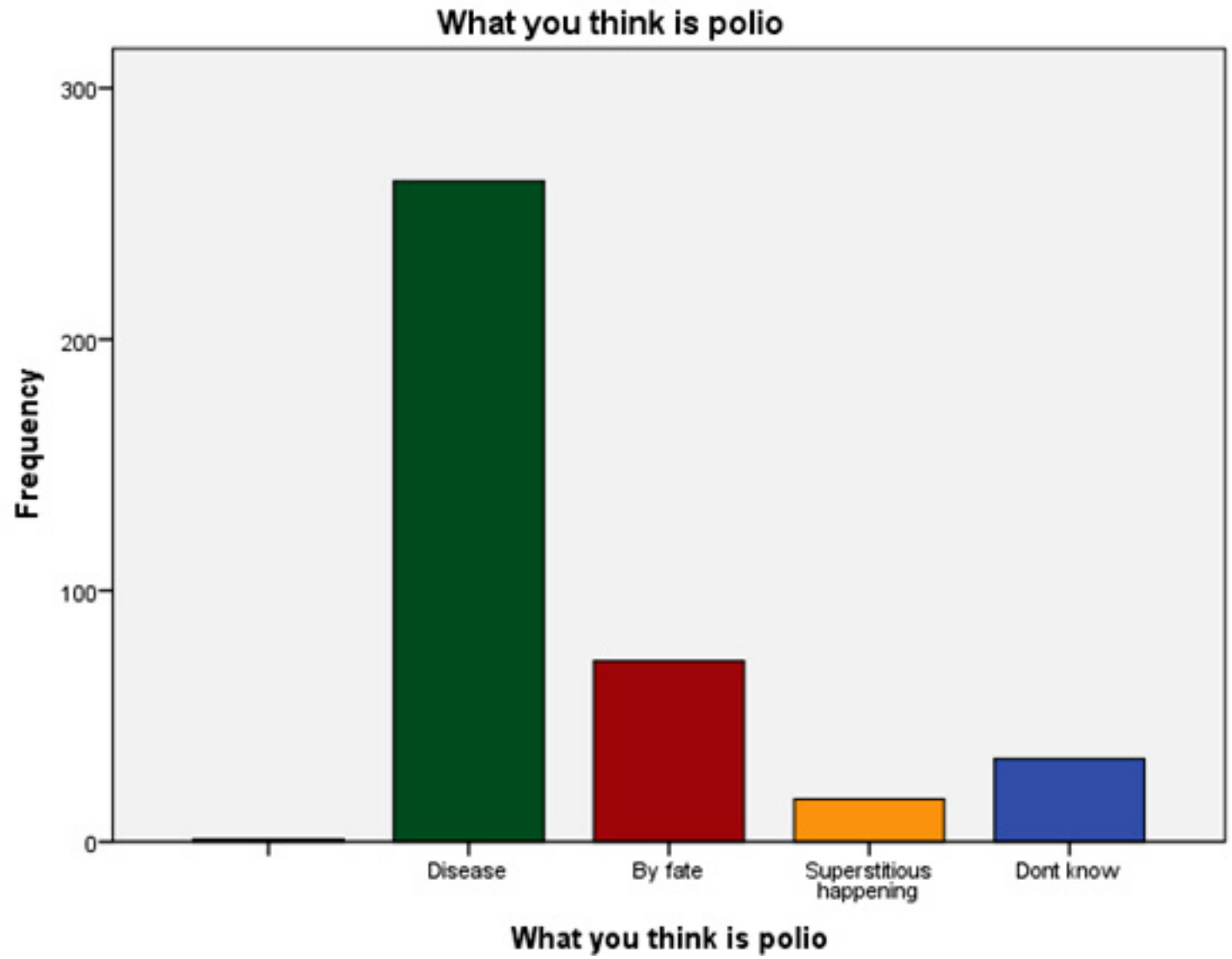


Figure 5 showing that when asked whether their child can become sterile after taking polio vaccine, 23.6% (n=33) said yes, 50.5% (n=195) said no, 12.7% (n=49) said maybe and 13% (n=50) said that they did not know

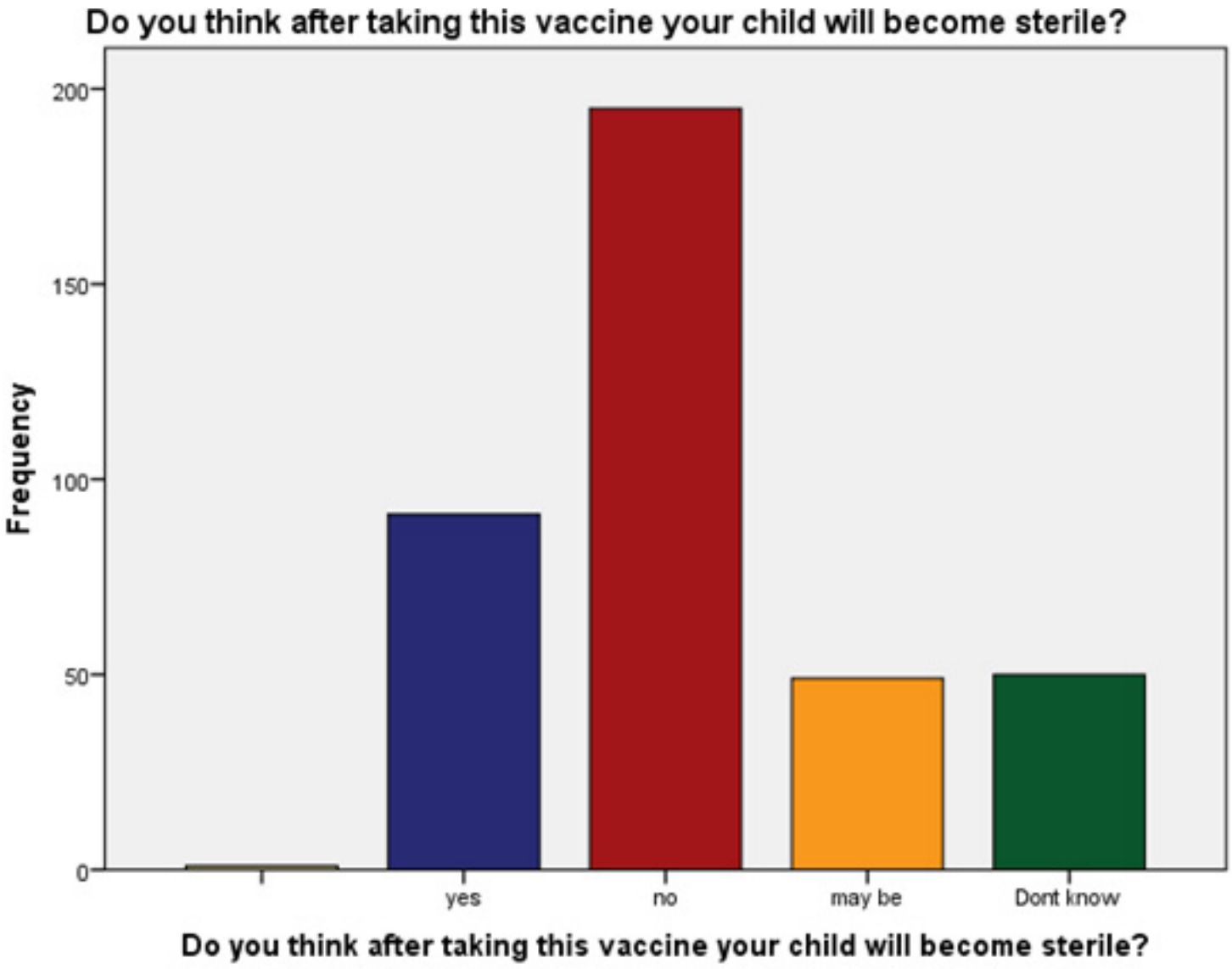
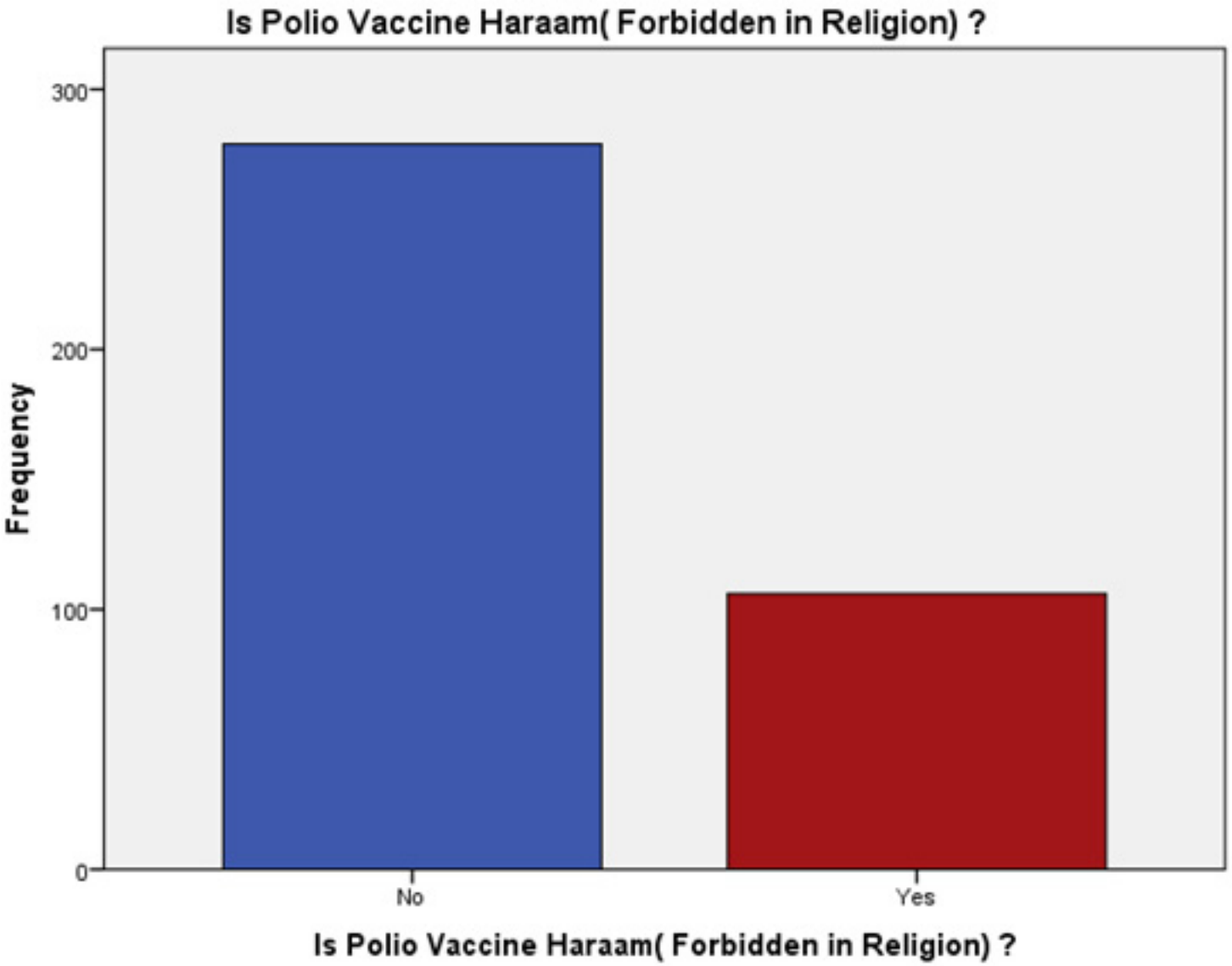


Figure 6 showing that when the parents were asked whether polio vaccine was haraam or forbidden in religion, 72.5% (n=279) said No and 27.5% (n=106) said yes.



Discussion

Polio was once a disease feared worldwide, striking suddenly and paralyzing mainly children for life. WHO is a partner in the Global Polio Eradication Initiative, the largest private-public partnership for health, which has reduced polio leaving its traces only in three countries of the world one of which is Pakistan where polio is still endemic. Pakistan has come a long way in its struggle to eradicate polio. In the early 1990s, the annual incidence of polio was estimated at more than 20,000 cases a year. Since its initiation in 1994, the national polio eradication programme has made major strides in reaching children with immunization in all parts of the country. The current polio epidemiology remains promising (10). Why cant Pakistan eradicate polio despite undying efforts of the government because the country still hasn't achieved that level of awareness at its community level where every single parent should know the value of polio vaccine. In this research as the data was collected at a tertiary care children hospital in Karachi .Many of the parents who were interviewed were uneducated and the researchers found that the false mindset and misconception was still prevailing among them that polio is not a disease but can happen superstitiously or by fate and vaccine has nothing to do with it. Pashtuns from low as well as high income groups refuse to get their children vaccinated. This is due to scarcity of polio awareness, trust deficiency in vaccine efficacy, vaccine related misconceptions, and lack of confidence on polio worker.

According to this study the literacy status was distributed as 43.4% of the parents were educated and 56.6% were uneducated. These findings were also confirmed by a study conducted in Nigeria where literacy played an important role in community participation in polio eradication (11). In this study when the parents were asked what polio was, 68.1% called it a disease, 18.7% called it fate, 4.4% termed it as a superstitious happening and 8.5% did not know what it was. Such poor levels of awareness in almost 30% of population was very alarming. These findings were also similar to another study conducted in Pakistan in 2019 (12). Another misconception that was discovered in this study was that sterility was caused by polio vaccine in children. When the parents were asked whether their child could become sterile after taking polio vaccine, 23.6%

said yes, 50.5% said no, 12.7% said maybe and 13% said that they did not know. These findings were confirmed by another study conducted in Pakistan in 2019 (13). So the foremost step needed to be taken is to educate the local people by arranging different workshops and awareness campaigns to remove the misconceptions of people about polio vaccination present in the society because if people will not be educated then there is no use of any polio vaccination campaigns and it will always result in a failure.

The foremost disturbing finding which was made in this study was the religious mindset of some of the parents showing that when the parents were asked whether polio vaccine was haraam or forbidden in religion, 72.5% said no and 27.5% said yes. The same mindset was demonstrated by some communities in Nigeria where polio vaccination in high-risk communities had been considerably low despite routine and supplemental vaccination activities. Large numbers of children were left unvaccinated because of community misconceptions and distrust regarding the cause of the disease and the safety of the polio vaccine (14). Although progress toward global polio eradication has continued, challenges in identifying and vaccinating every missed child remain. Much of the recent progress reaching previously missed children has been associated with recruitment of trusted community volunteers who are invested in their locality for vaccination and surveillance efforts (15). Intensification of efforts to improve the quality of immunization and surveillance activities and to develop additional innovations in addressing persisting challenges is necessary. Until poliovirus eradication is achieved, all countries must remain vigilant by maintaining high population immunity and sensitive poliovirus surveillance (16).

Despite various setbacks, the target is still not impossible. Possible interventions need to be proposed which include effectively using modern mass media and educating vaccinators on the social and cultural background of the target community. Another approach in the eradication of polio from Pakistan is to hire more and more local female lady health workers because they can carry out the polio campaigns more efficiently in a Pashtun community and they are more reliable in overcoming the fear and misconceptions aroused by the rumors related to polio vaccination.

Conclusion

Pakistan is among three countries in which polio is still endemic. Most of the cases sprouting up in the city are from slum areas where the majority of the population is uneducated. Several religious and fictional beliefs and misconceptions have been playing a pivotal role in keeping polio endemic in the area despite many sincere efforts of government. What has been concluded from this cross sectional study is that there are more efforts needed to be done in this respect particularly in educating parents of children and carrying out social campaigns to spread awareness among every single parent and make them affirm that polio is preventable and by only vaccinating their children they can save them from polio forever.

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Awareness and Pattern of Utilizing Family Planning Methods in Married Women of Duwakot, Nepal

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Received: August 2020; Accepted:September 2020; Published: October 1, 2020.
Citation: Raut Binod, Kharel Sushil. Awareness and Pattern of Utilizing Family Planning Methods in Married Women of Duwakot, Nepal. World Family Medicine. 2020; 18(10): 77-83 DOI: 10.5742/MEWFM.2020.93877

Abstract

Background: To assess level of awareness and pattern of utilizing family planning methods among married women (20-45 years) of reproductive age in Duwakot, Bhaktapur.

Methodology: A cross-sectional study was conducted from March 2019 to February 2020 at different wards of Duwakot, Bhaktapur. Four hundred and twenty three (423) couples of reproductive ages were interviewed by using a pre tested semi structured questionnaire. After taking informed written consent, socio demographic characteristics, knowledge, attitude and pattern of using family planning methods were recorded. The data was analyzed by using Statistical Package SPSS version 21.

Results: Knowledge about different contraceptive methods was present among the majority (88.89%) of respondents. 73.75 % respondents were using a contraceptive method at the time of study. 20.56% were using oral contraceptives followed by use of condoms in 19.15% of the respondents, Tubectomy (11.11%), intra-uterine device (5.43 %) traditional methods (4.50 %), injectables (2.6%) and vasectomy (10.40%) respectively. The reason given by most of the respondents (36.94 %) for not using any contraceptive method during the study was the desire for a male child. The use of contraceptive methods increased with increasing age, number of living children and level of education of both women and their husband.

Conclusion: A good number of women were aware about the contraceptive methods but the practice of contraception in Duwakot and utilization of family planning services were low. The gap between knowledge and implementation of contraceptive methods was found in the study population. This shows the need for more informative awareness campaigns for promoting contraceptive utilization.

Key words: Knowledge, Practice, Family Planning

Introduction

Family planning (FP) means a way of thinking, perceiving and utilizing which is adopted voluntarily upon the bases of attitude, knowledge, and genuine decisions by couples (1). Family planning refers to a conscious effort by husband and wife to limit or space the number of children they have through the utilization of contraceptive methods (2). Family planning is an acceptable, logical, and an important component of global health and development. It can have a wide range of positive effect to women, their families, the societies and a nation as a whole. An International Conference on Population and Development (ICPD) Cairo, 1994, and the fourth world conference on women Beijing, 1995, focused on women empowerment including reproductive and sexual rights as the fundamental aspect for development (3). Family planning is mainly concerned with the overall and reproductive health of the mother, having enough birth spacing, avoiding unwanted pregnancies and abortions, preventing sexually transmitted diseases and improving the quality of life of mother, infant and the family (4).

Family planning can help in reducing maternal mortality by decreasing the number of pregnancies, the number of risky abortions, and the proportion of births at high risk. It has been estimated that fulfilling women's need for modern contraceptives would prevent about one quarter to one-third of all maternal deaths, saving 140,000 to 150,000 lives annually (5,6).

Many reproductive aged women have little or incorrect knowledge and information regarding family planning methods. Even when they know some methods of contraceptives, they don't know the availability or how to use them properly. Many women have a negative perception about family planning, while some have heard misleading and incorrect information (7).

Knowledge, attitude and practices towards family planning are the basic fundamentals of achieving the goals and targets of family planning of national and international organizations. Regarding the higher use of contraceptives, knowledge and positive attitude towards family planning plays the most important role (8).

Methods

It was a cross-sectional study conducted among married women of reproductive age group (20-45 years) in the urban area of Duwakot from March 2019 to February 2020. The different wards of Duwakot were selected by random sampling method. All the married women in each house belonging to the age group of 20-45 years were interviewed. A total 423 married women were interviewed using a pre-designed and pre-tested questionnaire. The purpose of study was explained and written consent was taken from the respondents. The questionnaire elicited information regarding their age, nationality, religion, caste, socio-economic status, educational status of respondents and their husband, number of living children, knowledge and practice of different contraceptive methods, and the reasons for not using any contraceptive methods during the study period. The data was analyzed by using Statistical Package SPSS version 21.

Results

In our study we found good knowledge about different contraceptive methods was present among the majority (88.89%) of respondents (Table 2). 73.75 % respondents were using a contraceptive method at the time of study (Table 3 and Figure 2). 20.56% were using oral contraceptives followed by use of condoms in 19.15% of the respondents, Tubectomy (11.11%), intra-uterine device (5.43 %) traditional methods (4.50 %), injectables (2.6%) and vasectomy (10.40%) respectively (Table 3 and Figure 1). The reason given by most of the respondents (36.94 %) for not using any contraceptive method was the desire for a male child (Table 4). Only 54.84 % of the respondents were employed (Table 1). The use of contraceptive methods increased with increasing age, number of living children and level of education.

Table 1: Socio-demographic characteristics of the respondents (N=423).

VARIABLES	Number	Percentage
Age (Year)		
20-35	324	76.60 %
36-45	99	23.40 %
Educational Status		
Middle school	36	08.51 %
High School	37	08.74 %
College	201	47.51 %
University	127	30.02 %
Illiterate	22	05.22 %
Employment		
Employed	232	54.84 %
Non-employed	191	45.16 %
Economic Status		
High	34	8.03 %
Medium	342	80.85 %
Low	47	11.12 %
Husband's Educational Status		
Middle school	26	06.15 %
High School	26	06.15 %
College	213	50.37 %
University	145	34.29 %
Illiterate	12	02.84 %
No. of living children		
0	121	28.60 %
1	179	42.32 %
2	98	23.18 %
3	17	04.01 %
4 or Greater	8	01.89 %

Table 2: Distribution of respondents according to knowledge about contraceptive methods

KNOWLEDGE	Number	Percentage
Knowledge about any contraceptive method (n=423)		
Yes	376	88.89 %
No	47	11.11 %
Knowledge about different types of contraceptive methods (n=423)		
Oral Pills	212	50.12 %
Male Condom	321	75.88 %
Tubectomy (Female sterilization)	72	17.02 %
Vasectomy (Male sterilization)	67	15.83 %
Intra-uterine device	26	06.14 %
Traditional methods	29	06.85 %
Emergency contraception	101	23.88 %
Injectables	97	22.93 %

Table 3: Distribution of respondents according to current use of any contraceptive method

Current Use	Number	Percentage
Currently using any contraceptive method (n=423)		
Yes	312	73.75 %
No	111	26.25 %
Type of contraceptive method currently using (N=312)		
Oral contraceptives	87	20.56 %
Condom	81	19.15 %
Tubectomy (Female sterilization)	47	11.11 %
Vasectomy (Male sterilization)	44	10.40%
Intra-uterine device	23	05.43 %
Traditional methods	19	04.50 %
Injectables	11	02.60 %

Table 4: Distribution of respondents according to reasons for not using any method of contraception (N=111).

Reasons	Number	Percentage
Desire for a male child	41	36.94 %
No permission from husband	12	10.81 %
Desire for more children	12	10.81 %
Fear of side effects	11	09.91 %
Pregnant	13	11.71 %
Breast feeding	14	12.62 %
Husband away	08	07.20 %

Figure 1: Distribution of respondents according to current use of different types of contraceptive methods (N=312)

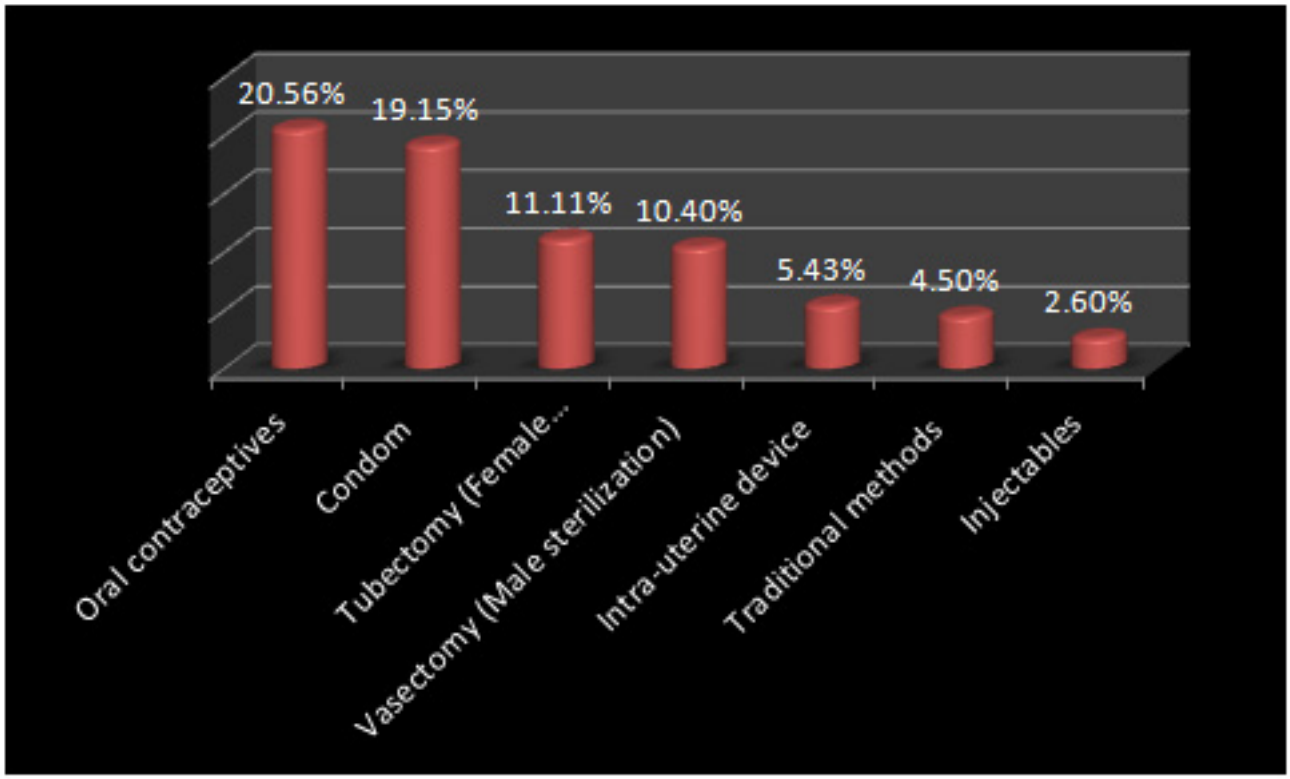
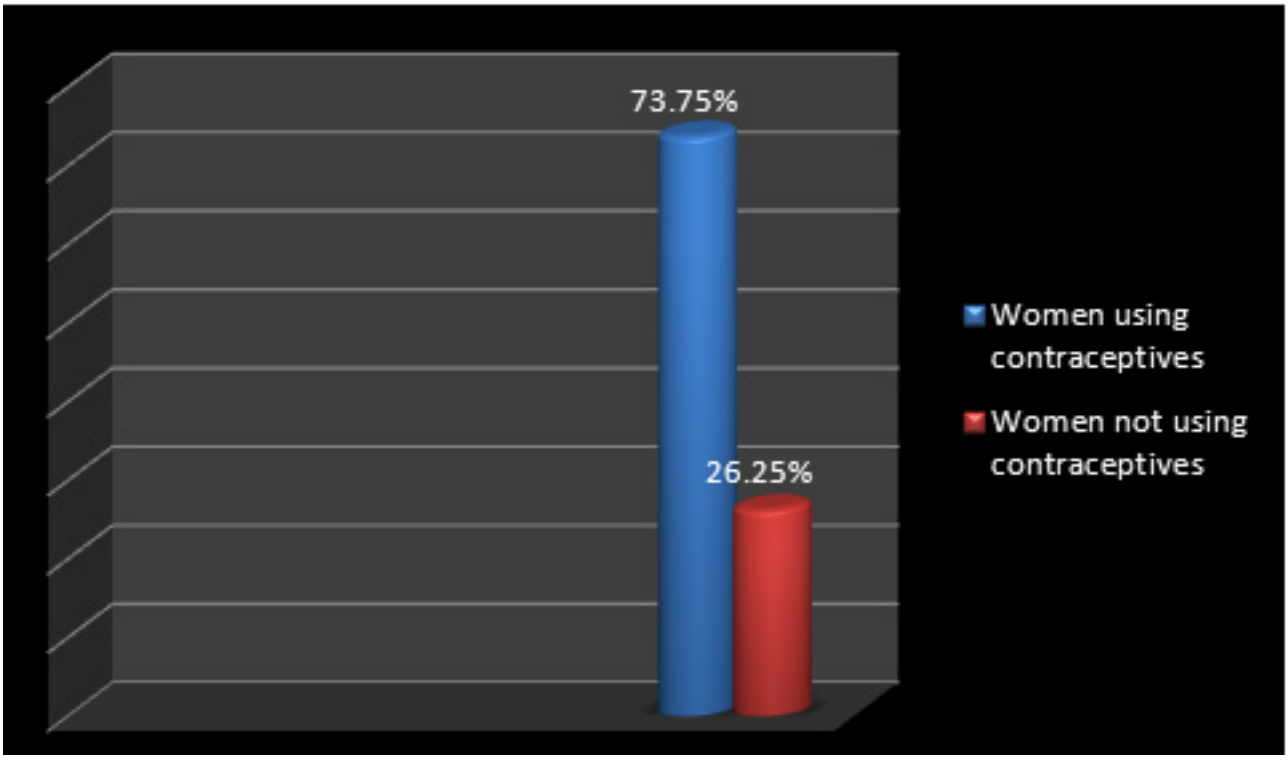


Figure 2: Comparisons of respondents using and not using contraceptives in the study population (N=423).



Discussion

Increasing population in most countries of the world is the burning issue. Only contraceptives can control this exponential population growth.

In our study most of the women have good knowledge about at least one method of contraception (89%). Similar results were found in a study done by Sunita TH et al in Dharwad (9). Also in a similar study done by Saluja N. et al in rural Haryana 96% women had good knowledge of contraception (10). Our finding was higher than the study conducted in Ethiopia that showed only 42.3% good knowledge towards family planning (11) and a study conducted in Fiji which showed 45.5% of respondents had a good level of knowledge about family planning (12).

In our study, pills was the most well-known method followed by condoms. Similar results were seen in other developing countries and demographic survey of Nepal. (13, 14). In our study 11.11% had adopted tubectomy as a permanent sterilization method. According to a study conducted by Das NP and Shah U in urban slums of Baroda, the maximum (48.8%) of the respondents adopted female sterilization which was very high compared to ours (15). Rizvi A et al in their study done in urban slums of Lucknow showed similar trends as ours and reported that female sterilization (tubectomy) was the most common method (16.7%) used by the respondents (16).

We also found that women who have a good level of education were practicing family planning more than those who were uneducated or had a low level of education (86.27% and 13.73%) respectively. This finding was in line with a study done in Jimma, Ethiopia (17). In our study association of educational status of the respondents with knowledge of contraception was found to be statistically significant. Similar association was seen in a study done in Qatar (18).

The current study also showed that knowledge and attitude of reproductive age women were related to family planning utilization. Reproductive aged women who had good knowledge were utilizing different methods better than those who were less knowledgeable. Those participants with favorable attitude were practicing better than those who had an unfavorable attitude. Better knowledge and positive attitude for specific activities are the key factors to start behaving and maintaining it continuously. Family Planning has been considered as an effective way to improve health of the mother and infant and enables them to decide freely and logically the number and spacing of their children.

Conclusion

This study shows that the knowledge and attitude of married females in Duwakot are favorable for family planning methods but actual practice lags behind the requirement. Awareness and education plays a very important role in acceptance of contraceptive method. Efforts should be targeted towards health educational activities regarding family planning methods.

Respondent's educational level, number of children, Employment, maternal age, knowledge, attitude and their family size were associated with family planning utilization habit.

Limitation of the study

As the data were collected using questionnaire method, reported KAP might have been overestimated or underestimated.

Acknowledgements

We are very grateful to all study participants for their cooperation in responding to our questionnaires.

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‘A positive thing by mentioning it’: a qualitative study of experiences of brief physical health interventions for individuals diagnosed with severe mental illness in primary care

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Received: August 2020; Accepted:September 2020; Published: October 1, 2020.
Citation: Hassan Awan, Mohsin Allah Ditta, Mick McKeown, Karen Whittaker. ‘A positive thing by mentioning it’: a qualitative study of experiences of brief physical health interventions for individuals diagnosed with severe mental illness in primary care. World Family Medicine. 2020; 18(10): 84-90 DOI: 10.5742/MEWFM.2020.93878

Abstract

Objectives: The physical health of people diagnosed with mental illness is a significant source of health inequality, with this group being three times more likely to have a physical illness and dying 15-20 years earlier than those without diagnosed mental illness. Unhealthy lifestyles are a major contributor to this. The purpose of this study was to explore the barriers and facilitators of the Making Every Contact Count (MECC) approach, an opportunistic health promotion strategy for improving the physical health of patients with diagnosed mental illness in primary care.

Methods: A qualitative study involving semi-structured interviews in which ten people diagnosed with mental illness from a Lancashire practice and ten GPs including stakeholders within the Clinical Commissioning Group were interviewed. Interview data was subject to thematic analysis.

Results: Themes were identified relating to patient factors, clinician communication, and systemic factors. Patients were more likely to take on brief interventions if they trusted and had good rapport with their clinician. Clinicians, if given the chance, valued opportunities for discussing the effects of unhealthy lifestyles with patients. Systemic factors influencing the MECC approach included provision of continuity of care and the annual review, although some patients viewed the latter as rarely offering fruitful discussion. Some clinicians felt time and workload pressures prevented them from carrying out meaningful interventions. Clinicians felt further training was needed to support them delivering brief interventions. Patients were pleased to focus on physical health.

Conclusion: Poor physical health of patients diagnosed with mental illness can be addressed using a ‘making every contact count’-based approach. MECC is a low-resource approach based on building a relationship of trust and casually introducing physical health as a topic of conversation as the opportunity arises. The research highlights barriers and facilitators to doing this within primary care from both patient and clinician perspectives.

Key words: Health promotion, Health inequalities, Mental Health, behaviour Change, Making Every Contact Count, Primary Care

Introduction

Reducing health inequalities is a key goal of public health policy. The physical health of patients diagnosed with mental illness is a source of significant health inequality. People with long-term mental health problems are three times more likely to have a physical illness and die 15 to 20 years earlier than their peers without a mental health diagnosis(1-3) .The gap in life expectancy is worsening (3-4). Main causes of death are heart disease, stroke, liver disease, respiratory disease and cancer(1,5). This may be primarily because of lifestyle factors, harmful effects of psychotropic medication and disparities in healthcare access, utilisation and provision (5). Increased rates of unhealthy lifestyle choices such as higher rates of smoking and obesity may be due to negative symptoms of mental illness and impaired emotional regulation (6-7). The literature indicates that general practice is significant for providing preventative health and medical care for people with mental health problems (8-9).

Health related behaviour change is notoriously difficult to achieve yet extremely important in the context of rising rates of non-communicable disease. The primary care team is well placed to understand patients' economic and social circumstances as they develop relationships with individuals and families over decades and countless practice encounters.

Making Every Contact Count (MECC) is an approach to behaviour change that capitalises upon these routine interactions between patients and health professionals to encourage positive change to physical health and mental wellbeing. It is an opportunity to achieve an integrated approach to addressing health inequality as part of a range of interventions(10-13). It is an approach consistent with principles of person-centred healthcare that makes the most of opportunities for health promotion specific to individual need' (14). Through the MECC approach professionals can act on opportunities to introduce physical health and well-being into conversations, without offending the individual (15-16). Brief interventions typically involve using behaviour change techniques to support patients to take action around unhealthy lifestyle behaviours (16). Research has shown that opportunistic health promotion such as MECC has the potential to improve the overall health of the population at a low cost (16). Application of the MECC approach has been argued to impact health inequality by engaging people who would not otherwise engage in brief interventions (17-18).

However, there is little research evaluating the implementation of the MECC approach to health behaviour change in primary care, and no such evaluation has been undertaken for people with mental health problems in this context, nor have the views and experiences of patients and clinicians been investigated. The purpose of this study was to explore the barriers and facilitators of implementing the MECC approach for primary care clinicians and patients who are under psychiatric services.

Methods

Participants were purposively recruited from a single General Practice (GP) surgery in Lancashire. Prospective patient participants were invited using a poster in the surgery reception as well as via the patient participation group Facebook page. The inclusion criteria for patients were adult patients aged 18 to 65 with capacity who were under or had previously been under the care of psychiatric services, this was to focus the research on patients with severe and enduring mental illness who are worst affected by physical health inequality (5). Purposive sampling ensured patients with a variety of mental disorders were included, from different age groups and genders. Clinically active GPs were recruited via email, diverse with regard to gender and age and the practitioner sample also included GPs with a role in commissioning. Semi-structured interviews explored experiences, perceptions, and acceptability of the MECC brief intervention model. All interviews were face-to-face, at the Practice for patients and at the place of work (or another preferred venue) of GPs. With participant consent, all interviews were audio recorded and transcribed. Field notes were written during and shortly after interviews. These included comments on what interviewees said, salient points and the emotions and reflections of the interviewer and were referred to during data analysis. Sample size was based on principles of data saturation (19); ten patients and ten clinicians were interviewed.

Patients were asked to describe their journey of care with reference to brief interventions. Their views and clinician' views were sought of current services, gaps in provision, and perceived barriers and facilitators to delivering brief interventions within primary care. Aspirations for future service delivery, including referral mechanisms, components and approach to delivery were also sought. Six key questions were considered:

- What experience do people with mental health problems have of receiving brief interventions to improve their physical health?
- What experience do clinicians have of delivering brief interventions to people with mental health problems to improve their physical health?
- What are the facilitators for people with mental health problems to engage with brief interventions to improve their physical health?
- What are the facilitators for clinicians to implement brief intervention approaches to improve the physical health of people with mental health problems?
- What are the barriers for people with mental health problems to engage with brief interventions to improve their physical health?
- What are the barriers for clinicians to implement brief intervention approaches to improve the physical health of people with mental health problems.

Ethical approval was obtained via NHS HRA processes (IRAS ID 200959) and UCLan university ethics committee. Patients who had given their details to be interviewed were given a participant information sheet and a minimum of 24 hours 'cooling off' period prior to obtaining written consent. Support was on hand should an individual become upset or distressed during an interview, though this was not required. Data was stored in locked filing cabinets in a locked office, held on password-protected computers and encrypted accordingly. Identifiable information held about participants was destroyed 6 months after final data collection.

Thematic data analysis was undertaken according to principles set out by Bazeley (20). Each transcript was anonymised. Transcripts were initially read briefly in completeness to gain a broad understanding capturing the essence of the interview, and then re-read in further detail. The data was coded, labelled, summarising and linking discrete portions of data, and then grouped into categories, linking together 'families' of codes which shared some characteristics. These categories were later organised into themes; higher-level and abstract concepts which were drawn out in the course of analytical reflection. Investigator triangulation occurred whereby the research team reviewed the raw data, discussing codes, categories and themes in regular meetings, enhancing the depth and nuance of analysis.

With regard to reflexivity, the interviewer was a research student who also worked as a trainee GP. Recruitment of clinicians was easier than expected, potentially due to the perception of supporting a colleague within their work. Some clinicians gave strong and at times controversial views, which may have been due to feeling able to converse openly with a colleague in a similar position to themselves. Mental health service users were aware of the dual role of the interviewer, as both a researcher and a GP. To be aware of and minimise bias and strengthen awareness of researcher rather than clinician role, a reflexive diary was kept.

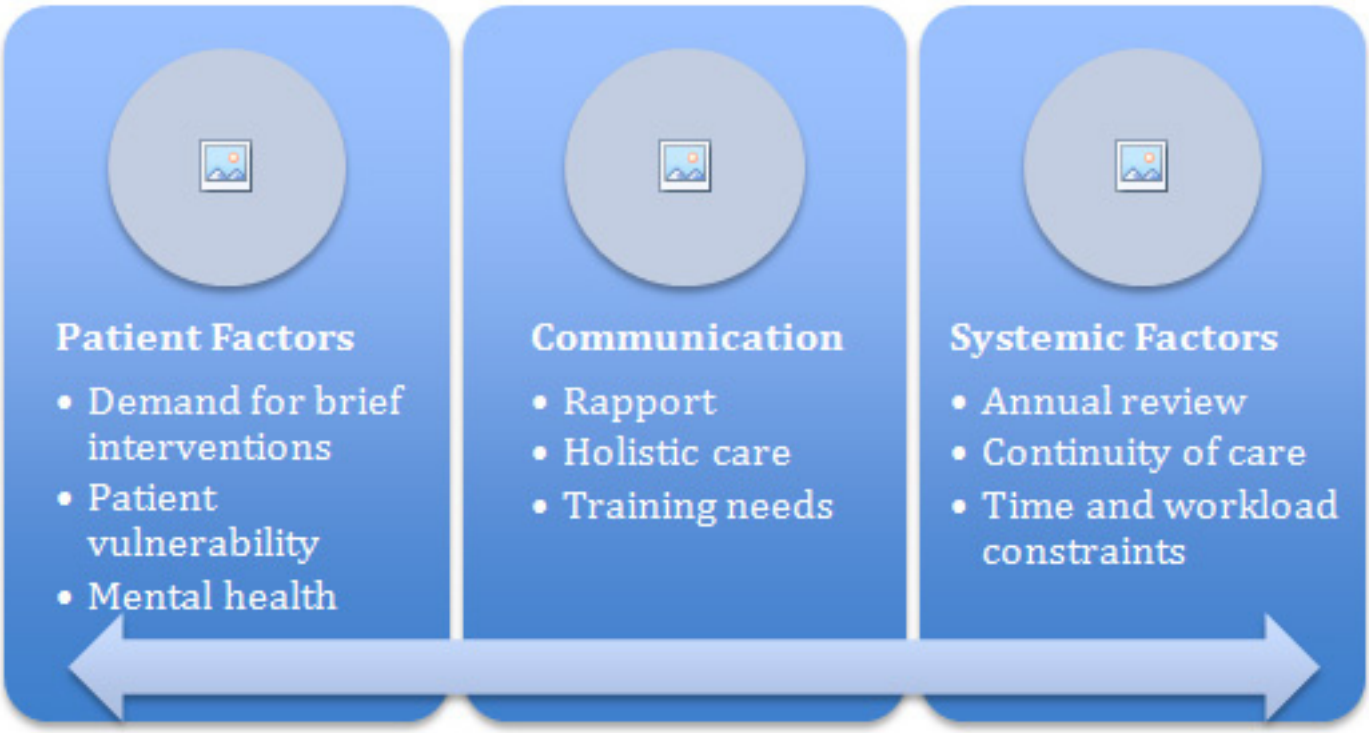
Results

Ten patients were interviewed, three men and seven women, with ages ranging from 30s to 60s. Diagnoses included severe depression, paranoid schizophrenia, bipolar affective disorder, schizoaffective disorder and personality disorder. All were taking psychotropic medication. Of the 10 GPs interviewed, seven were male and three were female. All bar one were involved in extra clinical activities, such as with the Clinical Commissioning Group, medical education and out-of-hours work. Interview lengths were commonly around 40 minutes. Key themes identified accounted for patient factors, clinician communication and systemic factors. Participant names have been replaced with pseudonyms and a forename reflective of gender. Clinicians have been given pseudonyms with 'Dr' to differentiate from service users.

Patient factors

Demand for brief interventions: Patients expressed clearly that they wanted brief interventions and that they found them a valuable part of their primary care experience. Thomas felt brief interventions should be *'brought up all the time, yes, because it's good, because it's helping the person* (Thomas).' In fact, even when patients did not feel in a position to make changes, they still felt that the advice should be offered. For example, regarding smoking cessation *'You're doing a*

Figure 1: Themes



positive thing by mentioning it. Whether the patient wants to take it up, it's down to them really but yeah, I think it's good (Teresa).' There was a sense that patients felt better about themselves because their physical health was inquired into, as opposed to feeling only defined in terms of mental disorder.

A minority of patients did not feel they needed brief interventions. For example, *'I think the thing is I haven't asked for a solution… it's the patient's responsibility for me to ask you* (Anna).' This implies that the onus is on patients to raise their unhealthy lifestyles and ask for advice rather than being brought up opportunistically by clinicians.

Patient vulnerability: Vulnerability within this context refers to the increased susceptibility to health problems as well as reduced coping mechanisms or ability to make lifestyle changes without support in patients with severe mental health illness. The demand for brief interventions was felt by clinicians to be stronger in this patient group due to increased vulnerability, as '*mental health patients as a cohort are more vulnerable and a lot of them, there is a reliance on the GP to guide them* (Dr Ahmed).' This highlighted an increased responsibility of clinicians to be proactive when managing this cohort's health. Vulnerability made seemingly simple habitual acts become challenging, as *'it is a big thing for me to have a shower every day, brush my teeth every day.'* If such acts require significant motivation and determination, it can only be assumed that achievements such as stopping smoking and other lifestyle changes would be more challenging.

Mental health: When patients' mental health was stable, clinicians felt more able to take opportunities to deliver brief interventions. Dr Smith explained *'in fact they have just got a mental health issue just like someone (with) a lung problem and they are just getting on with it and managing it fine, so they should be treated exactly the same as all other patients* (Dr Smith).' By having healthier lifestyles patients felt that their mental health improved, for example *'I've certainly seen mental health can be improved greatly by exercise* (Dr Stevens).' In periods of low mood Dr Khan felt it may be beneficial via giving small achievable targets which can boost self-confidence and morale, *'building yourself up'* as dealing with something like smoking can lead to a '*quick win'* that may build confidence and coping ability.

Clinicians were less willing to deliver brief interventions when a patient's mood was unstable. If one were to bring up lifestyle intervention in this stage it could give the impression that *'I am not listening* (Dr Hughes).' If brief interventions were brought up in a crisis *'I would have probably taken it as another insult and that I wasn't worth anything* (Sarah).'

Clinican communication

Rapport: Clinician communication is a core concept in the effectiveness of any brief intervention or any fruitful clinician-patient relationship. If the clinician does not have good communications skills and causes a negative experience for a patient '*they're not going to want to come to the doctors for anything* (Kate).' Rapport was considered as *'half the battle or probably more* (Dr Khan).' Sarah stated her reason for making a lifestyle intervention was that '*you know try and cut down like (Name) says. Because (Name) is nice and very kind* (Sarah).' This positive attitude was felt to come from '*being genuine in what you're doing* (Dr Khan).' There was a concern from clinicians that rapport could be damaged by discussing brief interventions, as *'some people could take offence that you're asking them to stop drinking, stop smoking* (Dr Jones).' This fear of brief interventions damaging rapport appeared to be more of a potential rather than actual experience, as '*I've not known it to go down badly* (Teresa)'.

Dr Jones described how it is necessary to *'tailor-make*' the intervention according to the patient's understanding and interests and provide healthy alternatives. For example, one patient explained the financial cost of cigarettes made her decide to quit. The clinician's role was felt to be an '*agent of change* (Dr Avons)'. Anna felt that brief interventions were only useful in a '*partnership approach*' of joint responsibility and understanding between the patient and clinician.

Holistic care: The essence of general practice should be *'a continuity of holistic care not just your mental health* (Dr Williams)' and '*primary care team are best placed*' to deliver brief interventions (Dr Hughes).' Conversely, patient experiences included routinely feeling their physical ailments were ignored or paled into insignificance in relation to index mental health issues, '*I think my other practitioners had ignored (symptoms of fibromyalgia) because of my mental health problem* (Lucy).' The effect of an enduring mind-body dualism was highlighted as an area where brief interventions were considered less when dealing with people with mental health problems, as *'you are either doing someone's physical health problem or you are doing someone's mental health problem often, that is how people perceive things* (Dr Ahmed).' Aspects of standard medical practice appear to mitigate against an authentic holistic approach such that one practitioner felt that there was an expectation of poor physical health in patients with mental health problems stating, *'there is an acceptance (of) their physical health will be bad* (Dr Williams).'

There was a significant variation in clinicians' sense of importance of delivering brief interventions. Some were very enthusiastic about discussing diet and exercise as, '*the single best intervention for anything is diet and exercise* (Dr Stevens).'This enthusiasm was not perceived to be present amongst all clinicians and did not always translate into practice. Dr Khan described how *'the reality*

is that we are quite poor at brief intervention… quite often it might just be a flying remark that doesn't get anywhere (Dr Khan). Sarah stated *'no-one ever pinpointed the fact that I was overweight. I was very overweight, I was nearly 14 stone* (Sarah).'

Training needs: Patients felt that clinicians were doing well at their jobs and did not need any further training. For example, when asked if any further training was needed William answered, '*not that I can think of, no'* (William).' A clinician training need was felt for the evidence behind the effectiveness of brief interventions, as '*just seeing that evidence in the first instant gives me encouragement to do brief interventions and the value of them* (Dr Hughes).' Motivational interviewing was suggested by a number of clinicians. In terms of delivery, suggestions included '*role play… VTS (GP training scheme) training (Dr Jones),' 'practices to have training (Dr Ahmed)' and a greater push for public health in 'undergrad programmes* (Dr Hughes).'

Systemic factors

Annual review: Dr Jones described how the annual review is an excellent opportunity to discuss lifestyle interventions as patients attend with this expectation. It was considered as *'a perfectly reasonable opportunity because people usually aren't arriving in a crisis* (Dr Jones).' Dr Smith highlighted cases where multiple medical problems needed an annual review, such as diabetes and mental health reviews, with all the problems being reviewed within the same time leading to less detailed reviews. The annual review was felt by patients to be superficial in addressing physical health problems. Anna stated that she was informed she was drinking *'too much*' alcohol without any further advice. Dr Hughes stated *'it is a tick box symmetric culture have you done this tick, if you press tick you get paid* (Dr Hughes).' Dr Avons felt that illness-based reviews constrain holistic care and also render practices less accessible by using up appointments.

Continuity of care: Continuity of care was viewed as an important facilitator making patients more likely to act upon brief interventions. When continuity is present *'you're going to know that they're not just bringing it up, just for hell of it, they're doing it for the best* (William).' In this case it is the continuity of care that made the patient feel that they could trust their doctor due to the relationship built, leading to potentially better health outcomes. Clinicians were further supportive of continuity of care as a facilitator in the delivery of brief interventions. Dr Jones felt able to build up interventions in a step-by-step manner during multiple consultations to maintain continuity of care. Sarah felt a lack of continuity of care is more damaging for people with mental health problems due to their vulnerability and past experiences, making it more difficult for them to develop rapport and trust others. As well as continuity of care with the same clinician, there was also a type of institutional continuity of care in respect that patients preferred to be seen by services in the same building as opposed to services outside of the building. Kate preferred to be seen in *'a familiar environment'* (Kate) and Anna described a loss of ownership by being sent to different places.

Time and workload constraints: The most emotive category during all interviews was the issue of time within general practice. Clinicians felt that delivering brief interventions would increase the short-term workload, as *'it (lifestyle interventions) increases the workload and it increases the time* (Dr Jones).' Clinicians described it would potentially decrease the long-term workload, *'that hopefully saves me time in the long run, because they might recover better* (Dr Jones),' which is more difficult to consider during a busy day. 10-minute consultations were felt to be '*certainly a barrier to having more holistic care* (Dr Mahmoud).' Dr Hughes felt that the increased workload was a direct contributor to brief interventions not taking place, explaining that *'It is not happening because people are just trying to get through the working day, they are just trying to manage* (Dr Hughes).' Dr Williams agreed, stating *'GPs are all overworked we try and fight fire and you prioritise things, this I suspect you say right where is patients with mental health physical health on your priority list and I think it would be pretty low near the bottom...*(Dr Williams)'.

Conclusion

The results demonstrated patients valued brief interventions to discuss their physical health in mental health consultations, finding it very helpful and affirming a more positive sense of self which should encourage primary care practitioners to deliver brief interventions more often, especially within a mental health consult and ideally at every contact where appropriate. The embrace of holism evident in the findings of this study concords with the policy narrative of Bringing together physical and mental health: a new frontier for integrated care in 2016 in which the fourth priority of strengthening primary care for the physical health needs of people with severe mental illness states that *'Primary care can play an important role in ensuring that people with mental illnesses receive equitable access to care across the system'* (21).

Despite the potential for patients to experience these interventions in a negative way, they actually reported a positive impact resulting from engagement in talk about physical health problems. Such benefits appeared to be conferred independently of any actual commitment to make lifestyle changes. Good clinician communication, good patient-doctor rapport, a tailored brief intervention with good signposting to additional services were key ingredients for making a MECC approach to brief intervention a positive experience.

Notably, even if a patient was unwilling at the time to make any lifestyle change they still had an appreciation for those aspects of the MECC approach that involved positive and proactive enquiries regarding their wellbeing. This may be due to aspects of identity, whereby self-worth is associated with the desire to be treated as a person

rather than a diagnosis. Clinicians demonstrating concern for holistic care may thus reinforce a more positive sense of personhood and improve trust and relationship variables within the clinical encounter. Timing would appear to be crucial: practitioner attention and prioritising of mental distress at times of crisis was valued, and to do otherwise would seem disrespectful. However, the implied recognition of full personhood(22-23) associated with enquiring into physical wellbeing at other times was welcomed by patients who were arguably used to feeling stigmatised and devalued carrying a mental illness label into other medical encounters and in society at large (24-25), with consequential detriment to self-esteem(26).

Some of the key reasons given by clinicians for not engaging in brief interventions during every mental health consultation were lack of time and workload pressures within primary care. Clinicians spoke of ten minute appointments and the 'one appointment one problem' policy. This is a good indicator that policy makers and commissioners should work towards making mental health reviews and consultations longer to accommodate for the opportunity to deliver brief interventions in an attempt to reduce health inequality in this cohort of patients. It is also pertinent for clinicians to remember that any time invested in brief interventions is likely to result in time saved in the long run from the improved physical health of patients with severe mental health problems.

The findings of this study also suggest that it is almost expected that this cohort of patients will have poor physical health and we need to move away from this fatalism and adopt a more proactive approach in primary care by embracing the ***make every contact count*** approach in the knowledge that this will tend to be well-received.

Patients were more comfortable in engaging in brief interventions with clinicians they were familiar with, in environments they were familiar with and valued the holistic longitudinal relationship that primary care is best placed to develop in the context of coproducing patient centred care (27-29). Improving health in the most vulnerable groups can make important contributions to preventing further increases in health inequalities, including the physical health care of those diagnosed with mental health conditions who have a reduced life expectancy due to a constellation of risks, including or resulting in unhealthy lifestyle behaviors (30).

Lawrence et al. (2016) found that trained practitioners showed significantly better and more regular use of the skills needed to assist behaviour change when compared to untrained peers (31). This should also encourage local commissioning groups and primary care networks to deliver training for clinicians on delivering brief interventions.

MECC is based on the premise that clinicians are able to make use of opportunities to deliver health promotion by way of healthy conversations and continuity of care allows for a context of trust to develop. This builds on the relational ideals professed within general practice settings (32). The strength of the research is that it achieved its objective in exploring barriers and facilitators to delivering brief interventions within primary care, furnishing rich data and findings offering new perspectives. It offers suggestions which may have a positive implication on practice.

A limitation is the selection of patients and clinicians who were interviewed. Due to limited time and resources, patients interviewed were from one practice. Patients who volunteered to be interviewed may have been those most keen to work with medical professionals and more actively involved in looking after their health. They may not be fully representative of the population of people with mental health problems. The clinicians being from the same CCG also meant that their experiences of services and provisions, as well as patient populations, may not be fully transferable throughout the UK. The study would be further strengthened by larger and longer term projects involving patients and clinicians from different practices and localities.

The need for primary care to be a bastion for preventative medicine is clear, and there are many examples of good practice. However, due to the challenges discussed, there is still some way to go for primary care to fully embrace a make every contact count approach to promoting health related behaviour change. MECC is an ideal means for dealing with poor physical health of people with mental health problems. This pragmatic approach has a significant potential to improve physical health if used appropriately. Its strength is that it is a potentially cost-effective ideology and intervention that can be applied to existing practice in a whole manner of contexts. Without addressing the current challenges within primary care, MECC may remain an interesting idea without fulfilling its potential.

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Difficulties facing family physicians in primary health care centers in Abha City, Saudi Arabia

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Received: August 2020; Accepted:September 2020; Published: October 1, 2020.
Citation: Hatim Mohammed Ali Alsharafi, Bassam Mousa Khalawy Mokali. Difficulties facing family physicians in primary health care centers in Abha City, Saudi Arabia. World Family Medicine. 2020; 18(10): 91-102
DOI: 10.5742/MEWFM.2020.93879

Abstract

Background: Family medicine is a well-developed specialty in the western world. However, in most Arab countries, family medicine practice is still limited; with several problems that hinder its development.

Objectives: To determine the difficulties facing family physicians in Abha City, Saudi Arabia and to assess their satisfaction regarding their workplaces.

Subjects and methods: A cross-sectional study was carried out among a sample of Saudi family physicians at primary health care (PHC) centers belonging to the Ministry of Health (MOH) in Abha City, Aseer Region, Saudi Arabia. A self-administered questionnaire was developed by the researchers and was used for data collection. It included demographic data, inquiry about various difficulties faced by physicians at workplace and inquiry about their satisfaction regarding their workplaces.

Results: The study included 87 Saudi family medicine physicians. Males represent 52.9% of them. The commonest reported difficulties related to transportation and staff were shortage of nurses (59.8%), unavailability of radiologists (43.7%), unavailability of radiology technicians (35.6%) and unavailability of drivers (33.3%). The most frequently mentioned difficulties related to infrastructure and work environment were the unavailability of cafeteria (58.5%), poor biomedical services (40.2%), unavailability of internet services (40.2%) and unavailability of a toilet for staff (40.2%), while regarding difficulties related to diagnostic, immunization, and pharmacy services, there were problems receiving radiology reports from referral facilities (58.6%), problems receiving results from reference laboratory (52.9%), insufficient laboratory test kits (37.9%) and unavailability of ultrasound equipment (33.3%). More than one third of the family physicians were satisfied with clinics (41.4%), working hours (41.4%), job (35.6%), and working environment (34.5%). On the other hand, a considerable percentage of them were unsatisfied with laboratory (65.6%), medical records (54.1%), and radiology (49.4%).

Conclusion: Family physicians working at PHC centers in Abha city, face several difficulties, which significantly affect their satisfaction with workplace and could impair quality of care delivered to patients.

Key words: Family Medicine, Primary health care, Difficulties, Satisfaction, Saudi Arabia.

Introduction

As medical awareness developed and technology advanced, many physicians chose to specify their practices to defined medicine areas. After World War II, the number of specialized physicians grew at a phenomenal rate, while the proportion of generalists diminished dramatically. Nevertheless, the public became increasingly aware of their care fragmentation and the shortage of physicians who can provide initial, continuing and comprehensive care. Thus, began the reorientation of medicine back to primary care, and the concept of the generalist was reborn with the establishment of family medicine (1-2).

In western countries, family medicine became a well-developed specialty. However, in almost all Arab countries, family medicine practice is still limited. This may be due to the lack of equipped primary healthcare (PHC) centers, and the inadequate financial support for family physicians and PHC. Therefore, there is low job satisfaction among family physicians compared to those working in secondary and tertiary healthcare facilities (3) .

This study aimed to determine the difficulties facing family physicians in Abha City, Saudi Arabia and to assess their satisfaction regarding their workplaces.

Methodology

Following a cross-sectional study research design, this study was conducted in PHC centers belonging to Ministry of Health in Abha City, Aseer Region, Saudi Arabia. This study was conducted during the period from March 2019 to February 2020. The inclusion criteria were all family physicians in Abha City, who are involved in direct patient care.

Based on extensive review of relevant literature, a fully-structured multi-item questionnaire was designed by the researchers and was used for data collection. It comprised three parts. The first part included the necessary demographic and professional data, namely gender and marital status. The second part included questions that explore difficulties faced by family physicians, and had only “Yes” or “No” answer options. The third part used a Likert scale to determine the level of family physicians’ satisfaction and how it is affected by the difficulties they encounter during their practice.

The Statistical Package for Social Sciences (IBM, SPSS, version 25.0) was used for data entry and analysis. Since all variables were categorical, frequency and percentages were utilized to describe the data. Chi-square test was applied to test significance of differences. P-values <0.05 were considered as statistically significant.

Results

The study included 87 Saudi family medicine physicians. Males represented 52.9% of the family physicians who participated in the study (Figure 1), and 65.5% were married (Figure 2).

Figure 3 shows that the commonest reported difficulties were shortage of nurses (59.8%), unavailability of a radiologist (43.7%), unavailability of a radiology technician (356%) and unavailability of a driver (33.3%).

Driver unavailability was reported by 36.6% of females compared to 30.4% of males, (p<0.001). Similarly, transportation difficulties were mentioned by 26.8% of females compared to only 13% of males, (p<0.001). The difficulty related to unavailability of laboratory technicians was mentioned by 19.3% of females compared to only 4.3% of males, (p<0.001). Similarly, the unavailability of radiology technician was reported by 63.4% and 10.9% of females and males, respectively (p<0.001). Moreover, 61% of females compared to 28.3% of male physicians reported the unavailability of radiologists (p=0.002). There was no statistically significant difference between physicians regarding shortage of nurses and unavailability of pharmacist according to their gender (Table 1).

More than one-quarter of single physicians (26.7%) compared to 15.8% of married physicians had difficulties regarding transportation, (p=0.018). There was no statistically significant difference between married and single physicians regarding other difficulties-related to transportation and availability of staff (Table 2).

The commonest reported difficulties related to infrastructure and work environment among family physicians were the unavailability of cafeteria (58.5%), poor biomedical service (40.2%), unavailability of internet service (40.2%) and unavailability of staff toilet (40.2%), as shown in Figure 4.

Missing patients’ files were reported by 56.5% of male physicians compared to 51.2% of females. Additionally it was reported sometimes by 37% of male and 19.5% of female physicians, (p=0.012). Dissatisfaction with managers was more observed among female physicians compared to males (31.7% versus 6.5%), p=0.007. Similarly, dissatisfaction with colleagues was more observed among female physicians compared to males (26.8% versus 2.2%, p=0.003). There was no statistically significant difference between male and female physicians regarding other difficulties related to infrastructure and work environment, as shown in Table 3.

There was no statistically significant difference between married and single physicians regarding all studied difficulties related to infrastructure and work environment as demonstrated in Table 4.

As realized from Figure 5, the most frequently reported difficulties related to diagnostic, immunization, and pharmacy services were problems receiving radiology

report from referral facility (58.6%), problems receiving result from reference laboratory (52.9%), insufficient laboratory test kits (37.9%) and unavailability of ultrasound equipment (33.3%).

More than one-third of female physicians (39%) compared to 10.9% of males reported unavailability of reagents, (p=0.006). Almost half of male physicians (47.8%) compared to only 17.1%) of female physicians reported unavailability of ultrasound equipment, (p=0.004). About half of female physicians (46.3%) compared to 13% of male physicians reported unavailability of immunization services, (p=0.002). Female physicians were more complaining of unavailability of drugs than male physicians (22% versus 4.3%, p=0.047). There was no statistically significant difference between male and female physicians regarding other difficulties related to diagnostic, immunization, and pharmacy services, as shown in Table 5.

There was no statistically significant difference between married and single physicians regarding all studied difficulties related to diagnostic, immunization, and pharmacy services as shown in Table 6.

Table 7 shows that more than one third of the family physicians were either satisfied or very satisfied with clinics (41.4%), working hours (41.4%), job (35.6%), and working environment (34.5%). On the other hand, a considerable percentage of them were either unsatisfied or very unsatisfied with laboratory (65.6%), medical records (54.1%), and radiology (49.4%).

Female physicians were more satisfied than males regarding laboratory services (12.2% versus 4.3%, p=0.040). Half of male physicians compared to 31.7% of female physicians were satisfied with working hours, (p=0.007). Also 39.1% of male physicians compared to 31.7% of female physicians were satisfied with job. However, the difference did not reach the statistically significant level (p=0.080). There was no statistically significant difference between male and female family physicians regarding other healthcare services, as shown in Table 8.

Table 9 shows that 40% of single physicians compared to only 19.3% of married physicians were satisfied with medication and pharmacy, (p=0.043). There was no statistically significant difference between married and single family physicians regarding other healthcare services.

Figure 1: Gender distribution of participants

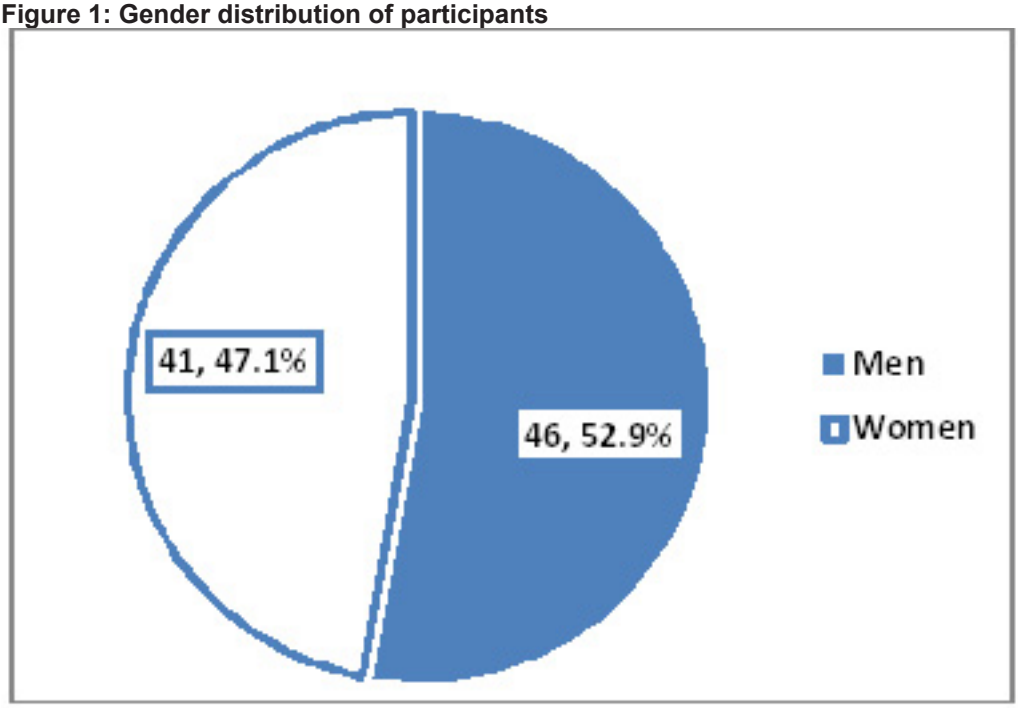

Figure 2: Distribution of the participants according to their marital status

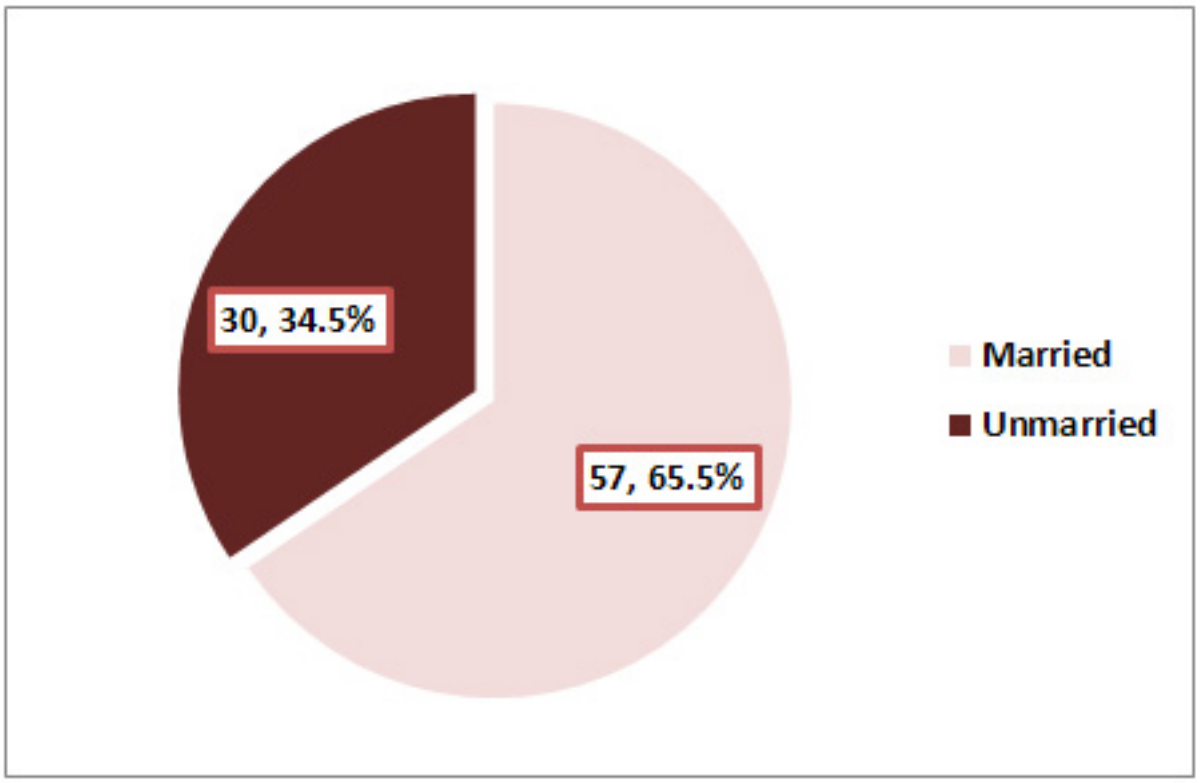

Figure 3: Difficulties related to transportation and staff among family physicians, primary healthcare centers, Ministry of Health, Abha City

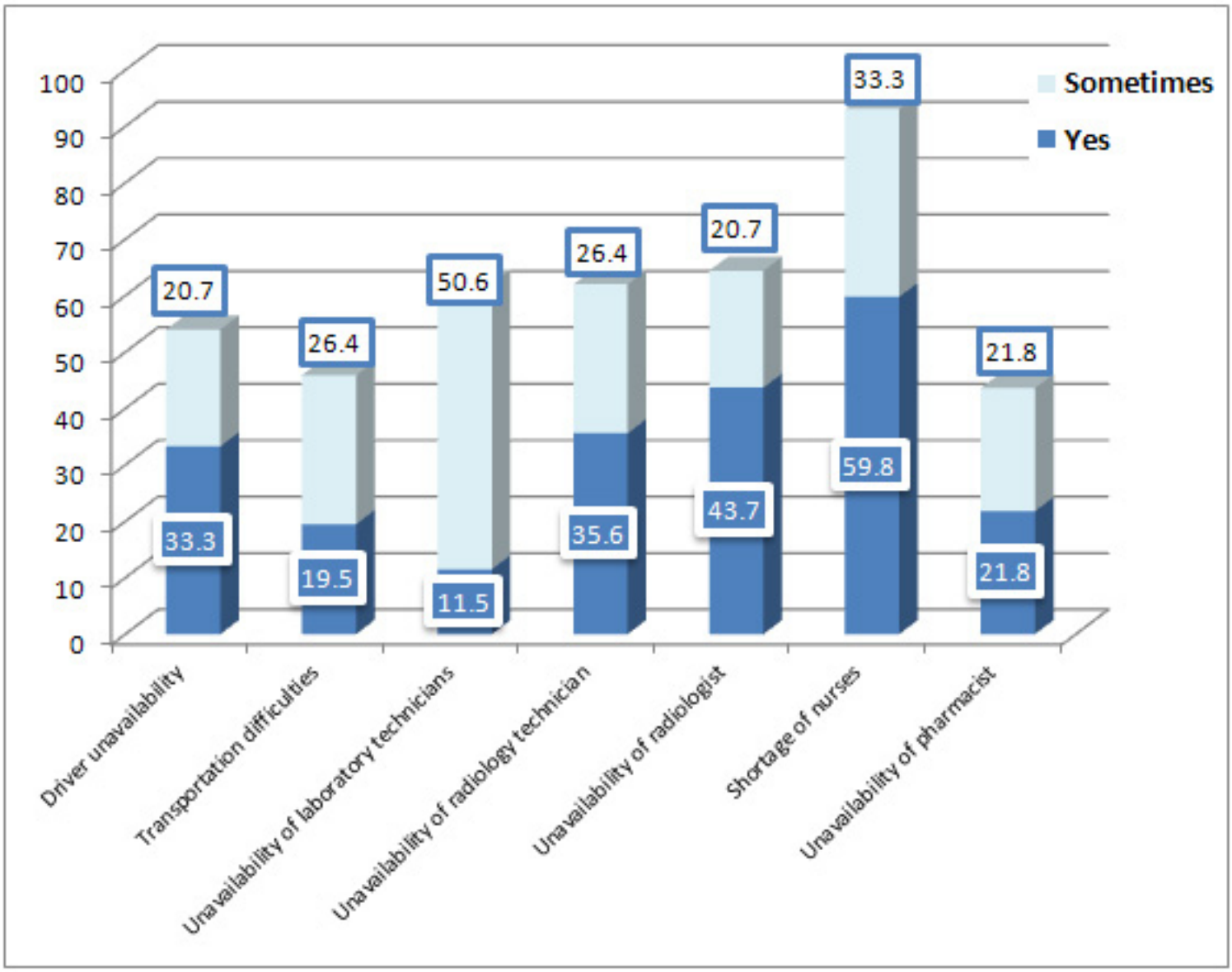

Table 1: Comparison between male and female family physicians regarding difficulties related to transportation and staff

Difficulties	Males (n=46)			Females (n=41)			P value*
	Yes No. (%)	No No. (%)	Sometimes No. (%)	Yes No. (%)	No No. (%)	Sometimes No. (%)	
Driver unavailability	14 (30.4)	30 (65.2)	2 (4.4)	15 (36.6)	10 (24.4)	16 (39.0)	<0.001
Transportation difficulties	6 (13.0)	35 (76.1)	5 (10.9)	11 (26.8)	12 (29.3)	18 (43.9)	<0.001
Unavailability of laboratorytechnicians	2 (4.3)	28 (60.9)	16 (34.8)	8 (19.5)	5 (12.2)	28 (68.3)	<0.001
Unavailability of radiologytechnicians	5 (10.9)	30 (65.2)	11 (23.9)	26 (63.4)	3 (7.3	12 (29.3)	<0.001
Unavailability of radiologists	13 (28.3)	24 (52.2)	9 (19.6)	25 (61.0)	7 (17.1)	9 (21.9)	0.002
Shortage of nurses	31 (67.4)	4 (8.7)	11 (23.9)	21 (51.2)	2 (4.9)	18 (43.9)	0.135
Unavailability of pharmacists	7 (15.2)	31 (67.4)	8 (17.4)	12 (29.3)	18 (43.9)	11 (26.8)	0.083

* Chi-square test

Table 2: Comparison between married and single family physicians regarding difficulties related to transportation and staff

Difficulties	Married (n=57)			Single (n=30)			P value*
	Yes No. (%)	No No. (%)	Sometimes No. (%)	Yes No. (%)	No No. (%)	Sometimes No. (%)	
Driver unavailability	17 (29.8)	30 (52.6)	10 (17.5)	12 (40.0)	10 (33.3)	8 (26.7)	0.224
Transportation difficulties	9 (15.8)	37 (64.9)	11 (19.3)	8 (26.7)	10 (33.3)	12 (40.0)	0.018
Unavailability of laboratorytechnicians	5 (8.8)	22 (38.6)	30 (52.6)	5 (16.7)	11 (36.7)	14 (46.7)	0.542
Unavailability of radiologytechnician	19 (33.3)	25 (43.9)	13 (22.8)	12 (40.0)	8 (26.7)	10 (33.3)	0.272
Unavailability of radiologist	25 (43.9)	22 (38.6)	10 (17.5)	13 (43.3)	9 (30.0)	8 (26.7)	0.549
Shortage of nurses	35 (61.4)	4 (7.0)	8 (31.6)	17 (56.7)	2 (6.7)	11 (36.7)	0.891
Unavailability of pharmacist	11 (19.3)	35 (61.4)	11 (19.3)	8 (26.7)	14 (46.6)	8 (26.7)	0.420

* Chi-square test

Figure 4: Difficulties related to infrastructure and work environment among family physicians, primary healthcare centers, Ministry of Health, Abha City.

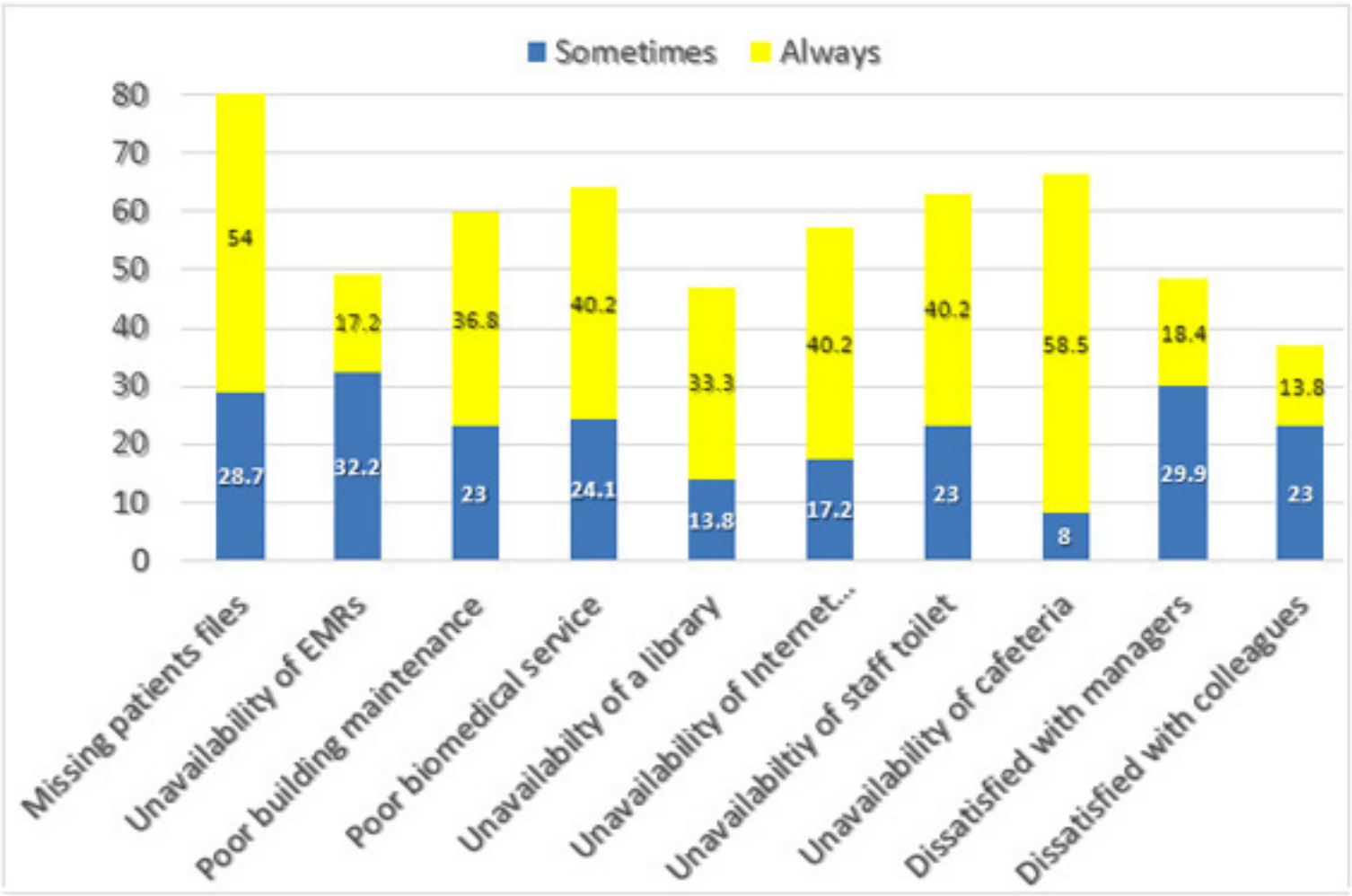

Table 3: Comparison between male and female family physicians regarding difficulties related to infrastructure and work environment

Difficulties	Males (n=46)			Females (n=41)			P value*
	Yes No. (%)	No No. (%)	Sometimes No. (%)	Yes No. (%)	No No. (%)	Sometimes No. (%)	
Missing patient files	26 (56.5)	3 (6.5)	17 (37.0)	21 (51.2)	12 (29.3)	8 (19.5)	0.012
Unavailability of EMRs**	7 (15.2)	20 (43.5)	19 (41.3)	8 (19.5)	24 (58.5)	9 (22.0)	0.155
Poor building maintenance	12 (26.1)	20 (43.5)	14 (30.4)	20 (48.8)	15 (36.6)	6 (14.6)	0.059
Poor biomedical service	19 (41.3)	15 (32.6)	12 (26.1)	16 (39.0)	16 (39.0)	9 (22.0)	0.806
Unavailability of library	17 (37.0)	22 (47.8)	7 (15.2)	12 (29.3)	24 (58.5)	5 (12.2)	0.607
Unavailability of internet connection	14 (30.4)	22 (47.8)	10 (21.8)	21 (51.2)	15 (36.6)	5 (12.2)	0.128
Unavailability of staff toilets	20 (43.5)	13 (28.3)	13 (28.3)	15 (36.6)	19 (46.3)	7 (17.1)	0.186
Unavailability of cafeteria	27 (58.7)	16 (34.8)	3 (6.5)	23 (56.1)	14 (34.1)	4 (9.8)	0.856
Unsatisfied with managers	3 (6.5)	29 (63.1)	14 (30.4)	13 (31.7)	16 (39.0)	12 (29.3)	0.007
Unsatisfied with colleagues	1 (2.2)	34 (73.9)	11 (23.9)	11 (26.8)	21 (51.2)	9 (22.0)	0.003

*Chi-square test; **Electronic medical records

Table 4: Comparison between married and single family physicians regarding difficulties related to infrastructure and work environment

Difficulties	Married (n=57)			Single (n=30)			P value*
	Yes No. (%)	No No. (%)	Sometimes No. (%)	Yes No. (%)	No No. (%)	Sometimes No. (%)	
Missing patient files	32 (56.1)	9 (15.8)	16 (28.1)	15 (50.0)	6 (20.0)	9 (30.0)	0.833
Unavailability of EMRs	12 (21.1)	29 (50.9)	16 (28.1)	3 (10.0)	15 (50.0)	12 (40.0)	0.322
Poor building maintenance	20 (35.1)	22 (38.6)	15 (26.3)	12 (40.0)	13 (43.3)	5 (16.7)	0.596
Poor biomedical service	23 (40.4)	20 (35.1)	14 (24.6)	12 (40.0)	11 (36.7)	7 (23.3)	0.987
Unavailability of library	18 (31.6)	30 (52.6)	9 (15.8)	11 (36.7)	16 (53.3)	3 (10.0)	0.729
Unavailability of internet connection	21 (36.8)	24 (42.1)	12 (21.1)	14 (46.7)	13 (43.3)	3 (10.0)	0.392
Unavailability of staff toilets	23 (40.4)	19 (33.3)	15 (26.3)	12 (40.0)	13 (43.3)	5 (16.7)	0.514
Unavailability of cafeteria	32 (56.1)	20 (35.1)	5 (8.8)	18 (60.0)	10 (33.3)	2 (6.7)	0.915
Unsatisfied with managers	11 (19.3)	29 (50.9)	17 (29.8)	5 (16.7)	16 (53.3)	9 (30.0)	0.853
Unsatisfied with colleagues	8 (14.0)	35 (61.4)	14 (24.6)	4 (13.3)	20 (66.7)	6 (20.0)	0.873

* Chi-square test

Table 5: Comparison between male and female family physicians regarding difficulties related to diagnostic, immunization, and pharmacy services

Difficulties	Males (n=46)			Females (n=41)			P value*
	Yes No. (%)	No No. (%)	Sometimes No. (%)	Yes No. (%)	No No. (%)	Sometimes No. (%)	
Unavailability of laboratory service	4 (8.7)	27 (58.7)	15 (32.6)	10 (24.4)	17 (41.5)	14 (34.1)	0.100
Unavailability of reagent	5 (10.9)	20 (43.5)	21 (45.7)	16 (39.0)	9 (22.0)	16 (39.0)	0.006
Insufficient laboratory tests	14 (30.4)	18 (39.1)	14 (30.4)	19 (46.3)	12 (29.3)	10 (24.4)	0.310
Problems receiving result from reference laboratory	29 (63.0)	4 (8.7)	13 (28.3)	17 (41.5)	4 (9.8)	20 (48.8)	0.114
Unavailability of X-ray equipment	10 (21.7)	25 (54.3)	11 (23.9)	6 (14.6)	28 (68.3)	7 (17.1)	0.411
Unavailability of ultrasound equipment	22 (47.8)	15 (32.6)	9 (19.6)	7 (17.1)	27 (65.8)	7 (17.1)	0.004
Problems in receiving radiology report from referral facility	32 (69.6)	6 (13.0)	8 (17.4)	19 (46.3)	10 (24.4)	12 (29.3)	0.089
Unavailability of immunization services	6 (13.0)	20 (43.5)	20 (43.5)	19 (46.3)	14 (34.1)	8 (19.5)	0.002
Unavailability of drugs	2 (4.3)	27 (58.7)	17 (37.0)	9 (22.0)	19 (46.3)	13 (31.7)	0.047

* Chi-square test

Figure 5: Difficulties related to diagnostic, immunization, and pharmacy services among family physicians, primary healthcare centers, Ministry of Health, Abha City

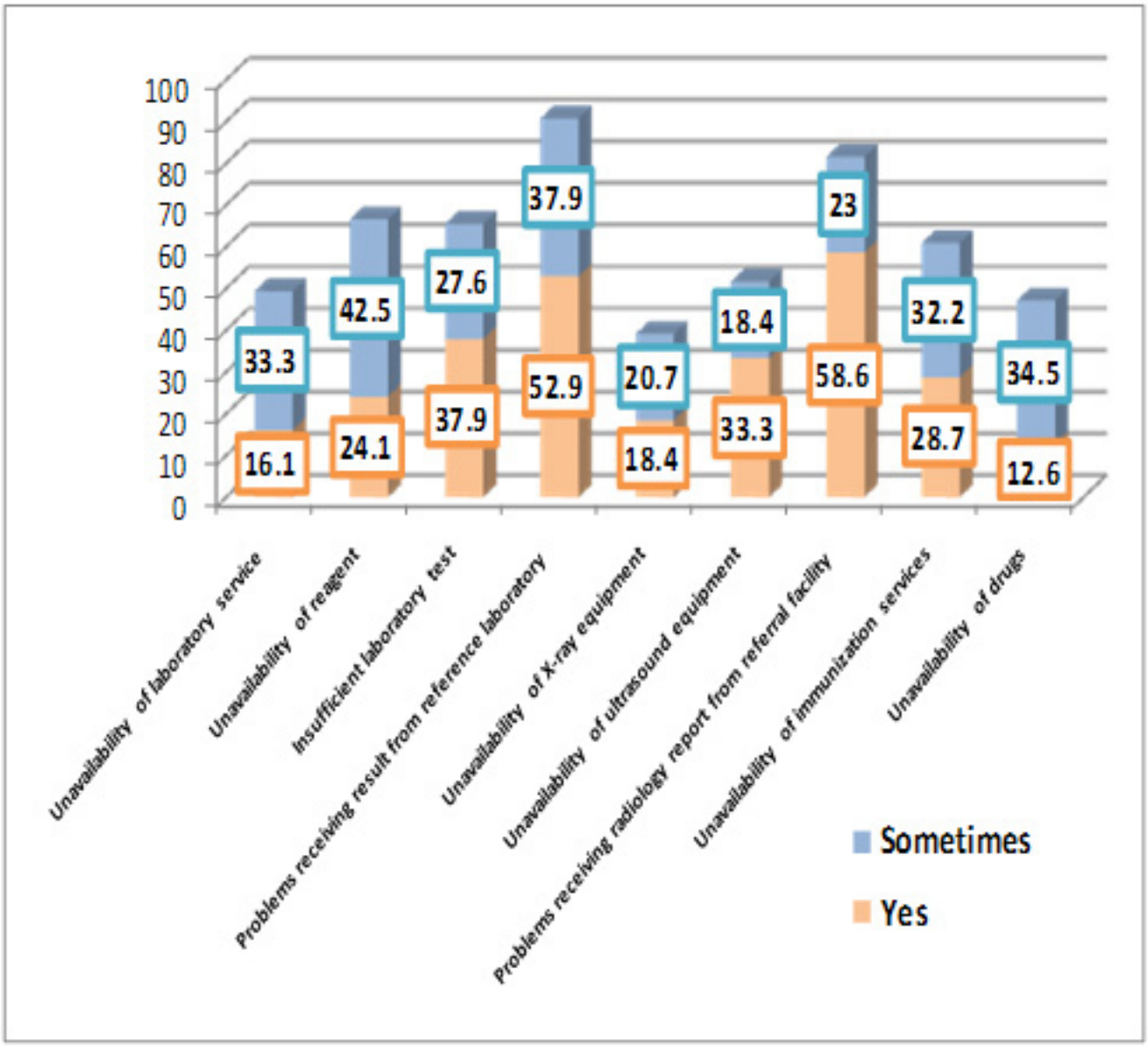

Table 6: Comparison between married and single family physicians regarding difficulties related to diagnostic, immunization, and pharmacy services

Difficulties	Married (n=57)			Single (n=30)			P value*
	Yes No. (%)	No No. (%)	Sometimes No. (%)	Yes No. (%)	No No. (%)	Sometimes No. (%)	
Unavailability of laboratory service	8 (14.0)	28 (49.2)	21 (36.8)	6 (20.0)	16 (53.3)	8 (26.7)	0.573
Unavailability of reagent	13 (22.8)	20 (35.1)	24 (42.1)	8 (26.7)	9 (30.0)	13 (43.3)	0.869
Insufficient laboratory tests	23 (40.4)	16 (28.1)	18 (31.6)	10 (33.3)	14 (46.7)	6 (20.0)	0.204
Problems receiving result from reference laboratory	29 (50.9)	5 (8.8)	23 (40.4)	17 (56.7)	3 (10.0)	10 (33.3)	0.814
Unavailability of X-ray equipment	9 (15.8)	35 (61.4)	13 (22.8)	7 (23.3)	18 (60.0)	5 (16.7)	0.615
Unavailability of ultrasound equipment	17 (29.8)	27 (47.4)	13 (22.8)	12 (40.0)	15 (50.0)	3 (10.0)	0.302
Problems in receiving radiology report from referral facility	34 (59.6)	10 (17.5)	13 (22.8)	17 (56.7)	6 (20.0)	7 (23.3)	0.953
Unavailability of immunization services	17 (29.8)	19 (33.3)	21 (36.8)	8 (26.7)	15 (50.0)	7 (23.3)	0.275
Unavailability of drugs	8 (14.0)	31 (54.4)	18 (31.6)	3 (10.0)	15 (50.0)	12 (40.0)	0.695

* Chi-square test

Table 7: Satisfaction level of family physicians in primary health care centers with different healthcare services

Services	Very Unsatisfied No. (%)	Unsatisfied No. (%)	Neutral No. (%)	Satisfied No. (%)	Very Satisfied No. (%)
Laboratory	20 (23.0)	37 (42.6)	23 (26.4)	5 (5.7)	2 (2.3)
Radiology	19 (21.8)	24 (27.6)	26 (29.9)	16 (18.4)	2 (2.3)
Medication and pharmacy	6 (6.9)	19 (21.8)	39 (44.9)	21 (24.1)	2 (2.3)
Clinics	3 (3.4)	17 (19.5)	31 (35.7)	30 (34.5)	6 (6.9)
Medical records	13 (14.9)	34 (39.2)	21 (24.1)	17 (19.5)	2 (2.3)
Building maintenance	8 (9.2)	25 (28.7)	33 (38.0)	8 (9.2)	13 (14.9)
Biomedical services	7 (8.0)	27 (31.1)	39 (44.9)	9 (10.3)	5 (5.7)
Job	5 (5.7)	10 (11.5)	41 (47.2)	28 (32.2)	3 (3.4)
Working hours	7 (8.0)	18 (20.7)	26 (29.9)	33 (38.0)	3 (3.4)
Working environment	6 (6.9)	20 (23.0)	31 (35.6)	26 (29.9)	4 (4.6)
Professional opportunities	10 (11.5)	24 (27.6)	32 (36.8)	19 (21.8)	2 (2.3)

Table 8: Comparison between male and female family physicians regarding satisfaction level with different healthcare services at primary healthcare centers

Services	Males (n=46)			Females (n=41)			P value*
	Unsatisfied No. (%)	Neutral No. (%)	Satisfied No. (%)	Unsatisfied No. (%)	Neutral No. (%)	Satisfied No. (%)	
Laboratory	27 (58.7)	17 (37.0)	2 (4.3)	30 (73.2)	6 (14.6)	5 (12.2)	0.040
Radiology	21 (45.7)	12 (26.1)	13 (28.3)	22 (53.7)	14 (34.1)	5 (12.2)	0.178
Medication and pharmacy	14 (30.4)	19 (41.3)	13 (28.3)	11 (26.8)	4 (8.8)	10 (24.4)	0.782
Clinics	13 (28.3)	13 (28.3)	20 (43.4)	7 (17.1)	18 (43.9)	16 (39.0)	0.250
Medical records	23 (50.0)	11 (24.0)	12 (26.0)	24 (58.5)	10 (24.4)	7 (7.1)	0.577
Building maintenance	17 (37.0)	17 (37.0)	12 (26.0)	16 (39.0)	16 (39.0)	9 (22.0)	0.904
Biomedical services	16 (34.8)	20 (43.5)	10 (21.7)	18 (43.9)	19 (46.3)	4 (9.8)	0.296
Job	11 (23.9)	17 (37.0)	18 (39.1)	4 (9.8)	5 (8.5)	13 (31.7)	0.082
Working hours	16 (34.8)	7 (15.2)	23 (50.0)	9 (22.0)	19 (46.3)	13 (31.7)	0.007
Working environment	13 (28.3)	16 (34.7)	17 (37.0)	13 (31.7)	15 (36.6)	13 (31.7)	0.870
Professional opportunities	22 (47.8)	13 (28.3)	11 (23.9)	12 (29.3)	19 (46.3)	10 (24.4)	0.147

* Chi-square test

Table 9: Comparison between married and single family physicians regarding satisfaction level with different healthcare services at primary healthcare centers

Services	Married (n=57)			Single (n=30)			P value*
	Unsatisfied No. (%)	Neutral No. (%)	Satisfied No. (%)	Unsatisfied No. (%)	Neutral No. (%)	Satisfied No. (%)	
Laboratory	35 (61.4)	19 (33.3)	3 (5.3)	22 (73.4)	4 (13.3)	4 (13.3)	0.082
Radiology	27 (47.3)	18 (31.6)	12 (21.1)	16 (53.3)	8 (26.7)	6 (20.0)	0.856
Medication and pharmacy	19 (33.3)	27 (47.4)	11 (19.3)	6 (20.0)	12 (40.0)	12 (40.0)	0.043
Clinics	13 (22.8)	23 (40.4)	21 (36.8)	7 (23.3)	8 (26.7)	15 (50.0)	0.395
Medical records	32 (56.1)	14 (24.6)	11 (19.3)	15 (50.0)	7 (23.3)	8 (26.7)	0.727
Building maintenance	21 (36.8)	22 (38.6)	14 (24.6)	12 (40.0)	11 (36.7)	7 (23.3)	0.959
Biomedical services	21 (36.8)	26 (45.7)	10 (17.5)	13 (43.3)	13 (43.3)	4 (13.4)	0.798
Job	9 (15.8)	25 (43.9)	23 (40.4)	6 (20.0)	16 (53.3)	8 (26.7)	0.447
Working hours	16 (28.1)	16 (28.1)	25 (43.9)	9 (30.0)	10 (33.3)	11 (36.7)	0.797
Working environment	17 (29.8)	21 (36.8)	19 (33.4)	9 (30.0)	10 (33.3)	11 (36.7)	0.936
Professional opportunities	20 (35.1)	21 (36.8)	16 (28.1)	14 (46.6)	11 (36.7)	5 (16.7)	0.420

* Chi-square test

Discussion

The government of Saudi Arabia provides an excellent quality of healthcare services in terms of quantity and quality and it is ranked 29th in the world according to the World Health Organization(4). Nevertheless, the Saudi healthcare system has high rates of turnover and turnover intention, particularly among nursing and technician staff (5). In accordance with that, the present study revealed that the commonest reported difficulties related to transportation and staff among family physicians were shortage of nurses, unavailability of radiologists, radiology technicians and drivers. The same difficulties have been reported in previous studies carried out in Saudi Arabia(6, 7) and abroad (8, 9) .

Driver unavailability and transportation difficulties were more reported by females in the present study, although recently females were allowed to have a driving licence in Saudi Arabia but still most of them rely on drivers to go to work. Similar findings were reported by Mumenah and Al-Raddadi (7) . However, till a couple of years ago, women have been prohibited from driving in Saudi Arabia. So, it is expected that more female physicians will start to drive their own cars and their previous need of drivers for a lift will be minimized.

Also, unavailability of laboratory technicians, radiologists or radiology technicians was more reported by females. The same has been observed in a previous study carried out in Jeddah (7) . The Scientific Committee of Quality Assurance in Primary Health Care suggested that in order to provide a good quality health services, infrastructure and work environment should be appropriate to work comfortably (10) .

In the present study, concerning difficulties related to infrastructure and work environment among family physicians, the commonest reported were unavailability of cafeteria, poor biomedical service, unavailability of internet connection and unavailability of staff toilet. Accordingly, these deficiencies could impact negatively the work of the physicians. These obstacles have been observed by others(7, 11). These difficulties are reflected in lower job satisfaction among family physicians.

In the current study, missing patients' files was more reported by male physicians, whereas dissatisfaction with managers or colleagues was more observed among female physicians. These findings could be attributed to biological differences between males and females.

In accordance with other studies, (7-9) difficulties related to diagnostic, immunization, and pharmacy services were common in the present study. Despite the great improvement of the organization of primary care services in Saudi Arabia during the last years, several studies showed some difficulties related to shortage of resources (12-13).

The unavailability of ultrasound equipment, reagents, immunization services, and drugs were more reported by female physicians in the present study. These findings might reflect the higher need of female physicians than males to these services especially for antenatal and postnatal care.

Regarding the overall satisfaction of family physicians with services provided by primary care settings, considerable proportions of them were satisfied with clinics, working hours, job, and working environment. However, considerable proportions were dissatisfied with laboratory, medical records and radiology services. In another study carried out in Jeddah(7) all physicians were satisfied with immunization services. However, we did not specify this service in the present study.

Several studies indicated that electronic medical records systems have many advantages in improving the quality of health care, (14,15) reducing paperwork time,(16) and enhancing patient satisfaction (17) . However, in the current study, a considerable percentage of participants were disatisfied with medical records. Therefore, in-depth research may be needed to investigate the possible reasons for this dissatisfaction.

The current study revealed that female physicians were more satisfied regarding laboratory services while male physicians were more satisfied with working hours than female physicians. This could reflect the higher family demands of women than men.

The main limitation of the present study is the conduction of the study in one city and among those working in primary care centers belonging to the MOH, which might limit the generalizability of findings over the entire population of family physicians all over the Kingdom or even in Abha City. Another important limitation is the relatively small sample size, which did not allow us to find statistically significant findings in some comparisons. Despite those limitations, the study is very important in exploring some difficulties faced by family physicians at primary care centers and these findings could be of importance for policy makers.

In conclusion, PHC family physicians in Abha City face several difficulties at the workplace. These difficulties are related to transportation and staff, such as shortage of nurses, unavailability of radiologist, radiology technician and driver or related to infrastructure and work environment such as poor biomedical service and unavailability of cafeteria, internet connection and staff toilet or related to diagnostic, immunization, and pharmacy services, such as problems receiving radiology report from referral facility or reference laboratory, insufficient laboratory test kits and unavailability of ultrasound equipment. There are differences between male and female physicians regarding some of these difficulties, such as transportation and unavailability of ultrasound equipment which are more among female physicians, whereas missing patients' files is more faced by male physicians. Family physicians are satisfied with clinics, working hours, job, and working

environment. On the other hand, they are dissatisfied with laboratory, medical records, and radiology services. Female physicians are more satisfied than males regarding laboratory services, while male physicians are more satisfied with working hours. Therefore, the Saudi MOH should provide all essential equipment and supplies to improve physician satisfaction. Difficulties related to infrastructure might need a specific authority to plan, monitor and care for them.

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Remote consultations; what you need to know

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Received: August 2020; Accepted:September 2020; Published: October 1, 2020.
Citation: Rubena Ali Malik, Philip Sadler. Remote consultations; what you need to know. World Family Medicine. 2020; 18(10): 103-106 DOI: 10.5742/MEWFM.2020.93880

Abstract

The Covid-19 pandemic has expedited the need for health services to consult remotely; this is to ensure the safety of health professionals and patients by reducing disease transmission rates. This review and useful guide will increase confidence with remote consulting. A health professional can feel overwhelmed and worry about risks to consulting on the telephone or via videocall. Most clinicians have experience in telemedicine and virtual consults. There are many benefits which range from convenience, less time consuming and cost effectiveness. Virtual consultation is a new skill that clinicians will need to get comfortable with and by transferring their practiced and mastered consultation skills this will aid transition in remote consulting. Understanding the challenges and how to overcome these will give assurance and prevent medicolegal issues occurring. Importance needs to be placed on consent, capacity, confidentiality, effective communication and consultation skills, correct patient assessment, safe prescribing and comprehensive documentation. Quality of care must not be compromised and we must continue teamwork and sharing of information where necessary. The General Medical Council in the UK gives clear guidance on remote consulting and how to decide if this is best path. Clinicians should feel reassured that converting to face to face consultations is still an option and are there as a back-up should it be needed after a risk assessment.

In these unpredictable times, a health care professional needs to be able to work a mix of face to face consultations and remotely as this will become our normal working patterns.

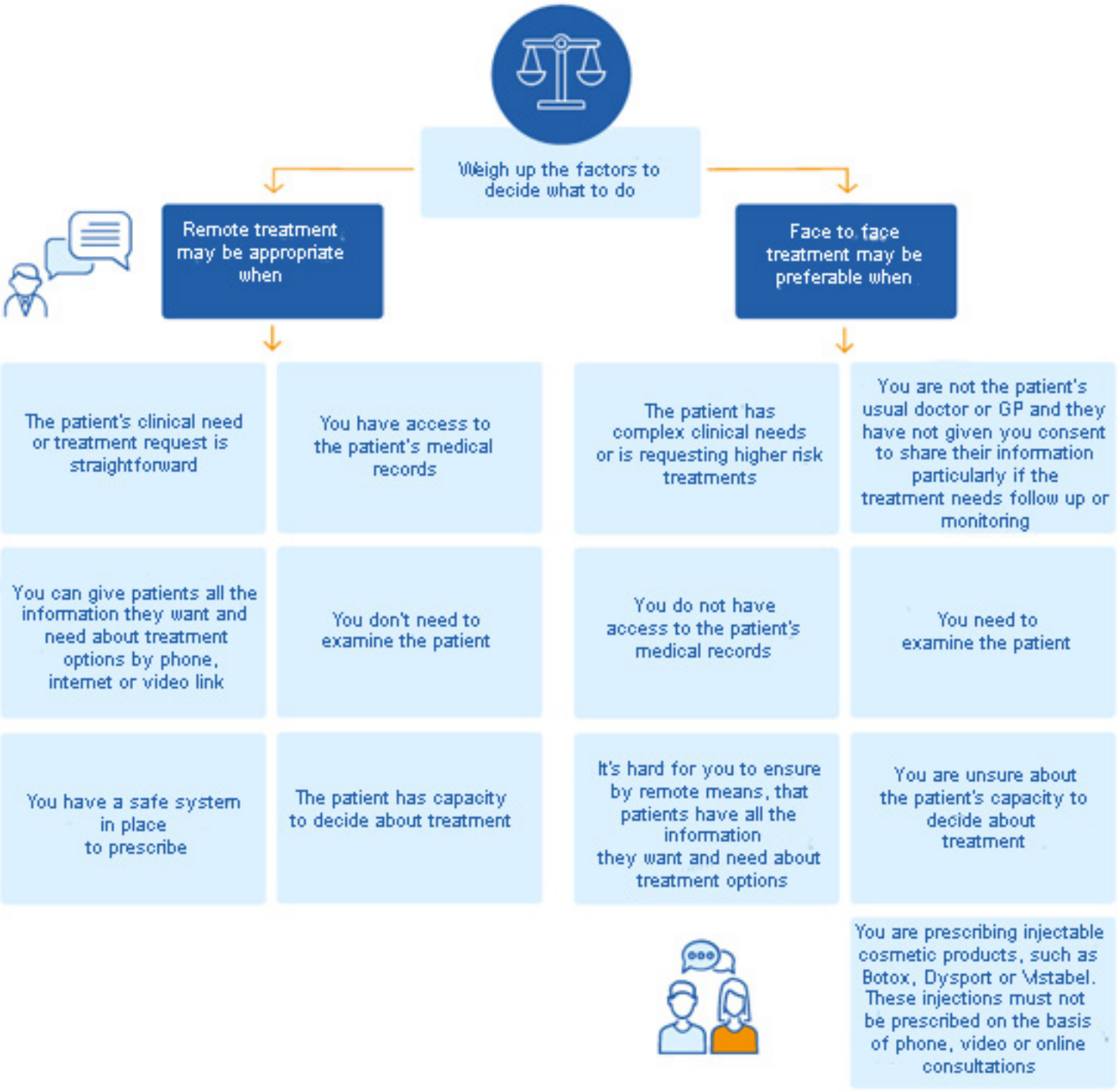
Key words: remote consultations, medicolegal

Introduction

Remote consultation is not a new skill for General Practitioners (GPs) as most of us do this as part of our routine day. It can be a telephone call or virtual consultation via programmes like Skype, Facetime or Zoom. In the UK there has always been a push towards remote consultation as people's lives evolve and become busier and this method of consulting has to be easily accessible. Also, with the introduction of the new primary care contract in April 2020 all practices have to do online consultations and by April 2021 must provide video consultations. Covid-19 has accelerated the implementation of remote consultations to ensure safety to health care professionals and our patients by minimizing the risk of transmission of coronavirus. There are challenges for clinicians that range from consulting, technical issues and medicolegal aspects. However, there are many benefits when we are in uncertain times of a pandemic; financial efficiency and clinical effectiveness. If clinicians or patients are self-isolating or shielding, if patients are in a care home, those working from home, if patients just need reassurance or patient's clinical need is simple, those with work commitments or childcare issues and those with mental health issues are examples of situations that benefit from remote consultations as time saving and less stressful for many.

General Medical Council (GMC) Advice

The GMC have developed an excellent flowchart in helping decide if remote consultation is appropriate (5).



Health care professionals need to ensure good practice with the following points to adhere to:

- Consent including checking capacity
- Privacy and confidentiality
- Continuity of care
- Empathy and patient centred communication
- Safe prescribing
- Rigorous documentation
- Work within competence
- Do not compromise on quality

Challenges

Despite being in the 21st century and advancements in technology we cannot always guarantee the line will be clear and working so patients need to be prepared for this. There needs to be a secure internet connection and use of an organisation approved device with appropriate software and smartcard access. Another challenge is with many now working from home is finding a quiet empty space to get on with consulting and if working in an office ensuring there is space for all. Leading on from this, continuity of care can be difficult with consulting patients who we do not know, so we need to communicate with our team and document competently. Patients can present with a variety of problems and more complex sensitive issues are better dealt with face to face. For example, can we break bad news on a telephone/video consultation? It can be very impersonal to the patient and uncomfortable for us as clinicians. If there are issues of safeguarding or an examination is needed consent needs to be obtained to take images and save them in patient records, but again see them if needed. Other complex consultations include, language barriers, patients with learning disabilities, patients with physical disabilities e.g. the deaf, the blind, those paralyzed and those with mental health issues. With experience we can map out how best to deal with such situations effectively whether that be using a live translation service online whilst virtually consulting or arranging a virtual multidisciplinary team meeting for those with mental health issues or learning/physical disabilities. Can clinicians use their highly mastered consultation skills on the phone and virtually? Skills can definitely be applied and adjusted to the type of consultation conducted but after assessing risk it may be more effective for a face to face consultation. As health professionals the more we absorb and participate in this new culture we will become aware of its limitations and what engages our patients best.

Medicolegal advice

In an increasingly litigious society, many health professionals understandably have concerns from a medicolegal aspect when it comes to remote consultation which are fraught with the potential for complaints or even legal action. Firstly, check that your indemnity covers remote consultation. A number of alerting points were highlighted in a Care Quality Commission (CQC) 2018 report on the condition of care in independent online primary health services:

- unsuitable prescribing of antibiotics and over prescribing of opioid-based medicines without talking to the patient's registered GP
- unacceptable methods of safeguarding children and those lacking mental capacity to understand or consent to a consultation
- not collecting patient information or sharing information with a patient's GP
- inappropriate prescribing of medicines for chronic diseases.

Consent and checking capacity should be at the forefront of remote consulting as the patient needs informing of clinical limitations, consent to record the consultation, consent to take and store images if necessary and be made aware of potential security breaches. The next is ensuring both clinician and patient are in private settings so to maintain confidentiality. Patients need to be assessed effectively, adequately reassured with safe prescribing especially when consulting with patients who are not known to the clinician. High quality of consulting must be maintained but it can be difficult to interpret discussions over the phone or video call and this is where misunderstanding, break down in rapport and misdiagnosis can occur. There needs to be robust documentation primarily to communicate with other health professionals to ensure continuity of care, and to provide a reference should things go wrong. Following the above will remove insecurities both patient and clinician have, giving confidence in this process which is to be the new norm.

Conclusion

From this short review you can see there are many skills we already practice in face to face consultations that we can transfer to remote consultation. Planning and setting up the process beforehand will ensure it is smooth running for both health professionals and patients but we need to accept there may be problems. Decide if remote consultation is appropriate when you triage the patient and feel reassured you have a back up plan of seeing the patient face to face. Remember the ethics of consulting remotely and discuss with colleagues if there is anything you feel uncomfortable with. Remember your skills of consultation and communication skills, pick up on (and provide) non-verbal cues and show empathy as you would if the patient was sat in front of you. It is challenging times for all but we need to ensure the safety of health professionals and patients without comprising on quality and safety of care.

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Bridging The Gap: A review of communication skills challenges for expatriate doctors in the Arabian Gulf

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Received: August 2020; Accepted:September 2020; Published: October 1, 2020.
Citation: Asif Parvez Malik, Ameer Muhammad Khan. Bridging The Gap: A review of communication skills challenges for expatriate doctors in the Arabian Gulf. World Family Medicine. 2020; 18(10): 107-111 DOI: 10.5742/MEWFM.2020.9381

Abstract

Good interpersonal communication has always been a part of everyday life, and is imperative for an effective doctor-patient relationship, not least for those practising Family Medicine. However, the movement of doctors around the world brings with it discordance in language and culture, which can bring about a challenge to communication skills in this doctor-patient relationship. This challenge to delivering quality healthcare may be evident in the Arabian Gulf where many expatriate doctors of a non-Arabic speaking background are employed.
The aim of this literature review, focussing on the Arabian Gulf, was to see the potential communication challenges faced between expatriate doctors and patients of an Arabic-speaking background. A review of important literature is presented from the perspectives of patients, nurses and medical students.

This review has added to the existing literature by finding that language-barriers are just the beginning of the communication challenges that can inhibit the relationship between health professional and patient. Although there is enough to highlight awareness of the problem, among a lack of research, there is a lack of perspective found from expatriate doctors. This among other perspectives, including all healthcare providers and patients, is needed to guide further research into the needs of those involved in the relationship between patient and healthcare provider. Future research, best directed across the Arabic-speaking world, can guide the implementation of improved language and communication skills training, leading to the delivery of better quality healthcare across the region.

Key words: communication, expatriate doctors, Arabian gulf

Introduction

Interpersonal communication is paramount to establishing professional relationships. It is the medium through which relationships are defined and benefit derived. One of the key interactions in which this is realised is that between the doctor and patient. Over the last 40 years the domain of communication skills from its beginnings in Western Europe has forged a well-established place in medical education and practice [1]. It is also considered to be the cornerstone of Family Medicine Physician post-graduate training [2]. In the midst of a fast-paced world where communication carries a different and rather virtual reality to what we have known before, the contemporary Primary Care Physician is seen to be at the forefront of knowing their patient, enhancing the professional yet interpersonal doctor-patient relationship through good verbal and non-verbal communication skills [3], thus increasing a patient's satisfaction on their journey of wellbeing through life [3].

In a globally evolving medical diaspora, one of the key and often critical perceived barriers to effective communication between doctor and patient is when each speaks a language which is foreign to the other. Without wanting to state the obvious, miscommunications in medicine due to language barriers can go as far as being life-threatening if key information is missed depending on the context [4].

One of the regions which is rapidly coming to the forefront of this evolving medical diaspora is the Arabian Gulf [5]. Doctors are among the many professionals which make up the large expatriate communities in GCC countries including the state of Qatar where Arabic is the national language [6]. Despite this, a doctor's knowledge of the Arabic language across most of the region appears to be at most, a mere recommendation rather than a requirement for the license to practice in most parts of the GCC [7][8].

This literature review aims to explore the discourse surrounding communication challenges between doctor and patient, through the medium of Arabic language, with Arabic-speaking patients, in the Arabian Gulf. The questions which will be explored are; what does existing evidence suggest regarding mutual language being key to improved patient-practitioner relations? How important is it for an expatriate doctor in the GCC to be able to communicate in Arabic with their patients? What are the challenges faced by health professionals and patients in such an ethnically diverse community? How should expatriate medical practitioners working in the Arabian Gulf respond to these findings?

In doing so this paper hopes to add to the current debates discussing whether speaking the language of the community should be a requirement for expatriate doctors.

Findings

A number of scholarly articles were reviewed from varying perspectives. This included a patient-perspective study on language-discordance (when health-care provider and patient don't speak the same language) in an outpatient setting in Qatar [9], a review on nursing perspectives to communication barriers on various studies in Saudi Arabia [10] and the viewpoint of native Arabic-speaking medical students in the UAE [11]. Attitudes towards interpreters were also considered through the lens of migrant Arabic-speaking patients in Sweden [12].

Abdelrahim et al, outline the current language discordance between patients and health care providers in a hospital outpatient context in Qatar [9]. This was a multilingual and multicultural study with 24 out of the 84 patients interviewed being Arab-speaking. Patients were interviewed for their perspectives and experiences with language discordance. This study found that most patients had experienced language barriers during their visits to clinics. Among the reasons reported for these barriers were the dominance of English language in the hospital setting [9], [8]. Participants in the study reported a hindrance in the doctor-patient relationship, and a lack of information preventing informed decision-making. Patients also reported adaptive methods used to overcome language barriers such as involving incidental interpreters or relatives and friends for interpretation. Abdelrahim et al, also reported that patients had taken upon themselves strategies to learn Arabic or English [9].

A significant integrated review from Saudi Arabia [10], where most patients are Arabic-speaking, derived from studies with a nursing perspective, also found experiences of language and culture clashes with Saudi patients.

A further study conducted in Sweden [12], where Arabic-speaking migrant patients were interviewed with regards to their experiences with interpreters, corroborates the above findings. Participants in the study reported that although they were happy that interpreters facilitated verbal communication between them and the doctor, they found it difficult to express themselves if the interpreter did not share their dialect, culture or national identity [12].

The closest study to exploring the attitudes among medical professionals communicating in Arabic was carried out with Arabic-speaking medical students at UAE University [11]. Via questionnaires a small sample was asked about their confidence in consulting patients in Arabic after having been taught communication skills in English. Despite all students surveyed being native Arabic speakers, only 27.8% felt confident to communicate with patients in Arabic while 72.2% said they were confident to communicate in English [11].

This research has thus far concluded that the language-barrier as well as cultural differences, both served to inhibit communication between practitioners and their patients in the Middle Eastern context.

However, Abdelrahim et al, further suggested that as Arabic is one of many languages spoken in the Arabian Gulf [9], would it therefore be unfeasible to expect expatriate doctors to learn Arabic amidst a multilingual community and where English has become the lingua franca?

Analysis

On review, there was very little literature studying or discussing this subject matter and particularly what it means for a migrant population of expatriate doctors. However, there are quite a few interesting points of discussion which may guide further research.

1. Language is just the beginning

Some studies in the Western World have suggested that language-discordance between clinician and patient is a hindrance to communication [13]. Abdelrahim et al, provide an insight into language-related difficulties and the effects from them that patients perceive [9]. Some patients in the study felt that language-discordance hindered the doctor-patient relationship, one even going as far as saying 'it made the doctor seem unfriendly' [9]. It's very interesting to see that there is a universal desire for patients to have an interpersonal and comfortable relationship in their interface with the clinician. As other participants pointed out, this would clearly improve information sharing and improve the level of autonomy that patients have in the quality of their care [9]. The consequences of language-discordance are seen not just from patients' perspectives but also from the point of view of a clinician. In Saudi Arabia, nurses reported difficulty in providing good quality of care due to the inability to speak and understand the Arabic Language [10]. Amongst the few studies were reports of the language barrier affecting end of life care discussions [14], family-centred care [15], and the ability to carry out duties [16].

The consequences of language-discordance are clear to see. However, meeting patient language requirements is just the beginning in the pursuit of effective communication skills and the provision of quality healthcare. By the researchers' own admissions, Abdelrahim et al, did not look comprehensively at communication challenges for Qatari native patients, as the study focussed specifically on language-discordance [9]. However, the review of nursing care in Saudi Arabia [10] reports frequently on how a clash of cultures hinders the health professional in understanding patients' needs. Many communication skills such as establishing rapport, and recognising verbal and non-verbal cues are embedded in recognising and understanding the culture and values of a patient.

In the Swedish study Hadziabdic and Hjelm identified that most patients were happy to have an interpreter in order to aid verbal communication, which would have otherwise been impossible in that particular context [12]. However, the desire for a shared identity with the interpreter which most participants sought shows a clear desire for a relationship that goes beyond language concordance. The wish to share culture, identity and even country and dialect gives an idea of the further understanding required to enhance communication with people of a Middle Eastern background. Therefore, is language alone enough to suitably break down communication barriers?

Mirza and Hashim primarily focus on the implications of a communication skills training programme routed in western culture [11]. Although from the perspective of medical students, this study may serve to provide an idea of the challenge for expatriate doctors to meet Arabic language requirements, and therefore provide good quality of care through effective communication skills. This is worth noting considering the proportion of Arabic-speaking students who felt unconfident to take a history in Arabic [11]. What then for those who are non-Arabic speakers?

2. Are interpreters enough?

The advantages and potential pitfalls of interpreter use have been discussed above. In their paper, Hadziabdic and Hjelm recognise that interpreters were found to have variation in the ability to translate [12]. This may also be a difficulty with the health professional so certainly doesn't negate the use of an interpreter. However, it should also be considered that an interpreter brings a third party to the relationship, and with that all its implications. An understanding and relationship between doctor and interpreter becomes just as important as the relationship between interpreter and patient, in order to achieve the higher goal of a good doctor-patient relationship. This skill required can vary depending on whether this interpreter is a professional or a relative and possession of the identity factors mentioned above.

In an ideal world, the doctor should be able to speak the same language as the patient. But surely for a doctor to anticipate and know the language of every patient they encounter is an insurmountable task? However, if the language in question is the official language of a country, as is the case with Arabic in all countries in the Arabian Gulf, is it too much to require doctors to be able to speak that language? "Why is English required in an Arab country" was the frustration of one Arabic-speaking participant in the study conducted in Qatar [9], a study where a lot of the Arab-speaking participants were appropriately concerned about the dominance of the English language in the hospital setting. The authors can testify to the fact that in the Western setting the ability to speak English is a pre-requisite for any health professional. The British regulatory body for doctors, The General Medical Council, stipulate knowledge of the English language as a prerequisite for the license to practice in the UK [17]. Why then is Arabic not a prerequisite in large parts of the Arabian Gulf? This remains yet to be explored.

3. Perspectives

Despite the limited number of studies and sample sizes, this review has managed to elucidate perspectives of Arab-speaking patients [9], [14], Nurses [10], [15], [16] and medical students [11]. In the pursuit of developing quality healthcare in a two-sided relationship it would

make sense to know the views of both parties of that relationship. However, the perspective of the expatriate doctor in the Arabian Gulf, which is the import of this discussion, can only be elucidated through analogy in this review, and therefore requires further research. The greatest source of this so-called analogy is the study conducted at the UAE University [11]. Medical students are the doctors of the future and the earlier they can be trained for a particular clinical context, the better. The struggles of a non-Arabic speaking doctor are merely left to the imagination considering the challenges faced by a native Arabic medical student. However, as close as this study came, it is also very far from understanding the difficulties for an expatriate doctor. The participants in this survey were third-year medical students who were yet to approach the clinical setting. There is a chasm of difference assessing their confidence in history-taking in Arabic and the views of a qualified Family Medicine Consultant who is likely to possess skills and experiences which transcend languages and cultures. A clinician experienced in communications skills would have a better understanding of how language and culture impact those skills, reflecting on fitness to practice and quality of care, rather than someone who has just been recently trained in those skills. Somewhat similar limitations can be found when trying to analogise from a nursing perspective to a doctor's perspective if one is to appreciate that these are two very different careers requiring different skills and experiences. Having said that all perspectives are useful, and certainly for the import of this discussion further study is required into the perspectives of patients and doctors in order to expand the body of research in this area.

Conclusions and future implications

This literature review highlights the importance of health professionals understanding patient language, culture and values in order to deliver safe, effective and quality healthcare. Studies in Arabian Gulf states have shown that language-discordance as well as lack of cultural awareness can be a barrier to good communication thus hindering the doctor-patient relationship. Having said that the studies found in this research are very limited to say the least and illustrate the need for deeper exploration of this topic, particularly from the perspective of an expatriate doctor. Although the authors of this article consider it important for expatriate doctors relocating in the Middle East to be able to speak Arabic, qualitative perspectives are required from a wide range of parties. It is vital to hear more from patients and certainly in the interests of this research, doctors. From this, needs can be fully assessed whether that be a patient's unmet needs or a doctor's educational needs in order to enhance communication in this two-way relationship. Once such needs are elucidated, only then can those needs be met by implementation of quality training. Perspectives from all relevant parties, qualitative study in greater quantity, are needed, whether it be patients, relatives, doctors, nurses and all health professionals. This would include looking more at the challenges of language-discordance, communication-barriers and cultural awareness. It is hoped further research will be carried out across the Arabic-speaking world. From this more attitudes and opinions can be discerned with regards to learning language as well as the challenges of culture, dialect, identity and values in developing communications skills. With all the above taken into account, then and only then, can healthcare systems across the Arabian Gulf begin bridging the gap.

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Recognising depression in elderly patients in general practice

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Received: September 2020; Accepted:September 2020; Published: October 1, 2020.
Citation: Mohammed Ansary. Recognising depression in elderly patients in general practice. World Family Medicine. 2020; 18(10): 112-114 DOI: 10.5742/MEWFM.2020.93882

Abstract

Background: Older patients with depression may not complain of sadness or feeling depressed on presentation. Delay in diagnosis can cause significant suffering to the patient and their families with increased health expenditure resulting from complications.

Objective: This article outlines an approach to help with diagnosis and assessment, of elderly patients with depression in the primary healthcare setting.

Discussion: Recognising depression in old people is not always easy as its presentation may differ from that of younger people. Older people tend to under report depressive symptoms and may not concede that they are depressed. This could be due to age, lack of cognisance of the disorder, shame or a belief in not talking about depression or admitting to not coping - it may also be embedded in their culture. Some common depressive symptoms such as poor sleep, chronic unexplained pain, poor concentration or impaired memory are wrongly ascribed to old age, dementia or poor health. As a result, depression in old age may go undetected and untreated for a long time. An assessment process which is less time consuming but has high sensitivity leading to the direct diagnosis of depression can help general practitioners in their busy general practice to facilitate management tailored to individual needs.

Key words: depression, elderly patients, general practice

Types of depression

Major Depression: Severe symptoms that interfere with ability to work, sleep, concentrate, eat, and enjoy life. Most people would experience multiple episodes, although some may experience only a single episode in their lifetime.

Persistent depressive disorder (Dysthymia): Symptoms are less severe than those of major depression but last a long time (at least two years).

Minor Depression: Symptoms that are less severe than those of major depression and dysthymia, and symptoms do not last long (1) [National institute of Mental Health, NIH].

Presenting symptoms of older patients with depression

The frequently encountered symptoms of late-life depression are persistent low mood or sadness (lasting two weeks or more), low energy, feeling hopeless or worthless, fidgeting and pacing, uncontrolled worries about health or finances, poor attention and concentration, sleep disruption, weight changes, other physical symptoms such as chronic inexplicable pain or gastrointestinal symptoms. Such symptoms on presentation should raise some suspicion in the general practitioner to consider further assessment for depression. One should bear in mind that older people tend not to divulge depressive symptoms and may not always acknowledge being sad or depressed. This could be due to age, shame or belief in not talking about depression or coping poorly (2). [Depression in older people, Black dog institute]. Depression with agitation is common and biological symptoms may not manifest that often. One important sign of depression is when people isolate themselves socially. Often depressed persons will give divergent explanations rather than explaining their symptoms as a medical illness. The cognitive and functional impairment and anxiety are more common in older people than in younger adults with depression.

Why to assess for depression

Depression in older adults (65 years and older) is associated with emotional suffering. It increases the costs of health care, morbidity, risk of suicide, and mortality. Depression is common and remains a significant problem for older adults (3).

Medical illnesses are a common trigger for depression in the older population and often it worsens the symptoms of physical illness. Correct early diagnosis and treatment would reduce the physician's workload as physical symptoms will decrease with resolution of depression (4). The results of non-treatment may lead to non-adherence with medication and other treatments, self-neglect, or non-attendance at clinic.

Assessment in general practice

A thorough history, corroborative information and mental state examination is required for proper diagnosis. It is essential to do a physical examination. Investigations to consider when depression is suspected; Full blood count, Urea and electrolytes, Liver function tests, Thyroid function tests Vitamin B12, Folate, Fasting glucose, Bone profile, Further tests dictated by clinical presentation.

Severity can be assessed by DSM V (Diagnostic and Statistical Manual; in Australia) or ICD -10 criteria. However minor depression which is more common in the elderly will not fulfil the necessary criteria for major depression (5).
When screening is positive for depression, the diagnosis should be confirmed using DSM-V or ICD-10 criteria. When symptoms do not meet the criteria for depression, other mental health disorders should be considered, such as bereavement, dysthymia, medication induced depressive disorder (6). The primary care physician will not have enough time to complete the assessment in one sitting although recognition can be achieved accurately within routine consultations. It is worthwhile to arrange follow up appointments which will provide additional time to allow not only recognising the illness, but also to device management plan and establishing a therapeutic relationship with the patient (6). Opportunistically the annual health assessment may be used for screening.

Discerning Depression Delirium and Dementia: Depression, delirium and dementia can all present in a similar way, hence it is important to distinguish depression from the others. Typically, an acute behavioural or mood change is suggestive of delirium. Once medical conditions are excluded, depressive symptoms characterised by more pervasive or chronic low mood state with or without cognitive impairment should be considered. Patients with dementia are less likely to report their problems than are the patents with depression (7).

Scales used for assessment of depression : The Geriatric Depression Scale has been validated the best among the depression screening instruments (8) and is suggested for routine use in primary health care service due to its high sensitivity (9). The majority of patients screening positive for depression will not meet criteria for major depression and screening instruments are not sufficient for diagnosis, but this would indicate the need for more detailed follow-up by the primary care physician to determine whether the person's depressive disorder progresses, and to explore other possible causes for depression (such as hypothyroidism or medication or substance use) and assess for co-existing psychiatric disorders (10). The Cornell Scale for Depression in Dementia (CSDD) is suitable for patients with dementia (4).

How to improve recognition

There are some doctors who are more adept in recognising depression than others. Such physicians tend to make more eye contact with the patient and are generally good listeners. They tend to ask direct, informed questions with psychological or social content. Certain behaviours in doctors can make it more difficult to detect depression as they may inhibit the distressed patient by asking closed questions or questions derived from theory rather than from the patient's unique situation (11).

Studies have shown that greater identification occurs in those consultations where patients mention psychological symptoms early and mention more symptoms; where the consultation is longer; and where the doctor shows high empathy and tolerance while also following up the patient's answers with further discussion. It is also advantageous if the physician is able to comprehend non-verbal behaviour (6).

Interview skills training has been shown to improve recognition of depression and other mental disorders as the skills taught are maintained over time and have an impact on satisfaction and outcome (6).

Conclusion

Depression in elderly can be difficult to diagnose. Failure to identify and treat depression increases mortality and morbidity in the elderly population increasing demands on relatives, health and social services. Early detection and management will reduce the workload of the physician in the medium to long term. Family physicians can increase their ability to recognise depression by improving interview skills and undertaking mental health skills training and using appropriate tools for diagnosis.

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CADASIL (Cerebral Autosomal Dominant Arteriopathy with Subcortical Infarcts and Leukoencephalopathy) in a young adult with migraine

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Received: September 2020; Accepted:September 2020; Published: October 1, 2020.
Citation: Mohammed Ansary. CADASIL (Cerebral Autosomal Dominant Arteriopathy with Subcortical Infarcts and Leukoencephalopathy) in a young adult with migraine. World Family Medicine. 2020; 18(10): 115-116
DOI: 10.5742/MEWFM.2020.93883

Case Presentation

A 44-year-old female presented to our practice with the complaints of sudden onset of severe headache and migraine associated with visual aura, dizziness and fogginess in her head. This was her first episode of the kind and she could only see through half of her vision. She was having daily headaches and migraine in the lead up to this episode.

Past medical history included depression, migraine and rosacea. She was medicated with citalopram 20 mg daily for treatment of depression and was on minocycline 50 mg twice daily for rosacea.

On physical examination she had malar rash, her visual acuity was normal with no evidence of papilloedema or vascular changes. Extra ocular movements were normal. The rest of the cranial nerves' examination were normal. Upper and lower limb examinations were normal. A gait examination did not reveal any abnormality. Cognitive assessment was unremarkable.

As part of the initial assessment and due to suspicion of a possible intracranial pathology a CT brain scan was performed, showing patchy low-density regions throughout the white matter and a recommendation was made for an MRI scan for a detailed assessment. The patient was referred to a neurologist and subsequent investigation with MRI revealed extensive bilateral periventricular and deep white matter hyper intensity throughout the cerebral hemispheres as well as anteromedial aspects of the anterior temporal poles bilaterally, favouring CADASIL. Differentials considered were, Systemic Lupus Erythematous (SLE), CADASIL and Fabry disease. Further investigations included serum autoantibodies, inflammatory markers, spinal fluid analysis and thrombophilia screen which returned normal results. For confirmation of diagnosis of CADASIL patient was referred for skin biopsy by a dermatologist. A confirmed diagnosis of CADASIL was made by presence of osmophilic granular deposits in the arterioles. Investigation for Fabry disease was deferred.

Corroborative history was taken from family members. Patient's mother suffered from migraine and was under care of a neurologist. Patient's father had long standing history of epilepsy, since the age 18. No other relevant history of note. Both parents were alive, both were in their late sixties and none were diagnosed with CADASIL.

The patient declined genetic testing and following skin biopsy, declined genetic counselling initially due to fear of implications it held for her three young children. After further discussions with empathetic approach, the family decided to have genetic counselling.

Discussion

Cerebral Autosomal Dominant Arteriopathy with Subcortical Infarcts and Leukoencephalopathy (CADASIL) is a hereditary vascular disease the onset of which can be early causing multiple asymptomatic strokes and commonly accompanied by migraine, psychiatric symptoms i.e depression and progressively severe neurological deficits over a period of time (1). MRI of the brain can be an important tool to aid diagnosis. A pathognomonic feature of the condition is typical involvement of the temporal lobes and external capsule. MRI changes have been detected in younger adults even below the age of 35 (2,3,4). Most affected individuals with CADASIL will have an affected parent. Nevertheless no apparent family history of CADASIL should not preclude the diagnosis, for example, the case mentioned above (5,6). A conclusive diagnosis of the condition requires genetic testing detecting mutation in NOTCH 3 gene or electron microscopy of skin biopsy specimens showing osmophilic granular deposits in the arterioles (7). However, a significant proportion of genetic testing for CADASIL may yield false negative results. If there is strong suspicion for the disease, a skin biopsy should be considered (7).

Conclusion

The case of CADASIL reported, in addition to the typical MRI findings, was confirmed by presence of granular deposits in the arterioles, from skin biopsy. The patent's presentation with worsening migraine and aura were consistent with those mentioned in literature. Important information not to be missed here was the history of depression, which is also well recognised, evident from the studies. The patients' refusal to have genetic testing and later declining genetic counselling indicates how the affected individuals are confronted with such a predicament in the diagnostic process and management planning.

Important learning points

1. CADASIL should be considered a possible cause in patients with migraine and aura associated with psychiatric disorder i.e. depression
2. A lack of apparent family history should not preclude the diagnosis of CADASIL.
3. Diagnosis of affected patients will allow family members to seek genetic counselling, but one has to be mindful of the predicament of the affected individual which may hinder management.
4. MRI scan of the brain can be an important diagnostic aid.

Ethical concerns: Consent for case presentation taken from patient.
Conflict of interest: None

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The authors concluded that the majority had good overall knowledge and attitude towards their disease. Despite that, self-care practices were mediocre. We still have miles to go in ensuring that every patient regardless of their education not only fully comprehends but also implements their self-care practices rigorously via educational and awareness programs.

Binod & Sushil followed a cross-sectional study to assess level of awareness and pattern of utilizing family planning methods among married women (20-45 years) of reproductive age in Duwakot, Bhaktapur. Knowledge about different contraceptive methods was present among majority (88.89%) of respondents. 73.75 % respondents were using contraceptive method at the time of study. The authors concluded that good number of women was aware about the contraceptive methods but the practice of contraception in the Duwakot and utilization of family planning services were low. The gap between knowledge and implementation in contraceptive methods was found in the study population. This shows the need for more informative awareness campaigns for promoting contraceptive utilization.

Dr Ansary, outlined an approach to help with diagnosis and assessment, of elderly patients with depression in the primary healthcare setting. He stressed that recognizing depression in old people is not always easy as its presentation may differ from that of younger people. Older people tend to underreport depressive symptoms and may not concede that they are depressed. This could be due to age, lack of cognizance of the disorder, shame or a belief in not talking about depression or admitting to not coping - it may also be embedded in their culture. As a result, depression in old age may go undetected and untreated for a long time. An assessment process which is less time consuming but has high sensitivity leading to the direct diagnosis of depression can help general practitioners in their busy general practice to facilitate management tailored to individual needs.

Arshad et al., did a Cross sectional study was conducted to determine the perceptions of parents regarding polio vaccination at National Institute of Child Health in Karachi. The author concluded that Pakistan is among three countries in which polio is still endemic. Most of the cases sprouting up in the city are from slum areas where majority of population is uneducated. Several religious and fictional beliefs and misconceptions have been playing a pivotal role in keeping polio endemic in the area despite many sincere efforts of government. More efforts are needed to be done in this respect particularly in educating parents of children and carrying out social campaigns to spread awareness among every single parent and make them affirm that polio is preventable and by only vaccinating their children they can save them from this disease

Shehata et al., tried to assess Prevalence of primary headache among King Khalid University students in 2019. He used a descriptive cross-sectional approach. Data were collected from participants using electronic pre-structured questionnaire. The study included 421 students whose ages ranged from 18 to 30 years with mean age of 21.7 ± 1.9 years old. The authors concluded that , more than three quarters of the students complained of moderate to severe headache attacks which was mainly related to sleeping disturbance, studying hours, and stressful lifestyle. Students should be learned strategies for stress management training for headache

Dr Razan did a descriptive cross-sectional survey to assess knowledge, attitude and practice of school teachers regarding T1DM and its acute complications. She included 499 teachers. With regards to teachers' awareness regarding T12DM among students, 91.2% of the teachers mentioned that T1DM leads to polyuria in diabetic student, 89.6% reported that DM leads to polydipsia, and 77.6% told that tremors and sweating means hypoglycaemia in diabetic student. The authors concluded that good level of knowledge, practice and positive attitude of school teachers towards T1DM students. It is suggested to increase the role of schools by establishing educational and training programs for teachers, especially teachers who showed their willing to join such programs. More trained personnel should be present in schools to deal with T1DM students.

Awan et al., did a qualitative study involving semi-structured interviews in which ten people diagnosed with mental illness from a Lancashire practice and ten GPs including stakeholders within the Clinical Commissioning Group were interviewed. Interview data was subject to thematic analysis. The purpose of this study was to explore the barriers and facilitators of the Making Every Contact Count (MECC) approach, an opportunistic health promotion strategy for improving the physical health of patients with diagnosed mental illness in primary care. The authors concluded that Poor physical health of patients diagnosed with mental illness can be addressed using a 'making every contact count'-based approach. MECC is a low-resource approach based on building a relationship of trust and casually introducing physical health as a topic of conversation as the opportunity arises. The research highlights barriers and facilitators to doing this within primary care from both patient and clinician perspectives.

Dr Ansary report a case of CADASIL (Cerebral Autosomal Dominant Arteriopathy with Subcortical Infarcts and Leukoencephalopathy) in a young adult with migraine. The patient is A 44-year-old female presented to our practice with the complaints of sudden onset of severe headache and migraine associated with visual aura, dizziness and fogginess in her head. This was her first episode of the kind and she could only see through half of her vision. She was having daily headaches and migraine in the lead up to this episode.

Middle East Journal of Family Medicine / World Family Medicine
medi+WORLD International 2020