

Premarital Counseling and Screening Awareness and Perception among Alfajr College for Science and Technology Medical Students, Khartoum, Sudan, 2021

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Abstract

Background: Premarital counseling and screening is an intervention that helps couples to start a healthy marital life. The screening involves examinations and tests that are performed before marriage to detect certain genetic blood disorders and infectious diseases to prevent and decrease the incidences of these conditions.

Aim: To assess the awareness and perception of premarital counseling and screening among Alfajr College for Science and Technology medical students in 2021.

Method: The study was an observational, descriptive, cross-sectional, institutional-based study conducted in Alfajr College for Science and Technology medical students, Khartoum, Sudan.

The calculated sample size was 300 students. They were distributed by stratified sampling technique between medical students from levels 2 to 5. The study collected data from medical students registered at the College through telephone interview using an adapted questionnaire. The questionnaire covered the socio-demographic characteristics, student awareness about premarital counseling and screening program's components, importance, time and sources of their awareness as well as the perception of the students regarding the program in form of their beliefs and willingness to practice and advocate for the program. Data was analyzed using SPSS software version 16.0. Descriptive and Inferential statistics were used. Ethical considerations were observed throughout the study.

Results: A 100% response rate was obtained from the targeted students. Participants who had an idea about Premarital Counseling and Screening constituted 78.7% of the sample. The commonest source of information (49.6%) was social media, followed by college staff (27.1%) and friends (22%). The health care services were the least common source of information (1.3%).

Two-thirds of the study participants knew the importance of Premarital Counseling and Screening. The knowledge score was high in 36.7% of the participants, moderate in 34% and low in 29.3%. There was a statistically significant association between the knowledge score and age (p -value $< .0001$) which indicates that young age students need to be addressed to increase their awareness. Also, there was a statistically significant association between knowledge score, willingness to practice and advocacy for Premarital Counseling and Screening (p . value $< .0001$). Furthermore, the study showed equal (50%) positive and negative perception scores despite the majority (71.3%) of the students believed that the Premarital Counseling and Screening is important.

Conclusion: knowledge is a strong determinant of students' willingness to practice Premarital Counseling and Screening. Moreover, knowledge score was significantly associated with the student's willingness to advocate for the program. In this regard, comprehensive and broadly scaled health education programs should address Premarital Counseling and Screening among young adults who are the targeted population to benefit from such programs. The study also indicates that health education programs can be best delivered through social media to young population.

Keywords: *premarital counseling, premarital screening, perception, awareness, medical student.*

Introduction

Premarital counseling and screening (PMCS) is an intervention that helps couples to start a healthier marriage.(1)The screening involves examinations and tests that have to be performed before marriage. The aim is to detect genetic blood disorders and infectious diseases that have health implications on the potential couples and their offspring. Screening coupled with counseling helps to prevent and decrease the incidences and prevalence of these conditions.(2)In the Middle East and North Africa region, consanguineous marriages (especially first-cousin marriages) are common. Recent statistics showed that such marriages constituted 42-67% of all marriages in the Kingdom of Saudi Arabia, 54% in Qatar, 40-54 % in the United Arab Emirates, 29-64% in Jordan, 21-33% in Egypt, 44-63% in Sudan, and 40-45% in Yemen.(3) The World Health Organization (WHO) estimated that at least 2.6% of the world's population are genetic carriers for hemoglobinopathies (2.9% for thalassemia and 2.3% for

sickle cell disease).(4) The Global Report on Birth Defects, issued by March of Dimes Birth Defects Foundation, New York, 2006, ranked Sudan as the highest country with birth defects (82.0 per 1,000 live births), in comparison to the lower rate in France of 39.7 per 1,000 live births.(5) On the other hand, the majority of Sexually Transmitted Infections (STIs) have no or only mild symptoms that may not be recognized as STIs.(6) Hepatitis B is one of the most common causes of liver disease worldwide, Sudan was classified as a country with high sero-prevalence exposure estimated at 47%-78%.(7) Premarital screening is, therefore, an essential tool to control, minimize, and prevent genetic and infectious disorders, with all the health, social and psychological complications that are likely to affect couples and their children.(2) Hence, it is important to explore the knowledge, beliefs and behavior of the population towards the PMCS program. Medical students are the prospective healthcare providers, who are supposed to provide health services and convince their surrounding communities regarding the importance of preconception care and utilization of the available health services. Those students need to obtain more information on reproductive health including premarital counseling, as well as encouragement to utilize premarital counseling services, which should be an essential part of the primary health care services.(8)

This study aimed to assess the awareness and perception of medical students of Alfajr College for Science and Technology (ACST) towards PMCS and to identify some factors which may influence its acceptance among them in 2021.

Materials and Methods

The study was an observational, descriptive, cross- sectional study, conducted during the period from April to June 2021 in ACST. The study population included medical students registered at ACST from the second to the fifth academic year.

Sample size and Sampling

The sample size estimated at 300 students obtained by using the formula:

$$n = \frac{Z^2(pq)}{e^2}$$

where n was the sample size, z = confidence level at 95% and value of 1.96, p = the estimated proportion of the students' knowledge/awareness about PMCS taken from a previous study,(9) as 73.4% ; $q = 1-p = 26.6$; e : margin of error =0.05.

The sample size was distributed to the different levels proportional to their size, thus 17% (51) were taken from students of the fifth level, 27% (81) from the fourth level, 24% (72) from the third level and 32% (96) from the second level. The sampling technique to enroll the participants followed a systemic random selection.

Data collection tools and techniques:

The study collected data through telephone interview using an adapted questionnaire, (4,9,10) which consisted of open and close-ended questions distributed in three sections. The first section was the socio-demographic data including gender, age, academic year and marital status. The second section contained student awareness about PMCS program's components, importance, time and sources of their awareness. The perception of the students regarding PMCS program in form of their beliefs and willingness to practice and advocate for PMCS program was also obtained in this section. The last section was about the determinant factors that enhance awareness and perception of students towards PMCS program. The questionnaire was reviewed and approved by an expert supervisor.

Data analysis:

Data was analyzed using SPSS software version 16.0. Descriptive statistics were carried out and inputs summarized as frequencies and proportions at a

95% confidence level. Inferential statistics using chi-square test was used to test the association between the socio-demographic characteristics and the knowledge and perception scores, willingness to practice and to advocate for PMCS. Statistical significance was taken as $p \leq 0.05$. The knowledge score was valued by categorizing the outputs as: high knowledge for scores 7-9 out of nine, moderate knowledge for 4-6, and low knowledge for 0-3 scores. The same was done for the perception score where those who answered 0-2 or 3-4 of the four perception questions were regarded as having negative and positive perception respectively.

Ethical approval:

Ethical and technical approval were obtained from the department of community medicine at ACST. Written consent was obtained from each student with clarification that their participation is voluntary and the information obtained will be treated with confidentiality.

Results

Sample Coverage and Characteristics of the Study Population

A total of 300 students were interviewed revealing a 100% response rate. The majority of them (97.7%) were Sudanese; almost half of them (55.3%) were females. Fifty-nine percent were in the age group of 15-25 years; while only 2.3% were aged 36 years and above. About one sixth (17%) of the students were married and 52% were living in urban areas. (Table 1)

Table 1: Medical Students Characteristics, Alfajr College for Science and Technology, 2021

Demographic data	Frequency- n=300	Percent
Age		
15-25	177	59.0%
26-35	116	38.7%
36-45	6	2.0%
46-55	1	.3%
Marital status		
Single	246	82.0%
Married	53	17.7%
Divorced	1	.3%
Living area		
Rural area	142	47.35
Urban area	158	52.7%

More than three-quarters of the students (78.7%) had an idea about PMCS. The commonest source of information was social media (49.6%) the second source was from the university (27.1%), while friends were the source for 22% of the participants. Health care services were the least common source for PMCS (only 1.3%).

Around two-thirds (64.3%) of the study participants knew the importance of PMCS in reducing the occurrence of genetic disorders while 50.7% knew that the PMCS program targets genetics and hereditary disorders as well as STIs. about half of the participants knew the place where PMCS services can be provided, it is important for preparation of marriage and it should be done in six months or more before marriage. However, only one third knew that PMCS involves both physical examination and blood testing. (Table 2)

Table (2) Medical Students Knowledge about Premarital Counseling and Screening, Alfajr College for Sciences and Technology, 2021

Knowledge Component: correct statement	Frequency- n=300	Percent
PMCS is important to know about.	214	71.3%
PMCS reduces the occurrence of genetic disorders	193	64.3%
PMCS reduces the occurrence of genetic disorders and STIs	152	50.7%
PMCS services are part of hospital and Primary Health Care settings	143	47.6%
PMCS involves physical examination and blood testing	97	32.3%
The PMCS screening program should involve both partners	206	68.7%
PMCS is important for preparation of marriage	136	45.3%
PMCS, should be done in six months or more before marriage	131	43.7%

Table 3 shows that a low percentage of the students who were willing to practice PMCS; and those who were not willing indicated that their decision was either due to lack of adequate knowledge or due to social and cultural factors.

Table (3) Medical Students Perception about Practice of Premarital Counseling and Screening, Alfajr College for Sciences and Technology, 2021

Perception of actual practice of PMCS	Number of students	Percent
Number of students willing to practice PMCS tests,	117	(39%)
Unwillingness to participate in PMCS was due to lack of adequate knowledge	134	(44.5%)
Unwillingness to participate in PMCS was due to social and cultural factors	99	(33%)

Around one third of students (36.7%) had high knowledge score. Those who had moderate and low knowledge scores were (34%) and (29.3%) respectively. However, the participants were evenly divided between positive and negative perception of PMCS, at scores of 50% for each.

There were significant associations ($p<0.0001$) between *knowledge score* and age. However, there was an insignificant association between *knowledge score* and sex ($p=0.215$), marital status ($p=0.792$) and Living area ($p=0.421$). On the other hand, *Perception score*, was significantly associated with marital status ($p=0.005$), but insignificantly associated with age, sex, and living area (0.182,0.106, and 0.427 respectively).

The result showed a significant association between the *knowledge score* and willingness to practice PMCS and willingness to advocate for PMCS ($p<0.0001$). Similarly, there was a significant association between the *perception score* and willingness to practice PMCS and willingness to advocate PMCS ($p<0.0001$).

Discussion

The importance of PMCS cannot be underestimated, as many countries have confirmed its importance in minimizing the incidence of genetic diseases.(11)In a program like PMCS, there is a need to focus on the target population, mostly young adults like high school and university students because their attitudes will affect their choice of a partner. Most of the international studies were conducted

on young adults.(11) This is comparable to the age of the study population where 59% of the participants' age ranged from 15-25 years. Most of the participants)82%(were single as in Ibrahim Kabbash's study in 2018, which was conducted on the Medical Students of Tanta University, Egypt that revealed 97.7% of participants were single.(12) This is an expected finding since the participants were still students. Our study revealed that the commonest source of information for those who had an idea about PMCS was social media (49.6%) while friends were the source for 22% of the participants. This was unlike a study in Oman which revealed that the main source of information about the PMCS program were family and friends (34.4%) followed by school subjects (30.3%), media and newspaper reports (18.5%) and healthcare services and school nurses 16.8%. (13,14) This indicates that the healthcare services are not as efficient as expected in spreading information on PMCS and more effort is required in this regard.

The findings in other studies regarding various aspects of knowledge related to PMCS were comparable to our study. However, it is possible that respondents from the two Muscat studies were better informed than our study sample about whom to screen and when to screen before marriage. (13, 15). (Table 4)

Table (4) The Score of knowledge about Premarital Counseling and Screening among Students in the Study Sample compared to Findings in Other Similar Studies from the Literature

Correct Statement About Knowledge	Percent in this study (KH)	Data from others studies
PMCS is important to know about.	71.3%	Al-Aama: 86.5% of the participants believed that PMCS is important (16)
PMCS reduces the occurrence of genetic disorders	64.3%	Saudi Arabia: Faisal Saeed Al-Qahtani, 69% of respondents knew that PMCS reduces the occurrence of genetic disorders (9)
PMCS reduces the occurrence of genetic disorders and STIs	50.7%	Muscat Study, Al-Kindi <i>et al</i> (13): 59.8% of the respondents knew that PMCS program targets genetic blood disorders as well as STIs.
PMCS services are part of hospital and Primary Health Care settings	47.6%	Jeddah Study, Ibrahim NK <i>et al</i> (14): 60% of their sample were aware that the hospital was a place for PMCS services.
PMCS involves physical examination and blood testing	32.3%	Muscat-2 study, Al Zeedi <i>et al</i> : 40.2% knew PMCS program includes blood tests and physical examinations.(15)
The PMCS screening program should involve both partners	68.7%	Muscat-2 study, Al Zeedi <i>et al</i> :92.8% knew that the screening test should involve both partners.(15)
PMCS is important for preparation of marriage	45.3%	A region in Oman study, Al-Farisi: Found that 84.5% of the participants believed that PMCS was necessary,(10)
PMCS, should be done in six months or more before marriage	43.7%	Muscat-2 study, Al Zeedi <i>et al</i> : 75.5% of participants knew the exact time.(15) Muscat-1 study, Al-Kindi: 87.9% knew that it must be done before marriage.(13)

Regarding perception of **Premarital Counseling and actual willingness to take part in the screening process, there was reluctance to do so by half of the study sample:** The study showed equal (50%) positive and negative perception scores despite the majority (71.3%) believing that the PMCS is important.

Willingness to actively participate in PMCS was clearly higher in Al-Kindi and coworkers study.(9) Compared to our study sample (Table 5). A common factor for reluctance to participate in PMCS was lack of adequate knowledge and socio-cultural factors (Table 5). Thus, there was a significant association between knowledge score and willingness to practice and advocate for PMCS (p-value .0001). Similarly, there was a significant association between perception score and willingness to practice and advocate for PMCs (p-value .0001).

Table (5) The Score of Perception about Practice of Premarital Counseling and Screening among Students in the Study Sample compared to Responses of Participants in other Similar Studies

Perception of actual practice of PMCS	Percent in this study (KH)	Data from others studies
Number of students willing to practice PMCS tests,	(39%)	Muscat-1 study, Al-Kindi (13) and Saudi Arabia study: Faisal Al-Qahtani (9): about 87% in both studies agreed to undergo the PMCS
Unwillingness to participate in PMCS was due to lack of adequate knowledge	(44.5%)	Sadia Noor: (50.5%) unwillingness to participate in PMCS was due to lack of knowledge,(17)
Unwillingness to participate in PMCS was due to social and cultural factors	(33%)	A region in Oman study, Al-Farisi: 30.5% of the participants were unwilling to practice pre-marital testing, the reluctance was associated with the participants socio-demographic characteristics (10)

Conclusion

We conclude that the knowledge score is a strong determinant of students' willingness to practice PMCS. At the same time, knowledge can be regarded as an underlying factor of the students' willingness to advocate for the program. In this regard, comprehensive and broadly scaled health education programs to address PMCS among young adults as the most targeted population who will benefit from such programs is crucial. Health education programs can be inflected through social media, being the main source of information as revealed by the study.

Funding:

Authors own resources

Conflict of interest

None

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