

# Teaching Nursing Intervention to Prevent Female Circumcision among Secondary School Students Based on Health Beliefs Model at Sohag Governorate

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**Abstract:** The incidence of female circumcision remained very high in upper Egypt, and that most cuttings were still performed by general practitioners. Female circumcision is a major public health issue in some areas of the world, especially in Africa, the Middle East and around the world and is still widespread in Egyptian society. Aim of the study: was to evaluate the effect of Teaching Nursing Intervention to Prevent Female Circumcision among Secondary School students based on Health Beliefs Model. Subjects and Methods: Research Design: Quasi experimental design was adopted to carry out this study. Setting: the study was conducted in eight secondary schools at Sohag Governorate. Subjects: 320 female secondary students who were in the first grade were selected randomly. Tools of data collection: Two tools were used for data collection, the first tool was self-administered questionnaires; Socio-economic status scale data, Students' experience of female Circumcision, Knowledge of female secondary students about female circumcision, the second tool was interview questionnaire of an Attitude scale for secondary students toward Female circumcision by using Health Belief Model. Results: the results revealed that statistically significant negative correlation between Knowledge, Socio-Economic Status and attitude of the studied subject in all phases of the program. Conclusion: The knowledge and attitude of female students to prevent female circumcision were improved after implementation of teaching nursing program. Recommendation: Raise students' awareness through educational booklets about impact of female circumcision on girls' rights and their health at various schools. .

**Keywords:** Adolescent Stage, Belief, cues to action, Female Circumcision, Health Belief Model, perception, self-efficacy, perceived seriousness, perceived susceptibility.

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## 1. INTRODUCTION

Girls' health is characterized by neglect, abuse, violence, discrimination, and many harmful practices due to their less power and authority. One of the most harmful practice is Female circumcision <sup>(1)</sup>. It is a harmful traditional practice that causes numerous health and social consequences for both women and young girls <sup>(2)</sup>. It is known by various names as Female circumcision(FGM), female circumcision(FC), female genital surgeries or female genital manipulation. It is defined as all procedures that include all or partial removal of the external female genitalia or other injury to the genital organ whether for religious, cultural or non-medical reasons <sup>(3,4)</sup>.

According to Egypt demographic health survey around 87.6 % of girls' aged 15-19 years has been circumcised, almost 80% of these cases were performed by health care personnel. Rural girls are more likely to be circumcised than urban girls (95.4 % and 86.3 %, respectively), as rural people believed that the girl must be circumcised to protect her and her family's honor, especially that now girls go to universities outside the village and may be exposed to a lot of intimidating situations. In Egypt, more than half of circumcised girls were between seven and ten years of age and virtually before age 15<sup>(5)</sup>.

FC is classified into four major types according to the parts removed during the procedure, the first type is Clitoridectomy, The second type is Excision, the third worst type is infibulation which is performed in Ethiopia, Eritrea, Somalia, and the fourth type is unclassified<sup>(6, 7)</sup>. The reasons for the perpetuation of FC include the preservation of group identity; femininity, female parity, maintenance of cleanliness and assurance of women's marriageability which is enforced by community mechanism. Girls exposed to FC are at risk to immediate physical consequences such as, sever bleeding and shock, difficulty in passing urine and faces. Long term consequences can include chronic pain and infection for many girls and women. Undergoing female circumcision is a traumatic experience that may adversely affect their mental health (8, 9).

or requesting its practice for their daughters. Through educational role, she must be able to address physical psychological, emotional, and social health risks of FC for female students in various other settings. Community health nurse plays, participate in health planning programs and their application according to community health needs. So, she provides prevention of some health problems and issues such as female circumcision<sup>(10)</sup>.

#### **AIM OF THE STUDY:**

To evaluate the Effect of Teaching Nursing Intervention to Prevent Female Circumcision among Secondary School students based on Health Beliefs Model at Sohag Governorate.

#### **RESEARCH HYPOTHESES:**

- The score of knowledge of female students about Female circumcision will be improved.
- The score of female students' perception regarding female circumcision will be increased than before teaching nursing intervention.
- There is a significant difference between Socio economic Status, knowledge and perception secondary female students toward FC after teaching nursing intervention than before teaching nursing intervention.

## **2. SUBJECTS AND METHODS**

#### **Research design:**

Quasi experimental design was connected carry out this study.

#### **STUDY SUBJECTS**

The study subjects comprised of 320 female secondary students from eight secondary schools were selected randomly from Sohag governorate.

Multistage random sample technique was used in this sample, component of sample technique were:-

- *First Stage:* the total number of secondary schools in Sohag Governorate was 66 schools. One school was chosen from each center of Sohag governorate and they are 8 schools.
- *The second stage:* each school has 4 classes from 1st grade: one class from each school was chosen randomly.
- *The third stage:* the total number of students in the chosen classroom was around 320 female students.

#### **STUDY SETTING**

##### **SETTING**

This study was carried out in 8 secondary schools in Sohag Governorate, named the following: Sohag, Tema, Tahta, El-maraghah, Sakolta, Berdis, Asmaa Bent Abi bakr, Shatora.

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### Study Subjects

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### TOOLS OF DATA COLLECTION:

Two tools were used to collect the study data.

**TOOL I:** Self-administrated questionnaires. It was developed by the researcher to collect the necessary data. It consisted of three parts:

**Part 1:** Socio-economic status scale (SES) of the studied subject. It included 7 domains (family, Educational and cultural, Occupation, economic, family possession, home sanitation, and health care domain)s. each domain contains sub items each item has special grade, the sum of grades is 84 ( El-Gilany Scale, 2012)<sup>(8)</sup>.

*Socio-economic scale (SES) was graded as:*

High (SES)	84 - 71.4
Middle (SES)	71.4 - < 63
Low (SES)	63 - < 42
Very low (SES)	< 42

**PART 2:** Students' experience of female Circumcision.

**PART 3:** Knowledge of female students about Female circumcision, assessed modified by the researcher: It included 27 questions included (meaning, types, causes, Complication, Opinion of student in FC, opinion of students to prevent FC in future).it distributed as

Good= 3 , Unsure = 2, Poor=1

**Tool II:** perception scale based on health belief model constructs. It included 42 questions, including perceived seriousness(10 questions about complications due to FC procedure; perceived susceptibility (9 questions on students' opinion about chance of getting potential risks of FC); perceived benefits (8 questions on false beliefs about the benefits of FC procedure); perceived barriers (6 questions including barriers to against false beliefs of benefits of FC to stop this practice); cues to action as a modifying variable to change perception (2 questions including the media and Worship places); self-efficacy( 7questions including the ability to take self-decision about stopping FC and observe the decision of doing FC was taken from Family decision).

### The Scoring System

All questions are based on the standard 5-point Likert scale ranging from strongly agree, agree, unsure, disagree, and strongly disagree (scores of 1 to 5).

The pre and post tests were used to assess attitude of female students toward female circumcision based on health belief model. It was used twice; immediately after completion of the program and after three months (Questions, no. 42).

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- **positive perception:** to regarding FC were 29 questions including: (FC is a painful practice and may lead to fear and anxiety, chronic inflammation in the female genitalia, hemorrhage, difficulty in urination, lack of trust in others, psychological disorder or death.
- **Negative perception:** regarding FC were 13 questions.

### II. Operational Design

The operational design included preparatory phase, validity, pilot study, ethical consideration and field work.

#### Preparatory phase

Based on review of the current and past local and international literature related the various aspect of the problem using textbooks, articles, magazine and internet. This review helps the researcher to be acquainted with problem, and guide to prepare tools of data collection.

#### Content validity

Content validity for Tool (I) and (II) was established by jury of five experts in the field of community health nursing, gynecological and obstetric health nursing (Cairo and Suez Canal University) to assess the study tools for clarity, relevance, applicability, comprehension, understanding and their modifications were modified.

#### FIELD WORK:

Data were collected through self-administered questionnaires that were distributed among the 1<sup>st</sup> grade of female secondary school. Data were collected from beginning 26th September, 2016 and lasted till April, 2017. The actual duration was three months & a half, "the period of examination and holidays were excluded".

The pre and post tests were used to assess perception of female students toward female circumcision based on health belief model. It was used twice; immediately after completion of the program and after three months (Questions, no. 42).

#### PILOT STUDY

A pilot study was conducted among 32 female students) excluded in the actual study (10% of the estimated sample) to evaluate the feasibility of implementing the designed tools and time required to fill in each tool. The necessary modification was carried out revealed from the pilot.

#### ADMINISTRATION AND ETHICAL CONSIDERATION:

- An official letter obtained from the Faculty of Nursing, Suez Canal University to the information security office in (CAPMAS) in Cairo to get an approval for data collection to conduct the study that forwarded to the ministry of education the directorate of education in Sohag City to seek their Permission for collecting the necessary data from the selected schools.
- Written permission for collecting data was obtained from responsible managers of schools after explaining the aim of the study and planned with him the available time for each selected class without corruption of school education.
- The aim of the study was explained to the students' participants and oral consent was obtained from each one. Voluntary participation and right of students to refuse to participate in the study and withdrawn before starting the program.

All information gathered would be confidential and used only for the purpose of the study.

#### STATISTICAL ANALYSIS

- All data was collected, tabulated and subjected to statistical analysis is performed by SPSS (version 25).
- Microsoft Office Excels is used for data tabulation and graphical presentation. All statistical analysis was done using two tailed tests.
- P value less than 0.05 was considered to be statistically significant.

### 3. RESULTS

Part I: Distribution of the studied Subject according to their Socioeconomic Status.

Table (1) demonstrates socio-economic status (SES) of the studied subjects. About 56.8% of them were from rural areas and 90.9% of them were Muslims. Concerning parents' education was 46.6% of fathers had a high educational level compared to 45.6% of mothers had secondary education. 74.7% of fathers were employees compared to 57.5% of mothers were employees. Also, 55.6% of the studied subjects lived in low SES and only 3.8% lived in high SES.

#### PART II: History and experience of female Circumcision among the studied sample.

**Table (2)** reveals that 66.6% of studied subject were circumcised. Nearly, 43.7% of them were circumcised at mean age of  $(7.01 \pm 2.9)$ . Regarding the place, 54.0% of circumcisions were performed at home and 35.2% of them were in private clinics. In addition, 76.1% of them were circumcised by medical personnel While, 16.9 % of them by traditional circumcisers.

Concerning the decision-makers for the procedure of FC, 79.7% of them mentioned that FC was by a shared parental decision, 11.9% of them said that the mothers were the main decision maker and 4.4% of students said that grandparent were decision maker. When asked students about any one talk with you about FC, 79.1% of them answered with "No".

#### Figure (1): health problems faced circumcised students, (n=63).

It was found that 29.6% of them faced health problems, the most commonly health problems faced circumcised students was (63.5%) fear and anxiety, (17.5%) urine problems, (9.5%) bleeding and 9.5% of inflammation.

#### Part III: knowledge of studied sample about FC throughout all phases of the programs (n=320).

**Figure (2)** regarding knowledge of students about FC, nearly 57.5% of the studied sample mentioned that they did not have knowledge while, 37.8% of them had good knowledge regarding FC.

**TABLE (3)** regarding sources of information and aim of FC, it was found that 57.3% of studied subjects got information about FC from their family and only (4.6%) got information from Net. Concerning aim of female circumcision, it was found that 44.4% of them thought that it is beliefs and tradition, 14.4% was religion, and 9.7% was culture and cleanliness.

**TABLE (4) reveals** that there were highly statistically significant difference between pre, post, and follow-up in relation to knowledge of studied subject about FC in all phases of the program about FC at  $p < 0.000$ .

**FIGURE (2):** Distribution of mean score of total knowledge of the studied subject regarding female circumcision throughout all phases of the program. As shown in the figure, improvement in the mean score of total knowledge of the studied subject regarding FC after implementation of the program compared to before implementation of the program.

#### TABLE (5): Distribution of the studied subject according to mean score of perception regarding prevention of FC in program phases (n=320).

There was high statistically significant ( $p < 0.001$ ) difference between mean score perception of the studied subject regarding prevention of female circumcision (pre\ post\ follow up) implementation of the program about perceived seriousness, susceptibility, benefits, barriers, cues to action and self- efficacy.

**TABLE (6):** Demonstrates that in pretest phase, was a statistically significant strong negative correlation between Knowledge, SES and perception of the studied subject. While, Positive correlation between SES and knowledge of the studied subject. In posttest phase, there is negative correlation between Knowledge and perception of the studied subject. In follow up phase there is positive correlation between SES, Knowledge and perception of the studied subject.

### 4. DISCUSSION

The current study revealed the majority of circumcised girls lived in low and middle (SES) was (86.4%, 13.1% respectively), These results were in the same line with (*Yasein study, 2014*)<sup>(12)</sup>, who reported the prevalence of FC was commonly observed among girls living at middle and lowest economic levels (51.7%, and 59.6% respectively) compared to (48.9%) among those living at higher levels. also, more than two thirds of studied sample were circumcised. This

finding agrees with (*El Zanaty, & Way, 2014; Abou Elyazed, 2006*)<sup>(5, 13)</sup>, who reported that 61.3 % of girls have been circumcised and disagree with (*Mahgoub et al., 2016*)<sup>(14)</sup>, who reported that Most of them (61.3%) were not circumcised.

Regarding Health problems faced circumcised girls after FC procedure; the recent study is in the same line with previous study and (*Zurynski et al, 2017*)<sup>(15)</sup>, which reported that the majority of the students knew that bleeding, delivery problems and recurrent infections are possible complication of FC.

The present study is in agreement with the study of (*Yasein, 2014*)<sup>(12)</sup> which found that educational levels of girl's mother were negatively associated with FC ( $P < 0.05$ ) and paralleled with another study of (*Tag-Eldin, 2008*)<sup>(16)</sup> which found that Parents with low or no education are the most likely to have circumcised their daughters with prevalence rates ranging between 59.5% and 65.1%.

**Regarding knowledge of students about FC.** It was found that more than one third of studied subject had high knowledge about FC and more than one half of them had poor knowledge. After implementation of the program the majority of the studied sample improved their knowledge about female circumcision and there were statistically significant ( $p < 0.000$ ) difference (pre\ post) follow up implementation, this could be due to the researcher uses a variety of teaching methods and media and health education programs are best methods that lead to success of the program to improve and correct knowledge of female students about female circumcision and may encourage female circumcision's eradication.

**Concerning Perceived seriousness** toward prevention of FC is the first step toward changing perception of population toward the practice of FC based on health belief model, even though this can be difficult and psychologically painful. After implementation of the program and uses a variety of evidence that FC may leads to many health and social problems, more than one third of students agreed with that and had positive perception toward prevention of FC The current study is in the same line with the study of (*Abolfotouh et al, 2015*)<sup>(17)</sup>, which reported that only one-third of the students correctly responded that FC could cause difficulty with urination or result in complications during childbirth and the majority correctly answered that FC predisposes to infection.

**Perceived susceptibility toward FC**, it is worth mentioning that only slightly less than one half of female students agreed with that FC is harmful practice and may lead to many health problems. Few percent of them 15.3% disagreed. On the other hand nearly two fifths of them did not know as they have lack knowledge FC. This finding is in line with (*Mahgoub study et al, 2016*)<sup>(14)</sup>, who studied "Knowledge and perception of Secondary School Students toward Female circumcision in Khartoum State, Sudan), which revealed that the majority of the students knew that bleeding, delivery problems and recurrent infections are possible complication of FC.

**The perceived benefits of FC** in this study include that FC is inherited traditional factors more than religious motivation in supporting this practice. In addition, FC make girls more hygienic, aesthetic reasons, purification, protection of virginity, decrease women sexual desire and finally some families refuse to accept women who have not undergone FC as marriage partners. This study is parallel to the finding reported by (*Khalid et al., 2017*)<sup>(18)</sup> when studied about Knowledge, Perception and Practice of Female Circumcision among Female Patients at Malaysia.

**Concerning Perceived barriers**, these reasons are considered as a barrier for discontinuation of female circumcision that parents believe that they are protecting their daughters from harm and rite of passage, preserving chastity, ensuring marriageability, improving fertility, religious requirement, hygiene, and enhancing sexual pleasure for men. Either, parents who insist on that their daughters circumcised are driven by a fear that their daughters may never marry. This finding is agree with (*Abolfotouh, 2015*)<sup>(17)</sup> study who mentioned that the majority of students (76%) disagreed that FGM/C is a prerequisite for a trustworthy marriage.

**Regarded cues to action** that support the discontinuation of FC. The media is the main source of information of FC and plays an important role in raising people's awareness about possible hazards of female circumcision and clarifying doubts and misconceptions about FC. This finding is agree with the study of (*Koustuv et al, 2010; Masho& Matthews, 2009*)<sup>(19, 20)</sup>, which reported that exposure to Media (newspapers, magazines, radio or television) has a positive effect for reducing the justification of FGM among adolescent girls.

**Concerning Self-efficacy**, regarding the statement, in the future I will circumcise my daughters; the current study revealed that only 15.9% of the studied sample supports the continuation of FC practice. This finding may be due to

increase the awareness of female students of the FC complications and the health education intervention had a positive impact on the perception of respondents towards FC. This finding is agree with *Abu Sabeeb study, 2016* <sup>(21)</sup> who found that only 14.3 % of the females supported the continuation of this practice in the future

## 5. CONCLUSION

All students were aware about FC and its complication. The majority of students support prevention of FC practice in the future after implementation of the program compared to the pre- program test. There were highly statistically significant differences between knowledge and perception of students toward prevention of female circumcision.

## 6. RECOMMENDATION

Distribution of educational booklets to students and their teachers about prevention of female circumcision, complications, its illegality, and teach them how to properly counsel mothers against female circumcision. Replication of the program in other schools to improve students' knowledge and discuss with them sensitive issues especially FC and women empowerment. Develop health education programs for girls and women especially in rural areas in upper Egypt to provide them with health education about, their rights and all forms of violence against women especially female circumcision, and to enhance awareness of the rights of the female child, and its relevance to the well-being of girls, their empowerment, and their right to participate in decisions affecting their lives.

**TABLE (1): DISTRIBUTION OF THE STUDIED SUBJECT ACCORDING TO THEIR SOCIOECONOMIC STATUS.**

- Socio-economic Status	- Results
<b>- Religion</b>	
- Muslim	291 (90.9%)
- Christian	29 (9.1%)
<b>- Residence</b>	
- Urban	140 (43.8%)
- Rural	180 (56.2%)
<b>Educational domain for mother</b>	
- Illiterate or read and write	53 (19.7%)
- secondary	147 (45.9%)
- High Education	79 (34.4%)
<b>Educational domain for Father</b>	
- Illiterate or read and write	63 (19.6%)
- secondary	109 (34.1%)
- High education	148 (46.3%)
<b>Occupational domain of father</b>	
- Non-working	81 (25.3%)
- Working	239 (74.7%)
<b>Occupational domain of mother</b>	
- House wife	136 (42.5%)
- Working	184 (57.5%)
<b>Family size</b>	
- < 5	275 (85.9%)
- > 5	45 (14.1%)
<b>Number of earning family</b>	
- 1 member	148 (46.3%)
- 2 members	138 (43.1%)
- >3 members	34 (10.6%)
<b>Source of health care</b>	
- Private health care	98 (30.6%)
- Health insurance	27 (8.5%)
- Free governmental health services	20 (6.3)
- More than one source	166 (51.9%)
- Traditional health services	9 (2.7%)

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Socio-economic score	
- Very high level	12 (3.8%)
- Medium	62 (19.4%)
- Low	178 (55.6%)
- Very low	68 (21.2%)

Table (2): distribution of the studied sample regarding their history and experience of fc at sohag governorate (n=320).

parameters	Results
<b>Experience of FC</b> N= (320)	
- Yes	213 (66.6%)
- No	107 (33.4%)
<b>Age of performance for circumcision</b> (N=213)	
- < 6 Years	93 (43.7%)
- ≥6Years	120 (56.3%)
Mean ±SD of circumcision	7.01±2.9
<b>Personnel performed FC</b> (N=213)	
- Doctor	162 (76.1)
- Nurse	12 (5.6%)
- Traditional midwife	36 (16.9%)
- Barber	3 (1.4%)
<b>Place for performing FC (n=213)</b>	
- Home	115 (54.0)
- One relatives	18 (8.5%)
- Health institution	5 (2.3%)
- Private clinic	75 (35.2%)
<b>Who is responsible for decision of FC</b> N= (320)	
- Both parents	255 (79.7%)
- Mother	38 (11.9%)
- Mother in low	14 (4.4%)
- Father	8 (2.5%)
- Doctor	5 (1.5%)
<b>Any one talk with you about FC</b>	
- No	170 (79.0%)
- Yes	43 (20.2%)
<b>Health problems of FC (n=213) occurrence</b>	
- Yes	63
- No	84
- Don't remember	66

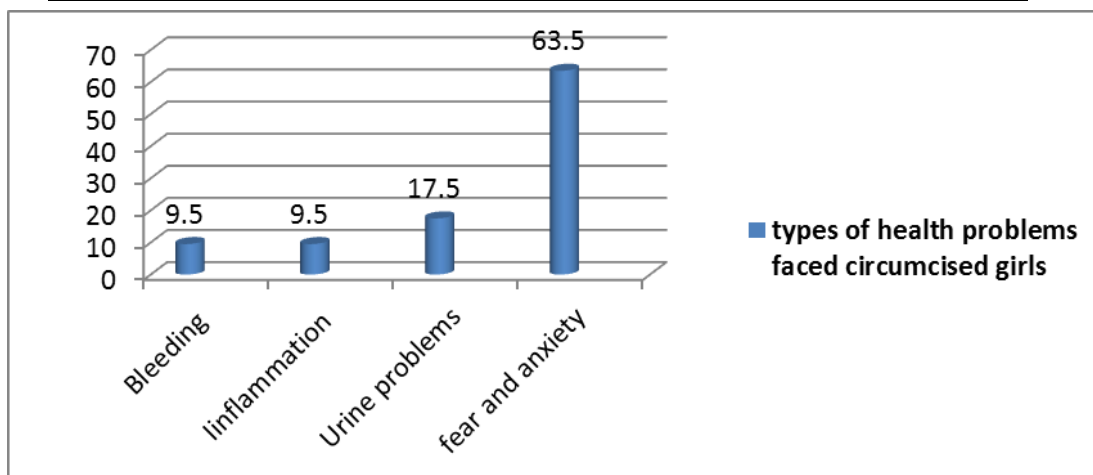


Figure (1): Distribution of Health Problem Faced Circumcised Students (N=63)



International Journal of Novel Research in Healthcare and Nursing

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Table (3): distribution of the studied subject regarding sources of information and aim of female circumcision (n=320).

Items	No.	%
<b>Source of information about FC</b>		
- Family	175	57.3%
- television\ newspaper	6	12.2%
- School	14	10.6%
- Nurse \ doctor	11	8.4%
- Community health education	9	6.9%
- Net	6	4.6%
<b>Aim of female circumcision</b>		
- Beliefs and tradition	142	44.4%
- Religion	46	14.4%
- Society's culture	31	9.7%
- Cleanliness	26	8.1%
- Pressure of society	22	6.9%
- Medical aspect	22	6.9%

Table (4): Distribution of Knowledge of the female students about female circumcision throughout the program phases (n=320).

Knowledge of female students about FC	Pretest	Posttest	Follow up	P.V
- There are laws against FC	99 (30.9%)	159(49.7%)	150(46.9%)	0.000**
- FC is a laws in upper Egypt	85 (26.6%)	111(34.7%)	115(35.9)	0.000**
<b>Causes of FC ( as people believed that )</b>				
- The clitoris look like a penis	85 (26.6%)	189(59.1%)	176(55.0%)	0.000**
- make girl less susceptible to sexually transmitted diseases(STD)	66 (20.6%)	190(59.4%)	171(53.4%)	0.000**
- Less susceptible to reproductive tract infection (RTI).	88 (27.5%)	170(53.1%)	162(50.6%)	0.000**
- Children of uncircumcised Mothers die more than children of circumcised mothers.	114(35.6%)	223(69.7%)	182(56.9%)	0.000**
- improve reproduction	131(40.9%)	226(70.6%)	216(67.5%)	0.000**
<b>Complication of FC</b>				
- bleeding	140 (43.8%)	266 (83.1%)	234 (73.1%)	0.000**
- infertility	94 (29.4%)	173 (54.1%)	144(45.0%)	0.000**
- urinary problems	110 (34.4%)	227(70.9%)	192(60.0%)	0.000**
- reproductive tract infection	53 (16.6%)	105(32.8%)	87(27.2%)	0.000**
- cancer	42 (13.1%)	108(33.8%)	89(27.8%)	0.000**
<b>Opinion of Students in FC</b>				
- Agree with your circumcision	55 (17.2%)	31 (9.7%)	27(8.4%)	0.002*
- Fc is not dangerous	124(38.8%)	39 (12.2%)	35 (10.9%)	0.000**
- Fc is violation to girls' gender.	140 (43.8%)	206 (64.4%)	183 (57.2%)	0.000**
- All daughters should be circumcised.	104 (32.5%)	39 (12.2%)	37(11.6%)	0.000**
<b>opinion of students in preventing FC in future</b>				
- Fc performed by specialized person.	140 (43.8%)	190 (59.4%)	186 (58.1%)	0.000**
- I will circumcise my daughter	90 (28.1%)	43 (13.4%)	32 (10.0%)	0.000**
- encourage my colleague to circumcise her daughter	72 (22.5%)	18 (5.6%)	32 (10.0%)	0.000**
- FC educational program should be encouraged	217 (67.8%)	276 (86.2%)	260 (81.2%)	0.000**

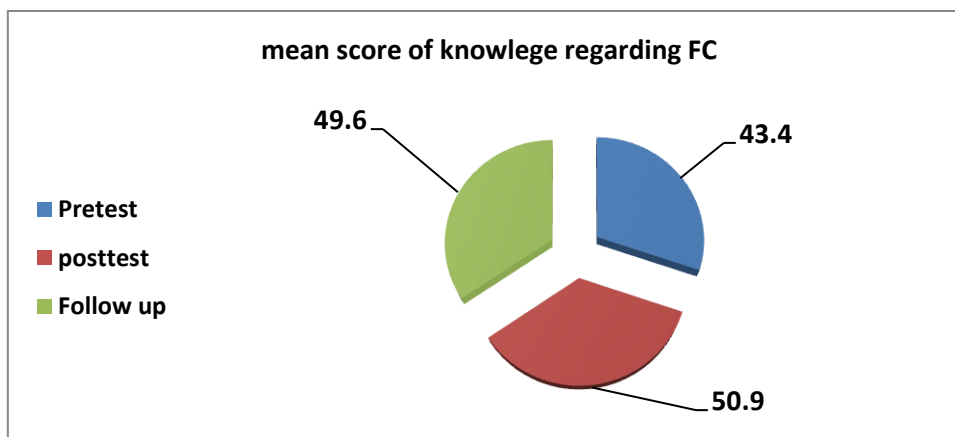


Figure (2): Distribution of mean score of knowledge of the studied subject regarding female circumcision throughout all phases of the program.

Table (5): Distribution of the studied subject according to mean score of perception regarding prevention of female circumcision in all program phases (n=320).

perception of studied subject to prevent female circumcision(FC)	Pretest	Posttest	Follow up	p. v
	Mean± SD	Mean± SD	Mean± SD	
Perceived seriousness	33.0±6.9	36.8±7.7	34.5±8.0	0.000**
Perceived susceptibility	28.9±4.6	32.7±7.1	29.7±5.2	0.000**
Perceived benefits of FC	26.1±3.8	27.2±4.1	27.4±4.3	0.000**
Perceived barriers	19.6±4.0	21.4± 4.3	21.2±4.2	0.000**
Cues to action	7.6±1.8	8.4± 1.8	3.6±1.2	0.000**
Self-efficacy	21.5±4.5	20.97± 4.9	20.1±4.8	0.001**

Table (6): Correlation of Secondary Students' Various Scale Scores.

spearman's rank correlation Coefficient							
	SES	Pretest of perception	posttest of perception	follow up of perception	pretest of knowledge	posttest of Knowledge	Follow up of Knowledge
SES							
SES		-.108-	-.016-		-.154**	.062	.130*
Pretest of perception	-.108-		-.052-	.118*	-.182**		
posttest of perception	-.016-					-.120*	
follow up of perception	-.076-	.118*	.032				.117*
pretest of Knowledge	-.154**					-.107-	
posttest of Knowledge	.062	.021	-.120*		-.107-		-.011-
follow up of Knowledge	.130*			.117*			

\*. Correlation is significant at the (P<0.05)

\*\* . Correlation is significant at the (P< 0.01)

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