

# University Students Attitude Towards the National Premarital Screening Program of UAE

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**Citation:** Saleh, L. M. and Abd El-Kader, R. G. (2022). University Students Attitude Towards the National Premarital Screening Program of UAE. *European Journal of Environment and Public Health*, 6(1), em0109. <https://doi.org/10.21601/ejeph/12022>

## ARTICLE INFO

Received: 28 Dec. 2021

Accepted: 2 Apr. 2022

## ABSTRACT

**Background:** In Arab countries, genetic blood disorders are common and account for a major proportion of physical and mental disability. Premarital screening is one of the most successful programs in the United Arab Emirates for reducing such high prevalence.

**Aim:** To assess the attitudes of the university students towards premarital screening program.

**Method:** A cross-sectional descriptive study was conducted at Ras Al Khaimah Medical and Health Sciences University during the period from February to June 2020. A self-administered questionnaire was distributed to 265 students using systematic random sample technique. The questionnaire comprised of two parts: students' demographic data and students' attitude about premarital screening program.

**Results:** The study findings revealed that the majority of participants agreed that premarital screening program prevents disease transmission to their offspring and ensures their partner's health. A fair number believed that if any diseases appeared on one of the couples has to be treated and rehabilitated before marriage. Most of them believed that to get married with incompatible result is a wrong decision.

**Conclusion:** Majority of the participants have a satisfactory attitude about premarital screening program. On the other hand, targeted educational programs regarding the importance of premarital screening program are strongly suggested to eliminate all factors that may impair the program success.

**Keywords:** premarital screening program, attitude, university students

## INTRODUCTION

Marriage is considered one of the major indicators in one's lifetime. It is a keystone on which families and consequently societies are established. Marriage steadiness and achievement be influenced by partners' compatibility. The existence of inherited or chronic infectious diseases can interrupt a marriage whether it affects the partners or their broods. Therefore, it is important to ensure the couples' capability prior to marriage by detecting those diseases and the possibility of its presentation in their offspring (Al-Enezi and Mitra, 2017; Melaibari et al., 2017).

Genetic blood diseases are a major public health concern around the world (Al Kindi et al., 2012). In the Gulf region, inherited blood disorders specially, thalassemia and sickle cell anemia are very common and cause great morbidity and mortality among the affected children in these countries (Salama and Saleh, 2016). Consanguineous marriage is one of the most contributing factors to the great prevalence of

inherited blood disorders that is most common in the Middle East, West Asia, and North Africa (Al-Nood et al., 2016).

In the Arab countries, statistics show that 40%-50% of marriages are consanguineous. In some societies, particularly those in Sudan, Iraq, United Arab Emirates (UAE), Mauritius, and Saudi Arabia, these figures can even exceed 60% (Al-Ghanim, 2020). In UAE, the rate of marriage among relatives has risen from 39% to 50% over the last two generations, with nearly 26% of those marriages occurring between first-degree relatives (Tadmouri et al., 2009). The rate of consanguineous marriage varies across countries due to factors like education, religion, culture, and socioeconomic status (Bener and Mohammad, 2017).

As of 1992, premarital screening services in the UAE were launched through the Marriage Fund, which provides UAE citizens who intend to get married with adequate family guidance services and financial grants. The program prepares and guides prospective couples toward starting a stable family life and creating a solid UAE society. Since 2009, the UAE Ministry of Health has made premarital screening

mandatory for all couples planning to marry, not just those seeking the marriage fund. To lower the occurrence of genetic illnesses, several nations in the Mediterranean and Middle Eastern regions have implemented mandatory premarital screening and genetic counselling programs (Salama and Saleh, 2016).

The Pre-Marital Screening and Genetic Counselling (PMSGC) program is a critical preventative measure for couples planning to start a family and an important step toward societal well-being. It includes the promotion of a woman's and her partner's health and well-being prior to pregnancy. Premarital health counselling and a general medical examination are included in this program, which can be very beneficial in reducing the spread of diseases (Bener et al., 2019).

University students is an important group of the population as they are living in UAE region with a consanguinity rate of 50% (Tadmouri et al., 2009). Furthermore, it was supposed that they must have adequate education and knowledge along with their high probability to soon experience these issues as they are at an age that is considered highly eligible for marriage (Rashad et al., 2005). The primary objective of this study is to explore the attitudes of RAK Medical and Health Sciences University (RAKMHSU) students toward the national PMSGC program of UAE. This could help assess the PMSGC program the efficacy in this area. Furthermore, it could assist in identifying the cultural and traditional barriers that adversely affect the PMSGC program's attainment of its objectives.

## MATERIALS AND METHODS

A cross-sectional descriptive study conducted in RAKMHSU, RAK Emirate, UAE during the period from February 2020 to June 2020. The target sample of 265 was estimated using the following formula:  $N = Z^2 PQ/d^2$ , where N is sample size, Z is the normal standard deviate ( $Z=1.96$ ), P is the frequency of occurrence of an event (knowledge level about premarital care 47%),  $Q=1-P$  (the frequency of non-occurrence of an event), and d is degree of precision (2%). N is 240 plus 10% to compensate for drop outs. Thus, final sample is 265 students. The sample size represented (25%) of the total students. The sample was selected using systematic random method. Married students and who attended any program related to premarital screening are excluded from the study.

### Instrumentation

A self-administered questionnaire was developed after reviewing the related literature. It was piloted on 10% (24) of the sample to assess its reliability and clarity of questionnaire. Accordingly, the potential problem area in research instrument identified prior to the implementation and items were modified. The validity of the instrument was tested by three expert faculty in nursing. The questionnaire consisted of the following two parts.

#### Part-1

Sociodemographic characteristics as age, gender, nationality, college, academic year, family monthly income,

family history of hereditary diseases, and source of information.

#### Part-2

Students attitudes towards the PMSGC program has 15 items rated on a 5-point scale. For positive attitude as premarital test limits the spread of hereditary diseases, scored: strongly agree (5), agree (4), undecided (3), disagree (2), strongly disagree (1). For negative attitude as do not want to interfere with God's will, reverse score given.

Those with attitude scores from 50% of the total attitude score and ( $\geq 37$ ) had satisfactory attitude while those with attitude score less than 50% of the total attitude score and (less than 37 score) had unsatisfactory attitude.

Students were selected from the class list. The purpose of research explained to the selected students and they signed the written consent. The questionnaire administered to the students in the classrooms and spent 5-7 minutes to fill it. The student who had any quires were answered during the administration of questionnaire. This process was followed in all the four colleges.

### Ethical Consideration

The study was approved by the RAK Medical & Health Sciences University ethical committee with the reference number RAKMHSU-REC-188-2019-PG-N. The participants were informed that the information they provided would be kept private and confidential. It was stressed that participation was entirely voluntary, and no personal information was disclosed. Each college's survey was collected and labelled independently. All paperwork is maintained in a secure area.

### Statistical Analysis

The Statistical Package for Social Sciences (SPSS) application version 25 was used for data entry and analysis. A number, a percentage, a mean, and a standard deviation were used to represent the data. The Chi-square test was used to determine the relationship between selected student's demographic data and their attitude level. The person correlation test was introduced to determine if there was a link between student's age and their attitude level. It was statistically significant when the p-value was equal to or less than 0.05.

## RESULTS

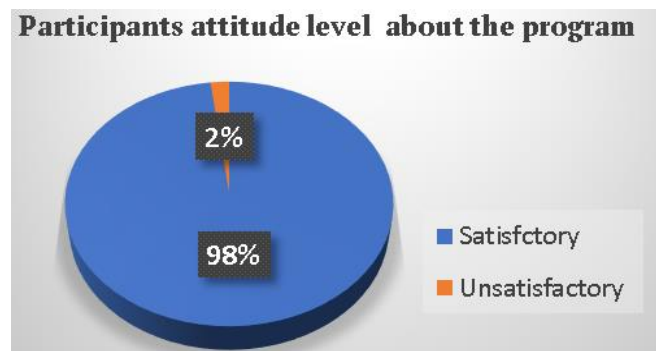
**Table 1** summarizes the socio-demographic characteristics of the 265 university students. The age ranged from 17 to 39 years and (70.2%) were female students. More than half (59.2%) were medical students, Arab nationality represents (68.3%). The students were in various academic years ranging from first to fifth. In terms of mother and father education level, 44.5% and 55.1%, respectively had a university education.

**Table 1.** Socio-demographic characteristics of study participants (N=265)

Characteristics	Frequency (f)	Percentage (%)
<b>Colleges</b>		
Medical	157	59.2
Pharmacy	50	18.9
Nursing	40	15.1
Dental	18	6.8
<b>Age</b>		
17-23	227	85.7
23-29	30	11.3
≥29	8	3.0
<b>Nationality</b>		
Arab	181	68.3
Non-Arab	84	31.7
<b>Gender</b>		
Male	79	29.8
Female	186	70.2
<b>Academic year</b>		
First	79	29.8
Second	41	15.5
Third	69	26.0
Fourth	39	14.7
Fifth	37	14.0
<b>Mother education level</b>		
Illiterate	17	6.4
Primary	19	7.2
Intermediate	26	9.8
Secondary	85	32.1
University	118	44.5
<b>Father education level</b>		
Illiterate	17	6.4
Primary	11	4.1
Intermediate	23	8.7
Secondary	68	25.7
University	146	55.1

**Table 2.** History of consanguinity and genetic disorders of the study participants

Characteristics	Frequency (f)	Percentage (%)
<b>Parental consanguinity (N=265)</b>		
Yes	116	43.8
No	149	56.2
<b>Type of consanguinity (N=116)</b>		
First cousin	56	48.3
Second cousin	60	51.7
<b>Family history of genetic diseases (N=265)</b>		
Positive	45	17.0
Negative	220	83.0

**Figure 1.** Distribution of the study participant's according to their attitude level about PMSGC program

Less than half of the participants (43.8%) had consanguineous parents and 48.3% of them were first degree relatives. Only 17% reported a family history of genetic disorders whereas none of them reported a personal history of genetic disorders. The history of consanguinity and genetic disorders summarized in **Table 2**.

The majority of participants (98%) reported satisfactory attitude about premarital program while only (2%) reported unsatisfactory attitude (**Figure 1**).

**Table 3** represents that 70.3% of females, 29.7% of of males had satisfactory attitude with no statistically significant difference ( $p>0.05$ ). there are astatistically significant difference between students' academic year and their attitude

**Table 3.** Association between sociodemographic data and attitude level of the students

Items	Attitude level about premarital screening and genetic counselling program		
	Satisfactory [N (%)]	Unsatisfactory [N (%)]	Chi-square/p-value
<b>Nationality</b>			
Arab	177(68.3)	4 (66.7)	0.11/>0.05
Non-Arab	82 (31.7)	2 (33.3)	
<b>Gender</b>			
Female	182 (70.3)	4 (66.7)	0.03/>0.05
Male	77 (29.7)	2 (33.3)	
<b>Academic year</b>			
1 <sup>st</sup>	77 (29.7)	2 (33.3)	22.58/≤0.05*
2 <sup>nd</sup>	41 (15.8)	0 (0.0)	
3 <sup>rd</sup>	67 (25.9)	2 (33.3)	
4 <sup>th</sup>	38 (14.7)	1 (16.7)	
5 <sup>th</sup>	36 (13.9)	1 (16.7)	
<b>Consanguinitybetween parents</b>			
No	145 (56.0)	4 (66.7)	0.20/>0.05
Yes	114 (44.0)	2 (33.3)	
<b>Type of relationship</b>			
1 <sup>st</sup>	53 (20.5)	2 (33.3)	1.33/>0.05
2 <sup>nd</sup>	59 (22.8)	2 (33.3)	
No reallion	147 (56.7)	2 (33.4)	

Note. \*p-value statistically significant ≤0.05

**Table 4.** Correlation between students' attitude and selected demographic data

Items	Age
Attitude about premarital program	r=+0.17; p>0.05

level ( $p \leq 0.05$ ). In relation to nationality and students' attitude level there were no statistically significant difference ( $>0.05$ ).

**Table 4** shows that there is a positive correlation between students age and their attitude about premarital screening program with no statistically significant difference ( $>0.05$ ).

## DISCUSSION

PMSGC is one of the most effective ways to prevent genetic illnesses. It can provide a capability to intervene according to identified risks, vaccinations, genetic consulting, nutrition, consulting regarding behavior, and advice regarding contraception (Al-Qahtani et al., 2019). It is important to know degree of this program's approval among university students to enhance its effectiveness and reach to this population.

The present study findings show that, the age of the university students ranged from 17 to 39 years and (70.2%) were female students. More than half (59.2%) were medical students. A similar study (AlQahtani et al., 2018) found that a total sample of 541 students were involved with ages ranged from 18 years to 27 years old and 56.6% at medical colleges.

As previously mentioned, in the UAE, the rate of marriage among relatives has risen from 39% to 50% over the last two generations, with nearly 26% of those marriages occurring between first-degree relatives (Tadmouri et al., 2009). This is in agreement with the results of the current study, 43.8% of the participants had consanguineous parents and 48.3% of them were first cousins. This is also in line with Ibrahim et al. (2011), which reported that 34.6% of the students at King Abdulaziz University in Jeddah. This may be due to considerable cultural and customary differences.

As regards to attitude of the university students toward premarital screening program, the vast majority of participants appreciated the importance of PMSGC and favored testing. This was based on their desire to prevent transmission of disease to their off-spring and revealed that the participants had a good understanding of the preventative role of PMSGC. Few participants believed that PMSGC screening examination interfere with God's will. Furthermore, they were concerned that the screening results would not support their selections. This results are in agreement with Melaibari et al. (2017), which reported that the most common reason for PMSGC rejection for nearly all participants was the fear of receiving incompatible PMSGC results and consequently the termination of an otherwise favourable marriage. This is in the line with Al-Khalidi et al. (2002), which stated that health science students in Abha agreed that the prevention of disease transmission to them and their offspring was the primary reason for partaking in a PMSGC rather than to certify the health of their partners. Also, their main reason for rejecting PMSGC was to not interfere with God's will.

In this study, most of the students believed that to get married with incompatible result is a wrong decision. This results are in agreement with Melaibari et al. (2017), which mentioned that the majority (82.9%) of Taif University students were willing to change their marriage decision in case of incompatibility. In consistence, Ibrahim et al. (2011) showed that 64.6% of female university students agreed that the decision to marry should be free regardless of the risk of hereditary disease. This data reflects a significant increase in the acceptability of the program. On the other hand, the remaining percentages of people who intended to continue mismatched marriages point to the existence of cultural barriers that must be addressed.

In the present study, most of the students believed that we should have a law to prevent any marriage with incompatible result. This is in line with Melaibari et al. (2017), which shows that the most of Taif University students (91.8%) are demanding the implementation of a law that prohibits incompatible marriages. This is also consistent with Al Kindi et al. (2012), which mentioned more than one-third of them favored putting laws and regulations in place to prevent marriage in case of positive results. This is also in agreement with Al-Nood et al. (2016), which show that more than half (62%) of the respondents believed that legal prevention of marriage in case of positive results. Finding of this study shows that 98% of student satisfied with the program. This results are in agreement with Hejri et al. (2015) finding that vast majority of the participants (94%) were satisfied with PMS program.

## CONCLUSION & RECOMMENDATION

The finding of the present study showed that most of the students have a satisfied attitude towards PMSGC and their readiness to adopt the counselling before marriage. Health education programs with medical advice are required for improving the community attitudes towards PMSGC. Further studies could be carried out to assess: the effectiveness of structured teaching program on student knowledge and attitude toward premarital program, holding of gatherings, workshops, symposium and instructional classes in the specific field of human hereditary qualities.

**Author contributions:** All co-authors have involved in all stages of this study while preparing the final version. They all agree with the results and conclusions.

**Funding:** No external funding is received for this article.

**Declaration of interest:** The authors declare that they have no competing interests.

**Ethical approval:** RAK Medical & Health Sciences University Research Ethics Committee approval number RAKMHSU-REC-188-2019-PG-N was obtained to conduct the study.

**Availability of data and materials:** All data generated or analyzed during this study are available for sharing when appropriate request is directed to corresponding author.

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