Assessment of students' Knowledge and attitude regarding Premarital Examination at Aswan University

Basma Abdo Ahmed Hassan[1] & Soad Sayed Bayomi[2]
[1] Demonstrator at Community Health Nursing Department, Faculty of Nursing, Aswan University, Egypt.
[2] Professor of Community Health Nursing, Faculty of Nursing- Assiut University, Egypt.

Abstract

Background: Premarital therapy often describes a procedure aimed to better premarital relations, resulting in stable marriages and greater satisfaction. **Aims:** To assess studied students' knowledge and attitude regarding premarital examination at Aswan University. **Design:** A descriptive cross sectional study. **Setting:** This study was conducted at four randomly selected faculties at Aswan University. **Sample:** A purposive sample of 310 of students at level fourth at Aswan University was recruited in this study. **Tools:** Two tools; **Tool I:** An self-administrated questionnaire sheet was involving two parts: **part 1:** Socio-demographics, **part 2:** Knowledge assessment questionnaire **Tool II:** Attitude Assessment Scale. **Results:** 47.1% of the students had poor knowledge level, while 22.6% of them had good knowledge level regarding pre-marital examination. Also, 61.3% of the students had positive attitude regarding pre-marital examination, while, 38.7% of them had negative attitude regarding pre-marital examination. **Conclusion:** there was significant correlation (P=0.028) between the total students' knowledge and total attitude regarding premarital examination **Recommendations:** Developing an educational program to raise awareness of students about premarital counseling in universities.

Keywords: Attitude, Knowledge & Premarital examination

Introduction

Premarital examination is a series of procedures in which couples preparing to marry are checked for genetic, infectious, and blood-borne disorders in order to reduce the chance of spreading any sickness to their offspring. Premarital exams may involve tests for sexually transmitted illnesses, blood draws, semen analysis, resuscitation factor, Follicle-stimulating hormone, testosterone, prolactin, and estrogen hormones **(Kamel & Fahmy, 2019; Hamed et al., 2022).**

Premarital screening attitude among couple and young people is the first force that push youth for receive premarital examination. Premarital screening attitude difference from one to another person according to different points as culture, education, economic status and believe. It is important to improve and seek or correct the youth attitude toward premarital screening attitude **(Kamel & Fahmy, 2019).**

Premarital screening (PMS) is a series of tests designed for couples hoping to marry shortly to detect common genetic blood diseases (primary hemoglobinopathy, including sickle cell anemia (SCA) and thalassemia) and viral disorders (such as hepatitis B, and C, and HIV/AIDS). PMS is a screening procedure provided to couples wanting to marry to discover carriers of specific inherited illnesses, such as SCA and thalassemia. These carriers are normally asymptomatic, but if both partners are carriers, they can pass on the condition to their future children **(AlShafai et al. 2022).**

Premarital counseling is a therapeutic approach for prospective couples who intend to marry. It is a skill designed to assist couples with knowledge on how to strengthen their relation. It is a method for reducing the likelihood of divorce and increasing partner pleasure after marriage. Couples who attend premarital therapy usually have generally good psychological health. It takes place in a variety of contexts and is delivered by a variety of professionals such as community agency workers **(Al-Qahtani et al., 2019).**

Furthermore, it is one of the most effective strategies to prevent genetic anomalies, congenital malformations, and a variety of medical and psychosocial marriage issues. PME can be especially useful in preventing disease transmission by recognizing, changing, and managing some medical, behavioral, and other health risks that are known to influence gestational outcomes. The lack of preconception genetic counseling increases the likelihood of pediatrics being afflicted by a condition and the risk of abnormalities **(Said & Gomaa, 2022).**

Community health nurses have an important role in delivering pre-marital care services such as evaluating inherited risk, offering information, discussing available testing choices, and providing necessary counseling. Nursing is an essential component of the health-care system, and nurses devote their abilities to the health

maintenance, and restoration. They also have an important role in modifying female beliefs and behaviors by providing education about premarital counseling and discussing its benefits **(Kamel & Fahmy, 2019).**

Nurses can provide individuals the option of joining support family groups, while health education and the media can collaborate to raise awareness among premarital students. Furthermore, nurses assist individuals in preventing genetic illnesses and the resulting mortality and morbidity. Furthermore, they guarantee that couples are informed of issues pertinent to their condition and assist them in making decisions that are consistent with their lifestyle and attitude **(Gomes et al., 2019).**

Significance of the Study

The incidence of hereditary blood diseases is high. This high occurrence is primarily attributable to an avoidable cause: consanguineous marriages. It is frequently practiced in all communities globally, with higher proportions in the Asian, Middle East, and African populations, including Egypt, which is represented by 30.9%, without considering the detrimental outcomes on family health such as genetic disorders and congenital anomalies, so increasing awareness about the outcomes of these marriages is important, especially among university students, who are the common engagement age through Premarital examination (PME) **(Ebid et al. 2021)** .

The frequency of marriages in Egypt rose to 928,800 contracts in 2019 from 887,300 in 2018, representing a 4.6% increase, while divorce frequency increased to 225,900 in 2019 from 211,500 in 2018, representing a 6.8% increase. (**Central Agency for Public Mobilization and Statistics, 2020**).According to studies, consanguinity rates among Egyptians have ranged from 29% to 39% over the last 40 years. Mental retardation, hearing impairment, autosomal recessive osteoporosis, and blood diseases are examples of disorders that can result from consanguineous marriage and be detected by PME **(Hanoon et al., 2021).**

Premarital examination is an important strategy for preventing hereditary diseases and congenital malformations, as well as reducing the economic burden on families with children who have inherited congenital deformities. Students' knowledge and attitudes concerning premarital examinations influence their practice and rate of success since they can exert a vital role in educating the communities regarding the need of PME **(Sedek et al., 2022).**

Aim of the study

To evaluate students' knowledge and attitude regarding premarital examination at Aswan University

Research questions

Q1. What is the university students' level of knowledge about premarital screening?
Q2. What is the students attitude regarding premarital examination?
Q3. What is relation between socio-demographic characteristics of the studied students and their total level of knowledge and attitude

Subject and Methods

Design: A descriptive cross sectional study.
Setting:
In Aswan University, four faculties were randomly selected, and these faculties are (Social work, Colleges of Arts, Science, and Agriculture). Aswan University branch was established as a branch of Assiut University in 1974 and in 1995 was issued to establish South Valley University. In 2012 was issued to establish Aswan University as an independent Egyptian government university, and the establishment of new colleges continued until the number of colleges became 18, in addition to the Institute of Nursing, the Institute for Research and African Studies and the Nile Basin countries. Researcher selected randomly four collages among university colleges by coding all collages and select only four numbers.

Sample:
A purposive sample according to inclusion criteria select this A total of 310 of students at level fourth the previous mentioned setting was recruited in this study. Sample involved Social Work Colleges (n=113), Arts College (n=117), Sciences Colleges (32) and Agriculture Colleges (n=48). Sample size contained fourth years students because they more mature and the closet to marriage stage than others students. All colleges are located inside the university campus next to each other except for the faculty of arts which is located outside the university in the new Aswan city. The sample size calculation done based on slovin's formula that was adopted from **(Saha & Paul, 2021)** as the following:

$$n = \frac{N}{1 + N(e)^2}$$

Where: n=sample size, N=total population number, e=margin error (0.05).

$$n = \frac{1385}{1 + 1385(0.05)^2} = 310$$

A representative sample from each college will be selected based on the following equation that was adopted from **(Gupta, et al, 2016)**:

$$n = \frac{total\ sample\ size}{total\ population} \ x\ population\ of\ subgroup$$

Faculty	Population	Size of sample
Faculty of Social Work	505	113
Faculty of Arts	525	117
Faculty of Sciences	140	32
Faculty of Agriculture	215	48
Total	**1385**	**310**

Inclusion criteria
- Fourth academic year
- Both sex male and females students
- Students who agreed to incorporated in the research

Exclusion criteria
- Married students
- Students who attended any program related to PME.

Data collection tools: Two tools were used for

Self-administrated questionnaire Sheet: It was designed by the researchers following revising of related literature. It involved two parts;

Part 1: Socio-demographic data, included questions related to age, sex, academic year, health status and family profile such as parents' education presence of chronic and genetic diseases as well as congenital malformations……etc.

Part 2: Knowledge assessment questionnaire. It was developed to identify students' knowledge about PME which encompassed definition, importance, and places offered services, time and components as well as their sources of knowledge **(Altaany et al., 2021;Tohamy et al., 2023).**

Scoring system was obtained from the students was examined with model key answer:
- Zero was recorded for each incorrect or don't know choice.
- One was recorded for each correct choice.

The overall scores of knowledge were estimated = 26, converted into a proportion score and categorized:
- Poor knowledge if total score < 50%.
- Average knowledge if total 50-< 70%
- Good knowledge if total 75%- 100% **(Saleh et al., 2022).**

Tool II: Attitude Assessment Scale

It was designed by the researchers following literature reviewing **(Altaany et al., 2021).** It concerned with assessing students' attitude toward PME. It consisted of 22 statement graded on three points likert scale that ranges from Agree, Neutral and Disagree. Negative items as "The presence of children with genetic problems does not affect the economic situation of the family" while positive items as "Premarital examination is a necessary step for a successful marriage"

Scoring system: The scoring of positive statements was: Agree = 3, Neutral = 2 and Disagree = 1. The scoring was inverted for negative sentences as follows: Agree = 1, Neutral = 2, and Disagree = 3. The overall

scores of attitude were collected, converted into a proportion score and grouped
- Positive attitude if total score ≥70%
- Negative attitude if total score was developed < 70% **(Kamel et al., 2019).**

Validity:
The content and face validity was performed through a panel of 5 experts from community health nursing department, Nursing Faculty. Their perspectives were regarding accuracy, comprehensiveness, relevance, clarity, and appropriateness of the tools. Alterations were established according to expert's judgment and the final form was developed. The required correction & modifications were done for knowledge and attitude. The required correction & modifications were done as the following rephrasing & paraphrasing of some items.

Reliability
Reliability coefficient of the tools was estimated by Cronbach's α alpha (0.85&0.89) for knowledge and attitude respectively.

Methods:

Administrative design:
An official written approval letter clarifying the purpose of study was obtained from Dean of Nursing faculty to Dean of each faculty of Aswan University

Pilot study:
It was established before data collecting 10% of sample (31 students) were included in the study. The necessary adjustments based on the pilot study findings and the questionnaire was reconstructed for ready. This was done to test the tools clarity and determine the time required for completion.

Ethical consideration
The faculty of nursing ethical committee gave its approval to the research proposal and there was no risk to the students being studied when the study being conducted. The study adapted with the common ethical principles sin clinical research and student's oral agreement was obtained after they had been informed of the study's nature and objectives. They were informed about having the right to refuse participation at any time and that they could withdraw from it any time without providing a reason. The privacy of study participants was taken into account when data was collected. Data was secret using a coding system. Data collection did not touch dignity of the students, tradition or culture.

Field work:
Field work included the following:
An approval was obtained from a scientific ethical committee of the Faculty of Nursing at Aswan University.
An official permission was obtained from the dean of some colleges at Aswan University which the study was conducted.
The current study were collected during the period from the beginning of March to 2023 until the end of June

2023, three days per week. From 9.00 a.m. to 12p.m. Before beginning the process of gathering characteristics, a brief explanation of the research's goal was given to the students. Following their clarification of the instructions, the students completed a self-administered questionnaire. The investigator met with the students during the break between lectures in the auditorium. The average time taken to complete each interview sheets sheet was around 20-30 minutes /6:7 students per day.

Statistical analysis:

Data were coded and analyzed based on the appropriate statistical tests then results were presented in appropriate tables, and figures. Data were imported into SPSS version 23 software for analysis. Numerical data were presented as mean and SD while categorical data were represented as number and proportion. The observed differences and associations were considered significant when $P \leq 0.05$

Results

Table (1): Distribution of the studied students regarding to their personal characteristics at Aswan University 2023 (n=310)

Items	No.	%
Age (in years)		
<20	138	44.5
≥20	172	55.5
Mean ±SD	21.06±7.16	
Gender		
Male	131	42.3
Female	179	57.7
Faculty		
Social Work	113	36.5
Arts	117	37.7
Sciences	32	10.3
Agriculture	48	15.5
Residence		
Rural	191	61.6
Urban	119	38.4
Are you engaged		
Yes	97	31.3
No	213	68.7
If yes, relationship (n=97)		
Son/daughter of a paternal uncle/aunt.	43	44.3
No relation	54	55.7
Father Education		
Illiterate	24	7.7
Basic	77	24.8
Secondary	122	39.4
High	87	28.1
Fathers occupation		
Employee	211	68.1
Worker	83	26.8
Don't work / retired	11	3.5
Died	5	1.6
Mother Education		
Illiterate	19	6.1
Basic	34	11.0
Secondary	216	69.7
High	41	13.2
Mothers occupation		
Housewife	236	76.1
Employee	74	23.9

Table (2): Distribution of the studied students regarding to their health history at Aswan University 2023 (n=310)

Items	No.	%
Personal history of chronic disease		
Yes	9	2.9
No	301	97.1
If yes, type of disease: *		
Diabetes mellitus	5	55.4
Hypertension	1	11.1
Heart disease	2	22.2
Renal disease	1	11.1
Hepatitis C	2	22.2
Family history about chronic disease		
Yes	196	63.2
No	114	36.8
If yes, type of disease : *		
Diabetes mellitus	123	62.7
Hypertension	167	85.2
Heart disease	48	24
Renal disease	26	13.3
Hepatitis C	97	49.5
Epilepsy	8	4.1

(*) More than one answer

Table (3): Distribution of the studied students' knowledge regarding pre-marital examination at Aswan University 2023 (n=310)

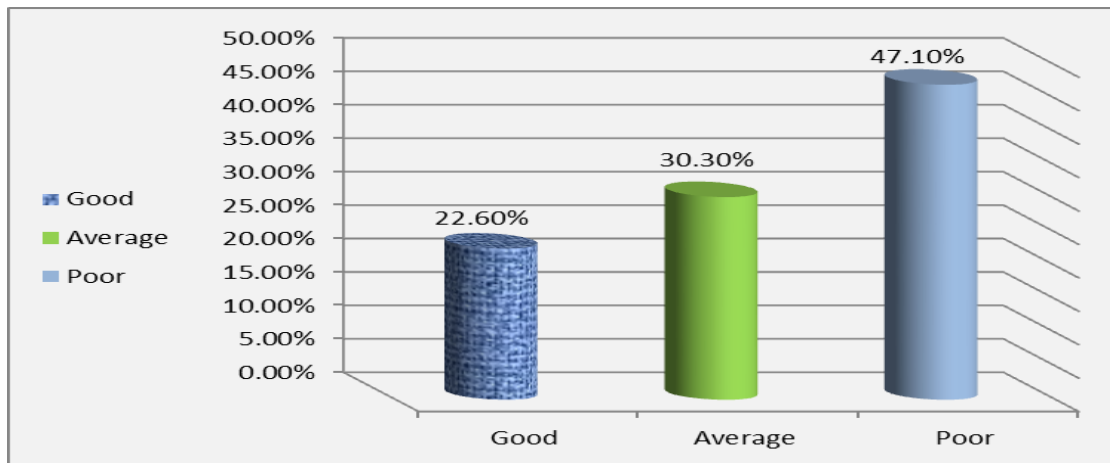| Knowledge	No.	%
Meaning of premarital examination.		
Correct	86	27.7
Incorrect answer	224	72.3
Beneficiary category of pre-marriage examination services.		
Correct	212	68.4
Incorrect answer	98	31.6
Suitable time for premarital examination:		
Correct	187	60.3
Incorrect answer	123	39.7
Importance of premarital examination: *		
Gain information about reproductive health	131	42.2
Ensure that couples are free from infectious diseases	87	28.0
Ensure that couples are free from genetic diseases	83	26.8
Early detection of disease	62	20
Places that providing premarital examination: *		
Maternal and Child Health Centers (MCH).	138	44.5
Medical Laboratories	138	44.5
Private Clinics.	48	15.5
Premarital investigation: *		
Semen examination	138	44.5
Rises factor (RH)	122	39.3
Virus C	115	37.0
Stool analysis	110	35.5
Complete blood test	90	29.0
Blood group test	90	29.0
Diabetes analysis	90	29.0
Virus B	87	28.0
Sexual transmitted disease (AIDS and syphilis)	84	27.0
Urine analysis	46	14.8
Radiological investigation	21	6.8
Diseases can be dedicated by premarital examination: *		
Infertility	139	44.8
Genetic disease	110	35.5
AIDS	110	35.5
Sexual transmitted disease	99	31.9
Viral hepatitis B.	55	17.7

(*) More than one answer

Figure (1): Total score of students' knowledge about pre-marital examination at Aswan University 2023 (n=310)
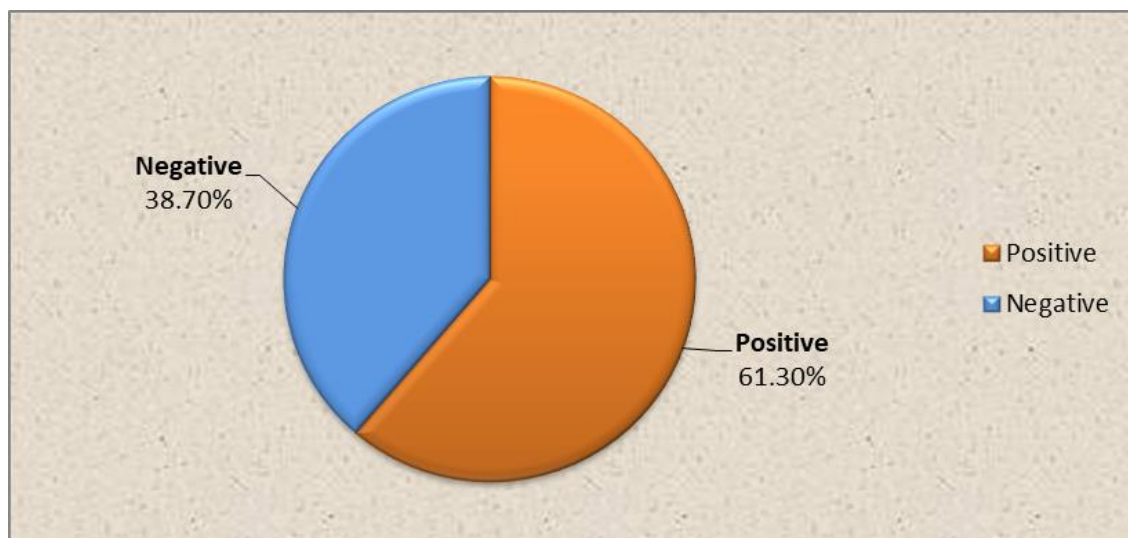

Figure (2): Total score of students' attitude about pre-marital examination at Aswan University 2023

Table (4): Relation between socio-demographic characteristics of the studied students and their total level of knowledge at Aswan University 2023

Items		Total level of knowledge						X^2	P-value
		Good		Average		Poor			
		N	%	N	%	N	%		
Age (in years)	<20	34	11.0	51	16.5	83	26.8	1.306	.564 (NS)
	≥20	36	11.6	43	13.9	63	20.3		
Gender	Male	38	12.3	46	14.8	72	23.2	.673	.712 (NS)
	Female	32	10.3	48	15.5	74	23.9		
Faculty	Social Work	13	4.1	20	6.5	80	25.8	2.147	0.029* (S)
	Arts	27	8.7	30	9.7	60	20		
	Sciences	12	3.8	5	1.6	15	4.8		
	Agriculture	18	5.8	10	3.2	20	6.5		
Residence	Rural	40	12.9	60	19.4	91	29.4	1.818	0.664 (NS)
	Urban	30	9.7	34	11.0	55	17.7		
Are you engaged	Yes	23	7.4	34	11.0	50	16.1	1.204	0.043* (S)
	No	47	15.2	60	19.4	96	31.0		
Father education	Illiterate	6	1.9	8	2.6	10	3.2		
	Basic	7	2.3	15	4.8	15	4.8	6.869	0.209 (NS)
	Secondary	35	11.3	40	12.9	87	28.1		
	High	22	7.1	31	10.0	34	11.0		

Items		Total level of knowledge						X^2	P-value
		Good		Average		Poor			
		N	%	N	%	N	%		
Fathers occupation	Employee	49	15.8	64	20.6	98	31.6	3.218	0.020* (S)
	Worker	17	5.5	26	8.4	40	12.9		
	Don't work/Retired	3	1.0	3	1.0	5	1.6		
	Died	1	0.3	1	0.3	3	1.0		
Mother education	Illiterate	1	0.3	7	2.3	11	3.5	6.141	0.331 (NS)
	Basic	28	9.1	32	10.3	49	15.8		
	Secondary	36	11.6	43	13.9	62	20.0		
	High	5	1.6	12	3.9	24	7.7		
Mothers occupation	Housewife	51	16.5	74	23.9	111	35.8	1.761	0.683 (NS)
	Employee	19	6.1	20	6.5	35	11.3		

X^2 test= Chi-Square test   P-value > 0.05= Non-significant (NS)   *P-value ≤ 0.05= Significant (S)

Table (5): Relation between socio-demographic characteristics of the studied students and their total level of attitude at Aswan University 2023

Items		Total level of attitude				X^2	P-value
		Positive		Negative			
		N	%	N	%		
Age (in years)	<20	85	27.4	57	18.4	1.266	.034* (S)
	≥20	105	33.9	63	20.3		
Gender	Male	93	30.0	63	20.3	.371	.645 (NS)
	Female	97	31.3	57	18.4		
Faculty	Social Work	13	4.1	100	32.3	2.389	0.022* (S)
	Arts	50	16.7	67	21.6		
	Sciences	10	3.2	22	7.1		
	Agriculture	18	5.8	30	9.6		
Residence	Rural	114	36.8	77	24.8	8.540	0.051* (S)
	Urban	76	24.5	43	13.9		
Are you engaged	Yes	72	23.2	35	11.3	2.479	0.115 (NS)
	No	118	38.1	85	27.4		
Father Education	Illiterate	18	5.8	6	1.9	3.362	0.499 (NS)
	Basic	48	15.5	29	9.3		
	Secondary	76	24.5	46	14.8		
	High	48	15.5	39	12.6		
Fathers occupation	Employee	136	43.9	75	24.2	3.781	0.437 (NS)
	Worker	47	15.1	36	11.6		
	Don't work / Retired	5	1.6	6	1.9		
	Died	2	0.6	3	1.0		
Mother education	Illiterate	13	4.2	6	1.9	1.362	0.851 (NS)
	Basic	69	22.3	40	12.9		
	Secondary	83	26.8	58	18.7		
	High	25	8.1	16	5.2		
Mothers occupation	Housewife	144	46.5	92	29.7	8.031	0.860 (NS)
	Employee	46	14.8	28	9.0		

X^2 test= Chi-Square test   P-value > 0.05= Non-significant (NS)   *P-value ≤ 0.05= Significant (S)
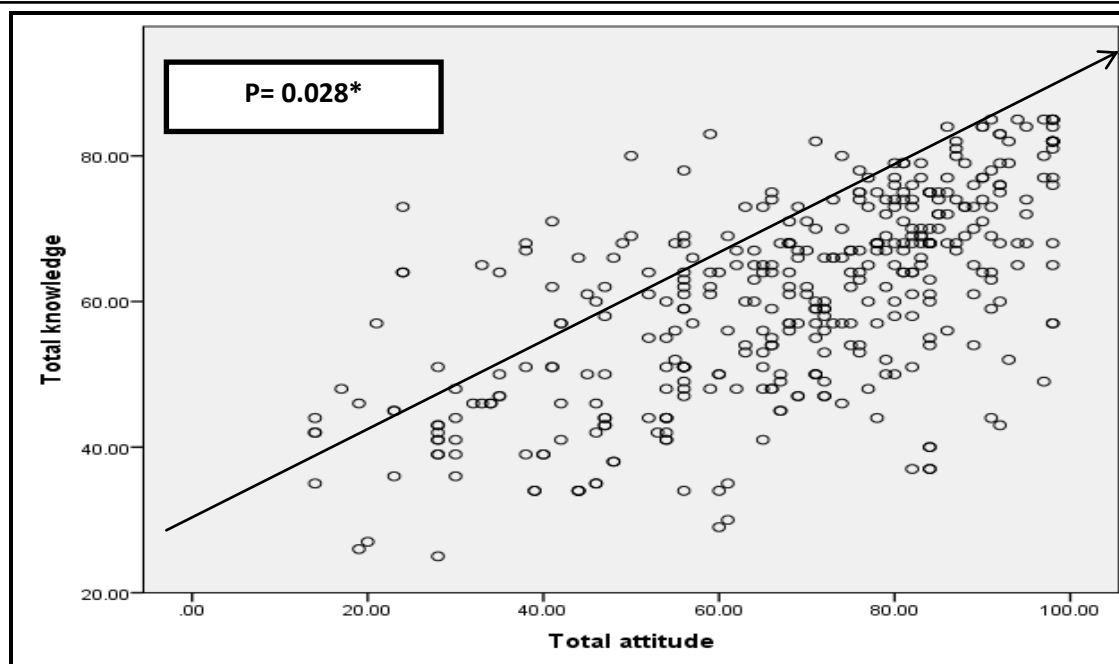
P= 0.028*

Figure (3): Correlation between total of knowledge and total level of attitude among the studied students

Table (1): Illustrates that, 55.5% of the students were in age group ≥20 years with mean 21.06±7.16, 57.7% of them were females and more than one third 37.7% of them were studied in Faculty of Arts. Also, 61.6% of them were from rural residence, more than two thirds 68.7% of them were not engaged; 39.3% of them had secondary education level. Additionally, 68.1% of the studied students reported that their fathers were employee, 69.7% of them their mother had secondary education and more than three quarters 76.1% of them reported that their mothers were housewife.

Table (2): Displayed that, the majority of the students 97.1% had no chronic disease; less than two thirds 63.2% of them had family history of chronic disease and less than two thirds 62.7% of them had diabetes mellitus.

Table (3): Reveals that, less than three quarters 72.3% of the studied students had incorrect answered regarding the meaning of premarital examination, more than two thirds 68.4% of the students had corrected answered regarding

Beneficiary category of pre-marriage examination services and 60.3% of them had correct answered regarding "suitable time for premarital examination". Regarding the importance of premarital examination, 42.2% of them mentioned "gain information about reproductive health" and regarding the places provide premarital examination 44.5% of them mentioned "Maternal and Child Health Care Centers" and " Medical Laboratories. Concerning premarital investigation, 44.5% of them mentioned "Semen examination" and more than one third 39.3% of them

mentioned "Rises factor (RH)". Also, 44.8% of them mentioned "Infertility" as disease can be dedicated by premarital examination.

Figure (1): Total score of students' knowledge about pre-marital examination at Aswan University 2023 (n=310) illustrates that, 47.1% of the studied students had poor knowledge level and 30.3% of them had average knowledge level, while, less than one quarter 22.6% of them had good knowledge level regarding pre-marital examination.

Figure (2): Total score of students' attitude about premarital examination at Aswan University 2023, Illustrates that, 61.3% of the studied students had positive attitude regarding pre-marital examination, while, 38.7% of them had negative attitude regarding pre-marital examination.

Table (4): Illustrates that, there was statistical significance difference in relation to total levels of studied students' knowledge regarding premarital examination, engaged status, father occupation at (P-value=0.029, 0.043 and .020) respectively.

Table (5): Demonstrates that, there was considerable difference in relation to total attitude level of the students regarding premarital examination and their age, faculty and residence at (P=0.034, 0.022 and 0.051) respectively, while, there was no was a significant difference relation to total levels of attitude of the studied students regarding premarital examination and gender are engaged status, father education, father occupation, mother education and mothers occupation at (P-value=0.642, 0.115, .499, .437, .851 and .860) respectively.

Figure (3): Reveals that**,** there was statistical considerable correlation between to total students' knowledge and total attitude regarding premarital examination at p- value=0.028

Discussion

Premarital counseling is a therapeutic approach for upcoming couples who intend to marry. It is a skill that provides couples with knowledge on how to strengthen their relation. Premarital therapy originated as a means to reduce divorce rates while also increasing satisfaction of couple post marriage. Couples that receive premarital counseling are more likely to have good psychological health and major relationship issues **(Osman et al., 2021)**.As a result, this research sought to analyze students' knowledge and attitudes toward premarital exams at Aswan University.

Regarding the students' characteristics in this research, more than half of the students were aged ≥20 years and more than one third of them were studied in Faculty of Arts. This findings was agree with **Al-Qahtani et al., (2019)**, who mentioned that more than half of student aged 22-24 years old. This result was disagree with **Saleh & Abd El-Kader, (2022)**, who found more than two thirds of subjects' ages were 17-39 years and more than half of them were medical students. From researcher opinion this may be due to the University Education starts at the age of 19 and more, this explains that their age was more than or equal to 20 years, in addition large faculty of arts containing the largest number of students in most Egyptian Universities.

Additionally, more than half of studied students were females. Also, more than three fifth of them were from rural residence, more than two thirds of them were not engaged; and about two fifth of them had secondary education level. Moreover, two thirds of the studied students reported that their mother had secondary education. This finding was comparable to the work conducted by **Al-Shafai et al., (2022)**, who revealed that the majority of students were female and single. Also, this finding was supported by the research performed by **Sedek et al., (2022)**, who showed that more than half of students were from rural areas and more than one third of their mothers hold secondary education.

Additionally, more than two thirds of the studied students reported that their fathers were employee, and more than three quarters of them reported that their mothers were housewife. This result was compatible with **Said & Gomaa, (2022)**, who found that more than half of fathers have work. Also, this result was similar with **Tohamy et al., (2023)**, revealed that, more than two fifth of mothers had a secondary level of education and more than three quarters of mothers were housewives. In addition, about two fifth of fathers had secondary education and more than half of them were

employed.

As regard to students'distribution regarding to their health history, this research showed that, most of the students had no chronic disease; less than two thirds of them had family history of chronic disease and about two fifth of them had Diabetes Mellitus. This result was consistent with **Kabbash et al., (2019),** who reported that only less than one fifth of students reported family history of hereditary disorders. This result was congruent with the study conducted by **Ali et al., (2018),** that showed that from the studied students reported familial hereditary disorder was Diabetes Mellitus. From researcher opinion this may be attributed to performing premarital examination before marriage that help prevention of hereditary and chronic disease.

Concerning distribution of the students' knowledge regarding pre- marital examination, this study demonstrated that, less than three quarters of the students had incorrect answered regarding the meaning of premarital examination, more than two thirds of the students had corrected answered regarding beneficiary category of pre-marriage examination services and three fifth of them had correct answered regarding "Suitable time for premarital examination".

Regarding the importance of premarital examination, more than two fifth of them mentioned "gain information about reproductive health" and "Maternal and Child Health Care Centers" and " Medical Laboratories" as a family planning centers. Concerning premarital investigation, more than two fifth of them mentioned "semen examination" and more than one third of them mentioned "Rises factor (RH)". Also, more than two fifth of them mentioned "Infertility" as disease can be dedicated by PME.

This result was congruent with the work performed by **Al-Qahtani et al., (2019),** they demonstrated that most of students were aware of the importance of premarital counseling. Also, this result was compatible with the study performed by **Telengech, (2020),** who showed that three fifth of students had incorrect answer regarding definition of premarital counseling. From researcher opinion this may be because premarital examinations became obligatory before marriage beside, friends and old family members advices for both couples before marriage.

According to total score of students' knowledge about pre-marital examination the current study illustrated that, less than half of the studied students had poor knowledge level and slightly more than one third of them had average knowledge level regarding pre-marital examination, while, less than one quarter of them had good knowledge level regarding pre-marital examination.

This result was in the same line with the study conducted by **Sedek et al., (2022),** they revealed that the majority of students had poor knowledge before

the educational program. But this result was different with the study carried out by **Osman et al., (2021),** which entitled "Awareness and attitude of university students regarding premarital counseling and examination" and demonstrated that more than half of studied students aware about premarital Counseling. Also, this result was inconsistent with the study performed by **Al-Qahtani et al., (2019),** they illustrated that less than three quarters of the students were aware of pre-marital counseling. From researcher opinion this may be attributed to lack of conducted training programs regarding premarital counseling beside, their parents low education levels.

Concerning total score of students' attitude about pre-marital examination the current study illustrated that, more than three fifth of the studied students had positive attitude regarding pre-marital examination, while, less than two fifth of them had negative attitude regarding pre-marital examination. This result agreed with the study performed by **Aga et al., (2021),** which entitled "Knowledge, awareness, and attitude of medical students concerning genetics and premarital screening" and concluded that the majority of students had a positive attitude toward premarital counseling. Also, this result was in the same line with **Osman et al., (2021),** they reported that about three quarter of the studied students had positive attitude regarding premarital counseling and examination. Also, this result was in harmony with the study carried out by **Hamed et al., (2022),** which entitled "Knowledge, Perception, and Attitude of Future Couples towards Premarital Screening" and demonstrated that approximately two-thirds of the studied future couples had a positive attitude about premarital screening. From researcher opinion this may be due to students' high education levels and increased awareness regarding the importance of premarital examination in early detection of hereditary, reproductive and other health problems.

According to relation between socio-demographic characteristics of the studied students and their total level of knowledge the current study illustrated that, there was statistical significance difference in relation to total levels of knowledge of the studied students regarding premarital examination and their faculty, engaged status, father occupation. While, there was no statistical significance difference in relation to total levels of knowledge of the studied students regarding premarital examination and their age, gender and residence, father education, mother education and mother occupation.

This result disagreed with **Alkhaldi et al., (2016),** they studied "Knowledge and attitudes toward mandatory premarital screening among university students in North Jordan" and revealed that significant associations were detected between the

knowledge scores and gender and urban/rural residence. Also, this result was incongruent with **Al-Shroby et al., (2021),** they reported that Predictors of high knowledge scores were university or higher education, family income, being married/previously married, female gender, and age >18 years. This result was incompatible with **Aljulifi et al., (2022),** they studied "Awareness and acceptance of premarital screening test and genetic counseling program in Riyadh area, Saudi Arabia" and found that a significant association between the level of awareness and level of education was observed. From researcher opinion this may be because the medical students have more knowledge regarding different diseases and the great importance of premarital examination in prevention of transmission of these diseases in different generations. Besides, the engaged partners are obliged to perform these examinations and may engage in premarital counseling for better and successful marriage.

Regarding the relationship between socio-demographics of the students and their overall attitude, the present work demonstrated that, there was statistical significance difference in relation to the total attitude of the studied students regarding premarital examination and their age, faculty and residence, while, there was no significance variation in relation to total levels of attitude of the studied students regarding premarital examination and gender are engaged status, father education, father occupation, mother education and mothers occupation.

This result was supported by **Aziz & Abdulla, (2021),** who illustrated that there were significant variations between couples' attitudes and age, but no significant difference was found between couples' attitudes and sex. This result disagreed with the study conducted by **Hamali, (2023),** who revealed that the association between sex, personal and family history of disorder, and attitude towards premarital examination was found to be significant. This result was different with **Al-Nood et al., (2016),** who showed that no association between the socio-demographics of the students and their attitudes towards premarital screening. From researcher opinion this may be due to the old age students have more experiences that may help increases their awareness and in turn improves their attitude toward premarital counseling, beside they may also be about to get married.

Concerning correlation between total of knowledge level and total level of attitude among the students, this study showed that, there was statistical considerable difference correlation between to total studied students' knowledge and total attitude regarding premarital examination. This finding was supported by **Hamed et al., (2022),** they found a positive relationship and a highly significant variance among the total knowledge and the total attitude scores studied future couples regarding

premarital screening. Also, this result was similar with **Kamel & fahmy., (2019),** who revealed that there was positive association between total knowledge and attitude scores of students about PME. But, this result was incompatible with **Baihaqi et al., (2023),** who demonstrated that there was no relationship between the level of knowledge and attitudes toward premarital and genetic screening. From researcher opinion this may be explained by the positive effect of increased knowledge and awareness that improves the students' perception of the importance of the premarital counseling that affects their attitude positively.

Conclusion
Based on the findings of this study, it can be deduced that, Less than half of the studied students had poor knowledge level and less than one third of them had average knowledge level regarding pre-marital examination, while, less than one quarter of them had good knowledge level regarding pre-marital examination. Moreover, less than two thirds of the students had positive attitude regarding pre-marital examination, while, more than one third of them had negative attitude regarding pre-marital examination.

In addition, there was a statistical significant relationship between the total levels of knowledge of the students and their faculty and are they engaged. There was statistical significant relationship between total attitude levels of the studied students regarding premarital examination and their age, faculty and residence, while, there was no statistical significant relationship between total levels of attitude of the studied students and their gender and are they engaged. There was a statistical significant difference correlation between the total studied students' knowledge and the total of attitude regarding premarital examination.

Recommendation
- Developing an educational program to raise awareness of students about premarital counseling in Universities
- University services should distribute booklet about premarital examination and places provided these services.
- Add specific course for student about premarital counseling
- Disseminate correct information about premarital counseling through mass media, for example through popular and readily available social media platforms.

References
- .Altaany, Z., Khabour, O., Alzoubi, K., Alkaraki, A., & Al-Taani, G. (2021): The perception of premarital genetic screening within young Jordanian individuals. Public Health Genomics, 24(3-4), 182-188.
- Aga,S., Alghamdi, Y., Alghamdi, A., & Khan, M. (2021): Knowledge, awareness, and attitude of medical students concerning genetics and premarital screening. Journal of Nature and Science of Medicine, 4(4), 356-365.
- Ali, M., Elshabory, N., Hassan, H., Zahra, N., & Alrefai, H. (2018): Perception about premarital screening and genetic counseling among males and females nursing students. IOSR Journal of Nursing and Health Science, 7(1), 51-57.
- Aljulifi, M., Almutairi, M., Ahmad, M., Abdall, S., Alelaiwi, M., Almutairi, F. & Albaker, A. (2022): Awareness and acceptance of premarital screening test and genetic counseling program in Riyadh area, Saudi Arabia. Pakistan Journal of Medical & Health Sciences, 16(02), 875-875.
- Alkhaldi, S., Khatatbeh, M., Berggren, V., & Taha, A. (2016): Knowledge and attitudes toward mandatory premarital screening among university students in North Jordan. Hemoglobin, 40(2), 118-124.
- Al-Nood, H., Al-Akmar, M., & Al-Erynai, E. (2016): Knowledge and attitudes of Sana'a University medical students towards premarital screening. Yemeni Journal for Medical Sciences, 10(1), 39-46.
- Al-Qahtani, F., Alfahad, M., Alshahrani, A., Almalih, H., Al-Malki, A., Alshehri, T., & Chaudhary, S. (2019): Perception of premarital counseling among King Khalid University students. Journal of Family Medicine and Primary Care, 8(8), 2607.
- Al-Shafai, M., Al-Romaihi, A., Al-Hajri, N., Islam, N., & Adawi, K. (2022): Knowledge and perception of and attitude toward a premarital screening program in Qatar: a cross-sectional study. International journal of environmental research and public health, 19(7), 4418.
- Al-Shroby, W., Sulimani, S., Alhurishi, S., Bin Dayel, M., Alsanie, N., & Alhraiwil, N. (2021): Awareness of premarital screening and genetic counseling among Saudis and its association with socio demographic factors: a national study. Journal of Multidisciplinary Healthcare, 389-399.
- Aziz, N., & Abdulla, S. (2021): Attitudes of Couples attending Family Counselling Clinic in Sulaimani City towards the Premarital Screening and Genetic Counseling Programme. Erbil Journal of Nursing and Midwifery, 4(2), 96-104
- Baihaqi, B., Hidayah, A., & Rujito, L. (2023): Awareness of Non-Health Students about Premarital Genetic Screening; A Study in Indonesia. Health Education and Health Promotion, 11(2), 189-194.

- **Central Agency for public Mobilization and statistics (CAPMAS) released "Statistical Yearbook (2020):** National information center ،Email: pres_ capmas @ capmas. gov. eg web site: http:// www. capmas. gov. eg

- **Ebid, N., Soliman, S., Abo-Shabana, K., & Metwaly, N. (2021):** Influence of Premarital Counseling Regarding Consanguineous Marriage on Knowledge and Attitude among University Students. Egyptian Journal of Health Care, 12(1), 576-586.

- **Gomes, C., Dias, R., Silva, W., Pacheco, M., Sousa, F., & Loyola, C. (2019):** Prenatal nursing consultation: Narratives of pregnant women and nurses. Texto & Contexto-Enfermagem, 28.

- **Gupta, K., Attri, J., Singh, A., Kaur, H., & Kaur, G. (2016):** Basic concepts for sample size calculation: Critical step for any clinical trials, Saudi J Anaesth, 10(3), 328-331

- **Hamali, H. (2023):** Public awareness and attitude toward premarital screening program in Jazan region, Saudi Arabia, an endemic area for hemoglobinopathies: A cross-sectional study. African Journal of Reproductive Health, 27(8), 65-75.

- **Hamed, E., Eshra, D., Qasem, E., & Khalil, A. (2022):** Knowledge, Perception, and Attitude of Future Couples towards Premarital Screening. Menoufia Nursing Journal, 7(2), 1-21.

- **Hanoon, B., & Khalaf, I. (2021):** Premarital screening program in Al Nuaman Teaching Hospital. Iraqi JMS.; 19 (2): 147151

- **Kabbash, I., Attalla, A., & Atlam, S. (2019):** Perception of importance of premarital counseling among medical students of Tanta University, Egypt. Egyptian Journal of Community Medicine, 37(2), 34-39.

- **Kamel, M., Fahmy, H., & Aly, S. (2019):** Knowledge and Attitude of Adolescent students' Toward Premarital Examination in Secondary Schools at Assiut City. Assiut Scientific Nursing Journal, 7(16), 139-147.

- **Melaibari, M., Shilbayeh, S., & Kabli, A. (2017):** University students' knowledge, attitudes, and practices towards the national premarital screening program of Saudi Arabia. Journal of Egyptian Public Health Association, 92(1), 36-43.

- **Osman, H., Baraia, Z., & Abdelati, I. (2021):** Awareness and attitude of university students regarding premarital counseling and examination. Trends in Nursing and Health Care Journal, 3(2), 18-43.

- **Saha, I., & Paul, B. (2021):** Essentials of biostatistics & research methodology, 3rd ed, Academic Publishers, USA, 94.

- **Said, N., & Gomaa, W. (2022):** Effect of counselling-based program on technical nursing students' perception regarding reproductive health. Egyptian Journal of Health Care, 13(2), 1906-1922.

- **Saleh, L., & Abd El-Kader, R. (2022):** University Students Attitude Towards the National Premarital Screening Program of UAE. European Journal of Environment and Public Health, 6(1), em0109.

- **Sedek, H., Emam, E., & Abd Elrahim, A. (2022):** Effect of Educational Program about Premarital Counseling for Technical School Students. Minia Scientific Nursing Journal, 12(1), 87-98.

- **Telengech, J. (2020):** Perception of Premarital Counseling among University Students: a case study of University of Eldoret (Doctoral dissertation, Moi University).

- **Tohamy, A., Abd El Hafiz, H., & Ali, R. (2023):** Assessment of Knowledge and Attitude of Nursing Students of Secondary Technical Girls School Towards Premarital Care. Assiut Scientific Nursing Journal, 11(40), 265-276.