

Effect of Premarital counseling on knowledge of female adolescent

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Abstract

Background: Premarital counseling is a worldwide activity aiming to diagnose, treat unrecognized disorders, and reduce transmission of diseases to couples.

Aim of the study was to evaluate the effect of premarital counseling on knowledge of female adolescent. **Subjects and Methods: Research Design:** A quasi-experimental study design was utilized in this study. **Setting:** The study was conducted on Belbis nursing school **Subjects:** The study was conducted on a sample of 95 female. **Tools of data collection:** one tool was used in the present study. The first tool was a self-administered questionnaire to collect data about characteristics of the studied school students and their knowledge about premarital counselling. **Results:** The results of the present study revealed that 7.4% of the studied adolescent girls had good knowledge score pre-intervention compared with 75.8% post-intervention. **Conclusion:** the implementation of educational program was effective in improving knowledge scores of female adolescent for premarital counseling **Recommendation:** the further researches are indicated to implement an analysis on the effect of premarital counseling outcomes, as well as the effect of the divorce rate after implementation of premarital counseling for further support the evidence of its effectiveness.

Keywords: Premarital Counseling, Female adolescent, knowledge.

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Introduction

Adolescents to grow and develop in good health, need information, including age-appropriate comprehensive sexuality education; opportunities to develop life skills; health services that are acceptable, equitable, appropriate and effective; and safe and supportive environments. They also need opportunities to meaningfully participate in the design and delivery of interventions to improve and maintain their health. Expanding such opportunities is key to responding to adolescents 'need (WHO., 2024).

Premarital counseling (PMC) is a worldwide activity aiming to diagnose, treat unrecognized disorders, and reduce transmission of diseases to couples. It is the promotion of the health and well-being of a woman and her partner before marriage and pregnancy; it is considered as the primary preventive approach for couples planning for conception. From public health view, it provides health education as well as convenient means of collecting information on population health for planning purposes (Sedek et al., 2022).¹

Pre-marital counseling has been in existence since the 1930's with the first program being established at Merrill-Palmer Institute in 1932. A comprehensive program was developed later in 1941 by the Philadelphia Marriage Council to enable individuals understand what is entailed in a marriage relationship and how they can best avoid some basic marital distresses. Nowadays, pre-marital counseling programs for would-be individuals are being offered through a number of modalities including workshops, conferences, couple counseling, individual counseling, courses offered in schools, online, books among others (Udofia et al., 2021).

Having Healthy mothers and children are valued hopes and dreams of families and the main concern of every society. The evidence reveals that promotion of the women and Men's health before marriage and pregnancy can promote the health of their offspring and this achieved through counseling .Counseling is a process as well as a relationship between persons that facilitates understanding of self and environment and change in behavior or attitude resulting in establishment and clarification of goals and values for future (Ebid et al., 2021).

Pre-marital counseling is conducting examination before marriage in order to identify if there is any genetic blood diseases such as sickle-cell anemia (SCA), thalassemia, and some infectious diseases such as hepatitis B, C and HIV "Aids". This is in order to provide medical consultation to the future couples and to give options and alternatives before soon-to-be married with the aim of helping them to plan for a healthy family (Mohamed et al., 2019).

Premarital immunizations protect healthy women and avoid difficulty and complications to their pregnancy. Because sexual contact is a significant route of transmission for hepatitis B virus, syphilis, gonorrhea, and acquired immunodeficiency virus, the prospective individuals should be protected by early immunization and counseling in case of the presence of a carrier status during premarital testing (Ali et al.,2019).²

Shockingly there is no accessible information in the nursing curriculum 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 counseling so this study was conducted to evaluate the effect of premarital counseling on nursing students (Ali et al., 2018)**Significance of the Study:**

The Egyptian Central Agency for Public Mobilization and Statistics (CAPMAS) reported a higher rate of divorce. Egypt has seen an 83% increase in divorce rates between 1996 and 2017. "The divorce rate stood at 1.2 per 1000 marriages in the period between 1996 and 1999, compared to a rate of 2.2 per 1000 marriages in 2015" . In addition, about 200,000 married couples get a divorce every year, and research suggests that 40% of marriages end within the first five years. As of 2017, divorce rates in Egypt were reported to be between 39.3 and 60.7%, depending on rural and urban location (Mendoza et al., 2019).

The total number of marriages across Egypt increased to 880,041 contracts in 2021 compared to 876,015 in 2020, with an increase of 0.5 percent, said the Central Agency for Public Mobilization

and Statistics (CAPMAS). Divorce cases, meanwhile, reached 245,777 in 2021 compared to 222,036 certificates in 2020, recording an increase of 14.7 percent. According to CAPMAS, marriage rates in 2021 were the highest among secondary school graduates and the lowest, with 0.1 percent, among university graduates. So that this study conducted to evaluate effect of premarital counseling on awareness of female adolescent (Mena., 2022).

Aim of the study:

This study aimed to evaluate the effect of premarital counseling on knowledge of female adolescent.

Research hypothesis:

Intervention of pre-marital counseling will be improving the female adolescent's knowledge score after intervention.

Subjects and methods:

Research design:

A quasi experimental design was used.

Study setting:

The study was conducted at secondary nursing school in Belbis city.

Study subjects:

The subjects of this study will be composed of all students of the 3 years and they were 95 students who attend the previous setting and have aged 15-17 year and agree to participate in the study.

Tools of data collection:

One tool was used to collect the necessary data:

Tool I: A self-administered questionnaire.

A self-administered questionnaire developed by the researcher under supervision of the supervisors and consists of two parts:

Part (A): Characteristics of the studied school students which include (age, sex, place of residence, family size, order between siblings, father's and mother's education and job).

Part (B): Students' knowledge regarding pre-marital counseling. It covered 6 items:

1: student's knowledge regarding pre-marital counseling:

Which includes: meaning, aim, importance, investigation, vaccinations before marriage, methods of premarital counseling. Methods of health education during premarital counseling, reasons of not conducting premarital counseling....etc

2: Students knowledge regarding genetic diseases;

Which includes: meaning of genetic diseases ,causes, preferred persons for genetic counseling, genetic diseases that affect children, common types, definition of chromosome and number of chromosome....etc

3: Students' knowledge regarding sexual transmitted diseases:

Which includes: meaning of sexual transmitted diseases & it's types, types of male and female laboratory tests....etc

4: Students' knowledge regarding menstrual period:

Which includes: meaning of puberty, age of puberty, signs of puberty, meaning of menstrual period, age of menarche, duration of menstrual period, description of menstrual period, hygiene during menstruation....etc

5: Students' knowledge regarding anatomy of reproductive system for couples.

6: Students' knowledge regarding circumcision

Which includes: meaning of circumcision, types, psychological & physical hurt...etc

Scoring system:

It was determined through: (1) score for correct answer, (0) score for incorrect answers and. The total scores were graded as Poor <50%, fair 50 < 70%, Good 70-100%.

Administrative and ethical considerations:

An official permission will be obtained by submission of formal letters issued from the dean of faculty of Nursing, Zagazig University to the responsible authorities of Belbis nursing school to obtain their permission for data collection

,Agreement from the research ethical committee in faculty of Nursing, Zagazig university. Then, informed consent of participants will be taken after full explanation of the aim of the study. They will be notified that they could withdraw at any time of data collection interviews; also they will be assured that the information would be used for the research purpose only and total anonymity and confidentiality of subject's data will be maintained.

Pilot study

It was carried out on a sample of ten students representing 10% of the calculated total sample size after the tools were developed and before starting the data collection to test the applicability, consistency, clarity and the feasibility of the study tools as well as to estimate the exact time required for filling out the tools sheet. The students involved in the pilot study were included in the study sample, since there was no modification in the tools of data collection

Field work

Data collection took a period of 4 months from the beginning of December 2023 to the end of April 2024. After getting the official permission the pilot study was done and analyzed. The researcher attended the study settings 2 days per week (Sunday and Tuesday) from 10:00 a.m. to 3:00 p.m. for data collection and implementation of the program. After identifying the students who fulfilled the criteria of the study, the researcher started with introducing herself, explaining the aim and process of the study and obtaining their verbal consent.

The studied students were individually interviewed to collect the necessary data and assess their knowledge, reported practice regarding premarital counseling. The average number of interviewed

students was between 20-30 students/day depending on their responses to the interviewer. Each interviewed students took about 25-30 minutes to fill the questionnaire depending upon their understanding and response.

I- **Assessment Phase:**

The Program was constructed on the assessment of student's knowledge, reported practice and attitude before implementation of the program. The assessment was performed before the implementation of program by interviewing each student individually or in group of students (20-30) to assess their knowledge, practice and attitudes (pretest) by using tool I, tool II, tool III and tool IV after explaining the aim of the study and had their approval to participate in the study.

This assessment phase shed light and gave more insight about deficits in students' knowledge and practices and helped in identifying their educational needs.

II- **Planning Phase:**

Based on the results obtained from the pilot study and assessment phase as well as reviewing the related literature, the intervention was planned and designed by the researcher. Detected needs, requirements and deficiencies were translated into aim and objectives of the program and set in the form of the booklet that was prepared by the researcher and its content was validated by scientific committee then planned to distribute to the students to be used as a guide for learning.

- ✓ **Teaching methods** were selected to suit teaching in groups in a form of lectures, group discussion and brainstorming.
- ✓ **Teaching materials** were prepared as booklet (handout), brochures, videos and colored posters that covered theoretical and practical information.

III- **Implementation phase:**

The program was implemented through nine sessions in which the students given the program individually or in groups according to their availability. The length of each session varied according to the content of the session and the student's responses and it ranged 30-60 minutes.

- ❖ **Session (1):** In this initial session the researcher introduced herself, clarified the aim of the program, determined the time table that was two days/week for each group of students and conducted the pre-test using the tools.
- ❖ **Session (2):** This session included providing knowledge about definition of premarital counseling, the importance of premarital counseling, types of investigation before marriage, types of immunization before marriage.
- ❖ **Session (3):** This session involved providing knowledge about the anatomical differences in genitals between men and women, definition of adolescence, the signs of puberty, definition of menstrual cycle, stages of menstrual cycle, physical and psychological changes of menstrual cycle, abnormal signs of menstrual cycle, some mistake beliefs of menstrual cycle, definition and types of circumcision, the side effect and complication of circumcision.
- ❖ **Session (4):** This session focused on providing information about definition of sexual transmitted disease, some types of sexual transmitted disease, ways of protection from sexual transmitted

disease, definition of chromosome and its numbers, definition of genetic disease and its causes, what are the epidemic and the abdicator of genetic disease, ways of protection from genetic disease.

❖ **Evaluation phase (post- test):**

In this phase, knowledge of all the studied students were reassessed immediately after implementation of the intervention by using **tool I** through direct re-interviewing.

Content Validity and reliability:

- **For validity assurance purposes**, tools were developed after a thorough review of the related literature then submitted to a jury of three experts (one professor of pediatric nursing at faculty of nursing, Alexandria university, one professor of obstetrics and gynecology nursing and one assistant professor of community health nursing at faculty of nursing, Zagazig university. The recommended modifications were done and the final forms were ready for use.
- **Reliability**

Scale	Cronbach's Alpha
Knowledge	0.820

Statistical analysis:

All data were collected, tabulated and statistically analyzed using SPSS 20.0 for windows (SPSS Inc., Chicago, IL, USA 2011)). Quantitative data were expressed as the mean \pm SD and qualitative data were expressed as absolute frequencies (number) & relative frequencies (percentage). Mc nemar test or marginal homogeneity was used to compare between two dependent groups of categorical data. Paired t-test was used to compare between two dependent groups of normally distributed variables. Percent of categorical variables were compared using Chi-square test or Fisher's exact test when appropriate.

Spearman correlation coefficient was calculated to assess relationship between study variables, (+) sign indicate direct correlation & (-) sign indicate inverse correlation. Multiple linear regression (step-wise) was also used to predict factors which affect knowledge.

Results:

Table (1) Concerning the residence, 9.5% of studied adolescent girls were from urban area while 90.5 % of them were from rural area.

Table (2)) Regarding to the educational level of them parents, It was found that 73.7% and 55.8% had intermediate education of both father's and mother's education respectively.

Table (3) Concerning to adolescent girls' awareness about premarital counseling, it was found 71.6% of them didn't hearing about premarital counseling before intervention and this percentage decreased to 00.0% after intervention. When adolescent girls were asked about the source of information 14.7 % reported awareness campaigns preprogram and this percentage improved to 89.5%.

Table (4) It was observed that 10.5%, 31.6% and 15.8 of the studied adolescent girls reported that they didn't know the tests should be done before marriage for males and females and the

vaccination should be obtained respectively before intervention. These percentages declined to 0.0%, 0.0% and 0.0% respectively after intervention. The differences were statistically significant ($P < 0.01$).

Table (5) When the studied adolescent girls were asked about the meaning of genetic diseases 27.4% reported there were diseases that may occur as a result of consanguineous marriage resulting from a decrease or increase in the number of chromosomes before intervention. This percentage improved to 84.2% after intervention. The differences were statistically significant ($P < 0.01$).

Table (6) indicated that 27.4% of the studied adolescent girls reported the correct answer of sexually transmitted diseases symptoms, which were bumps and ulcers around the vulva before implementation of the intervention. These percentages changed to 89.5% respectively after implementation of the intervention.

Table (7) When the studied adolescent girls were asked about the methods of personal care during menstruation 16.8% reported Use sanitary pads and change them every 4-6 hours before intervention. This percentage improved to 96.8% after intervention. The differences were statistically significant ($P < 0.01$).

Table (8) and **Figure (1)** The studied adolescent girls had fair knowledge score pre-intervention compared with 24.2% post-intervention. While 7.4% of the studied adolescent girls had good knowledge score pre-intervention compared with 75.8%. The difference was statistically significant ($P < 0.01$).

Table 1: Socio-demographic Characteristics of Participant Adolescent Girls (n=95).

Characteristics	No.	%
Age		
15-	32	33.7
16-	30	31.6
17 years	33	34.7
Mean ± SD	16.01±0.83	
Grade		
First grade	31	32.6
Second grade	29	30.5
Third grade	35	36.8
Number of family members		
Three	3	3.2
Four	45	47.4
Five	34	35.8

Six	13	13.7
Birth order		
The first	44	46.3
The second	30	31.6
The third	11	11.6
The fourth	10	10.5
Residence		
Urban	9	9.5
Rural	86	90.5

Table 2: Socio-demographic Characteristics of Parents of Participant adolescent girls (n=95).

Characteristics	No.	%
Father's education level		
Illiterate	2	2.1
Reads and writes	0	0.0
Basic education (primary-preparatory)	2	2.1
Intermediate education	70	73.7
University education	21	22.1
Postgraduate studies	0	0.0
Father's job		
Working	86	90.5
Not working	9	9.5
Mother's education level		
Illiterate	2	2.1
Reads and writes	6	6.3
Basic education (primary-preparatory)	5	5.3
Intermediate education	53	55.8
University education	29	30.5

Postgraduate studies	0	0.0
Mother's job		
Working	37	38.9
Not working	58	61.1
Monthly income		
Sufficient	50	52.6
Insufficient	36	37.9
sufficient to save	9	9.5

Table 3: Adolescent Girl s' Awareness about Premarital Counseling Throughout Study Phases (n=95).

Items	Pre		Post		MCp-value
	No.	%	No.	%	
Hearing about premarital counseling before					0.001**
Yes	27	28.4	95	100.0	
No	68	71.6	0	0.0	
Source of information					
Social Media	17	17.9	25	26.3	0.034*
Family and friends	34	35.8	35	36.8	0.984
Books and Magazines	21	22.1	29	30.5	0.023*
Awareness Campaigns	14	14.7	85	89.5	0.001**
The term premarital counseling					
It is a type of treatment that helps couples about to get married prepare for marriage	14	14.7	58	61.1	0.001**
It is an awareness-raising exercise for individuals that helps them identify weaknesses during marriage	55	57.9	78	82.1	0.001**
Premarital counseling helps individuals realize that marriage is fun and exciting all the time	36	37.9	4	4.2	0.001**
I don't know	4	4.2	0	0.0	0.125
The importance of premarital counseling					

Avoiding social and psychological problems for families resulting from the presence of children with hereditary diseases	37	38.9	45	47.4	0.001**
It raises health awareness and vaccinates against diseases that affect pregnancy	45	47.4	58	61.1	0.001**
It raises awareness of ways to prevent sexual diseases such as (hemophilia) and how to detect and treat these diseases early	54	56.8	14	14.7	0.001**
I don't know	14	14.7	0	0.0	0.001**
The specialists in giving premarital advice					
The doctors	40	42.1	53	55.8	0.001**
The nurses	60	63.2	76	80.0	0.001**
The engineers	52	54.7	0	0.0	0.001**
The media	10	10.5	15	15.8	0.087
I don't know	4	4.2	0	0.0	0.125
The methods of health education during premarital counseling					
A good and comprehensive offer of tests and vaccinations before marriage	70	73.7	77	81.1	0.034*
A simplified description of the male and female reproductive systems	49	51.6	76	80.0	0.001**
Explaining the physical and psychological harms of female circumcision	44	46.3	76	80.0	0.001**
Explaining the benefits of female circumcision	8	8.4	0	0.0	0.001**
I don't know	11	11.6	0	0.0	0.001**

MC: Mcnemar test, non-significant($p>0.05$), *: statistically significant ($p<0.05$), **: statistically highly significant ($p<0.01$), the wrong answer , the adolescent girls can choose more correct answers

Table 4: Adolescent Girl s' Awareness about Premarital Medical Tests throughout study phases (n=95).

Items	Pre		Post		MCp-value
	No.	%	No.	%	

The medical tests before marriage to detect genetic disease					
Thalassemia	22	23.2	61	64.2	0.001**
Sickle cell anemia	25	26.3	65	68.4	0.001**
Screening for syphilis	44	46.3	2	2.1	0.001**
I don't know	29	30.5	4	4.2	0.001**
The medical tests before marriage to detect sexually transmitted disease					
Screening for syphilis	63	66.3	74	77.9	0.001**
Human Immunodeficiency virus (HIV)	49	51.6	63	66.3	0.001**
Hepatitis B virus	44	46.3	71	74.7	0.001**
Chromosomal examination to determine karyotype	26	27.4	2	2.1	0.001**
I don't know	7	7.4	0	0.0	0.027*
Tests should be done before marriage for males					
Basic tests (complete blood count, urine analysis, blood group and RH)	53	55.8	72	75.8	0.001**
Semen analysis for men	60	63.2	85	89.5	0.001**
Analysis of hepatic viruses	57	60.0	79	83.2	0.001**
Estrogen analysis	41	43.2	0	0.0	0.001**
I don't know	10	10.5	0	0.0	0.001**
Tests should be done before marriage for girls					
Basic tests (complete blood count, urine analysis, blood group and RH)	22	23.2	74	77.9	0.001**
Erythrocyte Sedimentation Rate (ESR)	36	37.9	0	0.0	0.001**
Progesterone test on day 21 of the menstrual cycle	26	27.4	71	74.7	0.001**
Analysis of hepatic viruses	22	23.2	52	54.7	0.001**
I don't know	30	31.6	0	0.0	0.001**
Vaccinations should be obtained					
MMR vaccine	26	27.4	71	74.7	0.001**

Vaccination against hepatitis B	22	23.2	67	70.5	0.001**
Vaccination against chicken pox	21	22.1	37	38.9	0.001**
Vaccination against influenza	49	51.6	0	0.0	0.001**
I don't know	15	15.8	0	0.0	0.001**

MC: Mcnemar test, non-significant($p>0.05$), *: statistically significant ($p<0.05$), **: statistically highly significant ($p<0.01$), the wrong answer , the adolescent girls can choose more correct answers.

Table 5: Adolescent Girl s' Awareness about Genetic Diseases throughout study phases (n=95).

Items	Pre		Post		MCp-value
	No.	%	No.	%	
Definition of a chromosome					
It is known as genetic inheritance	22	23.2	69	72.6	0.001**
It is responsible for the shape and quality of embryos and makes each creature unique	25	26.3	88	92.6	0.001**
It is not inherited from grandparents to children	53	55.8	0	0.0	0.001**
I don't know	26	27.4	0	0.0	0.001**
The number of chromosomes					
26	30	31.6	0	0.0	0.001**
46	16	16.8	95	100.0	0.001**
57	9	9.5	0	0.0	0.001**
27	26	27.4	0	0.0	0.001**
I don't know	14	14.7	0	0.0	0.001**
Meaning of genetic diseases					
They are contagious diseases that are transmitted from one person to another	53	55.8	0	0.0	0.001**
These are diseases that occur in individuals with a family history of contracting a specific disease	22	23.2	46	48.4	0.001**
There are diseases that may occur as a result of consanguineous marriage resulting from	26	27.4	80	84.2	0.001**

a decrease or increase in the number of chromosomes					
I don't know	22	23.2	0	0.0	0.001**
The causes of genetic diseases					
Disease resulting from genetic mutations, which lead to the gene being damaged and not performed its function, completely	32	33.7	55	57.9	0.001**
Diseases resulting from a decrease or increase in the number of chromosomes	30	31.6	83	87.4	0.001**
Environmental and medicinal factors that affect the mother during pregnancy	26	27.4	53	55.8	0.001**
If the child suffers from some diseases after birth, this causes a defect in the gene	36	37.9	0	0.0	0.001**
I don't know	22	23.2	2	2.1	0.001**
The risks of consanguineous marriage					
High incidence of some genetic diseases among children	22	23.2	73	76.8	0.001**
Genetic disorders that lead to diseases such as mental retardation	26	27.4	86	90.5	0.001**
It has no risks	49	51.6	0	0.0	0.001**
I don't know	26	27.4	0	0.0	0.001**
The common genetic diseases that children suffer from					
Measles	32	33.7	2	2.1	0.001**
Sickle cell anemia	34	35.8	85	89.5	0.001**
Thalassemia	9	9.5	55	57.9	0.001**
I don't know	41	43.2	3	3.2	0.001**

MC: McNemar test, non-significant ($p > 0.05$), *: statistically significant ($p < 0.05$), **: statistically highly significant ($p < 0.01$). The wrong answer, the adolescent girls can choose more correct answers.

Table 6: Adolescent Girl s' Awareness about Sexually Transmitted Diseases throughout study phases (n=95).

Items	Pre		Post		MCp-value
	No.	%	No.	%	

Known sexually transmitted diseases					
These are diseases that are transmitted through sexual contact with another person who carries the disease	22	23.2	87	91.6	0.001**
These are diseases transmitted through blood or contaminated needles	23	24.2	53	55.8	0.001**
These are diseases transmitted from mother to the fetus during birth	23	24.2	54	56.8	0.001**
These are diseases transmitted through droplet	41	43.2	0	0.0	0.001**
I don't know	26	27.4	0	0.0	0.001**
Which of the following is a sexually transmitted disease					
AIDS	32	33.7	91	95.8	0.001**
Syphilis	25	26.3	92	96.8	0.001**
Hepatitis B	24	25.3	45	47.4	0.001**
Pneumonia	49	51.6	0	0.0	0.001**
I don't know	22	23.2	0	0.0	0.001**
Sexually transmitted diseases may be accompanied by some symptoms such as					
Bumps and ulcers around the vulva	26	27.4	85	89.5	0.001**
Redness and swelling around the vagina or penis	65	68.4	67	70.5	0.001**
Bowed feet	36	37.9	2	2.1	0.001**
Pain associated with sexual intercourse	26	27.4	74	77.9	0.001**
I don't know	12	12.6	2	2.1	0.001**
Prevention of sexually transmitted diseases					
Premarital counseling	26	27.4	95	100.0	0.001**
Use oil-based lubricants with condoms when having sex	30	31.6	2	2.1	0.001**
commitment to regular medical examination	26	27.4	83	87.4	0.001**
Make sure to take the necessary vaccinations to prevent some disease	26	27.4	77	81.1	0.001**
I don't know	22	23.2	0	0.0	0.001**

MC: Mcnemar test, non-significant($p>0.05$), **: statistically highly significant ($p<0.01$), the wrong answer, the adolescent girls can choose more correct answers.

Table 7: Adolescent Girls' Awareness about Menstrual Cycle throughout study phases (n=95).

Items	Pre		Post		MCp-value
	No.	%	No.	%	
The concept of puberty					
The period in which a person transitions from a child to an adult	22	23.2	95	100.0	0.001**
This is the period in which physical maturity only occurs	53	55.8	0	0.0	0.001**
This is the period during which hormonal changes occur	25	26.3	77	81.1	0.001**
It is the age of psychological, mood, and behavioral changes	25	26.3	82	86.3	0.001**
I don't know	22	23.2	0	0.0	0.001**
The signs of puberty in females					
Breast growth	26	27.4	91	95.8	0.001**
Menstrual cycle	26	27.4	89	93.7	0.001**
Deepening of the voice	49	51.6	0	0.0	0.001**
Appearance of hair in some places	22	23.2	85	89.5	0.001**
I don't know	22	23.2	0	0.0	0.001**
The concept of menstrual cycle					
A series of changes that occur to a woman's body every month to prepare the uterus for pregnancy and the formation of ovum	22	23.2	64	67.4	0.001**
The uterine lining comes out of the vagina in the event of ovulation and fertilization of the ovum	20	21.1	2	2.1	0.001**
Blood leakage from the female reproductive system occurs on average every 28 days	32	33.7	85	89.5	0.001**
I don't know	53	55.8	4	4.2	0.001**
The age of the first menstrual period					
12-18	26	27.4	0	0.0	0.001**

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13-18	5	5.3	0	0.0	0.001**
9-15	16	16.8	95	100.0	0.001**
15-17	22	23.2	0	0.0	0.001**
I don't know	26	27.4	0	0.0	0.001**
The normal duration of menstrual cycle occurs every (days)					
27-38	28	29.5	0	0.0	0.001**
25-37	9	9.5	0	0.0	0.001**
21-35	8	8.4	95	100.0	0.001**
24-38	20	21.1	0	0.0	0.001**
I don't know	30	31.6	0	0.0	0.001**
The normal period during which the menstrual cycle lasts on average is from					
2-7	8	8.4	95	100.0	0.001**
2-8	13	13.7	0	0.0	0.001**
1-6	14	14.7	0	0.0	0.001**
5-10	9	9.5	0	0.0	0.001**
I don't know	51	53.7	0	0.0	0.001**
The normal characteristics of the menstrual cycle					
The color of blood may vary from red to brown or black	22	23.2	87	91.6	0.001**
Its consistency is thin or very thick in some time	8	8.4	53	55.8	0.001**
It is possible to have a menstrual period every two weeks	36	37.9	2	2.1	0.001**
The number of days between one period and the next may increase more than 36 days in three consecutive cycles	41	43.2	2	2.1	0.001**
I don't know	30	31.6	0	0.0	0.001**
The abnormal characteristics of the menstrual cycle					

Abundance of blood in terms of quantity and frequency	22	23.2	85	89.5	0.001**
Severe pain that does not removed with analgesics	22	23.2	76	80.0	0.001**
Falling drops of blood before menstruation	22	23.2	40	42.1	0.001**
Black blood in some times	31	32.6	2	2.1	0.001**
I don't know	19	20.0	2	2.1	0.001**
The methods of personal care during menstruation					
Do not use tissues to receive blood	8	8.4	85	89.5	0.001**
Use sanitary pads and change them every 4-6 hours	16	16.8	92	96.8	0.001**
Change underwear daily	26	27.4	83	87.4	0.001**
Use soap and water to clean the vagina from the inside and outside	26	27.4	2	2.1	0.001**
I don't know	49	51.6	0	0.0	0.001**

MC: Mcnemar test, non-significant($p>0.05$), *: statistically significant ($p<0.05$), **: statistically highly significant ($p<0.01$)), the wrong answer , the adolescent girls can choose more correct answers.

Table 8: Total Scores of knowledge and its domains throughout study phases (n=95).

Awareness about	Pre						Post						MH P-value
	Good		Fair		Poor		Good		Fair		Poor		
	No	%	No	%	No	%	No	%	No	%	No	%	
Premarital counseling	18	18.9	22	23.2	55	57.9	58	61.1	20	21.1	17	17.8	0.001*
Genetic diseases	11	11.6	27	28.4	57	60.0	60	63.2	21	22.1	14	14.7	0.001*
Sexually transmitted diseases	20	21.1	41	43.2	34	35.8	56	58.9	28	29.5	11	11.6	0.001*
Menstrual cycle	53	55.8	33	34.7	9	9.5	83	87.4	12	12.6	0	0.0	0.001*

Anatomic al descriptio n of males and females	20	21.	17	17.	58	61.	87	91.	8	8.4	0	0.0	0.001*
		1		9		1		6					*
Female genital mutilatio n	10	10.	30	31.	55	57.	54	56.	29	30.	12	12.6	0.001*
		5		6		9		8		5			*
Total	7	7.4	54	56.	34	35.	72	75.	23	24.	0	0.0	0.001*
				8		8		8		2			*

MH: marginal homogeneity test, **: statistically highly significant (p<0.01)

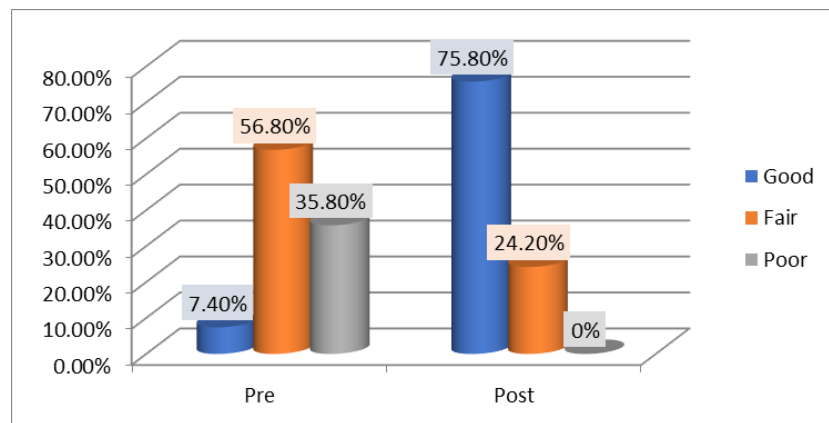


Figure1: Total score of knowledge throughout study phases

Discussion:

As regards the studied adolescent girls' awareness about premarital counseling throughout study phases. The present study shows that slightly more than two third of the studied sample did not hear about premarital counseling before intervention. In the investigator point of view this may be due to the nature of our community forbidden the speech in these topics.

This result agrees with the study of Sedek et al. (2022) who studied **Effect of Educational Program for Premarital Counseling among technical school student** and reported that more than three quarter of the studied sample did not receive any official training about premarital counseling

Kabbash et al. (2019) who studied **Perception of importance of premarital counseling among medical students of Tanta University** and reported that less than one half of the participants primary source of knowledge was media. This disagree with the present study, by asking the adolescent girls about premarital counseling source of information. It was found that family and friends were the most study samples responses as it reported by one third of adolescent girls. This is rationalized by lack of health education by media about this topic. Regarding negative effects of internet use among studied adolescents, the current study results revealed that half of studied adolescents sometimes chatting decreases communication with others around.

However, there was significant improvement in the adolescent girls' knowledge after the intervention. This result agrees with the study of **Yonus & Kashmoola. (2020)** who studied **Hematological parameters of β -thalassemia Trait in Premarital Screening in Nineveh Province.**

These results were come in accordance with **Ali et al. (2018)**) who studied **Perception about premarital screening and genetic counseling among males and females nursing students** and reported that less than two thirds of participants had completed information about importance of PMC after intervention.

In the present study, by asking the adolescent girls about the definition of premarital examinations. It was found that slightly more than half of the studied adolescent girls defined premarital examination correctly. In spite of this, nearly one tenth of them didn't know definition of premarital examination and more than half of them gave wrong answer as follow; it is a group of tests that are performed before or after marriage in order to ensure the health of the spouses. This is may return to lack of health education about this topic.

However, there was significant improvement in the adolescent girls' knowledge after the intervention. These results were in harmony with **Osman et al. (2021)** reported that there was significant improvement in the participant's' knowledge after the intervention about the definition of premarital examination.

Al Kindi et al. (2019) who studied **Awareness and attitude towards the premarital screening program among high school students in Muscat, Oman.** Sultan and mentioned that awareness and attitude towards the premarital screening program among high school students, and found that the majority of students had good awareness and knowledge about the premarital screening after to implementation of the program. In the investigator opinion this may be due to improve the level of knowledge after the educational program.

These findings were supported by the results of the current study. It was clarified that slightly more than one third of the studied samples didn't know the medical tests to detect genetic disease and nearly one half of them gave wrong answer prior to implementation of the program. This is because they had not been exposed to premarital counseling or had heard negative experiences from others; they may be more likely to hold misconceptions about its effectiveness. While after program implementation, there was significant improvement in the adolescent girls' knowledge.

The results of the current study indicated that more than one third of studied adolescent girls didn't know genetic disease also more than half of them didn't know sexual transmitted disease. In the researcher opinion because of the ignorance about premarital counseling and education about this topic was uncommon. This is in congruent with **Sedek et al. (2022)** clarifies that more than half of studied students reported that they did not know about diseases that transmitted sexually and diseases transmitted through genes before the program implementation.

Also, the present study revealed that more than eighth of the adolescent girls Use sanitary pads and change it every 4-6 hours pre intervention may be due to lack of their awareness regarding the suitable methods to clean the genital area.

However, there was significant improvement in the studied subjects' knowledge after the intervention. These results were in harmony with **Athipathy and Santhanakrishnan. (2018)** who

studied **Impact of health education on menstrual hygiene: An intervention study among adolescent school girls..**

Concerning the adolescent girl's knowledge about complication of female genital mutilation (FGM), the findings of the current study clarified that more than one half of the studied adolescent girls reported that there are complications of FGM, as follow: Bleeding that leads to death prior to implementation of the program. Even so, more than one quarter didn't know any of the complications, as well as more than one quarter of them gave wrong answer. These findings were supported by **Ahmed et al. (2024)** who conducted study about **Evaluating the long-term impact of large-scale trainings: an exposure based cross-sectional study on female genital mutilation-related knowledge, attitudes and practices among Sudanese midwives in Khartoum State** and revealed that there was significant improvement in knowledge of the studied subjects about complications of FGM after intervention. This is rationalized by the improvement of knowledge after educational program.

Regarding to adolescent girl's total Knowledge about Premarital Counseling, The current study reveals that more than three quarter had poor level of knowledge, more than one half had fair level knowledge and less than eighth had good level of knowledge regarding premarital counseling before the implementation of educational program. This is rationalized by lack of experience and society's neglect and ignorance about this issue. While after program implementation the result were improved as three quarter had good level of knowledge and nearly one quarter had fair of knowledge about PMC. In the investigator opinion this may be due to improve level of knowledge after the educational program.

This finding was supported with **Gülbetekin, & Yildirim. (2024)** whose conducted published study under title of **The correlation between domestic violence awareness and attitudes toward child marriage.**

Conclusion:

Based upon the findings of the present study, it was concluded that implementation of educational program was effective in improving knowledge scores adolescents girls for premarital counseling.

Recommendations:

In the light of the findings of the current study, the following recommendations are suggested:

- Providing continuously educational programs about premarital counseling in every technical school because those target groups marry during or early after finishing school so these programs are very useful for them.
- Preparation for marriage must be mandatory for all final year students in the school and university.
- Incorporate information about premarital counseling and examinations in school curriculum.
- Performing educational workshops for all people to increase their knowledge and attitude regarding the premarital counseling and examination

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