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EFFECT OF INSTRUCTIONAL GUIDELINE ON WOMEN'S KNOWLEDGE AND UTILIZATION OF EMERGENCY CONTRACEPTIVE METHODS

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Abstract

Emergency contraception is an effective method for preventing unplanned pregnancy. **Aim of this study**: Evaluate the effect of instructional guideline on women's knowledge and utilization regarding emergency contraceptive methods. **Research Design:** A quasi experimental. **Setting:** The study was conducted at family planning clinic at governmental health unit in Damanhur, Beheira governorate, Egypt, (Alhilal Service Medical Center). **Sample:** A purposive sample consists of 169 women. **Tools:** One tool was used (Structured interviewing Arabic questionnaire for assessing women's knowledge and utilization regarding using of the emergency contraception). **Results:** The current study showed that 7.1% of the studied women had satisfactory level of total knowledge towards emergency contraception pre implementation of instructional guideline which changed to 71.0% post implementation of instructional guideline, and showed that 91,7% of the studied women used emergency contraceptive methods post implementation of instructional guideline which changed to 87,6% at follow up phase. Moreover, there was no statistically significant difference in utilization of emergency contraception among the studied women post implementation of instructional guideline compared to follow up phase at ($P > 0.05$). Additionally, there was a highly statistically significant positive correlation between women's knowledge towards emergency contraception and their utilization of emergency contraception at post implementation of instructional guideline at $p< 0.001$. **Conclusion:** The present study concluded that the instructional guideline succeeded in improving the studied women's knowledge and utilization regarding emergency contraception.Based on this finding,the researcher recommended;Planning and implementing ongoing structured educational classes and programs regarding the use of emergency contraception for all childbearing women at family planning clinics,distribute posters at hospitals and family planning clinics about emergency contraception methods and mass media should be utilized to disseminate correct and relevant information about emergency contraception among childbearing women.

Keywords: Instructional Guideline, Knowledge, Utilization, Emergency Contraception Methods.

INTRODUCTION

Emergency contraception is a birth control measure taken to reduce the risk of pregnancy following unprotected sexual intercourse or when other regular contraceptive measures have not worked properly or have not been used correctly such as forgetting to take several birth controls pills in a row and having a condom break or slip off **[1]**.

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Emergency contraception methods include oral tablets or the insertion of a cupper intrauterine device within 5 days. Emergency contraception when provided by using oral regimens within 24 hours of unprotected sexual contact, their efficacy is at its peak **[2]**. Emergency contraceptive pills (ECPs) with levonogestrel (LNG) or combined oral contraceptive pills (COCs) should be taken as early as possible after unprotected intercourse within 120 hours (5 days). Emergency contraception pills (ECPs) with Ulipristal Acetate (UPA) are more effective between 72–120 hours (3:5 days) after unprotected intercourse than other Emergency contraception pills **[3]**.

Emergency contraception may cause nausea and vomiting, slight irregular vaginal bleeding, and fatigue this Side effects are not common but mild, and will normally resolve without further medications **[4]**.

Instructional guideline refers to the support and assistance provided to client to help acquire new knowledge or skills. It involves the use of strategies and techniques to facilitate learning and ensure that learners can achieve their learning goals **[5]**.

All women of reproductive age, regardless of marital status, need to receive education and counseling in order to reduce the rate of abortions and the negative effects on their long-term health. Thus, appropriate education guidelines can reduce the number of unwanted pregnancies and elective abortions if they are given to women to increase their understanding of emergency contraceptive techniques by medical professionals **[6]**.

In order to prevent unintended pregnancies, nurses at all levels who provide reproductive health care should make sure that women of childbearing age receive thorough education, training, advice, and counseling about contraceptive methods. This includes information on how to use, indicate, and treat side effects, as well as how to access various types and methods of emergency contraception. Nurses should try to dispel myths and raise awareness of the importance of emergency contraception for women. In clinical settings, nurses should make sure that women who obtain emergency contraception receive the proper follow-up **[7]**.

Every year, about 73 million induced abortions are performed worldwide. Three out of ten pregnancies (29%) and six out of ten (61%) of all unwanted pregnancies result in an induced abortion; over 97% of these occur in poor nations **[8]**. Reducing the number of unwanted pregnancies nationwide is one of the most crucial reproductive health objectives, recognized by most countries, particularly Egypt, in order to manage population growth and lower unsafe abortion rates, which increase the risk of maternal death and morbidity **[9]**.

Accordingly, the Strategic National Population Plan 2015-2030 in Egypt which asked for urgent strategies to decrease the total fertility rate to 2.4 births per woman by the year 2030 **[10]**. This indicates that there is a still lack of knowledge among women regarding emergency contraception. So, it requires necessity in applying a guideline to improve women's knowledge, understanding, cooperation and increasing women's utilization of these methods to ensure healthy motherhood, promote and protects women's health **[11]**.

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AIM OF THIS STUDY

The aim of the current study was to evaluate the effect of instructional guideline on Women's knowledge and utilization of emergency contraceptive methods this aim will achieve through:

1- Assessing women's knowledge regarding using of the emergency contraception.

2- Assessing women's utilization of the emergency contraception.

3- Designing and implementing instructional guideline about emergency contraception.

4- Evaluating the effect of the instructional guide line on women's knowledge and utilization of emergency contraceptive methods.

RESEARCH HYPOTHESIS

Instructional guidelines will improve women's knowledge regarding emergency contraceptive methods.

Instructional guidelines will improve women's utilization of the emergency contraceptive methods.

SUBJECTS AND METHODS

A quasi-experimental design was used to conduct the current study on One group (pre and posttest),The study was carried out at family planning clinic at governmental health unit in Damanhur, Beheira governorate, Egypt, (Alhilal service medical center), sample was 169 women were attended at family planning clinic at the previously mentioned setting, a purposive sample was used according to criteria that all women attendance to family planning clinic at reproductive age and excluded women with previous use of emergency contraception methods.

Tools of Data Collection:

One tool: Structured interviewing Arabic questionnaire to collect data pre and post regarding effect of instructional guideline on knowledge and utilization of emergency contraception which included the following parts:

Part I:

Included assessment of the women's general characteristics such as (age, residence, level of education, occupational status and marriage duration).

Part II:

Included assessment of the women's obstetric history such as (parity, number of abortions, history of family planning and previous unwanted pregnancies).

Part III:

Included assessment of women's knowledge about emergency contraception such as (definition, advantage, indications, contraindications, methods, timing, …. etc)

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Scoring System of Knowledge

The Knowledge score level contains three points; in -correct or didn't know, in complete correct and complete correct about several issues.

Scoring system Each statement will be scored as following, take (3) if response was complete correct, take (2) if it was in- complete correct and take (1) if it was in -correct or didn't know. So total knowledge score level as the following:

- Satisfactory level of knowledge ≥75%
- Average level of knowledge 60 % ≤ 75%
- Un satisfactory level of knowledge <60%

Part IV: (follow up phase)

This part was applied after three months post implementation, the follow up phase was done about utilization of emergency contraception and took two months as reported by women it is consists of four questions such as (used or not used emergency contraception, occurrence of pregnancy after use, the time use after intercourse and face a problem in using it).

Preparatory Phase

This phase included reviewing current and past, local and international related literature and theoretical knowledge of various aspects of the study by use of books, articles, periodical journals and internet for data collection, face and content validity of the tool will be conducted by jury group.

Validity

The content validity of the tool was ascertained by a panel of experts (3) in the field of maternal and neonatal health nursing who reviewed the content of the tool for their comprehensiveness, accuracy, clarity, relevance and no modifications were done.

Reliability

Testing the reliability of the tools was through Alpha Cronbach reliability analysis.

Tools	Alpha Cronbach
Knowledge assessment Questionnaire	0.781
Utilization of emergency contraception	0.910
Likert scale tool	0.889

Ethical Considerations:

1- Prior to study conduction, an approval was obtained from the scientific research and ethics committee of the Faculty of Nursing, Ain Shams University.

2- The researcher clarified the aim of the study to the women who included on the study.

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3- The studied women were assured that anonymity and confidentiality would be guaranteed, and were informed about their right to refuse or withdraw from the study at any time.

4- The study sessions do not entail any harmful effects on participants.

5- An oral consent was obtained from each woman prior to participation in the study.

Administrative Design:

Approvals were granted by the Faculty of Nursing at Ain Shams University to the director of the study site. This authorization outlined the purpose of the research, anticipated benefits, and guaranteed the confidentiality of the gathered data.

Pilot Study:

A pilot study was carried out on about 10% of the sample size which represent about (17) women to test the clarity and applicability of the study tools and time needed for filling it in was took last week of February 2023, there's no modification of the tool of the study so the pilot study number included in the sample size.

Field Work:

The study was carried out over one year started from beginning of March, 2023 to the end of February, 2024.data was collected, pre and posttest within seven months. beginning in March 2023 and ending in September 2023 (data was collected and pretest was done for 4 months and the posttest was performed up to 3 months. then after 3 months of post implementation, follow up test was applied for two months, from the beginning January of 2024 to the end of February 2024 until the total sample was obtained; after obtaining the official approvals for data collection.

The researcher attended to previous mentioned setting to collect the data three times weekly at morning shift from 9:00 am to12:00 pm until completion of the previous mentioned sample size.

Then tools of data collection were fulfilled by researcher, the average numbers of women were 3:4 women /session.

The tool of data collection took 25-30 minutes: (general characteristics and obstetric history took 5 minutes, knowledge part took 5:10 minutes, guide line took 10:15 minutes and follow up took 5 minutes) to each woman.

At the beginning, each woman interviewed the researcher individually and was explained the aim of the study, and then oral consent of the women was obtained. Each session was informed during the women's monthly visit when came to obtain routine contraceptive method.

In The first session, the researcher collected data used pre assessment tool and applied pretest, gave the women background about the instructional guideline regarding emergency contraception methods and the booklet was given to the women.

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The second session at the second visit, the researcher explained the instructional guideline booklet which was conducted about emergency contraception methods with simple Arabic language.

The third session at the third visit, after implementing instructional guidelines, the effect of it was assessed immediately through the post-test which was performed for 3 months and took 10: 15 minutes *and* After 3 months of post implementation, The researcher used Part IV from the tool for follow up test for two months which took 5:10 minutes to assess women's utilization of emergency contraception methods.

Statistical design:

The Statistical Package for Social Science (SPSS) version 25 and the Microsoft Excel Program were used to perform the statistical analysis of the data.

For categorical data, frequencies and percentages were used in descriptive statistics; for quantitative data, the arithmetic mean (α) and standard deviation (SD) were used. The chi square test (χ^2) was used to compare qualitative variables.

The Friedman test was used to evaluate group differences during the two and three visits. The paired t test was used to evaluate group differences throughout the course of the two visits.

The R-test was also utilized to determine the degree of correlation between the research variables.

RESULTS

Table 1: Frequency distribution of the studied women according to their general characteristics (n=169)

Items	No.	%
Age (years)		
< 20	10	5.9
20 -<30	**86**	**50.9**
30 -<40	73	43.2
Mean ± SD **29.21± 7.08**		
Residence		
Urban	84	49.7
Rural	**85**	**50.3**
Educational level		
Read and write	21	12.4
Primary education	34	20.1
Secondary education	**92**	**54.4**
University education	22	13.0
Occupational status		
Housewife	**115**	**68.0**
Employed	54	32.0
Professional	40	23.7
Craft work	14	8.3

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Marriage duration (years)		
< 5	38	22.5
5 - 10	**66**	**39.0**
>10	65	38.5
Mean ± SD	**8.91± 4.08**	

Table (1): shows that,50.9% of the studied women were aged between 20-<30 years old with mean age of 29.21 ± 7.08years. Also, 50.3% of them live at rural areas. Moreover, 54.5% of the studied women had secondary education. Furthermore, 68.0% of studied women were housewife.

In addition, 39.0% of them had marriage duration between 5 - 10 years with mean experience of 8.91 ± 4.08 years.

Table 2: Frequency distribution of the studied women according to their obstetric history (n=169)

Items	No.	%
Parity		
One	33	19.5
Two	64	37.9
Three and more	**72**	**42.6**
Number of abortions		
No	**125**	**74.0**
One	41	24.2
Two and more	3	1.8
Use family planning method		
Yes	**166**	**98.2**
No	3	1.8
If yes: last method used (n=166)		
Oral contraceptive pills	**140**	**84.4**
Intrauterine device	14	8.4
Male condom	12	7.2
Have previous an unplanned pregnancy		
Yes	39	**23.1**
No	130	76.9
If yes: what is the reason? (n=39)		
Missing the dose	**23**	**56.0**
Pregnancy with the method	13	33.3
Don’t use contraceptive method	3	7.7
Use emergency contraception before		
Yes	0	0.0
No	**169**	**100.0**

Table (2): displays that, 42.6% of the studied women were para three and more. Also, 74.0% of them don’t have history of abortion. Moreover, 98.2% of studied women used family planning method, 84.4% of them used oral contraceptive pills.

In addition, 23.1% of studied women have a history of previous an unplanned pregnancy, 56.0% of them due to missing the dose.Also, 100.0% of them don’t use emergency contraception before

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Table 3: Comparison between women' knowledge about emergency contraception at pre and post implementation ofinstructional guideline(n=169)

Items	Preintervention						Postintervention						X^2	p-value
	Complete correct knowledge		Incomplete correct knowledge		Incorrect knowledge		Complete correct knowledge		Incomplete correct knowledge		Incorrect knowledge			
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%		
Definition	30	17.7	18	10.7	121	71.6	143	84.6	14	8.3	12	7.1	69.74	0.000**
Indications	11	6.5	38	22.5	120	71.0	136	80.5	20	11.8	13	7.7	59.01	0.000**
Advantages	8	4.7	43	25.5	118	69.8	136	80.5	21	12.4	12	7.1	82.02	0.000**
Disadvantages	11	6.5	46	27.2	112	66.3	133	78.7	21	12.4	15	8.9	93.01	0.000**
Contraindications	8	4.7	25	14.8	136	80.5	107	63.3	45	26.6	17	10.1	44.08	0.000**
Types	9	5.3	24	14.2	136	80.5	120	71.0	29	17.2	20	11.8	52.66	0.000**
Timing to use emergency contraception	10	5.9	36	21.3	123	72.8	123	72.8	28	16.6	18	10.6	96.04	0.000**
Side effects	10	5.9	38	22.5	121	71.6	110	65.1	41	24.3	18	10.6	27.41	0.000**
Can it be used as a permanent method of contraception	32	18.9	14	8.3	123	72.8	118	69.8	36	21.3	15	8.9	60.14	0.000**
Does it affect breast feeding	27	16.0	19	11.2	123	72.8	128	75.7	21	12.4	20	11.9	70.70	0.000**
Know where to get it	31	18.3	14	8.3	124	73.4	122	72.2	31	18.3	16	9.5	61.97	0.000**
Can it be taken without consulting a doctor	26	15.4	20	11.8	123	72.8	122	72.2	29	17.2	18	10.6	55.58	0.000**

X^2: Chi Square Test. (**) highly statistically significant at p<0.001.

Table (3): shows that, (17.7%,6.5%, 4.7%, 4.7%, 5.3%, 5.9%, 16.0% and18.3%) of the studied women have complete correct knowledge and (71.6%, 71.0%,80.5%,80.5%,72.8%,72.8% and73.4%) of the studied women have incorrect knowledge regarding definition,indication, contraindication, types, timing to use, doses affect breast feeding and know where to get of emergency contraception pre implementation of instructional guideline which changed to (84.6%, 80.5%, 63.3%, 71.0%, 72.8%, 75.7% and 72.2%) complete correct knowledge post implementation of instructional guideline. respectively.there was highly a statistically significant improvement in all items of knowledge post implementation (P < 0.01).

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Table 4: Comparison between the studied women regarding utilization of emergency contraception at post and follow up after implementation of instructional guideline (n=169)

Items	Post intervention		Follow up		X^2	P-value
	No.	%	No.	%		
Using emergency contraceptive methods						
Yes	155	**91.7**	148	**87.6**	**2.088**	**0.141**
No	14	8.3	21	12.4		
If yes: what is it?	**(n=155)**		**(n=148)**		**0.857**	**0.621**
Emergency contraceptive pills	150	**96.8**	145	**98.0**		
IUD: Cupper T	5	3.2	3	2.0		
If yes: Why?	**(n=155)**		**(n=148)**		**1.027**	**0.251**
Missing the dose	127	81.9	125	84.5		
Condom was torn during intercourse	10	6.5	8	5.4		
Sudden return of the husband	18	11.6	15	10.1		
Occurrence of any side effects or complications	**(n=155)**		**(n=148)**		**5.025**	**0.051**
Yes	123	79.3	110	74.3		
No	46	29.7	38	25.7		
If yes: what is it?	**(n=123)**		**(n=110)**		**1.827**	**0.201**
Simple Headache	12	9.8	5	4.6		
Nausea	31	25.2	23	20.9		
Simple irregular Bleeding for two days	80	65.0	82	74.5		
Using emergency contraception	**(n=155)**		**(n=148)**		**0.271**	**0.998**
Before intercourse	0	0.0	0	0.0		
After intercourse	155	**100.0**	148	**100.0**		
If after intercourse: when?	**(n=155)**		**(n=148)**		**3.085**	**0.111**
The next day	125	**80.6**	128	**86.5**		
Immediately after intercourse	30	19.4	20	13.5		
Occurrence of pregnancy after using emergency contraception	**(n=155)**		**(n=148)**		**0.271**	**0.998**
Yes	0	0.0	0	0.0		
No	155	**100.0**	148	**100.0**		
Face a problem in using it	**(n=155)**		**(n=148)**		**0.271**	**0.998**
Yes	0	0.0	0	0.0		
No	155	**100.0**	148	**100.0**		

Table (4): shows that, there was no statistically significant difference in utilization of emergency contraception among the studied women post implementation of instructional guideline compared to follow up phase at ($P > 0.05$).

As evidence (91,7 %, 96.8 %,100.0%, 80.6%, 100.0% and 100.0%) of the studied women used emergency contraceptive methods, used pills, after intercourse in the next day, no pregnancy occurred after using emergency contraception and there's no facing a problem in using it post implementation of instructional guideline which changed to (87,6%, 98.0%, 100.0%, 86,5%, 100.0% and 100.0%) at follow up phase, respectively.

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Table 5: Correlation between total women's knowledge and their utilization of emergency contraception at post implementation of instructional guideline (n=169)

Variables	Utilization of emergency contraception	
	r	p-value
Total knowledge score	0.489	0.000**

R= correlation coefficient test. **highly significant at p ‹ 0.001.

Table (5): showed that, there was high significant statistical positive correlation between women's knowledge and their utilization of emergency contraception at post implementation of instructional guideline at $p < 0.001$.

DISCUSSION

Unwanted pregnancies are a major global health, social, and political concern. It is believed that around half of pregnancies in both developed and underdeveloped countries are unintended, despite recent advancements in contraceptive technology **[12]**. Emergency contraception is highly effective and can prevent up to 95% of unwanted pregnancies **[13]**. Therefore, the current study was carried out to evaluate the effect of instructional guideline on women's knowledge and utilization of emergency contraceptive methods.

In relation to the general characteristics of the studied women, the current study results indicated that more than half of them aged between 20 to less than 30 years old with a mean age and standard deviation of 29.21 ± 7.08 years old. More than half of them were living in rural areas and they had a secondary education. In addition, more than two thirds of them were housewives, and more than one third of them their marriage duration was between 5 to 10 years with mean and standard deviation of 8.91 ± 4.08 years. From the researcher's point of view, these results might be because this is the most commonly seen characteristics among most of the women who are living in rural community.

This result was partially in the same line with Oumer et al. **[14]**, who conducted a study entitled "Modern contraceptive method utilization and associated factors among women of reproductive age in Gondar City, Northwest Ethiopia", and found that one third of the studied women aged between 25 to 29 years old.

The same result was also partially in the same line with Kwame et al. **[15]**, who developed a study entitled "Use and awareness of emergency contraceptives among women of reproductive age in sub-Saharan Africa: A scoping review", and found that all the studied women were living in rural areas.

The current study finding was also supported by Saleh et al. **[16]**, who performed a study entitled "Awareness and use of emergency contraception among women attending Kidwany MCH center, Assiut City", and found that less than half of the studied women had secondary education. The present study result was also supported by Hassan et al. **[17]**, who conducted a study about "The effect of an educational guideline on childbearing

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women's knowledge, attitude and their intention regarding emergency contraceptive use at Mansoura city in Egypt", and found that more than one third of the studied women were housewives. Furthermore, the result of the current study was in the same line with Alameer et al. **[18]**, who conducted a study entitled "Knowledge, attitude and practices regarding contraceptive pill and its side effects among women in Jazan region, Saudi Arabia", and found that the majority of the studied women have been married for more than five years.

Regarding the obstetric history of the studied women, the present study results displayed that less than half of them were para three and more. From the researcher's point of view, this result might be because the Egyptian community like to have many children. Also, the present study showed that less than three quarters of them don't have any history of abortion, and the vast majority of them were using a family planning method. Furthermore, most of the studied women were using oral contraceptive pills, less than one fourth of them had a previous history of an unplanned pregnancy due to missing the dose, and all them don't use the emergency contraceptive methods before. From the researcher's point of view, this result might be due to lack of awareness and knowledge about emergency contraceptive.

This result was in agreement with Yusoff et al. **[19]**, who carried out a study entitled "Determinants of knowledge, attitude and practices towards family planning among women in Raub, Pahang, Malaysia", and found that more than half of them had three or more children.

The present study result was also partially supported by Alsharif et al. **[20]**, who developed a study entitled "Knowledge, attitude, and practice of contraception use among childbearing women in Makkah region, Saudi Arabia ", and found that more than two thirds of the studied women don't have any history of abortion.

The present study result was also consistent with Alharbi et al. **[21]**, who developed a study which aimed to assess knowledge and attitude about emergency contraception among Saudi women of childbearing age in Riyadh, and found that more than one third of the studied women were using oral contraceptive pills.

Moreover, the current study finding was supported by Issah et al. **[22]**, who carried out a study aimed to describe undergraduate nursing students' knowledge of contraceptives and the challenges identified to be associated with contraceptive use, and found that more than two thirds of them had a previous history of unplanned pregnancy.

The present study result was also congruent with Abera et al. **[23]**, who developed a study on 286 female students in private colleges of Dire Dawa city, Eastern Ethiopia to assess their knowledge regarding emergency contraceptives, and revealed that two thirds of them don't use the emergency contraception methods. The same finding contradicted with Gasaba et al. **[24]**, who carried out a study aimed to analyze the attitudes and knowledge of the women attending Van Norma Clinic for the use of contraceptive methods, and found that more than one third of the studied women don't have any previous history of unplanned pregnancy.

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The same result was incongruent with Yeboah et al. **[25]**, who developed a study aimed to assess the factors influencing the use of emergency contraceptives among reproductive-age women in the Kwadaso Municipality, Ghana, and revealed that more than three quarters of the studied women had ever used the emergency contraception.

Lack of awareness and knowledge about emergency contraception has a major implication on women by El-Mowafi and Foster **[26].**

As regards the studied women's knowledge about emergency contraception pre and post the instructional guideline implementation, the current study findings indicated that around three quarters and more of them had incorrect knowledge regarding the definition, indication, advantages, contraindication, types, timing to use, its effect on breast feeding, and from where to get of the emergency contraception pre the instructional guideline implementation, which improved to include the majority of them post implementation. The results of the current study also revealed that there were highly statistically significant improvements in all items of the studied women's knowledge about the emergency contraception post the instructional guideline implementation compared to pre intervention phase. This might be because the instructional guideline succeeded in improving the women's level of knowledge regarding emergency contraception.

These findings were in the same line with Hassan et al. **[10]**, who reported that more than two thirds of the studied participants had incorrect knowledge regarding the definition, types, indications, contraindication, and timing to use of the emergency contraception pre the educational guideline implementation which improved to include the majority of them post implementation, also reported that there were improvement in the studied women's knowledge regarding the emergency contraception post the educational guidelines implementation.

Also, these results were in the same line with Ibrahim et al. **[27]**, who carried out a study at Assuit city in Egypt to assess the effect of educational program on knowledge and attitude of childbearing women about intrauterine cupper device as emergency contraceptive method, and reported that around three quarters of the studied women had incorrect knowledge regarding the definition, types, indication, contraindication, advantages, and disadvantages of the emergency contraception pre the educational program implementation, which improved to include the majority of them post implementation, also, reported that there were improvement in the studied women's knowledge regarding the emergency contraception post the educational program implementation.

The same result was also supported by Thongnopakun et al. **[28]**, who conducted a study aimed to examine the effect of an educational program on the students' knowledge, attitudes, and intentions regarding the use of condoms and emergency contraceptive pills, and showed that there were highly statistically significant differences pre and post the educational program implementation.

The result was also similar to those of Abdulmalek and Ibrahim **[29]**, who conducted a study aimed to measure the women's knowledge regarding the use of emergency

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contraceptive methods, and revealed that there was highly statistically significant difference between pre and posttest, and the both authors suggested that these results might be because of the effectiveness of educational programs to improve the studied participants total level of knowledge regarding emergency contraceptive.

The high-quality patient-centered emergency contraception care should involve more women's outreach and education, especially on the most successful emergency contraception methods utilization by Trussell et al. **[30]**.

Regarding the emergency contraception utilization post implementation of instructional guideline among the studied women, the present study findings indicated that the vast majority of them used pills as an emergency contraceptive after intercourse in the next day, with no occurrence of pregnancy, and no facing a problem in using it post the instructional guideline implementation which changed to include most of them during the follow up phase with no statistically significant relation. This might be due to by increasing knowledge will increase the utilization of emergency contraception with unprotected sex These results agreed with ***Tenaw (2022)***, who performed a study entitled "Practice and determinants of emergency contraceptive utilization among women seeking termination of pregnancy in Northwest Ethiopia", and found that the majority of the studied women were using an emergency contraceptive method, and no pregnancy occurred during using it.

These results also supported with ***Ibrahim et al. (2022)***, who found that about two thirds of the studied women were ready to use the emergency contraception after the educational intervention implementation. Concerning the correlation between the studied women's total knowledge and their utilization of emergency contraception post the instructional guideline implementation, the present study result showed that there was a highly statistically significant positive correlation found. This might be because the utilization of emergency contraception is usually affected with the women's knowledge level.

This result was similar to Fekadu **[31]**, who conducted a study entitled "Knowledge, attitude and utilization of emergency contraception among health science and medical students of Arba Minch University in Ethiopia", and found that there was highly statistically significant positive correlation between the studied students' total knowledge, total attitude and their use for emergency contraception. The same result was also similar to Harper et al. **[32]**, who conducted a study entitled" Educational intervention among adolescents and young adults on emergency contraception options in California", and found that there was highly statistically significant positive correlation between the studied respondents' total knowledge, total attitude and their use for emergency contraception.

CONCLUSION

The present study concluded that the instructional guideline succeeded in improving the studied women's knowledge and utilization of emergency contraception methods. So, the aim and the hypothesis of the study was supported and accepted.

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Recommendation

In the light of the present study findings the following recommendations are suggestion: -

- Planning and implementing ongoing structured educational classes and programs regarding the use of emergency contraception for all childbearing women at family planning clinics.
- Distributing posters at hospitals and family planning clinics about emergency contraception methods.
- Mass media should be utilized to disseminate correct and relevant information about emergency contraception among childbearing women.
- **Further studies**: Implementing ongoing educational programs and training of nurses about emergency contraception at family planning clinics.

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