

## Perception about Premarital Screening and Genetic Counseling Among Males And Females Nursing Students

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**Abstract:** Premarital screening is a unique one of the almost important plans and strategies for preventing genetic disorders and congenital anomalies. The Nurse has an integral role in providing genetic services that include assessing genetic risk, provides information, discussing available testing options and provides appropriate supportive counseling. **Aim:** To explore nursing student's perception toward premarital screening (PMS) and genetic counseling (GS). **Methods:** A cross-sectional design used at Faculty of Nursing Suez Canal University from September to December 2016. A self-administered questionnaire was distributed to 203 third academic years both gender students. The self-administered questionnaire contained 3 core sections; the first involves socio-demographic data, the second includes the students' knowledge and information regarding the PMS and GC. Whilst the third portion of it was to discover their attitudes for the screening by using a Likert scale. **Results:** Most (78.3%) of the study participants were perceptive about the premarital screening availability. Their information main sources about PMSGC were studying at the faculty (63.6%), mass media (58.1%), family and friends and health care providers (56%). (94%) supposed it is important to carry out premarital screening and come to an agreement to perform the screening. Nearly two third (63.3%) favor an obligatory procedure of PMSGC just before marriage and near two third (59.6%) chosen making laws to prevent marriage if positive results. there was a highly significant correlation among study subjects' total knowledge and their total attitude ( $p$ -value <0.001). **Conclusion:** This study revealed that most of the students have a sure positive attitude to PMSGC but insufficient knowledge about which diseases PMSGC focus & targets. Despite the fact the majority of the participants thought it is important to carry out premarital screening; there was one third un-favored making it obligatory before marriage and making laws to prevent marriage if of positive results. This reflects and suggests the value of teaching and instruction in different educational settings as a keystone in improving awareness of students about premarital screening and genetic counseling program.

**Keywords:** Premarital, genetic, screening, counselling,

Date of Submission: 20-01-2018

Date of acceptance: 09-02-2018

### I. Introduction

Blood genetic disorders are widespread among Arab nations it constitutes the main proportion for handicap mentally as well as physically. <sup>[1]</sup> Hemoglobinopathies are the commonest inherited and are a main public health trouble globally. <sup>[2]</sup> As stated by World Health Organization (WHO), 240 million persons are affected by these diseases disorders (Sickle cell anemia plus thalassemia) and as a minimum 200,000 persons are born yearly affected. <sup>[3]</sup>

At present blood genetic disorders congenital anomalies affect an estimated number 1 in 33 neonates and result in about 3.2 million birth defects related disabilities every year. The percent up to 7.65 million, nearly 9 % of the population, who are suffering from Thalassemia sickle cell disease, was 0.2% .<sup>[4]</sup>

Blood genetic disorders are a major load on organizations and healthcare systems. Its prolonged (chronic) nature needs life-long medical care and high cost therapies also specific treatment. All of these mentioned justifications, Egyptian Premarital Screening and Genetic Counseling (PMSGC) program was introduced in 1946 as a chief component of pre-marital and child health care services. Service of wellbeing began to give such administrations gratis for imminent companions in either maternal and child wellbeing

focuses or concentrated wellbeing focus, yet this administration still extremely constrained and a large portion of the couples get hitched with no arrangement which may build the maternal and fetal risk.<sup>[5]</sup>

Pre-marital screening believed the most efficient means of prevention that may decrease the birth of affected children, by preventing the marriage of the carriers of the blood genetic disorder. Also, it is the appropriate procedure, as it is commonly acceptable from the ethical and religious point of view in addition to its minimal economical, and health requisites.<sup>[6, 7]</sup>

However, in Egypt, even though the existence of PMS, still its use and utilization is actual little. It is reported that the mean barrier is a limitation of information accessible to youths due to lack of existing general knowledge and information about reproductive health also, a lack of an adequate counseling and educational services appropriate for them. This confirmed the necessity to create a consciousness course to clarify the advantages of PMSGC to the undergraduates and enhance and develop consciousness of the risk effects and outcomes of blood inherited disorders.<sup>[8]</sup>

Perception is a procedure of accepting, choosing, sorting out, deciphering, checking and responding to boosts. This resembles a contribution through put-yield process in which the stimuli can be considered as 'inputs' change of 'contribution' through determination, association and understanding as 'through puts' and a definitive behavior conduct/activity as 'yield'.<sup>[9]</sup>

Concentrates on Arab nations demonstrated absence of familiarity with premarital testing.<sup>[10-12]</sup> shockingly there is no accessible information from nursing understudies on this part of premarital screening program neither about its uses and application. Additionally, today student nurse will be the future nurses who will be responsible for prevention and promotion of health during life cycle so this study was conducted to evaluate the nursing perception to what a base for better planning about counseling in the reproductive health. The purpose of this research is to discover nursing students' perception toward premarital screening and genetic counseling.

#### **Aim of the study**

To explore male and female nursing student's perception of premarital screening and genetic counseling.

#### **Research Question**

What is the nursing student's perception toward premarital screening and genetic counseling?

## **II. Methods**

A cross-sectional design used at Faculty of Nursing Suez Canal University from September to December 2016. The population was all undergraduate students third academic year during the study time frame. Both guys and females were selected and those willing to participate were enrolled in the study. A structured questionnaire with questions close-ended was designed by the investigator after a wide review of the literature on information of PMS program. It developed in Arabic after translated from English by professionals at the College of nursing.

A pilot contemplate was directed on an example of 20 understudies to evaluate the unwavering quality of the poll and to check for simplicity and lucidity of things. Inquiries that appeared to be questionable were then changed. The understudies engaged with the pilot think about were avoided from the final research.

The researchers gave brief clarification about the purposes of the study then distributed the questionnaire for 203 students. Our study questionnaire comprised of 3 fundamental parts; the initial segment was on the socio-statistic attributes including sex, age, faculty, scholastic year, guardians' connection and individual and family history of the inherited disorder. The second section gathers the students' knowledge with respect to premarital screening program, its accessibility, their wellspring of data, what it incorporates, who will be tested and the diseases it focuses. The third part comprised of things that investigated the students' attitudes towards premarital screening **by Likert scale**. The researchers emphasized assured students that their voluntary participation, anonymity and confidentiality. The informed agreement was got from all of them before concluding the questionnaires. The duration of each questionnaire was 30 minutes. The researcher repeated the same previous steps of data collection with the students who didn't attend in the visit.

- The researcher repeated the previous steps until finished predetermined numbers (203 students).

The data statistical analyses were conducted using Statistical Package of Social Science (SPSS) program. Describe the sample general features. Chi-square (or Fisher's exact) were used Spearman's rank correlation coefficient (r) was used to assess the degree of association between two sets of variables if one or both of them was skewed. To test significance we use a P-value of less than 0.05 was significant

### III. Results

Our study involved a sum of 203 nursing students most of them unmarried (94.1%) with 108 (53.2%) females and 95 (46.8%) males. The mean age of them is 20.46±1.70. Personal and family history of hereditary disorders was stated by 5.4 % and 35% (n=62) of them respectively. The reported disorders were sickle cell anemia, B thalassemia and G6PD deficiency. The rest assumed hypertension, asthma, heart diseases, and diabetes as familial hereditary disorders. About consanguinity between fathers and mothers, 55.2% while 44.8% have reported no relationship. **Table (1)**

**Table (2)** displays that, the studied sample had correct knowledge about PMSGC Test should involve both partners., importance, places offering PMCEs, components/services providing PMCEs (96.6%, 95.6%.) Most of the studied persons (No,159; 78.3%) were knowledgeable about the availability of PMSGC inside Egypt.one the other hand 62.6% (n=127) had not correct knowledge about disease by PMS

**Figure 1**The sources of students' information on PMSGC were school/faculty (63.6%), media (58.1%), family and friends and health care providers (56%).

**Table (3)** The vast majority of the participants (94.6%) reported it is essential to carry out PMS and agreed to perform it in the future life, 75% their rational is to avoid transmission of diseases to themselves, 74.9% for ensuring that their partner is healthy, and fitness for marriage .also, (90%) were agreed on the Affinity blood relationship is considered the main causes of genetic diseases is considered the main cause of genetic diseases.

**Table (4)** reveals that, there was a statistically significant difference between gender of studied sample and their attitude (p=0.002). Also, it reveals that there was a highly statistically significant relation between the studied samples' attitude and family history of the hereditary disease (p=<0.001).

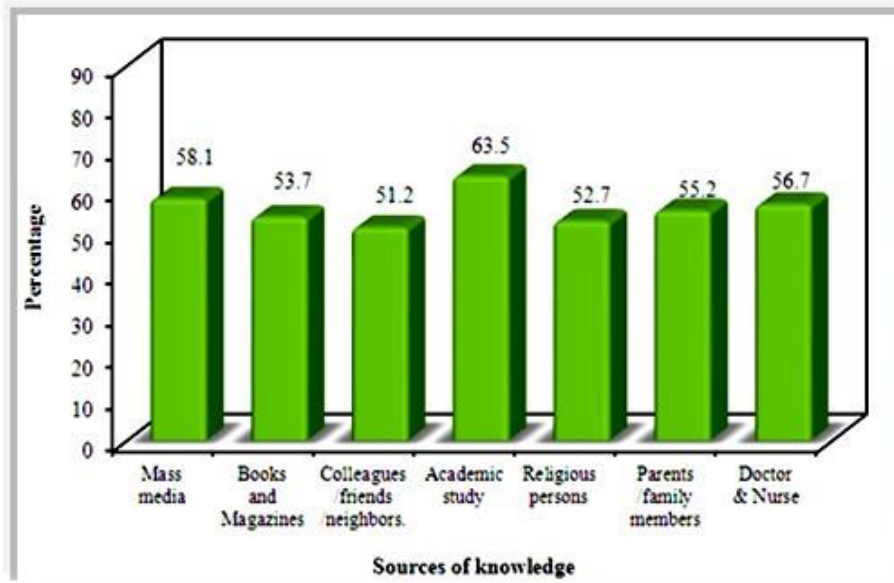
**Table (5)** validates the highly positive correlation between study subjects' total knowledge and their total attitude (p-value <0.001).

**Table 1: Students General features (n=203)**

General characteristics	(n=203)	
	No.	%
Mean age	20.47 (±1.70)	
<b>Sex</b>		
Male	95	46.7
Female	108	53.3
<b>Residence</b>		
Rural	83	40.9
Urban	120	59.1
<b>Marital status</b>		
Single	191	94.1
Married	11	5.4
Divorced	1	0.5
<b>Relationship between parents</b>		
Yes	112	55.2
No	91	44.8
<b>Personal history of hereditary disease</b>		
Negative	192	94.6
Positive	11	5.4
<b>Family history of hereditary disease</b>		
Negative	141	69.5
Positive	62	30.5

**Table (2):** Students knowledge regarding PMSGC (n=203).

Knowledge items	Correct (n=151)		Incorrect (n=52)	
	No.	%	No.	%
Availability of PMSGC in Egypt	159	78.3	44	21.7
It is important to carry out PMSGC.	142	70.0	61	30.0
Diseases that are focused and targeted by PMSGC	76	37.4	127	62.6
The test should involve both partners.	196	96.6	7	3.4
Components/services providing PMSGC. includes bloodtests and physical examination	194	95.6	9	4.4



**Figure (1):** Sample Source of knowledge

**Table (3):** Attitudes of the students toward PMSGC (n=203).

Attitude	Disagree (n=31)		Uncertain (n=19)		Agree (n=153)	
	No.	%	No.	%	No.	%
1. important to carry out PMSGC.	1	0.5	10	4.9	192	94.6
2. Agreed to do PMSGC in the future.	2	1.0	6	3.0	195	96.1
3. PMSGC prevent transmission of diseases to my offspring	3	1.5	10	4.9	190	93.6
4. Appropriate time for carrying out PMSGC, just before marriage.	137	67.5	3	1.5	63	31.0
5. Affinity blood relationship is considered the main causes of genetic diseases.	10	4.9	12	5.9	183	90.1
6. placing laws and rules in place to inhibit marriage in presence of positive results	68	33.5	14	6.9	121	59.6
7. PMSGC must be obligatory.	51	25.1	23	11.3	129	63.5
8. PMSGC ensuring fitness for marriage.	16	7.9	35	17.2	152	74.9
9. PMSGC preventing transmission of diseases to themselves.	13	6.4	36	17.7	154	75.9
10. If any diseases appeared on one of the couples has to be treated and rehabilitated before marriage.	5	40.0	39	19.2	158	77.8

**Table (4):** Relation between students' general characteristics attitude

General characteristic	Total Attitude						Significant test	
	Disagree (n=31)		Uncertain (n=19)		Agree (n=153)		x2	p
	No.	%	No.	%	No.	%		
<b>Gender</b>								
Male	21	67.7	4	21.1	70	45.8	10.587	0.005*
Female	10	32.3	15	78.9	83	54.2		
<b>Residence</b>							2.465	0.292
Rural	9	29.0	7	36.8	67	44.7		
Urban	22	71.0	12	63.2	86	56.3		
<b>Marital status</b>							4.045	MCP= 0.427
Single	31	100.0	19	100.0	141	92.3		
Married	0	0.0	0	0.0	11	7.0		
Divorced	0	0.0	0	0.0	1	0.7		
<b>Relationship between parents</b>							7.888	0.019*
Yes	14	45.2	16	84.2	82	53.6		
No	17	54.8	3	15.8	71	46.4		
<b>Personal history of hereditary disease</b>							28.528	0.001*
Negative	31	100.0	13	68.4	148	96.7		
Positive	0	0.0	6	31.6	5	3.3		
<b>Family history of hereditary disease</b>							6.728	0.035*
Negative	17	54.8	17	89.4	107	69.9		
Positive	14	45.2	2	10.6	46	30.1		

x2, p,  $\chi^2$  and p values for Chi square test  
MCP: p value for Monte Carlo for Chi square test  
\*: significant at  $p \leq 0.05$

**Table (5):** Correlation between total knowledge score of studied sample & their attitude regarding PMSGC (n=203).

	No.	%	r	P
<b>Total Knowledge</b>			0.614	<0.001
Correct	151	74.1		
Incorrect	52	25.9		
<b>Total Attitude</b>				
Disagree	31	15.3		
Uncertain	19	9.4		
Agree	153	75.4		

\*: Statistically significant at  $p \leq 0.05$

#### IV. Discussion

On arranging and designing planning any preventive program, many attributes should be considered to guarantee its prosperity and success. For Premarital screening program, there is an extraordinary need to concentrate on the objective populace (target population) basically unmarried youthful grown-ups, for example, college understudies in light of the fact that their attitudes and convictions and will affect their choices in influence their decisions in life including their decision on an accomplice and partner. The significance of PMS can't be overemphasized the same number of nations have demonstrated its value and viability in diminishing the rate of diseases tested or tried for. [13, 14]

Nowadays the undergraduate nursing students will be the future nurse who will be accountable for prevention and accountable of wellbeing health throughout life cycle so this study was conducted to recognition to what a base for better arranging about guiding in the conceptive about advising and counseling in the reproductive health and wellbeing.

The present results clearly showed that the undergraduates were conscious about the availability of PMSGC in Egypt but their Knowledge was insufficient about its various aspects such as what it includes and what diseases it focuses and targets. This finding is consistent with studies in Saudi Arabia and Syria [15,16] This may be due to their' young age (mean=20.60) where they lack the ability to appreciate the seriousness of the genetic blood disorders and its huge impact on the emotional and financial status of the affected families. Education should be directed to improving young adults' knowledge of these issues.

Additionally, past investigation finding was consistent with [17] who demonstrated that, the lion's share of considered example had amended information about significance of premarital directing and examination and more than three quarter of study test gave adjust learning about the objective gathering qualified for PMC at her

examination "Learning and Attitude of Mansoura University Students Regarding Premarital Counseling and Examinations".

The past examination turned around with our study <sup>[18]</sup> who said that almost 33% and the greater part individually rectify learning in connection to having data about premarital care, definition, significance and segments at her investigation "Premarital care: Health advancement program for female Students in Ain Shams University Hostel ." In the interim, the past examination finding was on speak with <sup>[19]</sup> who said that, the whole examination test had poor information about the hereditary issue, premarital examinations, this investigation improved the situation optional school understudies in the rustic region in Egypt.

Our finding was at a similar line with the past investigation discovering <sup>[17]</sup> who expressed that, more than two third of contemplated test had added up to rectify information score in her examination. While the past investigation was inverse with <sup>[18]</sup> who detailed that, more than two third of the aggregate information score of considered example about premarital care were unsuitable learning. What's more, in inverse to <sup>[20]</sup> who demonstrated at her investigation that more than seventy five percent of the contemplated tests had mistaken answer. The members' states of mind towards PMSGC were great, where the larger part trusted that PMS is essential and consented to complete it later on. This is like what has been accounted for in other. <sup>[17]</sup>

Most of the members detailed they will do PMS to anticipate transmission of sicknesses to the kids. These mirrors member's decent comprehension of preventive estimation of PMS. Making PMSGC as a required methodology before marriage was supported by around two third of the members and the same favored setting up laws and directions to counteract marriage in the case of un wanted outcomes. This is very lesser than results in Saudi by Abd Al Azeem <sup>[21-24]</sup> Al Farsi in an investigation intended to evaluate dispositions for premarital directing among understudies of Abha Health Sciences College, Saudi Arabia, they found that, premarital advising was acknowledged by the majority of study test., where 85% conceded to making PMSGC as a required technique before marriage and 63% concurred on lawful impedance if there should arise an occurrence of positive outcomes.

The past examination finding was converse to <sup>[20]</sup> in her investigation which intended to survey observation with respect to premarital screening among Ain-shams University understudies which showed that, the greater part of her contemplated test had a negative mentality about the reason of emerges illnesses as the consequence of connection marriage.

At the point when gotten some information about the fitting time of doing PMS, most of the members liked to make it immediately before marriage. This delineates PMSGC is really accomplice for finish procedure of marriage planning and is not a basic advance. So, the members' reaction, if there should arise an occurrence of positive PMS, comes about demonstrated that nearly.

The result of the present study indicated that the main sources of their knowledge from the faculty curriculum followed by mass media. The previous study finding was in the same line with <sup>[18,25]</sup> studies in Egypt and Omani they reported that main sources of knowledge were school or university curriculum & television respectively while the previous study finding was disagreed with <sup>[17]</sup> who reported the first source of knowledge mass media after that Academic study.

The result of the present study revealed that, there was highly statistically significant difference between students' total attitude and their gender, Personal and family history of hereditary disease. The previous study finding was congruent with <sup>[20]</sup> who indicated that, there was statistically significant difference between the studied sample's attitude and their gender. Meanwhile the previous study finding was disagreed with <sup>[26]</sup> who mentioned that, there wasn't any statistical difference between attitudes about premarital health counseling (PMHC) acceptance regardless the students' gender.

The aftereffect of the present investigation demonstrated that, there was exceptionally noteworthy positive relationship between's aggregate learning and state of mind. It concurred with <sup>[27]</sup> who directed an investigation on learning and demeanor about premarital advising among Hadharmout University Students which uncovered that, there was factual huge between understudies' information and their state of mind towards premarital guiding and care. In the meantime couldn't help contradicting <sup>[28]</sup> who specified that, there was no factual huge contrast between the information and demeanor of the understudies of Osun State Polytechnic, towards premarital hereditary screening.

## **V. Conclusion**

This research concluded that almost of the participants' attitude positively toward PMSGC but insufficient awareness concerning those diseases it focuses and targets. Also the vast majority of them thought it is vital agreed to perform PMSGC. Their attitude regarding premarital screening and genetic counseling found to be affected by their gender, personal and family history of heredity diseases. In addition, increase knowledge enhance positive attitude toward PMSGC.

## VI. Recommendations

1. Increase consciousness and awareness about human hereditary qualities and hereditary illnesses among people in general and experts to help and partake in explore on hereditary maladies in Egypt and to pull in worldwide consideration of particular researchers .
2. Holding of gatherings, workshops, symposia, and instructional classes in the specific field of human hereditary qualities to expand open and expert information about the diverse hereditary malady and strategies for containing them in the general public and trade of logical learning.  
Encouragement of understudies and late graduates to join the exercises of the general public .
3. Enhancement of national, local, and worldwide systems administration and collaboration for early discovery, avoidance and administration of hereditary illnesses which influence all frameworks and organs of the human body at the level of Egypt, Arab nations, Africa, Europe, USA, and so on.

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Maha Ali, Norelhouda Elshabory, Hanan Elzebalwy Hassan, Nehad Zahra, Hayam Alrefai. "Perception About Premarital Screening And Genetic Counseling Among Males And Females Nursing Students." *IOSR Journal of Nursing and Health Science (IOSR-JNHS)*, vol. 7, no.1, 2018, pp. 51-57.