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Knowledge, Attitudes and Needs of Individuals Attending Premarital Care at Ismailia City

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Abstract: ***Background:*** *Premarital care is considered a step toward saving the society and allowing people to enjoy life.* ***Aim of this study****: this study aimed to identify knowledge, attitude and needs of individuals attending premarital care at Ismailia city.* ***Design:*** *descriptive design was utilized in this study.* ***Study sample****: convenient sample of 320 individuals selected from maternal and child health centers that provide premarital care at Ismailia city.* ***Tool of data collection:*** *self administering questionnaire included questions about individual's knowledge and attitude towards premarital care in addition to questions about individuals' needs regarding premarital care.* ***Results****: - less than half (48.1%) of the study sample had good total knowledge about premarital care. Around two-thirds of the study sample had complete information about premarital investigation, importance and component of premarital care (62.8%, 59.4 and 56.9 respectively). Majority of the study sample had incorrect information about premarital immunization, specialized places for PMC and had positive attitude towards PMC (95.6%, 75.6% and 87.2% respectively). In addition, 80.3% of studied sample need educational lecture about premarital care and 73.4% of them need educational program about heredity and chronic diseases, psychological problems and reproductive health.* ***Conclusion:*** *the majority of the study sample had favorable and positive attitude about PMC services, but they had no sufficient knowledge in some aspects of PMC services. The health needs of the study sample regarding PMC were numerous.* ***Recommendation****: develop educational and disseminate program to raise individual's awareness and knowledge about premarital care.*

Keywords: *- premarital care, knowledge, attitude and needs.*

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I. Introduction

Premarital care (PMC) is a global activity aiming to detect, treat unrecognized disorders, and lessen spread of diseases to individuals **(Ibrahim et al., 2011)**, it is known to be the major defensive approach for the woman and her partner who are planning for conception **(Alghamdi et al., 2016**). **(Bostani & Simbar, 2017)** also defined it as an imperative action on the way to save people, help them to enjoy life and preserve the society.

Mothers and their kids who are in good health are the dream and wish of all countries **(Moodi et al., 2013)**. Facts show that couples with good health and well-being before marriage help to maintain the health of their future children. Therefore, complete healthcare should begin for them before marriage **(Farahat et al., 2014)**. This can be achieved through PMC as it is able to recognize and modify medical, behavioral, and other health risk factors well-known to have adverse effect on pregnancy outcomes through management and prevention **(Al Azeem et al., 2011)**.

Most youths today are either single or intending to get married and will give birth in the future. They are the target population who will benefit from appropriate interventions aimed at preventing and/or controlling problems **(Oyedele et al., 2015)**. Many of them get married with inadequate information on reproduction, sexuality, and family planning. Also, there is a big deficiency of knowledge related to reproductive health even between educated individuals **(Mohamed et al., 2015)**.

So it is important for them to have adequate knowledge and positive attitude towards PMC because they are the future couples in order to ensure successful marriage. Also, improving and increasing their knowledge will enhance and improve their understanding and cooperation which is able to decrease the number of marriages between carriers and promote their health and well-being **(Odelola et al., 2011)**.

According to integrated standards of practice, settled by ministry of health and population in 2005 components of PMC packages are premarital examination and history taking, premarital immunization, premarital investigations and premarital counseling. Premarital examination (PME) and history taking provides a base line assessment of future married couples. It has proved to be a helpful and effective measure to detect and diminish burden of reproductive problems, communicable diseases, and heredity illness **(Ibrahim et al., 2013)**.

Premarital immunization is very important part of PMC to protect healthy women and avoid difficulty and complications to their pregnancy. As sexual contact is a significant route of transmission for hepatitis B virus (HBV), syphilis, gonorrhea and acquired immunodeficiency virus (AIDS), in case of the presence of a carrier status during premarital testing, prospective spouse should be protected by early immunization and counseling **(Tosun et al., 2012)**.

Premarital investigation (PMI) is a multidimensional concern that has a significant role in reducing marital difficulties caused by inherited and infectious diseases. It aims to detect and treat unrecognized disorders and decrease the spread of diseases to couples and children. Premarital counseling is one of the tools to make knowledge and skills available for motivating individuals to make better and healthy lifestyle choices especially when correctly targeted. It is also the most appropriate process, as it is generally acceptable from the religious and ethical point of view **(Al-Farsi et al., 2014)**.

The role of nurse in providing PMC is important as they help in promoting public health through orienting and educating couples about their health because they are the building stone of any society **(Gu et al., 2014)**. The nurse can provide complete care to couples through comprehensive care plan begin from taking complete history, performing comprehensive assessment, detecting risk factors or existing problems, treating or modifying problems, providing health counseling and make appropriate referral to other services. She can also assist couples in suitable decision making and support them in case of problems discovered and this important role require interviewing skills and high education **(Elfattah, et al., 2015)**.

Significance of the Study

According to **(Farahat et al., 2014)**, young people in Egypt need more information on reproductive health and access to PMC services before they have their first child. Although their attitudes towards sexual matters are liberal, their knowledge about reproductive health and premarital care is still limited. Multiple studies were conducted in Egypt (Fayoum and Menoufia university students) addressing knowledge and attitude of youth towards PMC and revealed that there is a lack of knowledge related to PMC and reproductive health even among educated persons **(Mohamed et al., 2015)**. So, this study was done to shed light on premarital care through assessment of knowledge, attitude, and need of individuals toward it in Ismailia city.

II. Aim of the Study

The Aim of the Present Study was to:-

Identify knowledge, attitude and needs of individuals attending premarital care at Ismailia city. This aim will be achieved through the following objectives:

1. Assess level of knowledge of individuals regarding premarital care.
2. Identify attitudes of individuals regarding premarital care.
3. Identify needs of individuals regarding premarital care.

Research Question

1. What is the level of knowledge of individuals regarding premarital care?
2. What is the attitude of individuals toward premarital care?
3. What are the needs of individuals regarding premarital care?

III. Subject and Methods

Subject and methods for this study was explained under four main designs as follows:-

1. Technical design.
2. Operational design.
3. Administrative design.
4. Statistical design.

1-Technical Design:-

The technical design for the study included research design, setting, target population, sampling design and tools of data collection.

- **Research Design:-**

A descriptive study design was used in this study.

- **Setting:-**

The study was carried out at all maternal and child health care centers that provide premarital care at Ismailia city included El-Shouhada health center, El –Saba Banat health center, and Hay el-Salam health center. In each center, the PMC included waiting room where the couples pay 50 LE for the service, history taking and examination room and lab for investigations where RH blood type only was performed. The PMC starting work in each center from 08:00 AM to 02:00 PM. There were only 6 persons that provide the service for couples in each center, consist of two nurses for history taking and counseling, a doctor for providing examination, lab technician and two social specialists.

- **Target Population:-**

The target populations of this study were consisted of individuals who attend premarital care at Ismailia city.

Inclusion Criteria:

1- Individuals who attend the premarital care for the first time.
2- Willing to participate in the study.

Exclusion Criteria:

1- Male or female who previously married,
2-Aren't Egyptian

- **Sampling design:**

Sample type:-

Convenient sampling was used to recruit the study sample.

Sample Size:-

The investigator attended each center and determined the flow rate of each center in the last year which was 1512 individuals per year for Hay El-Salam health center, 807 individuals for El –Saba Banat health center and 681 individuals for El-Shouhada health center.
The sample was calculated based on the flow rate of each center and the following formula:

$n = Z\alpha^2 \times pq / d^2$ (Wassertheil-Smoller, 2004)

Where:
n = sample size.
$Z\alpha$ = the value of standard normal distribution for type I error probability for the sided test and equals 1.96.
P= 0.96
q= 1- p
d^2 = the accuracy of estimate = $(0.05)^2$

$$\text{Sample size (n)} = \frac{(1.96)^2 (0.96)(1-0.96)}{(0.05)^2} = 320 \text{ individuals}$$

So, according to the calculations the sample size = 320 individuals.
The sample was divided according to the flow rate of each center as the following:
1- Hay el-Salam health center: 161 subjects (50.4%of total sample) as the flow rate was~ 1512 individuals.
2- El –Saba Banat health center: 86 subjects (26.9%of total sample) as the flow rate was ~ 807 individuals.
3- El-Shouhada health center: 73 subjects (22.7%of total sample) as the flow rate was ~ 681 individuals.

- **Tool of Data Collection:**

Self Administering Questionnaire: (Appendix II)

This tool was adopted from **(** ***Al Azeem et al., 2011;*** **Al Kindi et al., 2012;** ***Ibrahim et al., 2013., Farahat et al., 2014;*** **AbouElyazid et al., 2014)** and adapted by the investigator based on the related literatures.
The tool included opened ended and close ended questions. It was divided into four parts as follows:

Part 1

Included closed questions about socio-demographic data as, age, sex, residence, level of education occupation, economic status, consanguinity, present and past medical history and family history. (12questions).

Part 2
It included MCQ questions to assess individuals knowledge related to premarital care as definition, component, offered services, sources of their knowledge, target people to receive PMC, investigations, suitable time of PMC visit, settings of PMC and PMC immunization (12 questions).

Scoring system for knowledge:
A scoring for individual's knowledge regarding premarital care was consisted of: given scores (3) for complete correct answers, score (2) for incomplete correct answers, while the wrong answer was scored (1). A scoring was given to each question and a total knowledge score was 33 points. Individual who obtained ≥ 20 point (>60%) was classified as having good level of knowledge, individual who had 14-<20 point (40-<60%) was described as having fair level of knowledge and who had < 14 point (<40%) was described as having bad level of knowledge.

Part 3:
This part aimed to assess the attitude of individuals towards premarital care. It included questions distributed according to 3 point scale (agree, not sure, disagree), (14 questions).

Scoring system for attitude:
A scoring for individuals' attitude toward premarital care was consisted of given score (3) for agree, scores (2) for not sure and score (1) for disagree. A scoring was given to each question and a total of attitude scores were 42 points. A total score of >31 points (>75%) conveys a positive attitude toward pre-marital care, while a total score of 21-31point (50-75%) conveys equivalent attitude toward pre-marital care and a total score of <21points (<50%) conveys negative attitude toward pre-marital care.

Part 4:
It included open and MCQ questions and aimed to assess individuals' needs regarding premarital care. It divided into 3 sections
Section A: - Included questions about general needs of individuals regarding PMC.(3 questions)
Section B: - Included questions about educational and counseling needs (3 questions)
Section C: - Included questions about individuals' perception of their needs regarding premarital care (4 questions).

- **Tool validity:**

The tool was revised by jury consist of five expertise for clarity, relevance, applicability, comprehensiveness, understanding and easiness of implementation. According to their suggestions the modifications were applied.

2-Operational Design:

- **The preparatory phase:**

The data collection tool was prepared by the investigator based on a review of relevant literatures.

- **Pilot study**

A pilot study was conducted on 10% of the study sample to examine the clarity and effectiveness of the study tools. It was carried out for one month and covered 32 individuals. Data obtained from the pilot study were analyzed. Based on its results, modifications of the study tool were done. The sample used for the pilot study was excluded from the study sample.

- **Field of Work**

Data was collected within 4 months period started in December 2017 and ended in March 2018. Data was collected 5 days/ week. From individuals visited maternal and child health centers, the investigator selected the subjects according to the previous mentioned criteria. During data collections the individuals weren't with each other as each partner attend the center near to his/ her residence. The investigator introduces herself and explains the purpose of the study for each individual. Written consent was obtained from individuals to participate in the study. The investigator arranged suitable room in which the study subjects can fill the questionnaire with complete privacy to reduce their worries. The self administered questionnaire was distributed to individuals to fill it and the investigator was available to clarify any question. Semi interview was performed for illiterate individuals to help them understand and fill the questionnaire. Every day from 4 to 6 individual were recruited. The self administering questionnaire was completed within 15 to 25 minutes.

3-Administrative Design:-
Before conduction of this study a written letter was directed from the dean of the faculty of nursing, Suez Canal University to every director of each maternal and child health care center to obtain their permission to conduct this study. The aim of this study was explained to the directors, physicians and staff nurses working in each maternal and child health care center to attain their cooperation.

- **Ethical considerations:**

All ethical considerations were considered for privacy and confidentiality. Written consents (Appendix III) was obtained from the individuals participated in the study after a brief explanation of the study and they were reassured that the information obtained will be confidential and used only for the study purpose with their right to withdraw at any time.

4-Statistical Analysis:
Data was collected, coded and entered into SPSS system files (SPSS package version 20). Analysis and interpretation of data were conducted. All data were presented in number and percentages, mean and standard deviations were calculated for quantitative data.

IV. Results:

A total of three hundred and twenty individuals were enrolled in this study to fulfill its aim. The aim was to identify knowledge, attitude and needs of individuals attending premarital care at Ismailia city. The results are presented through the following parts: Part I: Sociodemographic characteristics of the studied sample and their medical and family history, Part II: Knowledge level of the studied sample about PMC, Part III: Attitude of the studied sample toward PMC. Part IV: Needs of the studied sample related to PMC, Part V: Total knowledge and total attitude and its association with sociodemographic characteristics of the studied sample.

Table (1). Shows the individuals source of knowledge about premarital care. It shows that 65.9% of the studied sample heard about premarital care and less than half of them (45.97%) knew about PMC from relatives and friends. It also shows that 45.4% of the studied sample heard about premarital care from different sources.

Figure (1): shows that 48.1% of the studied sample had good knowledge about PMC.

Figure (2): shows that 87.2% of the studied sample had positive attitude towards PMC.

Table (2). Shows that more than half of the studied sample had no general needs about PMC and had no needs about educational programs (56.9% and 58.1% respectively). As shown 26.9% of the studied sample need health education about premarital care, 15.9% need health education about relationship between couples and 14.7% need health counseling about child rearing and care. In addition, 46.3% of the studied sample preferred attending premarital care before marriage. Also it shows that 40.6% of the studied sample prefers female doctor/nurse to provide premarital counseling. Concerning preferred place for premarital care half of the studied sample preferred all mentioned setting including maternal and child health center, general hospitals and private clinics. Most of the studied sample need confidentiality about test results and to provided only to both partners and psychological specialist for rehabilitation in case of barriers to marriage (92.8% and 92.2% respectively).

Table (3). Shows that more than two thirds of the studied sample need educational lecture about premarital care for university students and need educational program about all topics including Heredity diseases, Chronic diseases, Psychological problems, and reproductive health (80.3% and 73.4% respectively). Also 72.8% of the studied sample need information before marriage about all items including sexual relation, heredity diseases, fertility and childbearing, family planning methods and social relation

Table (4). Shows that there was statistical significant relation between total knowledge and sex and educational level of the studied sample (P value= 0.047 and 0.000 respectively).

Table no 1. Distribution of the studied sample according to their source of knowledge about premarital care (n=320).

Item of knowledge	No	%
Source of knowledge about PMC(no=211)		
-Didn't hear about PMC before	109	34.1
-Mass media(radio and TV)	41	19.43
-Relatives and friends	97	45.97
-Social communication means	29	13.74
-Health field workers	26	12.32
-educational curriculum	37	17.53
-All of above	96	45.4
-Don't know	42	19.43

Figure (1). Distribution of the studied sample according to their total knowledge (n=320):

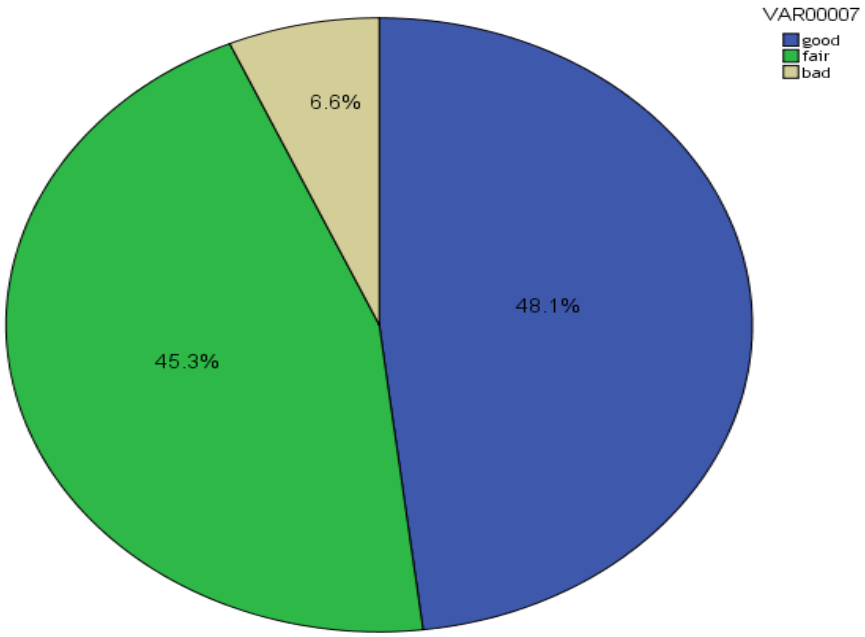

Figure (2). Distribution of the studied sample according to their total attitude (n=320):

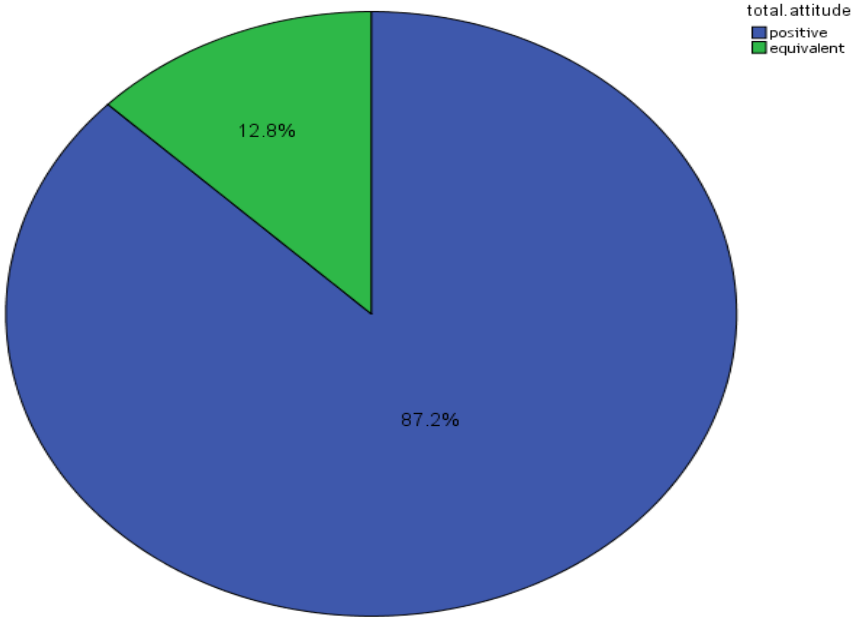

Table (2). Distribution of the studied sample according to their general needs regarding premarital care (n=320).

Item of needs	No	%
Suitable time for attending premarital care*		
-During study period	50	15.3
- Before engagement	116	36.3
-Before marriage	148	46.3
-All of above	19	5.9
What are the needs you want to have about PMC*		
-Non		
-Health education	182	56.9
-Complete investigation and medical examination	86	26.9
-Presence of psychological specialist	75	23.4
-Presence of specialized doctors	4	1.3
-Premarital immunization	8	2.5
-Free examination	10	3.1
	3	0.9
Who is preferred to provide PM counseling		
-Male doctor/nurse	113	35.3
-Female doctor/nurse	130	40.6
-Together	71	22.2
-Other	6	1.9
Preferred place for PMC		
-M&C health center	80	25
-General hospitals	43	13.4
-Private clinics	37	11.6
-All of above	160	50.0
Confidentiality about test results should be maintained and provided only to both partners		
-Yes	297	92.8
-No	23	7.2
-Don't know	-	-
There should be psychological specialist for rehabilitation of premarried couples in case of barrier to marriage		
-Yes		
-No		
-Don't know	295	92.2
	25	7.8
	-	-

**The results are not mutually exclusive*

Table (3). Distribution of the studied sample according to their educational needs regarding premarital care: (n=320).

Item of needs	No	%
Should make educational lectures about PMC for university students		
-Yes		
- No	257	80.3
-Don't know	21	6.6
	42	13.1
Should provide educational programs for prospective couples about		
-Heredity diseases		
-Chronic diseases	29	9.1
-Psychological problems	8	2.6
-Reproductive health	33	10.3
-Child care &rearing*	15	4.7
- Infectious diseases*	47	14.7
- Relationship between couples	42	13.1
- Premarital investigation*	51	15.9
- Follow up during pregnancy and healthy life style*	30	9.4
- Immunization and medical examination*	24	7.2
-All of above	20	6.3
	235	73.4

Information should be known before marriage		
-About sexual relation	16	5.0
-About heredity diseases	9	2.8
-About fertility and childbearing	16	5.0
-About family planning methods	26	8.1
-About social relations	20	6.3
-All of above	233	72.8

**The results are not mutually exclusive*

Table (4). Relation between total knowledge of the studied sample about PMC and their sociodmographic characteristics (n=320):

Total knowledge	Good	Fair	Bad	χ^2	**P value**
Item	**No (%)**	**No (%)**	**No (%)**		
Age					
18-<25	22 6.87 15 4.68	84 26.25	69 21.56		
25-<32		43 13.44	38 11.87	3.966	0.411
32-38	3 0.94	21 6.56	25 7.82		
Sex					
-Male	15 4.68	75 23.44	78 24.37	6.106	0.047*
-Female	25 7.82	73 22.82	54 16.87		
Residence					
-Urban	28 8.75	104 32.5	90 28.13	0.152	0.927
Rural	12 3.75	44 13.75	42 13.13		
Education					
-Illiterate	- -	1 0.32	4 1.25		
-Write and read	- -	1 0.32	12 3.75		
-Basic education	1 0.32	4 1.25	10 3.13		
- Secondary education or its equivalent	6 1.87	38 11.87	35 10.94	28.038	0.000*
- University education	33 10.32	104 32.5	71 22.18		
Occupation					
-Professional	21 0.32 4 6.56	46 14.37	51 12.82		
-Non professional		39 12.18	54 13.75	14.608	0.006*
No	13 4.68	63 19.68	27 14.68		
Income					
-Not enough	4 1.25	35 10.94	36 11.25		
-Barely enough	17 5.32	63 19.68	57 17.82	6.852	0.144
-Enough	19 5.93	50 15.63	39 12.18		
Consanguinity					
Yes	2 0.63	22 6.87	18 5.63	2.739	0.254
-No	38 11.87	126 39.37	114 35.62		

V. Discussion

Interpretation and discussion of results obtained from the current study were presented in three main parts; the first part describes individual's level of knowledge related to premarital care in Ismailia city. The second part is concerned with attitude of individuals towards premarital care. The third part is concerned with general, educational and counseling needs and individuals perception of their needs regarding premarital care in Ismailia City.

This study stated that about two-thirds of participants heard before about PMC. This result was in agreement with **(Elyazid et al., 2014)**, who found that about two- thirds of the participants of Al Azhar university students in Cairo heard before about PMC. Also, the study done by **(Farahat et al., 2014)** on

Menoufia university students, indicated that most participants from theoretical faculties heard before about PMC services. In addition, **(Al Kindi et al., 2012)**, mentioned that the participants were aware about the availability of PMC in Oman in higher frequency. Furthermore, another study done by **(Al-Aama et al., 2008)** among university students in western Saudi Arabia, stated that about half of the participants heard about PMC.

In most Arab countries friends and media are the primary sources of information related to reproductive health for youth even though they are educated **(Mahaini, 2008)**. As shown in this study, source of knowledge about PMC and reproductive health of about one third of participants was relatives and friends. This may be due to cultural influences and absence of the role of mass media and health categories in disseminating information about PMC program and reproductive health in Ismailia city. This finding was in line with **(Elyazid et al., 2014)**, who found that friends and mass media were the main source of information among non- medical students.

Also, **(Ibrahim et al., 2011)**, showed that the source of information of most of their participants in King Abdul-Aziz university students, Jeddah were relatives and friends followed by mass media. Similarly, **(Ibrahim et al., 2013)**, found that relatives and friends were the source of information for more than three quarters of their participants of governmental outpatient clinics attendees in Jeddah. In addition, **(Al Kindi et al., 2012)**, reported that about one third of the participants have obtained their information on premarital screening tests from curriculum then family and friends.

This was in contrast with **(Elyazid et al., 2014)**, where their results revealed that university curriculum and health care workers were the most frequent sources among medical students and this may be due to the nature of their study. In addition, **(Mirza et al., 2013)**, showed that electronic media was the primary source of information for about one quarter of their participants in Pakistan. From the researcher perspective this may be due to the wide range use and importance of inclusion of electronic media in disseminating information about PMC between youth in Pakistan. Moreover, the findings of the study performed by **(Farkındalığı, 2010)** among youth corpers in South-West Nigeria, showed that the majority of their respondents were informed by health care workers.

In addition to the Egyptian study performed by **(Al Azeem et al., 2011)** among Fayoum university students, it revealed that television was the main source of knowledge and for about two-thirds of participants, relatives is a source of knowledge of more than one third of the sample. Furthermore, **(Farahat et al., 2014)**, reported that primary source of knowledge of less than half of participants was media followed by relatives and friends of less than one third of participants. From the researcher point of view, these differences in source of information may be attributed to different study groups and importance of combination of all categories in disseminating information about PMC.

The current study showed that total knowledge score of less than half of participants was good and total knowledge score of more than one thirds was fair. From the investigator point of view, the lake of knowledge between participants of our study may be due their source of information about PMC and reproductive health that's relative and friends. This disagreed with **(El-Ghany et al., 2010)**, who found that more than one third of participants had average level of knowledge score about premarital counseling and care and less than half of them had low level of knowledge score about premarital counseling and care.

The same findings were found in a study performed by **(Ibrahim et al., 2013)**, they showed that the participants' total knowledge regarding premarital screening and genetic counseling was generally low. This also agree with those of a study conducted at King Abdul-Aziz university, Jeddah, showed that their participants had insufficient knowledge about PMC program **(Al-Aama et al., 2008; Al-Aama, 2010)**. Another study in Syria in 2009 showed that university students had fair overall knowledge about premarital testing. **(Gharaibeh & Mater, 2009)**.

This study showed that total attitude score of majority of participants towards PMC was positive and only 12.8% of participants had expressed equivalent attitude score towards PMC. This high score of positive attitude between participants related to high level of education of about two-thirds of them in Ismailia city. This was in agreement with **(Ibrahim et al., 2013)**. They showed a positive attitude score towards premarital screening and genetic counseling among most of the general population of outpatient clinic attendees.

Also, **(El-Ghany et al.,2010)**, found that about two-thirds of participants had positive attitude score toward premarital counseling and care and less than one third had expressed equivalent attitude score toward premarital counseling and care. In addition, **(Al-Aama et al., 2008; Al-Aama, 2010)** found that most of the participants had overall positive attitude towards premarital screening and genetic counseling. Also, results from Germany in 2009 found that there was an overall positive attitude toward genetic testing among their participants **(Balck et al., 2009)**.

As for participants needs, this study showed that about half of participants need PMC to be provided at different setting included maternal and child health centers, general hospitals and private clinics and. This was

supported by **(Elyazid et al., 2014)**, who found that more than two thirds of their participants favored private clinics and hospitals as a place to provide PMC followed by specialized health care centers.

Also, **(El-Ghany et al., 2010)**, showed that the majority of participants need maternal and child health centers as a proper places of premarital counseling and care. In addition, **(Al Sulaiman et al., 2008)**, found that about one third of their participating youth favored receiving PMC in specialized centers and less than one third desire private clinic. This was in contrast with **(Farahat et al., 2014)**, who reported that about one quarter of participants did not care about the place to have the service.

Concerning time of attending PMC services, this study showed that less than half of participants need to attend PMC before marriage and about one third preferred attending PMC before engagement. This agreed with **(Al Kindi et al., 2012)**, who reported that the majority of participants preferred to do it just before marriage. This was in contrast with **(El-Ghany et al., 2010)**, who found that about half of participants preferred premarital counseling during educational years compared to one third of them preferred the suitable time to provide premarital counseling direct before marriage.

This study showed that about three quarters of participants need educational programs about heredity and chronic diseases, psychological problems, reproductive health and relationship between couples. This was in agreement with **(Ibrahim et al., 2013)**, who stated that majority of participants suggested adding counseling about building a healthy family as well as reproduction and fertility issues. A high percentage of participants also suggested adding more genetic counseling, which agreed with results of **(Al Sulaiman et al., 2008)**.

In this study majority of participants need to make educational lecture about PMC to university students. This was in same line with **(Al Azeem et al., 2011)**, who showed that all participants in their study need to have proper education in such care. Similar finding were stated by **(Sobhy et al., 2001)** on Alexandria university nursing students, who recommended that premarital counseling should be included in university curriculum. Also, the participants in a study conducted by **(Inandi et al., 2003)** on university students in Erzurum, Turkey, agreed to the idea that health education should be given in schools.

Finally, this part of thesis discussed knowledge, attitude and needs of individuals regarding PMC in Ismailia city with other studies in this field. The majority of previous studies support our study results where there were lack of total knowledge about time, places that provide PMC and premarital vaccination but their attitudes were positive and their needs were to receive investigation, examination and health education, provide care by female doctor/nurse, provide psychological care and ensure confidentiality about test results. Few studies don't support our results due to differences in the characteristics of study sample.

VI. Conclusion& recommendations:

Based on the findings of the present study, it can be concluded that:

- Less than two thirds of the studied sample heard about PMC from different sources. Although less than half of the studied sample had good total knowledge about PMC they had insufficient knowledge about some aspects of PMC as premarital immunization.
- Total attitude score of the majority of the studied sample towards premarital care was positive but the total knowledge score of them was good or fair.
- In addition, high frequency of the studied sample need to receive premarital care before marriage, receive investigations, examinations and health education about heredity, chronic and infectious disease, psychological problems, fertility and child care. Also they need to provide care by female doctor/nurse, provide psychological care and ensure confidentiality about test results.

Based upon the results of this study, the following recommendations can be suggested:-

1. Developing educational classes and disseminating program to raise individual's awareness and knowledge about premarital care.
2. Developing educational programs to raise awareness of youth and families about premarital care in schools, universities, clubs and social settings.
3. Designing and holding nurses educational classes and workshops about premarital care services are important to improve their knowledge to activate their role as providers of premarital counseling
4. Premarital care centers should distribute materials (posters, pictures and booklet) about premarital care and places provide its services.
5. Further researches should be conducted to develop strategy to meet needs of individuals attaining premarital care centers.

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