Original Article

Knowledge and Attitudes of Damanhour University Students Regarding Premarital Care Services

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Abstract:

Background: Premarital care (PMC) is a worldwide activity aiming to diagnose, treat unrecognized disorders, and reduce disease transmission to couples. **Aim**: To assess knowledge and attitudes of Damanhour university students regarding premarital care services. **Research design**: Descriptive cross-sectional research design. **Settings**: This study was conducted in 10 faculties affiliated to Damanhur University, El-Beheira Governorate. **Subjects**: Students (both sexes) enrolled in the previously mentioned settings who are unmarried and at all academic levels. **Tools**: Tool 1: Students' Profile Self-administered Questionnaire. Tool II: Students' Knowledge Regarding Premarital Care Services Self-administered Questionnaire. Tool III: Students' Attitudes Regarding Premarital Care Services Self-administered Questionnaire. **Results**: Less than three quarters (73.3%) of the studied students had poor knowledge, while slightly more than one quarter (25.9%) of them had fair knowledge, and only 0.8% had good knowledge regarding premarital care services. Moreover, slightly less than two thirds (64.2%) of the studied students had positive attitudes toward premarital care services, while more than one third (35.6%) of them had neutral attitudes and only 0.2% had negative attitudes. **Conclusion**: There is a highly significant relation between students' level of knowledge and their attitudes. Mothers' education, fathers' education, parents' consanguinity, degree of consanguinity, and family income were the most prominent factors affecting the studied students' knowledge and attitude. **Recommendations**: Implement continuous health education programs targeting high schools and university students at different grades regarding reproductive health and the benefits of premarital care services.

Keywords: Attitudes, Knowledge, Marriage, Premarital care, University students.

Introduction:

Marriage is regarded as one of the most important milestones in a person's life, serving as a foundation for families and, by extension, communities. However, the presence of hereditary, chronic, or communicable diseases can negatively impact a marriage, whether through affecting the partners or their children. This can lead to psychological, social, and economic challenges, as well as medical complications, all of which affect the individual, their family, and society at large. Therefore, ensuring the health and fitness of both partners before marriage, by identifying potential diseases and assessing the risk of them being passed on to offspring, is of vital importance.[1, 2]

Premarital care (PMC) is described as knowledge and skills-based training that equips couples with essential information on ways to maintain and enhance their relationship after marriage. It serves as a key preventive approach for couples planning to have children, helping to identify and address behavioral, medical, and other health risk factors that could negatively impact maternal and child health.[3] More studies have shown

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that PMC can enhance the health and well-being of women and their partners, leading to better outcomes in future pregnancies and child health.[1, 4, 5]

In Egypt, premarital care services have been available since 1946 as a key part of maternal and child health services. The Ministry of Health and Population (MOHP) began offering these services for free to prospective couples at both maternal and child health centers and specialized health centers. The first dedicated checkup center was established in mid-2001.[6]

On June 12, 2008, a presidential decree was issued concerning the Child Law, which addressed two main points: first, raising the minimum marriage age for both males and females to 18 years, and second, making premarital testing and counseling a mandatory requirement for obtaining a marriage certificate.[7] According to integrated standards of practice, settled by the Ministry of Health and Population 2005[8], the key components of the premarital package are advocating the premarital package, collecting the premarital history and conducting examinations, performing premarital investigations, administering premarital immunizations, providing premarital education and counseling, and ensuring proper registration and recordkeeping.

The community health nurse (CHN) plays an essential role in providing premarital care services. CHN provides a complete care plan that begins with gathering a detailed history, conducting a full assessment, identifying risk factors or existing issues, and offering health education and counseling.[9, 10] Moreover, nurses can assist couples in making informed decisions and provide support if any problems are detected. They play a key role in influencing couples' attitudes and behaviors toward premarital care while also highlighting the advantages of such services.[11, 12]

Significance of the study:

Premarital care primarily targets young people, as most marriages occur after completing their education. Therefore, university students are considered the key group for evaluating their knowledge and attitudes toward premarital care services.[13, 14] A clear understanding and awareness of such services are essential. In Egypt, young people require more information on reproductive health, sexuality, family planning, and access to premarital care services before having their first child.[14-17] While students tend to have liberal attitudes toward sexual issues, their knowledge about reproductive health and premarital care remains limited.[18]

Aim of the study:

Assess knowledge and attitudes of Damanhour University students regarding premarital care services.

Research Questions:

- What is the level of knowledge of Damanhour University students regarding premarital care services?
- What are the attitudes of Damanhour University students regarding premarital care services?

II. Materials and Methods

Research design:

A descriptive cross-sectional research design was used to carry out this study.

Setting:

The study was conducted in faculties affiliated to Damanhour University, namely, Faculty of Arts, Faculty of Commerce, Faculty of Education, Faculty of Agriculture, Faculty of Science, Faculty of Veterinary, Faculty of Pharmacy, Faculty of Early Childhood, Faculty of Specific Education and Faculty of Computers & Information. Faculty of Nursing was excluded from the study because of student's scientific base on premarital care.

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Subjects:

Students (both sexes) enrolled in the previously mentioned settings were selected according to the following inclusion criteria:

- Unmarried.
- Willing to participate in the study.

Sampling size:

The EPI info-7-software was utilized to estimate the total sample size based on students' average number in faculties in the academic year 2021-2022 (51,141 students), expected frequency of 50%, acceptable error of 5% and confidence limit of 95%. Thus, the minimum sample size was 572 students and the final sample size was 630 students for dropout.

Sampling technique:

- Proportional allocation method by faculty was used and the students were conveniently selected from each faculty at all academic levels **(table 1).**

Table 1: Estimation of the students' number in each faculty at all academic levels

Setting	Total Number of students	Equation	Samplesize
1. Faculty of Arts	16640	16640×630÷51,151	206
2. Faculty of Commerce	11401	11401×630÷51,151	140
3. Faculty of Education	10669	10669×630÷51,151	132
4. Faculty of Agriculture	4541	4541×630÷51,151	56
5. Faculty of Science	2371	2371×630÷51,151	29
6. Faculty of Veterinary medicine	1726	1726×630÷51,151	21
7. Faculty of Pharmacy	1349	1349×630÷51,151	17
8. Faculty of Early Childhood	1020	1020×630÷51,151	13
9. Faculty of Specific Education	745	745×630÷51,151	9
10. Faculty of Computers & Information	679	679×630÷51,151	8
Total sample size	630		

Source: Department of Learning and Students' Affairs, DamanhourUniversity (2021).[19]

Tool for data collection

To collect the required data three tools were used as follows: -

Tool 1: Students' Profile Self-administered Questionnaire.

This tool was developed by the researcher after reviewing recent literature[15-20] to collect data from the students. It included the following: **Part I**: Students' personal data such as age, sex, faculty name, academic year, place of residence, number of siblings, birth order, engagement status, family income, student occupation, parents' education, occupation and parents' consanguinity. **Part II**: Students' medical history such as chronic diseases, surgical operations, previous hospitalization within the last 6 months and periodic check-ups. **Part III**: Students' family health history such as history of chronic diseases, history of genetic disorders and the relation of the student with the affected family member.

Tool II: Students' Knowledge Regarding Premarital Care Services Self-administered Questionnaire

This tool was developed by the researcher after reviewing recent literature [15-20] to assess students' knowledge toward premarital care services. It included questions such as the concept of premarital care, its importance, the target group to receive premarital care, offered services, types of investigations, types of immunization, setting for providing premarital care services, providers of premarital care, suitable time for

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performing premarital care and validity of health marriage certificate. Each item included a comprehensive statement to give an overview of student knowledge regarding each concept.

Scoring system for knowledge: a score for students' knowledge regarding premarital care services was classified as score (2) for complete correct answer, score (1) for incomplete correct answer and score (0) for incorrect answer /don't know. The total items of knowledge were 22 questions and given a total score of 44 points. The student's total score who was < 22 points (< 50 %) was classified as having a poor level of knowledge, while a total score of 22 to < 33 points (50 % to < 75%) was classified as having a fair level of knowledge, and score of ≥ 33 points (≥ 75%) classified as having a good level of knowledge.

In addition to questions related to the following:

- Students' awareness regarding the goal of Mawadda initiative.
- Attendance of any training session through Mawadda initiative.
- Students' sources of knowledge about premarital care services.
- Students' suggestions to improve knowledge and attitudes of university students about premarital care services.
- Students' reasons for not utilizing premarital care services.

Tool III: Students' Attitudes Regarding Premarital Care Services Self-administered Questionnaire.

This tool was developed by the researcher after reviewing recent literature [15-20] to assess students' attitudes regarding premarital care services. Examples of attitude statements are premarital care services lead to a healthy and successful marriage, premarital care services have a significant impact on the reproductive health of the future, premarital care can protect offspring from hereditary diseases. There were five reversed statements as premarital examinations violate personal privacy, premarital care services are against the principles of Islamic law, and couples should undergo premarital screening in case of consanguinity marriage only.

Scoring system for attitude items were rated on a 5 -point Likert scale (strongly disagree =1, disagree =2, neutral =3, agree =4 and strongly agree =5). The scores of negatively worded items were reversed so that higher scores always represent the correct answer. The total number of attitude items was 23 statements and given a total score of 115 points. The students total score who was < 54 points (< 33.3%) was classified as negative attitude, while a total score of 54 to < 85 points (33.3 % to < 66.6%) was classified as neutral attitude, and a score of ≥ 85 points (≥ 66.6%) classified as positive attitude.

Methods

The study was implemented according to the following steps:

i. Administrative process

- An official letter from the Faculty of Nursing was directed to the vice president of the University Postgraduate Studies and Research at Damanhour University to facilitate the implementation of the study.
- An official letter was directed for all deans of faculties to collect the required sample.

ii. Development of study tools

- The study tools were developed by the researcher after reviewing recent relevant literature.
- Content validity of tools II and III was assessed by a group of 5 experts in the fields of community health nursing and obstetric and gynecological nursing and considering their opinions and recommendations.
- The reliability of the study tools was evaluated using Cronbach's Alpha, with tool II scoring 0.844 and tool III scoring 0.711, demonstrating that the tools are reliable.

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Pilot study

The pilot study was conducted on 10% of the sample (63 students), selected randomly, and excluded from the final sample. This was done to ensure the clarity, applicability, and comprehension of the study tools, estimate the time required to gather the necessary data, and identify potential obstacles in the data collection process. The data from the pilot study were analyzed, and based on its findings, the required modifications were made.

iii. Data collection process

- Data were collected over a period of 3 months (from November 2022 to January 2023).
- Students were chosen conveniently from each faculty at all academic levels.
- Data were collected from the students during their breaks in the lecture halls, cafeteria, laboratory or library.
- Each questionnaire took about 15-20 minutes from each student after explaining the purpose of the study.

iv. Data analysis:

- Data were coded and transferred into specially designed formats to be suitable for computer feeding. After the data entry, the process of checking and verifying was implemented to avoid any errors. Frequency analysis, cross-tabulation and manual revision were employed to identify and correct any mistakes.
- Data were analyzed using a personal computer with statistical package for social science (SPSS) version 23.
- The level of significance selected for this study was P value equal or less than 0.05.
  The next statistical and graphical presentation procedures were employed:
- Descriptive as count, percentage, arithmetic mean and standard deviation.
- Inferential as chi-square test, one way ANOVA test, student t-test and pearson correlation coefficient.
- Graphical presentation as bie chart and bar chart.

Ethical considerations:

1. Permission to conduct the study was obtained from the ethicalcommittee in the Faculty of Nursing at Damanhour University.
2. Permission was obtained from all deans of faculties, and all of them were informed about the date and the time of data collection.
3. Informed consent was obtained from each student who participated in the study after an explanation of the aim of the study, and participants were assured that the collected data would be used only for the study purpose.
4. Confidentiality and privacy of the students were guaranteed by a statement on the cover page.
5. Anonymity was maintained by using a code number instead of names.

Results

Table 2 illustrates the distribution of the studied students according to their personal data.

Regarding studied students' age, it ranged from 17 to 25 years, with a mean age of 19.81 ± 1.51 years, it was observed that the majority (82.9%) of them were aged less than or equal to 20 years old. Concerning sex, the table shows that more than three quarters (75.9%) of the studied students were females. Pertaining to type of faculty, it is evident from the table that the majority (80.5%) of the studied students were affiliated to the theoretical faculties. Concerning academic year, the table conveys that more than one third (35.7%) of the studied students were in their first academic year, followed by slightly more than one quarter (25.7%) were in their second academic year.

Relating to place of residence, more than half (54.1%) of the studied students were living in rural areas. In relation to engagement status, the table shows that the majority (87.9%) of the studied students were single. Pertaining to number of siblings, the table shows that more than half (58.8%) of the studied students had three

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or more siblings. In relation to birth order, more than one third (37.5%) of the studied students were ranked the first child. Regarding the students' occupation, the table conveys that the majority (82.7%) of the studied students were not working. It was observed that more than half (54.1%) of them were teachers' assistants. Concerning family income, it is clear from the table that less than two thirds (63.5%) of the studied students had enough family income for basic needs only.

Table 2: Distribution of the studied students according to their personal data.

Students' personal data	Studied students N= 630	
	No.	%
Age		
≤20 years	522	82.9
>20 years	108	17.1
Min. – Max	**17- 25**	
Mean ± SD.	**19.81± 1.51**	
Sex		
Male	152	24.1
Female	478	75.9
Faculty		
Scientific (Agriculture, Science, Veterinary Medicine, Pharmacy)	123	19.5
Theoretical (Arts, Commerce, Education, Early Childhood, Specific Education and Computers & Information)	507	80.5
Academic year		
1st	225	35.7
2nd	162	25.7
3rd	133	21.2
4th	110	17.4
Place of residence		
Rural	341	54.1
Urban	289	45.9
Engagement status		
Engaged	76	12.1
Single	554	87.9
Siblings number		
One	50	7.9
Two	210	33.3
Three or more	370	58.8
Birth order		
First	236	37.5
Second	184	29.2
Third	136	21.6
Fourth	74	11.7
Occupation		
Not working	521	82.7
Working	109	17.3
Type of occupation	**N=109**	
Teachers' assistant	56	51.4
Trader	16	14.7
Secretary	14	12.8
Others (seller, communication specialist, lab technician, pharmacist assistant and cashier)	23	21.1
Family income		
Enough for basic needs only	400	63.5
Enough and saving	151	24.0
Not enough	79	12.5

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Table 3 demonstrates the distribution of the studied students according to their parents' personal data.

With respect to parents' education, less than half (45.1%) of the studied students reported that their fathers had secondary/technical education. Furthermore, slightly more than one third (33.8%) had university education and above. While less than half (47.6%) of the studied students stated that their mothers had secondary/technical education followed by more than one quarter (25.7%) had university education and above, and the minority (19.2%) of them were illiterate/read and write.

Concerning parents' occupation, slightly less than half (48.7%) of the studied students' fathers had professional work compared to more than one third (36.9%) working as traders and more than one tenth (14.4%) not working. While more than three quarters (78.1%) of the studied students' mothers were housewives and slightly less than one fifth (18.9%) had professional work.

As regards parents' consanguinity, more than one fifth (20.3%) of the studied students stated that they have parents' consanguinity, and less than half (49.2%) of them informed that they have a first-degree parents' consanguinity.

Table 3: Distribution of the studied students according to their parents' personal data.

Parents' personal data	Studied students N= 630	
	No.	%
Fathers' education		
Illiterate/Read and write	78	12.4
Primary education	26	4.1
Preparatory education	29	4.6
Secondary/technical education	284	45.1
University and above	213	33.8
Mothers' education		
Illiterate/Read and write	121	19.2
Primary education	13	2.1
Preparatory education	34	5.4
Secondary/technical education	300	47.6
University and above	162	25.7
Fathers' occupation		
Not working	91	14.4
Professional work	307	48.7
Trader	232	36.9
Mothers' occupation		
Housewife	492	78.1
Professional work	119	18.9
Trader	19	3.0
Parents' consanguinity		
No	502	79.7
Yes	128	20.3
Parents' consanguinity degree	**N= 128**	
First degree (cousin/aunt's son or daughter)	63	49.2
Second degree (relatives of the mother or father)	43	33.6
Third degree (relatives of grandfather or grandmother)	22	17.2

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Figure 1 exhibits the studied students' total score of knowledge regarding premarital care services. The figure shows that less than three quarters (73.3%) of the studied students had poor knowledge, while slightly more than one quarter (25.9%) of them had fair knowledge, and only (0.8%) had good knowledge regarding premarital care services.

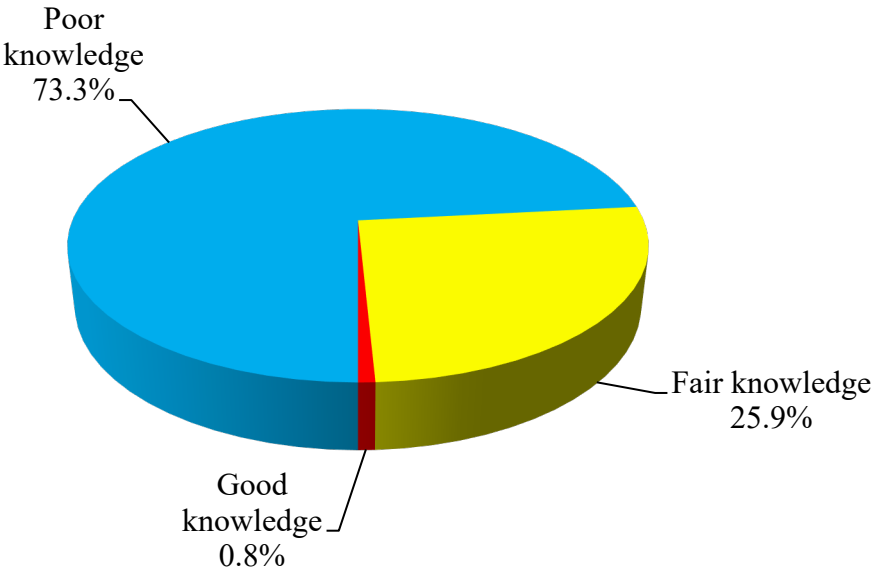

Figure 1: Students' total score of knowledge regarding premarital care services

Figure 2 illustrates students' source of knowledge about the premarital care services. The figure depicts that more than half (53.3%) of the studied students informed that the internet was the primary source of premarital care services knowledge, followed by approximately two fifth (40.8%) reporting parents and relatives. Additionally, more than one quarter (27.6%) mentioned media, while the rest (21.9%, 20.3%, 19.7%, and 3.3%) reported neighbors and friends, healthcare team, educational curriculum and newspapers & magazines respectively.

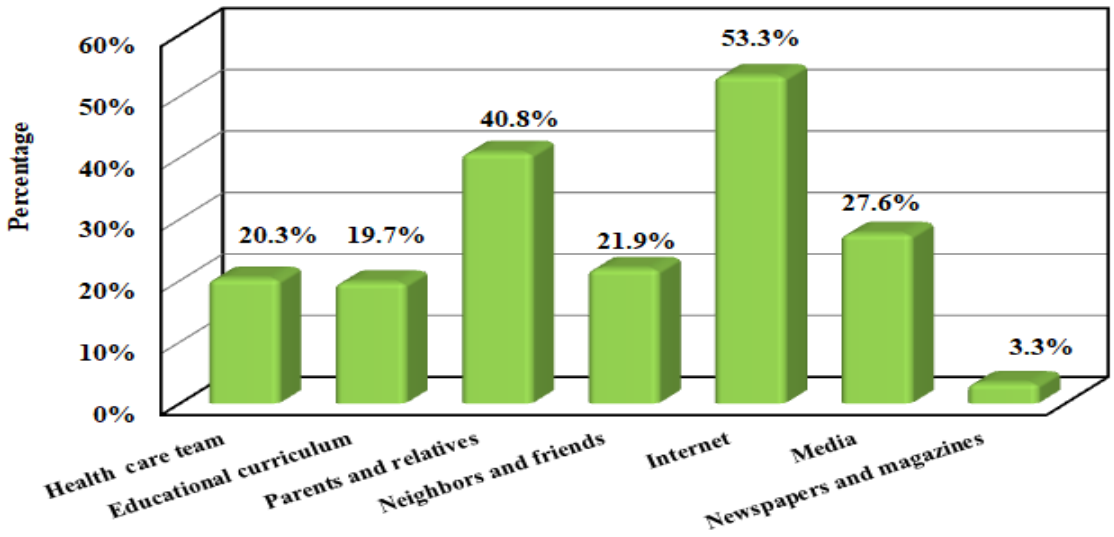

Figure 2: Students' source of knowledge about premarital care services

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Figure 3 illustrates students' reasons for not utilizing premarital care services. More than half (59.2%) of the studied students stated that they being not contradicting the will of God. This was followed by more than one quarter (26.3%) of them expressing fear of the results and 15.1% reported due to lack of time.

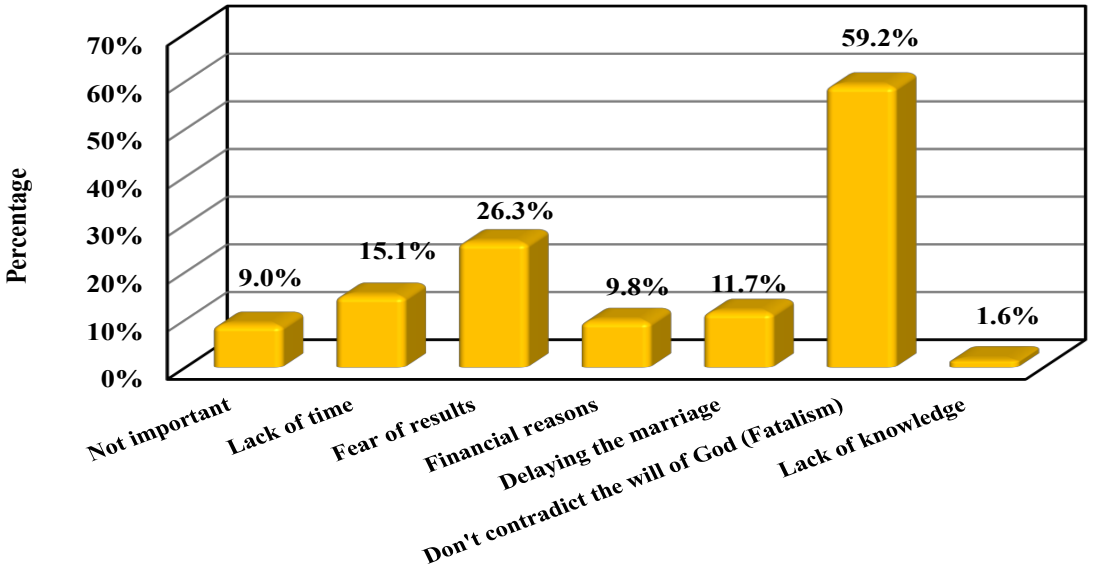

Figure 3: Students' reasons for not utilizing premarital care services.

Figure 4 portrays students' total score of attitudes toward premarital care services. It is obvious from the figure that slightly less than two thirds (64.2%) of the studied students had positive attitudes toward premarital care services, while more than one third of them (35.6%) had neutral attitudes, and only (0.2%) had negative attitudes.

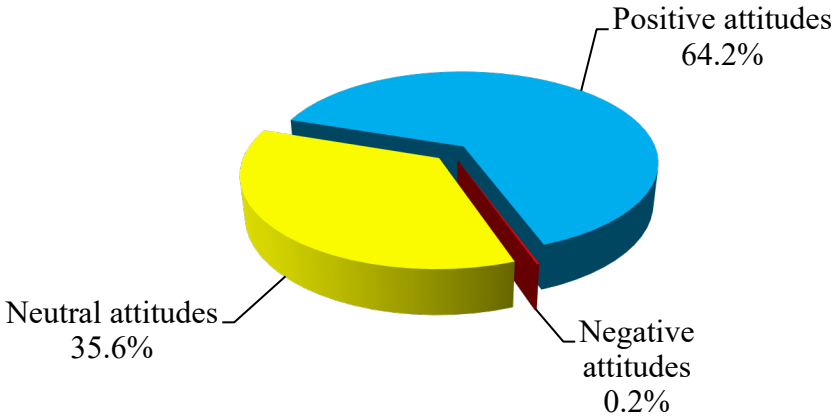

Figure 4: Students' total score of attitudes toward premarital care services

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Table 4 shows the relationship between students' level of knowledge and their attitudes toward premarital care services. The table reveals that there was a highly significant relation between students' level of knowledge and their attitudes toward premarital care services (χ^2=176.537, p<0.001), it was evident that all the students who had positive attitudes had good knowledge.

Table 4: Relationship between students' level of knowledge and their attitudes toward premarital care services

Level of attitudes	Level of knowledge								Test of significance
	Poor knowledge (n = 462)		Fair knowledge (n = 163)		Good knowledge (n = 5)		Total sample (n = 630)		
	No.	%	No.	%	No.	%	No.	%	
Negative attitude	1	0.2	0	0.0	0	0.0	1	0.2	χ^2 =176.537 MCp<0.001
Neutral attitudes	224	48.5	0	0.0	0	0.0	224	35.6	
Positive attitudes	237	51.3	163	100.0	5	100.0	405	64.2	
r(p)	0.515* (<0.001*)								

χ^2: Chi square test
MC: Monte Carlo
r: Pearson coefficient
*: Statistically significant at $p \leq 0.05$

Discussion

PMC plays a crucial role in identifying health risks that may affect partners or their future children, thereby reducing the incidence of inherited diseases, improving reproductive outcomes, and promoting overall family health.[3]

In the current study, over three-quarters (79.7%) of the participants reported that their parents were not consanguineously related, while just over one-fifth (20.3%) indicated that they were. This is consistent with a study conducted by Youseef et al., (2024) [20] in Mansoura, who reported that 70% of the couples studied did not have parental consanguinity. Similarly to a study done by Hamed et al., (2022)[21] in Menoufia who found that 76.1% of participants also reported no parental consanguinity. Furthermore, Kabbash et al., (2019)[22] in Tanta, Egypt, reported that 81.2% of the parents were unrelated. The consistency between the current study and these prior findings may stem from conducting research within the same cultural context, reflecting the common customs in Egypt.[23]

The current study's findings disagree with two recent studies conducted in Saudi Arabia. First, Alwhaibi et al., (2024)[24] who reported that the majority of the participants (59.6%) believed their parents were related. Second , Bakry et al., (2023)[25] indicated that 74.2% of study participants had a family history of consanguineous marriages. This discrepancy may be attributed to the cultural and customary differences across regions. Relevant literature suggests that the prevalence of consanguineous marriages is notably higher in Saudi Arabia, with estimates ranging from 42% to 67%[26] in Saudi Arabia, compared to Egypt, where the prevalence is between 29% and 39%.[27]

The study found that the majority of participants were first-degree cousins. This finding aligns with studies conducted in Saudi Arabia by Hamali H (2023)[28] who reported that over one-quarter (27.3%) of participants were first-degree relatives, while Melaibari et al., (2017)[2] indicated that 76.7% fell into the category of first-degree relatives. Additionally, the results are consistent with Shebani et al., (2024)[29] in Libya, who found that 55.1% of participants were first cousins.

In contrast, this finding contradicts the results of Al-Shafai et al., (2022)[30] in Qatar, which indicated that the majority of participants were more distantly related. Additionally, the study by Saleh et al., (2022)[31] in the United Arab Emirates found that 23.0% of participants had second-degree relatives. This discrepancy may be attributed to the fact that over 10% of marriages globally occur between first or second cousins, while in Egypt, marriages between first cousins are particularly prevalent, accounting for approximately 86%.[32]

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In the present study, only 5.4% of the students reported a family history of genetic disorders. This finding aligns with the results of Hamed et al., (2022)[21] in Menoufia, where the majority (87.8%) of participants did not have a family history of genetic diseases. Conversely, this contrasts with Shebani et al., (2024)[29] in Libya, who found that 18.3% of participants had a family history of hereditary diseases, and the study conducted by Alkalbani et al., (2022)[33] in Oman, who reported that 39.5% of participants had a family history of genetic disorders. This discrepancy may be attributed to the higher rates of parental consanguinity reported in these studies (48.5%, 43.8%) respectively, compared to only 20% in the present study. Such higher consanguinity rates contribute to an increased risk of genetic disorders.[23, 34, 35]

Concerning the total level of the studied students' knowledge, this study found that a significant majority of the students (73.3%) demonstrated poor knowledge regarding premarital care services, while just over a quarter (25.9%) exhibited fair knowledge, and only a small fraction (0.8%) achieved good knowledge levels. These findings are consistent with the results of Tohamy et al., (2023)[36] in Assiut, which reported that approximately 71.6% of students had poor knowledge, 26.3% had average knowledge, and 2.1% had good knowledge of premarital care services.

Furthermore, the findings align with three recent studies conducted in 2022. Firstly, Mohammed et al.[37] in Minia reported that 82% of the students exhibited a poor level of knowledge regarding premarital counseling. Secondly, Hamed et al., (2020)[21] in Menoufia found that approximately two-thirds (69.4%) of future couples demonstrated inadequate knowledge about premarital screening. Thirdly, Bakry et al.,[25] revealed that a significant majority (73.8%) of students had poor knowledge on the subject.

This consistency across studies may be attributed to prevailing beliefs and concepts among couples, perceiving premarital counseling as merely a routine step in the marriage preparation process rather than an essential aspect of marital health. Additionally, the limited coverage of premarital screening and genetic counseling in public media, coupled with a lack of awareness-raising programs.

On the other hand, these findings contradict those of three other studies. Firstly, a study conducted by Hamali H (2023)[28] in Saudi Arabia reported that participants demonstrated excellent knowledge and awareness of premarital services. Secondly, Nasr Eldeen et al., (2021)[17] in Menoufia found that more than two-thirds (73.8%) of participants exhibited good knowledge regarding premarital counseling. Thirdly, Osman et al., (2021)[3] in Egypt revealed that a significant majority (86.75%) of the students had satisfactory knowledge concerning premarital examinations and investigations.

The discrepancies between the present study's findings and those of other studies can be attributed to differences in participant demographics, educational exposure, and cultural perceptions regarding premarital care services. The current study primarily involved participants less than 20 years of age and single, which may limit their knowledge and experience related to premarital counseling.

Regarding the attitudes of the studied students toward premarital care services, the present study found that less than two-thirds (64.2%) had positive attitudes, while more than one-third (35.6%) expressed neutral attitudes, and only a small fraction (0.2%) held negative views. These results align closely with findings from Hamed et al., (2022)[21] in Menoufia, where approximately two-thirds (68.30%) of future couples demonstrated a positive attitude toward premarital screening and genetic counseling, with 22.80% maintaining a neutral attitude and 8.90% exhibiting negative attitudes. Additionally, the study is consistent with Tohamy et al., (2023)[36] in Assuit , who reported that 92.1% of participants had a positive attitude, and 7.9% had a negative one.

This positive sentiment may be attributed to the fact that 81.6% of the studied students recognized the importance of premarital care services, with nearly half possessing an understanding of its concepts, which likely shaped their favorable attitudes.

In contrast, recent studies reported different findings regarding attitudes toward premarital care services. Mahmood et al., (2024)[38] in the Kurdistan region of Iraq found that a significant majority of participants (80.8%) exhibited poor attitudes, while only 16.1% had a fair attitude and a mere 3% demonstrated a good attitude. Moreover, Sabbah et al., (2023)[39] revealed that less than half (48%) of participants held positive attitudes, while 52% expressed negative attitudes toward premarital counseling. These discrepancies may stem from a belief among some couples that premarital care could result in the prevention of marriage if positive

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results are obtained, a perspective that is not widely accepted by many individuals and contributes to the formation of negative attitudes.

In the current study, a highly significant relationship was found between students' levels of knowledge and their attitudes toward premarital care services ($\chi^2 = 176.537$, $p < 0.001$). Notably, all students exhibiting positive attitudes also demonstrated good knowledge of the subject. These findings are consistent with several recent studies assessing knowledge and attitudes related to premarital care. For instance, a study by Tohamy et al., (2023)[36] in Assiut reported a highly statistically significant relationship between knowledge and attitudes at a comparable p-value.

In relation to this, the findings are consistent with those of Sabbah et al., (2023)[39], who found a strong statistically significant positive correlation between overall knowledge, attitude, and satisfaction regarding premarital counseling among the participants in their study. ($p < 0.001$).

Moreover, the findings are consistent with Hamed et al., (2022)[21] in Menoufia, who showed a positive correlation among the total knowledge, attitude, and perception score of the studied future couples toward premarital screening. Additionally, this finding corroborates the study by Al-Shafai et al., (2022)[30] in Qatar, who reported a positive correlation among the total knowledge score, total attitude score, and total perception score of the Qatar university students regarding premarital screening. Furthermore, the findings are supported by Zaien et al., (2021)[40], who highlighted statistically significant differences in total knowledge, attitude, and self-efficacy before and after intervention ($p < 0.001$).

The highly significant relationship between students' level of knowledge and their attitudes regarding premarital care services, as shown in the current study, underscores the critical role that knowledge plays in shaping attitudes. When students possess a strong understanding of premarital care, they are more likely to appreciate its importance, leading to positive attitudes toward these services and increasing the utilization of premarital care services among students and future couples. This highlights the necessity of incorporating comprehensive education about premarital screenings into academic curricula to foster awareness and support informed decision-making.

The study found that the primary source of knowledge regarding premarital care services among participants was the internet, followed by parents and relatives, while the educational curriculum ranked the lowest. This finding aligns with studies conducted by Kabbash et al., (2019)[22] and El-Hosany et al., (2021)[41] in Tanta, which also identified the internet as the predominant source of information. The reliance on the internet, along with input from relatives and friends, underscores the significant role these channels play in disseminating information within communities.

Conversely, these study results contrast with those of Youseef et al., (2024)[20] in Mansoura, Aljulifi et al., (2022)[42] in Saudi Arabia, and Hamed et al., (2022)[21] in Menoufia, all of which found that relatives and friends were the primary sources of knowledge. Additionally, the findings diverge from those of Saleh et al., (2022)[31] in the Emirates and Ali et al., (2018)[43] in Port Said, where the school or faculty curriculum was identified as the main source of information on premarital screening.

In the present study, over half (59.2%) of the participants reported reasons for not utilizing premarital care services, with the most prevalent reason being a belief that such services contradict the will of God. This finding is consistent with the research of Kabbash et al., (2019)[22] in Tanta, Egypt, and Al-Nood et al., (2016)[14] in Yemen, which also identified the belief in not interfering with "Allah's will" as the primary reason for avoiding premarital care. This tendency may stem from a misunderstanding of Islamic teachings regarding health and wellness, leading to the perception that premarital care services are unnecessary or inappropriate.

In contrast, the findings of Mohamed et al., (2015)[18] in El Minia indicated that the primary reason for not utilizing premarital care services was a lack of time. Additionally, the results differ from those of Mahmood et al., (2024)[38], who found that 10.4% of participants were unwilling to undergo premarital screening primarily due to concerns that unfavorable test results might impact their marital choices (65 out of 91 participants, representing 7.4%). Moreover, contradicting to study by Boardman et al., (2020)[44] in UK reported social stigma as one of the main barriers to premarital screening. This highlights the variability in reasons for not engaging with premarital care services across different populations and contexts.

Conclusion

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Based upon the results of this study, it could be concluded that the knowledge of the studied students regarding premarital care services was limited. However, the total score of their attitudes was generally positive, with a notable portion of attitudes remaining neutral. Additionally, there was a highly significant positive relation among the studied students' level of knowledge and their attitudes. Factors such as type of faculty, mothers' education, fathers' education, parents' consanguinity, degree of parents' consanguinity, and family income had a significant effect on the studied students' knowledge. While mothers' education, fathers' education, degree of parents' consanguinity, and family income had a significant effect on the studied students' attitudes.

Recommendations

- Implement continuous health education programs targeting high schools and university students at different grades regarding reproductive health and the benefits of premarital care.
- Incorporate topics and relevant content of premarital care services in high schools and universities curriculum.

Further future research:

- Conduct studies that focus on identifying specific barriers (like stigma, cost, and lack of awareness) and facilitators that influence young adults' use of premarital care services.
- Studying the effect of education programs on university students' knowledge and attitudes regarding premarital care.

Limitations of the study

There were no limitations encountered in this study.

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