

Effect of Educational Instructional Module on Childbearing Women's Awareness Regarding Emergency Contraception.

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Abstract: Emergency contraception (EC) is considered one of the effective family planning methods for reducing the risk of unintended pregnancy and its related consequences, including maternal death and disability. **Aim of the study:** was to determine the effect of educational instructional module on childbearing women's awareness regarding emergency contraception. **Subjects and Method:** A quasi-experimental research design was used to conduct this study at all Maternal and Child Health Care Centers (M.C.H centers) at Tanta city. Three Tools were used for data collection included: **Tool (I)** A structured interview schedule, **Tool (II)** childbearing women's knowledge regarding emergency contraception (EC) and **Tool (III)** childbearing women's attitudes regarding emergency contraception (EC). **Results:** It was revealed that about two third of the studied women had low level of knowledge regarding emergency contraception pre intervention with the main source of knowledge was social media among slightly half of them, while 3 months post intervention the level of knowledge was significantly improved to be high among more than three quarter of them. Additionally, the total level of attitudes towards Emergency Contraception (EC) was substantially changed from negative attitudes among three quarters of the studied women pre intervention to be positive among the majority of them 3 months post intervention. **Conclusion:** Based on the finding of the present study, it can be concluded that the educational instructional module significantly improved the childbearing women's knowledge and attitudes regarding EC. **Recommendations:** Planning and developing ongoing structured educational classes and programs regarding EC for all childbearing women to increase their awareness about EC. Additionally, mass media should be utilized and community organizations mobilized to disseminate correct and relevant information about Emergency Contraception.

Keywords: Knowledge, Attitudes, Emergency Contraception, Educational Instructional Module.

Introduction

Emergency contraception (EC) is considered one of the effective family planning methods for reducing the risk of unintended pregnancy and its related consequences, including maternal death and disability⁽¹⁾. Unintended pregnancy is a global health problem affecting women, their families and the society at large

(2). All over the world, approximately 85 million (40%) of the pregnancies are unintended. While in Egypt, about 23% of all pregnancies are unintended^(3,4). One of the most particular harmful consequences of unintended pregnancy is unsafe abortion^(2,5). According to WHO estimation 2021, six out of 10 (61%) of all unintended pregnancies

end in an induced abortion. Around 45% of all abortions are unsafe, of which 97% take place in developing countries ⁽⁶⁾.

Unsafe abortion is a leading but preventable cause of maternal deaths and morbidities. It can result in physical and mental health complications as well as social and financial burdens for women, communities and health systems ^(6,7). Most women in the Arab region who decide to terminate their unintended pregnancies may resort to unsafe abortion in case if they face legal barriers to obtain a safe abortion ^(2,8). Although, many of these unintended pregnancies could be avoided by using emergency contraception ⁽⁹⁾.

Emergency contraception is defined as utilization of a method for contraception in the first few days after unprotected intercourse. It is also known as post-coital pills or morning-after pills ^(10,11,12). According to World Health Organization (WHO), EC can prevent up to 95% of unintended pregnancies ⁽¹³⁾. The main mechanism of action of EC is inhibiting or postponing ovulation as well as preventing fertilization. It may also affect implantation, but does not disrupt an already established pregnancy ^(9,14). EC are classified into three methods; levonorgestrel-only pills (LNG) or progestin only pills (Plan B), combined estrogen and progestin pills (the Yuzpe regimen) and the copper intrauterine device. Among these methods, the copper intrauterine device is the best type of emergency contraception accessible ^(2,15).

There are many indications for using EC as unprotected intercourse, contraceptive failure, breakage or slippage of condom, in addition to sexual assault. Moreover, EC are safe with no serious complications or side

effects. The most common side effects of EC are nausea and vomiting for oral pills while, heavy menstrual bleeding, pain and cramping or expulsion are associated with IUCD ^(1,2).

Emergency Contraceptive pills should be used within 72 hours of unprotected intercourse, while IUCD should be used within 5 days. The optimum effectiveness of EC can be achieved to range from 75–95% for pills and 99% for IUDS if they used within the proper time ^(2,12,16). Although, its strong efficacy to prevent unintended pregnancies, EC is underutilized due to lack of awareness and general poor knowledge among childbearing women ^(17,18). Women often have inaccurate knowledge or misinformation about the effectiveness of EC, the proper time of use, the availability of EC, the prescription laws surrounding EC, as well as their effect on fertility and preexisting pregnancies ^(18,19,20). Moreover, in about half of all unintended pregnancies, conception happens because of deficient guidance to utilize EC properly, the users' inability to address their feelings, poor attitudes towards EC, and absence of motivations. Eventually, this result in inhibiting the access to and hindering the accurate use of EC ^(10,21).

Thus, women need to be equipped with accurate knowledge about the different EC methods, their effectiveness, proper time of use, how and where EC can be accessed. Consequently, their attitudes and motivation toward EC can be enhanced. ^(10,21,22). So, without nursing provision of information and knowledge regarding EC through continuous educational programs especially in the developing countries, women will miss the opportunity to access available EC services

and protect themselves from unintended pregnancies and its associated complications (23,24).

Significance of the study

Emergency contraception (EC) plays a vital role in reducing maternal mortality substantially and improves maternal health by avoiding unintended pregnancies and unsafe abortions (3,25). Yearly, unintended pregnancies result in at least 50 million abortions worldwide. These result in approximately 80 000 maternal deaths almost all in developing countries (16). In Egypt, each year, 216,000 women are admitted to hospital with complications of abortion (26). Moreover, delay or not utilizing antenatal care services that may influence maternal and fetal health is considered another negative consequence of unintended pregnancy. Consequently, emergency contraception is considered a life-saving intervention (25,27). The major factor limiting the use of EC may be inadequate information about their effectiveness and availability or unfavorable opinions and attitudes about their safety due to misinformation. Despite the fact that different modern contraceptives exist in Egypt, the problem of unintended pregnancy still present which could be due to gap in childbearing women's awareness regarding emergency contraception (28,29).

Aim of the study

The aim of this study was to determine the effect of educational instructional module on childbearing women's awareness regarding emergency contraception.

Research Hypothesis

Childbearing women's knowledge and attitudes regarding emergency contraception would be improved after implementing

educational instructional module.

Operational definition

Awareness in this study means knowledge and attitudes of childbearing women (15-49) regarding emergency contraception.

I. Subjects and Method

Research Design: A quasi-experimental research design was used to conduct this study.

Setting: This study was carried out at all Maternal and Child Health Care Centers (M.C.H centers) affiliated to the different available geographical health zones for the Ministry of Health at Tanta city. There are 7 (M.C.H centers) representing 5 districts of Tanta City at El-Gharbiah governorate. The settings include:

- 1) Tanta Awal at El-Shrouk.
- 2) Tanta Tanie at EL- Embaby.
- 3) Tanta Thalith at EL-Azharia.
- 4) Tanta Rabae at Kohafa.
- 5) Tanta Khames at El-Agizy.
- 6) Doctor Mohamed Mashally Medical Center at Said.
- 7) Medical center at Siger.

Subjects

- A purposive sample of (65) women attending the antenatal clinics of the previously mentioned settings were included in this study. The sample size was calculated using Epi-info 7 software program. The criteria for sample size selection were determined at 95% confidence limit, study power 80% with a 5% margin of error. The calculated sample size was found to be 51 women and increased to 65 to increase the validity of the results.
- The study sample in this study was selected according to the following inclusion

criteria:

- Married women at reproductive age from (15-49) years.
- Free from any chronic medical diseases.
- Agree to participate in the study.

MCH Centers	Number of women	Selected number of women
1- Tanta Awal at El-Shrouk	30	6
2- Tanta Tanie at EL- Embaby.	30	6
3- Tanta Thalith at EL-Azharia.	25	5
4- Tanta Rabae at Kohafa.	25	5
5- Tanta Khames at El-Agizy.	60	12
6- Doctor Mohamed Mashally Medical Center at Said.	90	18
7- Medical center at Siger.	65	13
Total	325	65

-Three tools were used to achieve the aim of this study as follows:

Tool (I) A structured interview schedule. It was developed by the researchers after reviewing the recent related literatures to collect the basic data of the study subjects. It was divided into three parts:

- **Part (1): Socio demographic characteristics of women:** age, educational level, employment status, residence, and family income.
- **Part (2): Obstetric history:** This part included age of menarche, regularity of menstrual cycle, duration of menstrual flow,

gravidity, occurrence of unintended pregnancy, number of abortion and unsafe abortion.

- **Part (3): Contraceptive history included:** previous or current using of contraceptive methods, duration of use, using of emergency contraception (EC), and attendance of previous program related to EC.

Tool (II): Childbearing women's knowledge regarding emergency contraception (EC)

- 1) This tool was developed by the researchers after reviewing the recent related literatures to assess childbearing women's knowledge about EC. It included the following questions; definition, types of EC methods, proper time of using EC, effectiveness of EC, indications, contraindications, interval between doses, side effects of EC, and women's sources of knowledge about EC.

The scoring system of childbearing women's knowledge regarding emergency contraception was as follows:

- Correct and complete answer was given a score of (2).
- Correct and incomplete answer was given a score of (1).
- Incorrect or don't know was given a score of (0).

The total score level of childbearing women's knowledge was calculated as follows:

- High level of knowledge $\geq 75\%$ of the total score.
- Moderate level of knowledge 50% $< 75\%$ of the total score.
- Low level of knowledge $< 50\%$ of the total score.

Tool (III): Childbearing women's attitudes regarding emergency contraception (EC).

This tool was adapted from (Thapa, 2013)⁽³⁰⁾ to assess women's attitudes. It consisted of thirteen statements (10 positive statements and 3 negative statements). Women response to these statements in a three point Likert scale. Their responses ranged from agree to disagree. The scoring system of women's attitudes regarding emergency contraception was as follows:

- Each positive statement scored as (2) if women's response was agree, (1) if it was uncertain and (zero) if it was disagree.
- Each negative statement scored as (2) if women's response was disagree, (1) if it was uncertain and zero if it was agree.

The total score level of childbearing women's attitudes was calculated as follows:

- Positive attitudes towards EC \geq 60% of the total score.
- Negative attitudes towards EC $<$ 60% of the total score.

Method

1. **Administrative approval:** An official letter from the responsible authorities at the Faculty of Nursing clarifying the purpose of the study was directed to Head of Ministry of Health in Gharbaya and Head of the concerned M.C.H centers to obtain their approval and cooperation for conducting the study.

2. Tools development

- **Tool I and II** were developed by the researchers after reviewing relevant and the recent related literatures. **Tool III** was adapted from (Thapa,2013). The tools were tested for their content and face validity by a jury of 5 experts in the field of Maternity and Gynecological Nursing to evaluate each item as well as the entire tools as being relevant

and appropriate to test what they wanted to measure. The face validity of the tools were calculated based on experts' opinion after calculating content validity index (%) of their items and they were 92.8%, 90.7% and 91.2% respectively.

- As well as to assess reliability, the study tools were tested by the pilot subjects at first session and retested after 2 weeks as test-retest reliability for calculating Cronbach's Alpha which were 0.875, 0.784, and 0.831.

3. Ethical considerations: Women's informed consent was obtained to participate in the study after explaining the purpose of the study. The nature of the study not caused any harm and/or pain for the entire sample. Also, confidentiality and privacy were ascertained regarding the data collected and each subject was free to withdraw from the study at any time.

4. **Pilot Study:** After the development of the tools, a pilot study was carried out on 10% of the sample (7 women) from the previously mentioned settings to ascertain the clarity, feasibility and applicability of the developed tools. The pilot study was conducted before the actual data collection. Accordingly the necessary modifications, and/or rephrasing, were done according to the results of this pilot study, then the tools made ready for use. Data obtained from the pilot study were excluded from the current study sample.

5. Field work

— The data and the predetermined sample size were collected over a period of six months, through three days per week at 9:00 a.m, to 2:00 p.m from the previously mentioned (M.C.H centers). The researcher introduced herself and the purpose of the study was explained to every woman who

participated in the study.

— The study was implemented and conducted through **4 phases**: assessment, planning, implementation, and evaluation as follows:

- **Assessment phase (Pre test)**: A structured interview schedule (**Tool I**) was conducted individually for each woman to collect their basic data related to sociodemographic characteristics, obstetrics and contraceptive history. **Tools II and III** were used to collect childbearing women's knowledge and attitudes regarding emergency contraception (**EC**). The questions were asked in Arabic language and the women's answers were recorded.

- **Planning phase**: Based on the data collected on the assessment phase, an appropriate educational instructional module was prepared by the researchers to meet the following general and specific objectives:

- **General objectives**: The general objective was to improve childbearing women's knowledge and changing their attitudes toward EC.

- **Specific objectives**: After completion of the educational instructional module regarding EC, the women included in the study should be able to:

- Define emergency contraception.
- List types of emergency contraception.
- Display the proper action in case of unprotected intercourse.
- Identify proper time of using emergency contraception.
- Determine effectiveness of each emergency contraceptive method.
- Enumerate indications and contraindications of emergency contraception methods.
- Differentiate between side effects of each

emergency contraceptive method.

- **Prepare the content of the instructional module**

- An educational instructional module was developed by the researchers based on the women's needs to increase their awareness regarding (EC).

- Different methods of teaching were used to conduct the instructional module included lecture, group discussion, poster, booklet, powerpoint and video.

- **Implementation phase**

- The researchers attended the previously selected (M.C.H centers) at Tanta City three days per week for six months.

- All the available women who meeting the inclusion criteria were interviewed individually by the researchers.

- The educational instructional module content was explained in Arabic language using the previously mentioned different teaching methods through three sessions as follows:

- At the beginning two separate sessions are given to women at MCH centers each one ranged from 15-20 minutes including an orientation to the significance of the study, general and specific objectives. As well as definition, types, action, indications, contraindications and effectiveness of emergency contraception were explained. While, the third session is provided to women through online meeting ranged from 20 to 45 minutes. It included revision on the previous sessions, side effects of EC, the proper action should be taken in case of unprotected intercourse and the proper time of using emergency contraception. In addition to answering women's questions.

- Booklet was given to women after the implementation of the educational

instructional module for encouragement and being a guide for them.

- **Evaluation phase:- (Post test)**

- Childbearing women's knowledge and attitudes regarding EC were evaluated three months after implementation of the educational instructional module using **Tools II and III** as a post test.

6. Statistical analysis: The collected data were coded, organized, tabulated and statistically analyzed using to Statistical Package for Social Sciences windows software, version 20. For numerical data, the range, mean and standard deviation were calculated. For comparison between two means, t-test was used. Differences between more than two means were tested by (F) repeated measures analysis of variance. For categorical variables, the number and percentage were calculated and differences between subcategories were tested by Chi-square (X^2). When Chi-square was not appropriate, Wilcoxon test and Monte Carlo exact test were used. Correlation between variables was evaluated using Pearson's correlation coefficient. The level of significance was adopted at $p < 0.05$.

Results

Table (1): Shows the distribution of the studied women according to their socio-demographic characteristics. It was observed that the mean age of the studied women was 31.05 ± 7.538 years. The table also reveals that, nearly three quarters (73.8%) of the studied women had finished university or post graduate education and more than three fifths (67.6 %) of them were employee with nearly half (43.1 %) of them were employee at the health Sector. Concerning the residence, it was found that more than half

(55.4 %) of the studied women were from urban. Furthermore, almost three quarters (78.5 %) of them had enough income.

Table (2): Presents the distribution of the studied women according to their obstetric and contraceptive history. It was noticed that 11.40 ± 1.209 of the studied women had menarche at 10-13 years old. As regard the regularity of menstruation, it was observed that (75.4%) of them had regular menstrual flow. Concerning the duration of menstrual flow, 4.00 ± 1.52 of the studied women had duration of menstrual flow ranged from 3-7 days. The table also reveals that (67.6 % and 32.4%) of the studied women became pregnant for 1 - 3 and 4-6 time respectively, from these pregnancies (26.2%) were unintended. Additionally, (16.9 %) of them had one time or more abortion with (13.8 %) suffer from one time or more unsafe abortion. Relating to the contraceptive history, it was observed that (76.9 %) of the studied women used previous or current method of contraception for a duration ranged from 5 to 15 years among 7.00 ± 1.60 of them. The table also reveals that only (29.2 %) of the studied women used emergency contraception with the majority of them (84.6%) didn't attend any previous program related to (EC).

Table (3): Demonstrates the distribution of the studied women according to their knowledge about Emergency Contraception. The table reveals that (58.5%, 56.9%, 60%, 52.3%, 50.8%, 50.8%, 53.8%, 58.5% and 66.2% respectively) of the studied women gave incorrect answers or didn't know about definition, types of emergency contraception, actions should be taken by woman to prevent pregnancy in case of unprotected intercourse or failure of regular birth control method,

proper time of using EC and its effectiveness, indications, contraindications, interval between doses as well as its side effects. On the other hand after implementing the educational module, an improvement on their level of knowledge was obviously observed, where (80.0%, 78.4%, 84.6%, 72.3%, 70.8%, 81.6%, 75.4%, 87.6% and 80.0% respectively) of them gave correct and complete answers regarding the same previous items with statistically significant difference where $P < 0.05$ in all items of knowledge.

Table (4): Presents the distribution of the studied women according to their attitudes towards Emergency Contraception. The table reveals a significant positive change of the studied women's attitudes towards Emergency Contraception 3 months post intervention compared to pre intervention where $P < 0.05$ in all items of attitude

Table (5): Illustrates the presence of positive correlation between total score level of knowledge and total score level of attitudes regarding Emergency Contraception of the studied women 3 months post program with statistically significant difference where $P < 0.05$.

Figure (1): illustrates the distribution of the studied women according to their total score level of knowledge regarding Emergency Contraception. It was revealed that (58.5% and 33.8% respectively) of the studied women had low and moderate total score level of knowledge regarding Emergency Contraception pre educational module implementation, while 3 months after implementing the educational module, the

total score level of knowledge was significantly improved to be high among (80%) of them.

Figure (2): shows the distribution of the studied women according to their sources of knowledge about Emergency Contraception. It was observed that social media followed by medical staff represent the basic source of knowledge among (46% and 31% respectively) of the studied women, while books and other sources of knowledge represent (8% and 15% respectively) among the rest of them.

Figure (3): Reveals the distribution of the studied women according to their total score level of attitudes towards Emergency Contraception. It was obvious that the total score level of attitudes towards Emergency Contraception was changed from negative attitude among (76.9%) of the studied women pre educational module implementation to be positive among (87.8%) of them 3 months after implementing the educational module.

Table (1): Distribution of the studied women according to their socio-demographic characteristics. (n=65)

Items	The studied women (n=65)	
	N	%
Age (years):		
18->25	9	13.8
25->35	34	52.4
35-45	22	33.8
Range	23-40	
Mean ± SD	31.05±7.538	
Educational Level:		
Secondary	17	26.2
University or Post Graduated	48	73.8
Employment status:		
Employee	44	67.6
Non-Employee	21	32.4
Type of employment:		
Health sector	28	43.1
Governmental sector	22	33.8
Private	15	23.1
Residence		
Rural	29	44.6
Urban	36	55.4
Family income:		
Enough	51	78.5
Not enough	14	21.5

***Significant P< 0.05.**

Table (2): Distribution of the studied women according to their obstetric and contraceptive history. (n=65)

Items	The studied women (n=65)	
	N	%
Age of menarche:		
Range	10-13	
Mean + SD	11.40±1.209	
Regularity of menstruation:		
Yes	49	75.4
No	16	24.6
Duration of menstrual flow: (days)		
Range	3-7	
Mean + SD	4.00±1.52	
Gravidity:		
1-3	44	67.6
4-6	21	32.4
Occurrence of unintended pregnancy:		
Yes	17	26.2
No	48	73.8
No. of abortions:		
None	54	83.1
One or more	11	16.9
Number of unsafe abortion:		
None	56	86.2
One or more	9	13.8
Previous or current using of contraceptive method:		
Yes	50	76.9
No	15	23.1
Duration of using contraceptive method:		
Range	5-15	
Mean + SD	7.00±1.60	
Using of Emergency Contraception (EC):		
Yes	19	29.2
No	46	70.8
Attendance of previous program related to(EC):		
Yes	10	15.4
No	55	84.6

*Significant P< 0.05.

Table(3): Distribution of the studied women according to their knowledge regarding Emergency Contraception (EC). (n=65)

Items	The studied women (n=65)				Pre vs Post P-value
	Pre		Post		
	N	%	N	%	
Definition of emergency contraception (EC):					0.024*
Correct and complete answer	5	7.7	52	80.0	
Correct and incomplete answer	22	33.8	13	20.0	
Incorrect and don't know	38	58.5	0	0.0	
Types of EC methods:					0.002**
Correct and complete answer	5	7.7	51	78.4	
Correct and incomplete answer	23	35.4	7	10.8	
Incorrect and don't know	37	56.9	7	10.8	
Action should be taken by woman to prevent pregnancy in case of unprotected intercourse or failure of regular birth control method:					0.003*
Correct and complete answer	19	29.2	55	84.6	
Correct and incomplete answer	7	10.8	10	15.4	
Incorrect and don't know	39	60	0	0.0	
Proper time of using EC:					0.002**
Correct and complete answer	6	9.2	47	72.3	
Correct and incomplete answer	25	38.5	18	27.7	
Incorrect and don't know	34	52.3	0	0.0	
Effectiveness of EC:					0.000**
Correct and complete answer	9	13.8	46	70.8	
Correct and incomplete answer	23	35.4	15	23.0	
Incorrect and don't know	33	50.8	4	6.2	
Indications of EC:					0.001**
Correct and complete answer	6	9.2	53	81.6	
Correct and incomplete answer	26	40.0	9	13.8	
Incorrect and don't know	33	50.8	3	4.6	
Contraindications of EC:					0.063
Correct and complete answer	12	18.5	49	75.4	
Correct and incomplete answer	18	27.7	13	20.0	
Incorrect and don't know	35	53.8	3	4.6	
Interval between doses of EC:					0.093
Correct and complete answer	5	7.7	57	87.6	
Correct and incomplete answer	22	33.8	4	6.2	
Incorrect and don't know	38	58.5	4	6.2	

Side effects of EC:					0.019*
Correct and complete answer	5	7.7	52	80.0	
Correct and incomplete answer	17	26.1	8	12.3	
Incorrect and don't know	43	66.2	5	7.7	

***Significant P < 0.05.**

Table (4): Distribution of the studied women according to their attitudes towards Emergency Contraception (EC). (n=65)

Items	The studied women (n=65)				Pre / Post P-value
	Pre		Post		
	N	%	N	%	
-Emergency contraception is an issue need to be learned about it.					0.050*
Agree	25	38.5	55	84.6	
Uncertain	12	18.5	10	15.4	
Disagree	28	43.0	0	0.0	
It is morally wrong to use emergency contraception?					0.018*
Agree	41	63.1	17	26.2	
Uncertain	11	16.9	39	60.0	
Disagree	13	20.0	9	13.8	
-Emergency contraceptive methods can't be used if pregnancy occurs.					0.001*
Agree	7	10.8	58	89.2	
Uncertain	21	32.3	5	7.7	
Disagree	37	56.9	2	3.1	
-Using emergency contraception is necessary in the event of unprotected. sexual intercourse					0.007*
Agree	5	7.7	58	89.2	
Uncertain	20	30.8	5	7.7	
Disagree	40	61.5	2	3.1	
Using emergency contraception is necessary in case of failure of the regular used birth control method.					0.038*
Agree	16	16.9	59	90.8	
Uncertain	38	58.5	6	9.2	
Disagree	11	24.6	0	0.0	
Emergency contraception is safe to use.					0.008**
Agree	4	6.2.0	60	92.3	
Uncertain	20	30.8	5	7.7	

Disagree	41	63.0	0	0.0	
Emergency contraception is effective.					0.033*
Agree	12	18.5	55	84.6	
Uncertain	10	15.4	7	10.8	
Disagree	43	66.1	3	4.6	
-Advice another women to use emergency contraception.					0.001*
Agree	3	4.6	60	92.3	
Uncertain	40	61.6	4	6.2	
Disagree	22	33.8	1	1.5	
Emergency contraception should be easily accessible.					0.008**
Agree	4	6.2	50	76.9	
Uncertain	20	30.8	15	23.1	
Disagree	41	63.0	0	0.0	
Emergency contraception should be inexpensive.					0.007*
Agree	3	4.6	57	87.7	
Uncertain	9	13.8	3	4.6	
Disagree	53	81.6	5	7.7	
-Emergency contraception should be available without prescription.					0.019*
Agree	5	7.7	5	7.7	
Uncertain	43	66.2	8	12.3	
Disagree	17	26.1	52	80.0	
Emergency contraception should be available to all women not only the victims of rape.					0.001**
Agree	6	9.2	53	81.6	
Uncertain	26	40.0	9	13.8	
Disagree	33	50.8	3	4.6	
Emergency contraception might affect pregnancy in the future.					0.003*
Agree	39	60	0	0.0	
Uncertain	7	10.8	6	9.2	
Disagree	19	29.2	59	90.8	
Emergency contraception might be harmful to the body.					0.024*
Agree	38	58.5	0	0.0	
Uncertain	22	33.8	13	20.0	
Disagree	5	7.7	52	80.0	

***Significant P < 0.05.**

Table (5): The correlation between total score level of knowledge and total score level of attitudes regarding (EC) of the studied women pre and 3 months post after implementing the educational module. (n=65)

Variables	The studied women (n=65)	
	Total score level of knowledge regarding (EC).	
	Pre	Post 3 months
	R P	R P
Total score level of attitudes toward (EC).	0.205 0.101	0.243 0.021*

*Significant P< 0.05.

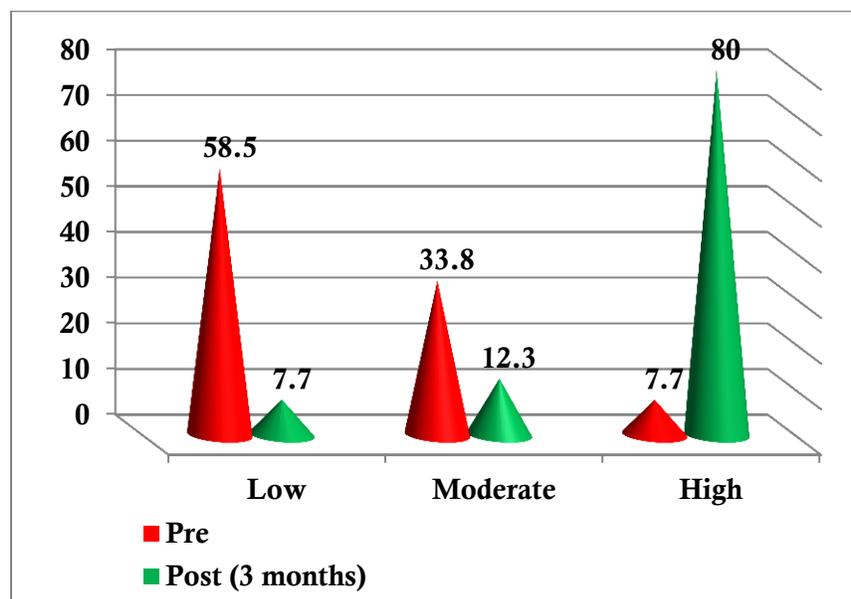


Figure (1): Distribution of the studied women according to their total score level of knowledge regarding Emergency Contraception (EC).

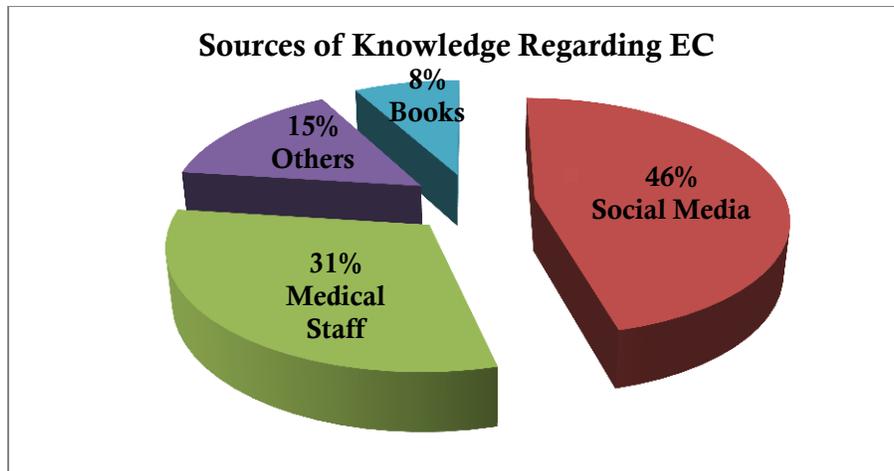


Figure (2):- Distribution of the studied women according to their sources of knowledge about Emergency Contraception (EC).

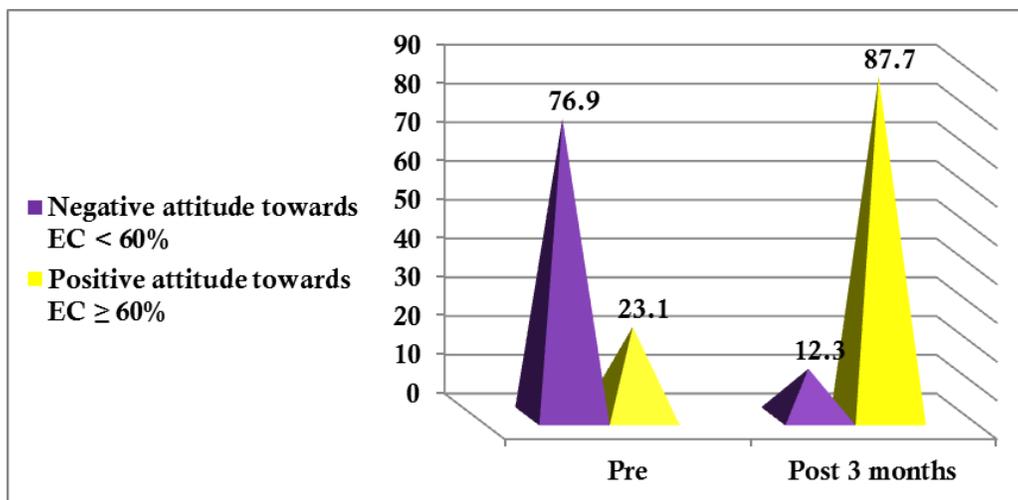


Figure (3): Distribution of the studied women according to their total score level of attitude towards Emergency Contraception (EC).

Discussion

Emergency Contraception EC is a highly effective birth control method that has the capability to reduce the incidence of unintended pregnancy among reproductive age women. However, efforts to disseminate EC to women are hindered by incorrect and lack of knowledge as well as negative attitudes that may impede the accurate use of EC⁽³¹⁾. Therefore, this study was carried out to determine the effect of educational instructional module on childbearing women's awareness regarding Emergency Contraception.

Regarding to socio-demographic characteristics of the studied women, the present study showed that half of the women were adult, about three quarters had university or post graduate education, and more than half of them were employee as well as lives in urban areas.

Referring to the distribution of the studied women according to their knowledge regarding Emergency Contraception EC, the present study clarifies a lack of knowledge about EC among the studied women. More than half of the studied women didn't know or gave incorrect answers about definition and types of EC, action should be taken by woman to prevent pregnancy in case of unprotected intercourse or failure of regular birth control method, proper time of using EC and its effectiveness, indications, contraindications, interval between doses as well as its side effects.

This was obvious in the **women's total score level of knowledge regarding emergency contraception (EC)**. Where the present study revealed that one third and more than one half of the studied women had moderate and low level of knowledge regarding EC before implementing the educational module respectively.

Meanwhile, after implementing the educational module, there was a significant improvement in women's knowledge regarding EC post 3 months compared to pre-test where more than three quarters of the studied women had high level of knowledge about emergency contraception.

These results are agreed with **Hassan S et al (2020)**⁽³²⁾ who studied the effect of educational guidelines on childbearing women's knowledge, attitude and their intention regarding emergency contraceptive use. They illustrated that half of the participants had poor total knowledge score about EC before the intervention of guidelines. However, most of emergency contraception information was significantly improved post educational guidelines.

Similar findings was found on a study about the effects of an educational program on knowledge, attitudes and intentions regarding condom and emergency contraceptive pill use among Thai female university students carried out by **Thongnopakun S et al (2018)**⁽³³⁾ who reported that there was a statistically significant difference in the scores of knowledge before and after intervention in the study group.

In the same line, these results are supported by **Abdulmalek I and Ibrahim W (2016)**⁽³⁴⁾ who conducted health education program in improving knowledge regarding emergency contraception among school teachers in Duhok, they reported that most of the school teachers had inadequate and low knowledge about EC pre-training program, while there was high statistical significant improvement in the level of knowledge among them in the post-training program. Additionally, this is matching with **Mollen C. et al (2013)**⁽³⁵⁾ who carried out a

study regarding developing Emergency Department–based Education About Emergency Contraception: Adolescent Preferences. They emphasized the lack of knowledge and underutilization of EC. They also concluded how education around emergency contraception would best serve adolescents' needs, with a particular interest in in-person, targeted counseling.

Furthermore, these results are in accordance with **Arinze-Onyia S. et al (2010)**⁽³⁶⁾ who studied the effects of health education on knowledge and attitudes to emergency contraception by female students of a tertiary educational institution in Enugu, South East Nigeria. They portrayed that despite the poor knowledge displayed by the studied group at baseline, the study has shown that health education on EC can effectively improve the knowledge of EC.

The harmony of the previous studies with the current study may be attributed to the effect of the implemented educational instructional module provided about EC. In addition, a big proportion of women in the current study were educated for this reason they were active participants in the session of the educational module. Furthermore, some of the studied women experienced unintended pregnancies and its complications as well as the majority didn't attend any previous health education program related to EC. Thus make them more eager to gain knowledge about EC to overcome unintended pregnancies and its adverse outcomes.

On the other hand, the findings of the present study in contrast with **Abd Elmoniem S., and Abdelhakam E. (2018)**⁽³⁷⁾ who conducted a study for assessing the Effect of Emergency Contraception Guidelines Intervention on Women's Knowledge and Attitude. They

revealed that the majority of studied women had poor knowledge about EC before guidelines intervention with significant difference post intervention. These differences could be justified as about three quarters of the studied women at the current study had university or post graduate education which is an important factor to acquire knowledge regarding reproductive health and its related issues.

Since, sources of knowledge could play an important role in the decision making process for women regarding health related issues, so it should be strengthened. In relation to women's sources of knowledge regarding EC, the current study demonstrated that about half of the studied women mentioned that social media is the main source of their knowledge regarding EC. However, such knowledge from social media may be inadequate, inaccurate and incomplete. On the other hand, about only one third of them obtained their information from medical staff. This finding clarifies the need for health care providers to provide more information on EC routinely as a part of family planning counseling.

The findings of the current study are supported by **Hassan S et al (2020)**⁽³²⁾ who told that nearly half of the study participants mentioned that social media was the common source of information about EC.

Other authors like Gupta R et al (2017)⁽³⁸⁾, **Joseph et al (2016)**⁽³⁹⁾, **Relwani N et al**⁽⁴⁰⁾ and **Ahmed F et al (2012)**⁽⁴¹⁾, also reported that mass media was the main source of information among respondents in their respective studies. From the researchers' point of view, these results may be due to the social media provides a platform for rapid and seamless access to information so it becomes a common and

primarily source of health information among millions of variable peoples.

An attitude refers to a set of emotions, beliefs, and behaviors toward a particular person, thing, or event. It often results from past or current experiences, and it can have a powerful influence over behavior. In psychology, while attitudes are stable, they can also change. Relating to the attitudes of the studied women toward EC, the current study revealed that slightly more than three quarters of the women had negative attitudes toward EC pre educational instructional module implementation, this may be due to inadequate emphasis on EC during family planning counseling by health care providers. On the other after implementing the educational module, this result were significantly improved among the majority of them who reported positive attitudes regarding EC.

These results are consistent with **Kgosiemang B. and Blitz J. (2018)**⁽⁴²⁾ who conducted a study about Emergency contraceptive knowledge, attitudes and practices among female students at the University of Botswana: A descriptive survey. They confirmed that more than half of the female students had a negative attitude towards the utilization of EC. **Abd Elmoniem S. and Abdelhakam E. (2018)**⁽³⁷⁾ also illustrated that more than half of the studied women had negative attitude pre intervention about the availability of EC. On the other hand, more than two thirds of the studied women showed positive attitude toward using EC post intervention. Moreover, **Thongnopakun S et al (2018)**⁽³³⁾ declared that the attitudes of the studied respondents toward EC were further improved upon the health education intervention at post survey. This similarity of findings might be related to the effect of

providing accurate and detailed information about different available emergency contraceptive methods, inducing a state of positive attitude toward using emergency contraceptive methods.

Women with better knowledge were more likely to have positive attitudes towards using EC properly. This was obvious in the results of the current study where there was a positive correlation between total score level of knowledge and total score level of attitudes regarding EC among the studied women 3 months post implementing the educational module with statistically significant difference. This is similar with other reports of **Hassan S. et al (2020)**⁽³²⁾ who demonstrated that the group of good knowledge has a significantly higher positive attitude than those with poor knowledge. Consequently, if health care providers and policy makers gave more attention to fill the big gap in knowledge about EC which leads to unused or incorrect use of EC as well as negative attitudes toward it. This will result in a considerable decline in the prevalence of unintended pregnancy and its related complications.

Conclusion: Based on the finding of the present study, it can be concluded that the educational instructional module significantly improved the women's knowledge and attitudes regarding Emergency Contraception. So, the aim was achieved and hypothesis was supported and accepted.

Recommendations: Planning and developing ongoing structured educational classes and programs regarding emergency contraception for all childbearing women to increase their awareness about emergency contraception. Additionally, mass media should be utilized and community organizations mobilized to disseminate

correct and relevant information about emergency contraception among childbearing women.

Limitation of the study: There was decreased number of childbearing women attending MCH centers during the COVID-19 Disaster due to fear from attracting the infection.

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