

*Full Length Research Paper*

# Promotion of knowledge and attitude towards premarital care: An interventional study among medical student in Fayoum University

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Premarital care (PMC) is a worldwide activity aiming to diagnose, treat unrecognized disorders, and reduce transmission of diseases to couples. The study was an interventional educational prospective study; its aim was to assess and improve knowledge and attitude of 200 medical students in Fayoum University towards premarital care services; through health education intervention in the form of lectures and brochures that address important issues of premarital care. The involved students were interviewed by using closed-ended questionnaires, which were distributed twice, just before the intervention and then after 2 months. A special scoring system was used. Total knowledge score showed significant improvement from  $62.44 \pm 4.98$  to  $69.37 \pm 3.43$ , especially as regards components of reproductive health, contents of premarital counseling and the role of PMC in prevention of certain diseases especially hepatitis (significant increase in correct response from 58 to 72%). The main source of knowledge was TV (65.5%). Total attitude score showed significant improvement from  $7.89 \pm 1.1$  to  $13.1 \pm 0.81$  especially favorable attitudes towards importance of PMC services, convention to receive such services, and refusal of marriage person with untreated infectious diseases with increase in the percentages to reach 94, 92.5 and 90%, respectively. Females showed better attitudes than males towards PMC. The results reflected the importance of health education as a cornerstone element in improving knowledge and attitude towards premarital care. There is need of continuous health education programs for students to increase their awareness and attitude.

**Key words:** Premarital care, knowledge, attitude, medical students.

## INTRODUCTION

Premarital care (PMC) is the promotion of the health and well-being of a woman and her partner before pregnancy; it is considered as the primary preventive approach for couples planning for conception; it can identify and modify behavioral, medical, and other health risk factors known to impact pregnancy outcomes through prevention and management (Chuaung and Chen, 2008). It is considered a step towards saving the society and allowing people to enjoy life (Stanely et al., 2001).

In Egypt, the first checkup center has been operating since mid-2001. Despite the success of this center in

control of many health problems, attendants' number is still few. It seems that many young couples remain skeptical about the usefulness of PMC and less likely to convince (Khater and EL Ghazaly, 2003). On the other hand according to WHO (2000a), a medical certificate has often been provided without the medical checkup being carried out. Nowadays, PMC became compulsory by law in many Arab countries including Egypt (UNFPA, 2010). Components of the premarital package according to integrated standards of practice, settled by (MOHP), in 2005 are premarital counseling, premarital history taking and examination, premarital investigations and premarital immunization (MOHP, 2005).

Health education is one of the tools to provide individuals with the knowledge, skills, and motivation to make healthier lifestyle choices especially when properly

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targeted (Nazli and Umit, 2005). However, there is a big lack in knowledge related to reproductive health even among educated persons, about the term of premarital care (PMC) (Mahini, 2009). Media and friends, not health professionals, have been reported as the primary sources of information for young women and men of all ages; hence, inadequate information is expected in youngsters (Baron-Epel, 2003).

According to Beamish (2003), young people in Egypt need more information on reproductive health and access to services before they have their first child. Although premarital care should be an essential part of primary and preventive care, rather than an isolated visit (Moos, 2004), a large number of health providers in primary care and maternal and child health services require basic training in PMC (WHO, 2000a).

The reproductive health service is lagging behind current attitudes and demands of university students. Although students' attitudes towards sexual matters are liberal, their knowledge about reproductive health and premarital knowledge is still limited (Chen et al., 2008). Since medical students are the future health care providers, who are supposed to provide health services related to preconception care to future parents (Chuaung, 2008), health education intervention in this group is cost effective Farsi et al. (2004). A preliminary step for the design of proper health education strategy is to know how much the target group knows about health problems and what their attitudes towards this important element of health care (Alnaif and Alghanim, 2009).

Previous multiple studies were conducted in Egypt and other countries addressing knowledge and attitude of youth towards PMC (Dabbous et al., 1995; Abostate et al., 2001; Soliman et al., 2003; Coonrod et al., 2009; Wallace and Hurwitz, 1998; Gharaibeh and Mater, 2009). On the other hand, fewer studies were designed to assess the impact of health education intervention among youth in Egypt (Mounir et al., 2003).

Fayoum University is a new faculty that was constructed in 1998 with an average of 150 graduates per year. Most of these students will become health providers in the health care centers.

The aim of this study is to assess and improve knowledge and attitude towards premarital care services among medical students in the Faculty of Medicine in Fayoum University through implementing health education intervention to those students. Those students were chosen as representatives of the educated youth from rural area (Fayoum governorate) . At the same time, they will be the future physicians who will provide such service to the public through primary health care centers.

## **SUBJECTS AND METHODS**

The present study was an Interventional educational prospective study that was conducted in the Faculty of Medicine, Fayoum University during the period from January, 2010 till May, 2010.

### **Study participants**

#### ***Inclusion criteria***

The present study was carried out on samples from 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> year medical students during the academic year 2009/2010; we enrolled students from these first three years because the information about premarital care was not included in their curriculum yet, this would enable us to assess the effectiveness of the health education intervention.

#### ***Exclusion criteria***

The exclusion criteria are the refusal to participate in this voluntary study.

#### ***Sampling***

Sample size was determined using the table by Krejcie and Morgan (1970), consuming the facts that whole population size in the desired years was about 450, Confidence Level = 95%, Margin of Error = 5%. The table revealed that 200 students should be recruited in the study. A total of 225 were enrolled in the study to cover for drop outs. Sampling method used was cluster random sample chosen as: As a routine, the faculty divides all the students in the academic year into smaller groups (practical sessions) distributed all week round. The investigators assigned numbers to those sessions and then chose randomly two sessions from each academic year to be included in the study.

Pilot study was carried out on 30 students not included in the study (10 from each year). It was performed as an initial step for the study to check the questionnaire. Some modifications in some questions were done after the pilot study.

### **Study tools**

#### ***Pre interventional stage***

After receiving a verbal consent, the involved students were interviewed by using a self administrated anonymous questionnaire, written in Arabic. The questionnaire took about 20 min to be completed. It included the following sections: (a) Sociodemographic characters; (b) Students' knowledge regarding the component of reproductive health and premarital care (that is, counseling, examination, investigation and vaccination); (c) Sources of knowledge, and (d) attitude towards PMC.

#### ***The interventional stage***

At the same time, a health education intervention session was given to the students in form of a lecture, duration about one hour. Six lectures were given for the six assigned sessions over a period of six weeks. The lectures were given by one of the investigators who is a public health lecturer at Fayoum university. The content of the lecture included information about the definition of premarital care, target group, and the premarital care package, which includes counseling, premarital examination, premarital investigation, premarital vaccination, genetic counseling. Each item previously mentioned was planned to be discussed in about 7 min covering its indication, importance, and activities to be carried out for couples. An additional hour was assigned at the end of the lecture for an open discussion with the participants about this topic. Brochures containing brief points about premarital care were distributed to students at the end of session.

### **Post interventional stage**

The same questionnaire was applied 2 months later with the same students that participated previously in order to detect the degree of knowledge obtained after health education; and to what extent it was sustained and if there were any changes in their attitude.

### **Scoring system**

Scoring was done as follow: (2) for correct answer, (0) for incorrect answer and (1) for I do not know. Eight items on knowledge (40 questions) have a total score of 80. They included components on reproductive health (6 questions), components on premarital care (6 questions), component on counseling session (6 questions), role of premarital examination in prevention of certain diseases (6 questions), role of premarital care in screening of (STDs) diseases (6 questions), investigations done to couples (10 questions). Attitude was given a total score of 16 (8 questions); they were divided as follow: Importance of premarital care (2 question), convention to do premarital examination and investigation (one question), advice on premarital care (one question), preference of consanguineous marriage (one question), refusal to marry a person with an untreated infectious disease (one question), refusal to marry a person with an uncontrolled chronic disease (one question), and refusal to marry a person with an hereditary disease (one question).

### **Statistical analysis**

Analysis of data was done by means of IBM computers using SPSS (Statistical Program for Social Science version - 15) as follows: Quantitative data are expressed as mean, SD , qualitative variables as number and percentage. T-test was used to compare two independent groups as regards to a quantitative variable, while paired t-test was used to compare quantitative variables in the same group before and after intervention. Mc Nemar test was used to compare qualitative variable in the same group before and after intervention. For comparison the correct answers were analyzed versus others.  $p < 0.05$  is considered significant,  $P < 0.01$  is considered highly significant.

## **RESULTS**

The response rate was 95.2%. Causes for non respondents were mainly refusal of students to participate due to lack of time, or they are not convinced by the importance of the study.

### **General characteristics**

Most of the studied candidates were in the age group less than 20 years. Males represented 40% of the studied candidates, while females represented 60%. Participants were represented as follow: The first year students represented 29% of the sample; also second year students occupied the same percent (29%), while the third year represented 42% of the studied sample (Table 1).

### **Sources of knowledge**

Television was chosen as a first source of knowledge on

premarital care in 65.5% of the studied candidates, followed by relatives as a second source of knowledge in 39.5% of them (Figure 1).

### **Knowledge score**

An improvement in the knowledge score after the intervention has been detected. A significant improvement in knowledge was observed in the components on reproductive health especially on post menopausal care, and nutrition education. The correct response increased from 42 to 75% and from 23 to 57%, respectively, after the intervention with a P value  $< 0.001$ . The contents of premarital counseling especially on neonatal care counseling showed a significant increase in correct responses from 17.5 to 93.5%, and the role of PMC in prevention of certain diseases, especially hepatitis, also exhibited an increase in correct responses from 58 to 72%. The total knowledge score showed an improvement from  $62.44 \pm 4.98$  to  $69.37 \pm 3.43$ , with a significant p value  $< 0.001$  (Table 2).

### **Attitude score**

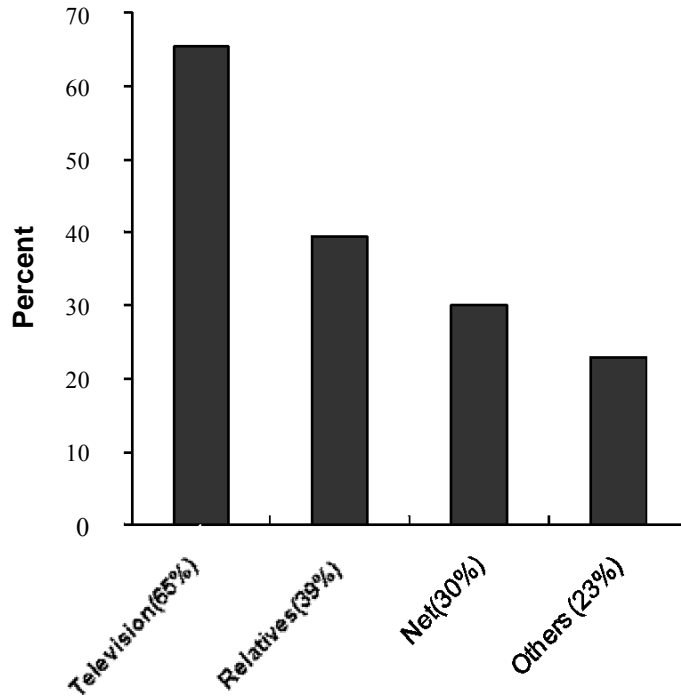
Slight improvement in attitude among studied group of students was detected. Those improvement were in items related to conviction to receive PMC, advice on receiving PMC services, and refusal to marry person with uncontrollable chronic disease (from 85.5 to 92.5%, 84 to 96% and from 31 to 38%, respectively. The results were shown in Table 3. Marked improvement was noticed towards refusal to marry persons with untreated infectious diseases from 37 to 90%, while no improvement was detected in the attitude of students towards acceptance of consanguineous marriage as well as towards refusal to marry person with hereditary diseases. The total attitude score was significantly improved after the intervention from  $7.89 \pm 1.16$  to  $13.14 \pm 0.8$  (Table 3) . Regarding change in attitude towards importance of PMC as shown in Figure 2, fifty three percent of the students saw that PMC is very important, this percentage increased reaching 63 .5% after the intervention. Thirty seven percent of the students saw that PMC is important in certain cases, while 9.5% saw that PMC is not important. These percents decreased to 30.5 and 6%, respectively after the intervention which indicated the improvement in the attitude.

### **Sex difference**

No difference was detected between males and females regarding the total knowledge score either before or after the intervention (Table 4). On the contrary, a significant difference was observed between them as regards their attitude score especially after the intervention ( $12.96 \pm .863$  vs.  $13.25 \pm .770$ , respectively) ( $P = 0.01$ ) (Table 4).

**Table 1.** General characteristics of the students.

<b>General characteristics of the student</b>	<b>No. (200)</b>	<b>(100) %</b>
<b>Sex</b>		
Male	80	40
Female	120	60
<b>Age</b>		
< 20 year	161	80.5
20 - 25	39	19.5
<b>Study class</b>		
First year	58	29
Second year	58	29
Third year	84	42
<b>Smoking</b>		
	6	3



**Figure 1.** Source of knowledge about premarital care. N.B: Every student can choose more than one source of knowledge

## DISCUSSION

Many young women and men enter into marriage with insufficient information on sexuality, reproduction, and family planning (Bastani et al., 2010). Addressing young couples' needs about information on reproductive health remains a critical area for expanded health education interventions through a range of media, including in-school and out of school information programs (Beamish, 2003).

This study demonstrates high knowledge scores in the

pretest which may be due to the medical nature of the participants. Similar findings were reported from other studies (Coonrod et al., 2009; Wallace and Hurwitz, 1998; Gharaibeh and Mater, 2009; Heyes et al., 2004). In contrary, low knowledge level was detected by Eshra et al. (1989) which could be attributed to discrepancy in educational level between our participants who are medical students and their participants who were villagers most of whom were illiterates. Lack of knowledge was also reported by Sobhy et al. (2001) and Inandi et al. (2003) in their studies involving Egyptian nurses and

**Table 2.** Change in mean knowledge scores of PMC.

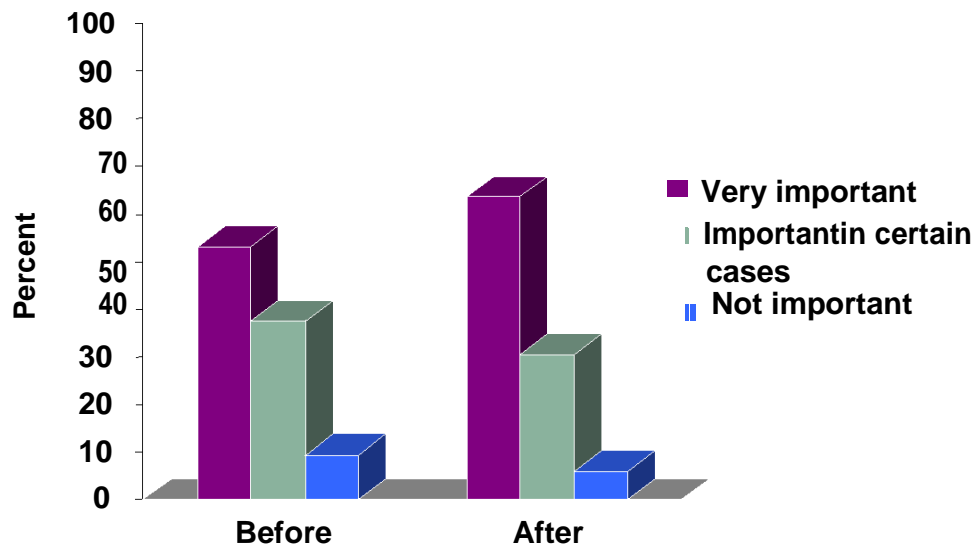
Score knowledge	Before (Mean ±SD)	After (mean ± SD)	p Value*
Components of reproductive health	8.72±1.139	9.43±.877	0.001*
Components of PMC	10.31±1.31	11.01±1.21	0.001*
Contents of premarital counseling session	9.84± .77	11.63± .76	0.001*
The role of PMC in prevention of certain diseases	7.47±2.8	10.29±1.6	0.001*
The role of PMC in screening STDs	9.57±2.2	9.74±1.4	0.4
Investigations done for couples	13.57±1.6	13.63±1.3	0.746
Total knowledge score	62.44± 4.98	69.37±3.43	0.001*

\*P < 0.05 is considered significant, P < 0.01 is considered highly significant. Paired T- test was used.

**Table 3.** Change in attitude about PMC.

Change in attitude	Before (No. (%))	After (No. (%))	P value*
Importance of PMC	181 (90.5)	188 (94)	0.001*
Convention to receive premarital care	171(85.5)	158(92.5)	0.001*
Advising others to receive PMC services	168(84)	192(96)	0.001*
Refusal to marry person with uncontrollable chronic disease	62(31)	78(38)	0.002*
Refusal to marry person with untreated infectious) diseases	74(37)	180(90)	0.001*
Refusal to marry person with hereditary diseases	184(92)	185(92.5)	0.31
Acceptance of consanguineous marriage	18(9)	16(8)	0.1
Total attitude score (mean ± SD)#	7.89± 1.16	13.14± 0.89	0.001*

\*P < 0.05 is considered significant, P < 0.01 is considered highly significant. (Mc Nemar test was used # paired T- test was applied).



**Figure 2.** Change in attitude of students regarding importance of PMC.

Turkish university students, respectively. Differences from our study could be related to difference in education level of study participants. On the other hand, low scores on questions of knowledge were reported by Conway et

al. (1995) among internal medicine residents and family physicians whose scores were 5.0 and 8.5 respectively (out of a possible 18 point score). They ascribed this to their residency training which does not appear to have

**Table 4.** Change in total knowledge and attitude score before and after the intervention in relation to sex.

<b>Total score</b>	<b>Male (Mean (SD))</b>	<b>Female (Mean (SD))</b>	<b>P value *</b>
<b>Total knowledge score</b>			
Before	62.5(4.9)	62.3(5.0)	0.2
After	69.04(3.4)	69.5(3.4)	0.7
<b>Total attitude score</b>			
Before	7.85(1.3)	7.92(1.1)	0.69
After	12.96 (0.9)	13.25(0.8)	0.01*

\* P <0.05 is considered significant, P < 0.01 is considered highly significant. T- test was used.

adequately provided the appropriate knowledge.

The health education intervention applied in our study succeeded in improving the knowledge significantly affirming that it is the corner stone in promotion of PMC. Our results are in concordance with different studies conducted on divergent participants as health care providers (Sanghvi et al., 2000), university students (Chen et al., 2008; Mevsim et al., 2009), university nursing students (Sobhy et al., 2001), women (Elsinga et al., 2008), and adolescent girls (Roa et al., 2008).

Recommendations for health education intervention to various groups could be elicited from multiple studies. One of these was the study conducted by Kitamura et al. (2005). This study recruited family medicine and internal medicine physicians who already practiced the elements of preconception care. The study revealed that physicians received little training about PMC and preconception care during their academic years and this was consequently reflected on their practice later on. Almost all participants in this study announced that medical students (95%), and residents (91%), should have proper education in such care. Chen et al. (2008) comment that although goals were set at the 1994 International Conference on Population and Development in Cairo to improve human sexual and reproductive health, there are still very few efforts that focus specifically on rights of youth in most countries. Such effort should come into implementation. Similar finding were declared by Sobhy et al. (2001) who recommend that premarital counseling should be included in university curriculums. Ezegwui et al. (2008) highlighted the importance of preconception clinics in developing countries such as Nigeria compared with the western world in dissemination of knowledge as regards PMC because this would help correct inadequate education and identify a high level of existing illness relevant to pregnancy, much higher than in the western world. The participants in a study conducted by Inandi et al. (2003) considerably agreed to the notion that health education should be given in schools.

Mass media, especially the visual, is an accessible, widespread and effective means of knowledge

dissemination (Hayyawi, 2010). Concerning sources of knowledge about premarital care, the current study revealed that television was the most common source of knowledge and occupied about (65.5%), relatives came in the second rank as a source of knowledge (39.9%) of the sample. These results about source of knowledge in the current study was in concordance with results of a study done by Soliman et al. (2003) which revealed that mass media was the main source of knowledge (48%) then friends and relatives (13.2%). This reflects the major importance of television as a source of information and also the importance of relatives in spreading the information among communities. Similar results were also obtained by Dabbous et al. (1995) who found that radio and TV were the most common reported means of health education (65%).

Favorable attitudes were observed as regards acceptance to receive PMC, willingness to advise others to receive this service, refusal to marry a person with uncontrolled chronic diseases or untreated infectious disease. These results were in agreement with Conway et al. (1995) in which attitude scores were high for both groups in the study; against a perfect score of 28.0, medians were 22.0 for internal medicine residents and 25.0 for family practice residents. Similar findings were reported by Al-Khaldi et al. (2002) who disclosed the positive attitude in nearly 70% of their participants as regards premarital counseling in Saudi Arabia. On the other hand, unfavorable attitudes were detected as regards consanguineous marriage. In a study conducted by Abdel-Meguid et al. (2000), the consanguinity rate among the general population in Egypt was reported to be 36.8%. The majority of the students in this study were accepting consanguineous marriage. The health education intervention showed no effect on this attitude. This finding can be explained by the fact that those students are from Fayoum University (Upper Egypt governorate) where consanguinity is a deeply rooted social norm. WHO (2000a) reported that although many governments especially in the Arabic-speaking world (Egypt, Syrian Arab Republic, Lebanon, Tunisia and Morocco, for

example) have been promoting premarital medical examinations since the first half of the 20th century, yet little effect had been detected on hereditary disease and consanguinity. Moreover, the medical certificates were provided without the actual medical checkup being carried out.

Regarding change in total attitude score between males and females, a significant change was detected between them after the health education intervention with (P value = 0.01). Females exhibited a better attitude towards premarital care services than males. Men and women, due to the different formation of their brains, perceive the world differently, and hence attach different norms to the same events and objects. These differences influence not only the way the genders think but also the way they behave (Oztas, 2003). This result is in concordance with Khater and EL-Ghazaly (2003) and Fageeh (2008) who revealed that better attitudes among female students might be referred to the emotional and behavioral variation between males and females. Females are very sensitive to any issue related to their reproductive health. Since females will be the future mothers and the hope of any mother is to have a healthy baby, they wish to pass them with the least possible complications. Since a positive correlation existed between knowledge and attitude (Sobhy et al., 2001), our study demonstrates that females were more oriented and more knowledgeable with important health issues related to PMC than males. This was reflected on their better attitude.

In conclusion, health education intervention is an effective method in improving knowledge and attitude towards PMC among medical students although more efforts are needed to change some deeply rooted norms as positive consanguinity.

## Recommendations

1. Application of continuous health education programs for students in different grades focus on primary health care services especially premarital care with implementation of a practical training course to improve the students' knowledge and attitude.
2. Involvement of community leaders and NGOs in counseling programs to youth to raise awareness and change their attitude toward consanguineous marriage.
3. Application of comprehensive health education programs about reproductive health and the importance of premarital care through different mass media especially T.V.

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