Effect of Nursing Intervention on Maternity Nurses' Performance Regarding Care of Women Undergoing Hysteroscopy

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Background: Hysteroscopy is one of the most common gynecological procedures, the most accurate technique in order to visualize the endometrial cavity, diagnose and treat the relevant pathologies. **Purpose:** To examine the effect of nursing interventions on maternity nurses' performance regarding the care of women undergoing hysteroscopy. Design: A quasi-experimental design was used. **Setting:** The Gynecological department at Menoufia University hospitals. **Sample:** A purposive sample containing 45 nurses for six months. **Instruments:** The instruments used for data collection were a structured interview questionnaire sheet, and the nurses' performance observational checklist. **Results:** Nurses had higher level of knowledge on post -test related to definition, indications, suitable time, complications, time needed for diagnosis, and time needed for therapeutic or surgical treatment of hysteroscopy (100%) compared to (2.2%) on pretest. Also they had higher level of performance on posttest (91.1%) than pretest (13.3%) related to pre, intra, and post-operative preparation for women undergoing hysteroscopy. The present study revealed that there was a high statistically significance difference between the studied nurses' total knowledge score and their residence, there was a high statistically significance relation between the studied nurses' total practice level regarding the care of women undergoing hysteroscopy and their socio-demographic characteristics in the residence. While there was a high statistically significant positive correlation between the total knowledge score and the total practice level of studied nurses. **Conclusion:** The studied nurses had poor knowledge level and low level of performance regarding the nursing care provided for women undergoing hysteroscopy procedure before introducing the nursing intervention program. But after implementing the nursing program; the studied nurses' knowledge and practice were improved. **Recommendation:** Continuous training programs regarding hysteroscopy for maternity nurses to develop and improve their knowledge and practice.

Key words: Hysteroscopy, Nurses' Performance, Nursing Intervention.

Introduction

Hysteroscopy is a minimally invasive technique for pathology assessment and treatment of the uterus cavity. While office hysteroscopy started in the 1980s, the operation was originally carried out in 1869. Technological developments have made office hysteroscopy possible as a smaller, less expensive tools. Any pathology that is seen can be treated by operational hysteroscopy. The indications for both surgical and diagnostic treatments significantly overlap. As long as the patient tolerates the procedure and aberrant pathology is identified, the "see and treat" strategy enables a smooth transition from diagnostic to surgical hysteroscopy (Zelivianskaia, & Robinson, 2022).

Minor diseases can be treated using hysteroscopy in an office setting. To ensure optimal visibility, a distension medium is required. These media include liquid-based media like normal saline and 1.5% glycine, which are utilized for both diagnostic and surgical hysteroscopy, as well as gaseous media like carbon dioxide, which are used for diagnostic hysteroscopy. Every gynecologist's toolkit should include a hysteroscopy (Okohue 2020).

Hysteroscopy is the gold standard for diagnosing endometrial polyps, endometrial cancer, abnormal uterine bleeding, uterine adhesions, miscarriage reasons, intrauterine device location, and surgical sterilization. Compared to endometrial biopsy, blind dilation, and curettage, hysteroscopy with tissues sample had reduced rates of false positives and false negatives. (Zelivianskaia, & Robinson, 2022). Endocervical canal, tubal ostia, and uterine cavity were all examined and treated by hysteroscopy. In comparison with other techniques like hysterography, hysteroscopy may provide a more accurate diagnosis, a better foundation for therapy, or confirmation of results (Soliman et al., 2022).

Uterine cavity distension is required for all hysteroscopy operations. For uterine cavity distension during both diagnostic and surgical hysteroscopy, different media are used. the fluid is also utilized, as are the gas media for diagnostic hysteroscopy. The patient's fluid intake and output during a hysteroscopy should be observed by perioperative nurses. Increased systemic fluid absorption is a result of higher distending media pressure, and fluid overload can occur with any distending media. The maximum safe hydration deficit for each patient is something that perioperative nurses should also be aware of (Donan et al., 2020).

Our daily lives have been continuously revolutionized by the technical and technological advances in gynecology. Improved hysteroscopy knowledge and performance among maternity nurses can only be achieved via the use of the nursing intervention program. The maternity nurses' knowledge of how to care for women having hysteroscopy can be updated and improved with the use of numerous instructional materials, including large posters, pamphlets, and guided books (Campo, et al., 2018).

According to WHO reports, (2020) in Egypt stated that; nearly 808 per 100,000 women died every day due to preventable causes of pregnancy and childbirth, such as hemorrhage, hypertension, infection and indirect causes due to interaction between preexisting medical conditions and pregnancy. 94% of them are from low and middle income countries. Another meta-analysis study mentioned that the incidence of maternal death globally was 18.5 per 1000 live birth.

Maternity nurses must be a knowledgeable about the techniques and tools used in hysteroscopy. The role of nurses in pre- and post-operative care for women having hysteroscopy, as well as coordinators of the treatment team (surgeon, women's anesthesiologist) include equipment preparation and storage. A crucial part of streamlining the hysteroscopy procedure is played by maternity nurses, who provide compassionate care, support for women, meticulous planning, acquisition of essential supplies, and careful maintenance of ultrasound equipment Pregnancy, severe metrorrahagia, acute cervicovaginitis, and pelvic inflammatory disease (PID) are among the conditions that preclude hysteroscopy (Oroomiechihia et al., 2020).

Significance of the study:

One of the most important roles that nurses play in hysteroscopy is before having a hysteroscopy, patients are educated about the many forms of the procedure, its reasons, therapeutic approaches, and the possibilities both before and after the procedure. Preparing and supporting the women; providing care and education following surgery; and, lastly, taking care of the instruments and cleaning them (Oroomiechihia et al., 2020). There are little gynecological nursing researches regarding hysteroscopy, which move me to initiate like this research aiming to increase the research area in the gynecological field.

Purpose of the study

- Examine the effect of nursing interventions on maternity nurses' performance regarding the care of women undergoing hysteroscopy.

Research hypotheses:

1) Maternity nurses who receive the nursing intervention program are expected to have higher level of knowledge about care of women undergoing hysteroscopy on posttest than pretest.
2) Maternity nurses who receive the nursing intervention program are expected to have higher level of practice related to care of women undergoing hysteroscopy on posttest than pretest.

Operational definition of variables:

1) **Nursing intervention: -**

In this study, nursing intervention refers to systematically developed instructional programs using instructional aids such as guided brochures and big posters designed to provide information concerning the care of women undergoing hysteroscopy.

2) Nursing performance: -

In this study, the studied nurses will operationally apply their skills regarding hysteroscopy technique, it was assessed through instrument two (the observation checklist).

Methods

Design:

A quasi-experimental (one group pre, posttest and follow up) design was utilized in this study.

Setting:

The study was conducted in Obstetrics and Gynecological department at Menoufia University hospital, Menoufia Governorate, Egypt.

Sampling:

A convenient sample of all maternity nurses' (45) who work in Obstetrics and Gynecological department at Menoufia University hospital was recruited in the study.

Sampling size:

All nurses work in Obstetrics and Gynecological department at Menoufia University Hospital 45 nurses including word nurses, in addition to scrapping, circulating and recovery nurses. All nurses act as both scrapping and circulating nurses. Also they as assistant nurse, professional nurse and nursing supervisor.

Instruments:

Two instruments were utilized for data collection:

Instrument one: - Structured interviewing questionnaire:

The researcher developed after a review of literature (Soliman et al., 2022; Oroomiechiha et al., 2020) to assess the effect of "nursing intervention" on studied nurses' knowledge and performance related to hysteroscopy. It was distributed into two parts:

- **Part 1: Socio-demographic characteristics of maternity nurses as age**, educational level, years of experience, and the previous training courses…..etc.
- **Part 2: Maternity nurses' knowledge**. It was developed to assess knowledge of studied nurses about hysteroscopy and its care. It included many questions such as: definition, indications, complications, and specific nursing care of hysteroscopy that were scored.

The total knowledge levels were presented as the following:

- Good: ≥ 75% of total knowledge score.
- Fair: <75% - 50% of total knowledge score.
- Poor: if the percent score was less than 50%.

Instrument two: Nurses' performance observational checklist:

The observational checklist was established by the researchers based on review of literature (Janesh et al., 2019). It was developed to examine the studied nurses' performance related to hysteroscopy care. It contained thirty statements to assess six essential competencies such as; Preoperational checklist (5 items) for each scrapping and circulating nurse, checklist (5 items) for each scrapping and circulating nurse intra-operatively and

another (5 items) for both recovery and ward nurses at postoperative phase.

Scoring system:

Scoring system for done was 2 and 1 for not done. If total score was < 20 level of practice was low, if it ranged between 20 to 30, level of practice was considered moderate and if total score was 30 to 40 level of practice was considered high.

Validity of the instrument: -

The questionnaire was formulated and cross-checked for its validity by five qualified experts (four professors in maternity nursing at Faculty of Nursing and one of obstetric medicine. They were asked to judge the items for completeness and clarity and the required modification were done accordingly.

Reliability of the instruments: -

The researcher was assessed the reliability using test-retest reliability for testing the internal consistency of the instruments. It was done through the administration of the same instruments to the same studied nurses under similar conditions on two or more occasions. Scores from repeated testing were compared to test consistency of the result over time.

Ethical consideration:

The researcher introduced herself to the studied nurses and explained the purpose of the study and its nature to obtain their acceptance to be recruited in the study in addition to gain their cooperation. The studied nurses were informed that the information collected during the study will be kept confidential and used only for statistical purpose. Considering the ethical aspects of scientific research, respecting all cultural, spiritual and religious beliefs for nurses. Maintaining the confidentiality and dignity of the nurses. Avoiding any harm to the nurses.

Pilot study:

Pilot study was carried out on 10% of the studied nurses (5 nurses) from the total number of (50) nurses for a period of three weeks before the beginning of data collection in order to evaluate the study instruments according to the simplicity, clarity, applicability. They were also excluded from the main study sample. Results of the piloting study helped refining the interview questionnaire and to schedule the time framework. The required modifications were done in form of clarification and simplification of some sentences.

Procedure

An official letter was submitted from the Dean of the Faculty of Nursing, Menoufia University to the directors of Menoufia University hospital. It contained an explanation of the purpose of the study and methods of data collection 2- The data was collected in a period of six months, from the beginning of October 2022 to the end of March 2023. The researcher began the study by visiting the Obstetrics' and Gynecology Department at Menoufia University hospital twice per week (Monday-Wednesday) from 9AM - 1PM. Each session included about 2-3 nurses. At the beginning of interview, the

researcher greeted the maternity nurses', introduced herself, explained the purpose of the study and the nature of the study, and took an oral consent to participate in the study.

The structured interviewing questionnaire was distributed between nurses for obtaining the personal data and collecting the studied nurses' knowledge regarding hysteroscopy, the time needed for completing the structured interviewing questionnaire was about 10 minutes. Then, the researcher used the observational checklist to assess nurses' performance. The time needed to fulfill each instrument by nurses was about 30 minutes.

Each nurse received three sessions. First session included information about Definition of hysteroscopy, indications of hysteroscopy, and time suitable for hysteroscopy. Second session included complications of hysteroscopy, time required for diagnostic hysteroscopy, and time required for curative hysteroscopy. Third session was about hand washing, preoperative preparation, intra-operative manipulation of hysteroscopy, and postoperative rehabilitation of studied nurses for women undergoing hysteroscopy.

Methods of teaching included lectures and group discussions. Teaching media included posters and brochures. All these steps were repeated for six months until the needed sample was obtained. The researcher assessed the nurses' performance using the same instruments (pretest (30min.)- Intervention (30min.)- posttest (30min.).

Posttest was conducted one week following the educational nursing intervention and follow-up test was conducted 3 months later. Data collection instruments which were used in pretest were reused during post and follow-up tests.

Statistical analysis:

The data collected was organized, categorized, analyzed and tabulated Statistical analysis was done using SPSS version 22.0.Mean, standard deviation (SD), frequency and percentages were used for descriptive data, Chi square test was used A statistical significant difference was considered if $P \leq 0.05$. A highly statistical significant difference if $P \leq 0.01$. A very highly statistical significant difference was considered if $P \leq 0.001$.

Results:

Table (1): shows distribution of studied nurses according to their personal data. As evident from the table, about two thirds (66.7%) of the studied nurses were 20 to less than 30 years old. While about 62.2% of them had Technical Diploma of Nursing. Additionally, more than one third of them (42.2%) had Less than 5 years of experience. In addition, approximately three quarters of them (75.6%) were assistant nurses. Moreover, 66.7% of studied nurses were from rural area. Only 8.9% had completed previous training courses.

Table (2): shows distribution of studied nurses according to their knowledge about hysteroscopy on pre, post and follow- up tests. An improvement in nurses' knowledge was observed in post and follow-up tests. So, there was a highly statistically significant difference among pre, post and follow- up interventions for the studied nurses regarding their knowledge about hysteroscopy.

Table (3): shows distribution of studied nurses according to their pre-operative practice about hysteroscopy on pre, post and follow- up tests. There was a highly statistically significant difference among pre, post and follow up interventions for the studied nurses regarding all pre- operative preparation of women undergoing hysteroscopy except assuring bathing before hysteroscopy technique, as there was no statistically significant difference among pre, post and follow up interventions for the studied nurses.

Table (4): shows distribution of studied nurses according to their intra-operative practice about hysteroscopy on pre, post and follow- up tests. There was a highly statistically significant difference among pre, post and follow up interventions for the studied nurses regarding greeting the woman with touch, identify the woman surgical staff names and numbers and prepared the equipment needed as doctor ordered. There was a statistically significant difference among pre, post and follow up interventions for the studied nurses regarding explain the components of operation room. There was no statistically significant difference among pre, post and follow up interventions for the studied nurses regarding and ensure signing the informed consent and explain anesthesia types and its risks.

Table (5): Shows distribution of studied nurses according to their post-operative practice about hysteroscopy on pre, post and follow- up tests. There was a highly statistically significant difference (P= .001**) between pre, post and follow up interventions for the studied nurses regarding most of post-operative preparation of women undergoing hysteroscopy. There was a statistically significant difference among pre, post and follow up interventions for the studied nurses regarding assure the woman in the recovery position. There was no statistically significant difference among pre, post and follow up interventions for the studied nurses regarding making a systemic assessment of the woman, reporting any abnormalities in vital signs to the doctor, detecting, and managing the early complication and endorsing to the ward nurses.

Figure (1): demonstrates level of knowledge of studied nurses about hysteroscopy on pre, post, and follow-up tests. They had average score of knowledge regarding hysteroscopy pre- intervention (60%) but post-intervention; the studied nurses had good score of knowledge regarding hysteroscopy post intervention (100%) and in follow up had good score of knowledge regarding hysteroscopy post intervention (93.4%).

Figure (2): demonstrate level of practice of studied nurses about hysteroscopy on pre, post, and follow-up tests. The studied nurses had unsatisfactory level of practice regarding care of women undergoing hysteroscopy pre intervention (86.7%) but post intervention; the studied nurses had satisfactory level of practice regarding care of women undergoing hysteroscopy post intervention (91.1%) also in follow up; the studied nurses had satisfactory level of practice regarding care of women undergoing hysteroscopy post intervention (88.9%).

Table (6): clarifies the correlation between the studied nurses' total knowledge level and the total practice level. There was a highly statistically significant positive correlation between the studied nurses' total knowledge level and the total practice level. When the knowledge increased, the practice of the studied nurses improved.

Table (1): Distribution of Studied Nurses according to their Personal Data (N = 45)

Variables	No.	%
Age		
- 20 to less than 30	30	66.7
- 30 to less than 40	9	20.0
- More than or equal to 40	6	13.3
Educational level		
- Diploma of nursing	9	20.1
- Technical diploma of nursing	28	62.2
- Bachelor degree	6	13.3
- Post- graduate (Master or PHD.)	2	4.4
Experience		
- less than 5 years	19	42.3
- More than 5 and less than 10 years	15	33.3
- More than 10 years	11	24.4
Position Level of Work		
- Assistant nurse	34	75.6
- Professional nurse	8	17.8
- Nursing supervisor	3	6.6
Residence		
- Rural	30	66.7
- Urban	15	33.3
Previous training Courses		
- Yes	4	8.9
- No	41	91.1

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Table (2): Distribution of Studied Nurses according to Their Knowledge about Hysteroscopy on Pre, Post and Follow- up Tests. (N=45)

Variables	Pre-intervention		Post-intervention		Follow up		P-value
	No.	%	No.	%	No.	%	
Definition of hysteroscopy							
- Incorrect answer or (don't know)	21	46.7	0	0	0	0	.001**
- Correct answer	24	53.3	45	100.0	45	100.0	
Indications of hysteroscopy							
- Incorrect answer or (don't know)	28	62.2	0	0	0	0	.001**
- Correct answer	17	37.8	45	100.0	45	100.0	
Suitable time for hysteroscopy							
- Incorrect answer or (don't know)	23	51.1	0	0	2	4.5	.001**
- Correct answer	22	48.9	45	100.0	43	95.5	
Complications of hysteroscopy							
- Incorrect answer or (don't know)	20	44.4	0	0	1	2.3	.001**
- Correct answer	25	55.6	45	100.0	44	97.7	
Time needed for diagnostic hysteroscopy							
- Incorrect answer or (don't know)	24	53.3	3	6.7	5	11.1	.001**
- Correct answer	21	46.7	42	93.3	40	88.9	
Time needed for therapeutic or surgical hysteroscopy							
- Incorrect answer or (don't know)	27	60.0	4	8.9	2	4.5	.001**
- Correct answer	18	40.0	41	91.1	43	95.5	

Table (3): Distribution of Studied Nurses according to Their pre-operative practice about Hysteroscopy on Pre, Post and Follow- up Tests. (N=45)

Variables	Pre intervention (N=45)				Post intervention (N= 45)				Follow up (N=45)				P value
	Done		Not done		Done		Not done		Done		Not done		
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
Greeting the woman with touch.	2	4.4	43	95.6	42	93.3	3	6.7	40	88.9	5	11.1	.001**
Explain the procedure (steps- time- persons equipment)	3	6.7	42	93.3	41	91.1	4	8.9	39	86.7	6	13.3	.001**
Build a trusting relationship using primary explanation, and active listening.	3	6.7	42	93.3	40	88.9	5	11.1	40	88.9	5	11.1	.001**
Take a complete history.	2	4.4	43	95.6	42	93.3	3	6.7	38	84.4	7	15.6	.001**
Perform a complete physical examination.	3	6.7	42	93.3	40	88.9	5	11.1	40	88.9	5	11.1	.001**
Instruct her about methods and exercises that reduce stress and anxiety related to procedures	8	17.8	37	82.2	40	88.9	5	11.1	38	84.4	7	15.6	.001**
Provide instructions regarding the operation for both the woman and her family.	7	15.6	38	84.4	40	88.9	5	11.1	38	84.4	7	15.6	.001**
Shaved the perineum.	3	6.7	42	93.3	42	93.3	3	6.7	40	88.9	5	11.1	.001**
Perform bathing before surgery.	39	86.7	6	13.3	39	86.7	6	13.3	35	77.7	10	22.3	.368

Table (4): Distribution of Studied Nurses according to Their intra-operative practice about Hysteroscopy on Pre, Post and Follow- up Tests. (N=45)

Variables	Pre intervention (N=45)				Post intervention (N= 45)				Follow up (N=45)				P value
	Done		Not done		done		Not done		Done		Not done		
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
Greeting the patient with touch	1	2.2	44	97.8	39	86.7	6	13.3	45	100.0	0	0	**.000**
Explain the components of operation room	3	6.7	42	93.3	37	82.2	8	17.8	45	100.0	0	0	**.030***
Prepared the equipment needed as doctor ordered.	44	97.8	1	2.2	45	100	0	0	40	88.9	5	11.1	**.001**
Identify woman surgical staff names and numbers	6	13.3	39	86.7	41	91.1	4	8.9	39	86.7	6	13.3	**.001**
Describe anesthesia types and its risks	8	17.8	37	82.2	39	86.7	6	13.3	38	84.4	7	15.6	.105
Signed the informed consent.	44	97.8	1	2.2	44	97.8	1	2.2	41	91.1	4	8.9	.717

Table (5): Distribution of Studied Nurses according to Their Post-Operative practice about Hysteroscopy on Pre, Post and Follow- up Tests. (N=45)

Variables	Pre intervention (N=45)				Post intervention (N= 45)				Follow up (N=45)				P value
	Done		Not done		Done		Not done		Done		Not done		
	No	%	No.	%	No.	%	No.	%	No.	%	No.	%	
Put woman in the recovery position.	37	82.2	8	17.8	44	97.8	1	2.2	42	93.3	3	6.7	**.008***
Assess the ABCs (airway, breathing and circulation).	31	68.9	14	31.1	41	91.1	4	8.9	40	88.9	5	11.1	**.002**
Check the conscious level.	28	62.2	17	37.8	42	93.3	3	6.7	39	86.7	6	13.3	**.002**
Monitoring the vital signs.	40	88.9	5	11.1	43	95.6	2	4.4	39	86.7	6	13.3	**.001**
Make a systemic assessment of the woman	17	37.8	28	62.2	38	84.4	7	15.6	36	80.0	9	20.0	**.156**
Assess pain level.	17	37.8	28	62.2	39	86.7	6	13.3	35	77.8	10	22.2	**.001**
Observe and record the intake and output.	10	22.2	35	77.8	41	91.1	4	8.9	39	86.7	6	13.3	**.001**
Reassure the woman and keep empathy	24	53.3	21	46.7	43	95.6	2	4.4	39	86.7	6	13.3	**.001**
Report any abnormalities in vital signs to the doctor	41	91.1	4	8.9	44	97.8	1	2.2	44	97.8	1	2.2	.165
Detect and manage the early complication	42	93.3	3	6.7	44	97.8	1	2.2	44	97.8	1	2.2	.368
And endorse to the ward nurse	44	97.8	1	2.2	44	97.8	1	2.2	40	88.9	5	11.1	.165

Figure (1): Levels of knowledge of studied nurses about hysteroscopy on pre, post, and follow-up tests. (N=45)
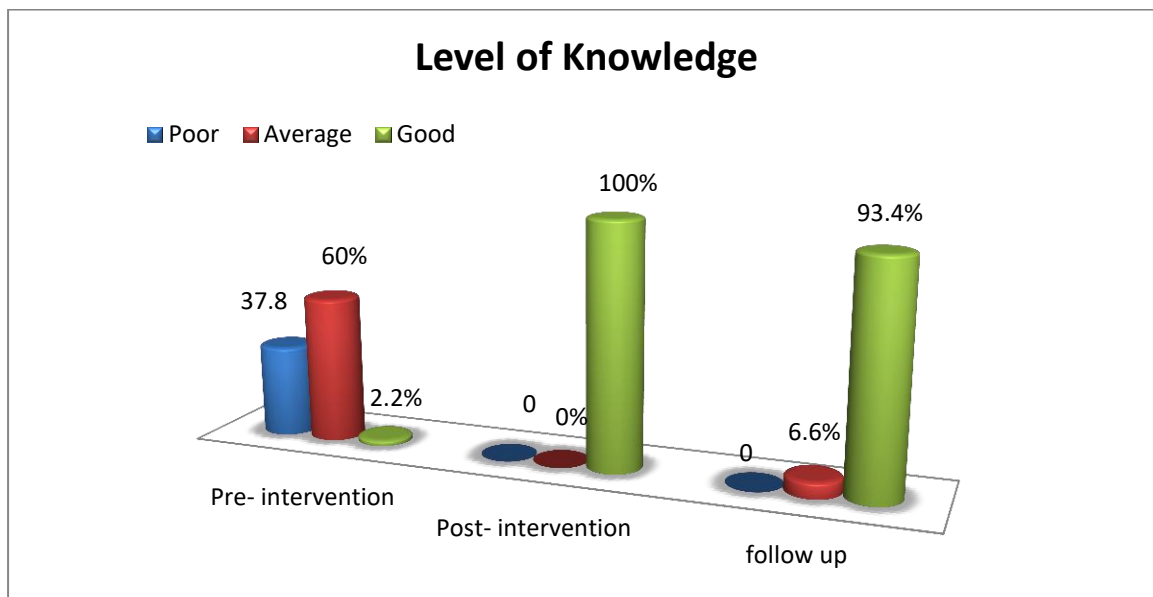

Figure (2): Level of practice of studied nurses about hysteroscopy on pre, post, and follow-up tests. (N-45)
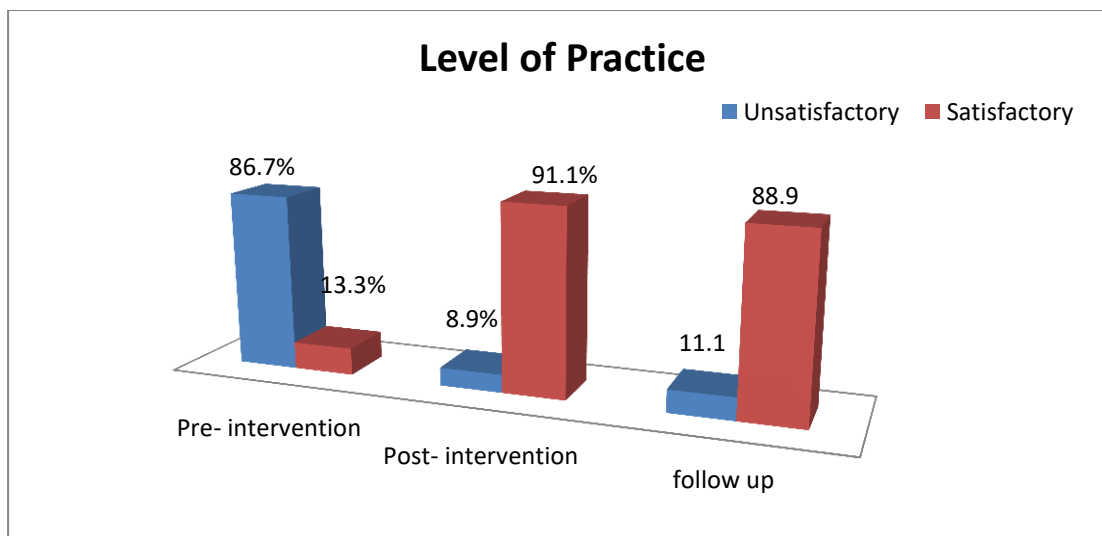

Table (6): Correlation between the studied nurses' total knowledge level and the total practice level (N=45)

	Total Practice Level	
	(N=40)	
	r	P value
Total knowledge	..566**	**.001**

Discussion

As regards the studied nurses' knowledge about care of women undergoing hysteroscopy, results of the current study revealed that there was a highly statistically significant improvement in nurses' knowledge about hysteroscopy on post and follow-up tests compared to pretest. More than half of study sample did not have knowledge about definition, indications, the duration of diagnostic hysteroscopy, the duration of therapeutic hysteroscopy, and the complications of hysteroscopy. This result was similar to Elsayed et al., (2022) study findings proved nearly two thirds of the studied nurses had inadequate knowledge regarding definition, preparation, proper time, duration, methods of diagnosis, and complications of hysteroscopy. This could be attributed to lack of continuing educational programs about hysteroscopy nursing care.

On the other hand, findings were in disagreement with Kandeel et al., (2019) who stated that about half of the studied nurses had adequate correct answers regarding knowledge about hysteroscopy. According to the researcher's point of view. However, this difference could be attributed to the previous in-service education programs which were conducted for these nurses.

Furthermore, results of the current study revealed that there was a highly statistically significant improvement in nurses' knowledge level about hysteroscopy on post and follow-up tests compared to pre-test. This result

was similar to Soliman et al., (2022) who reported that after implementing the educational program, more than two thirds of the studied nurses had improvement in their knowledge regarding hysteroscopy field. This could be attributed to maternity nurses always need feeding information in order to maintain, develop and update their level of knowledge regarding hysteroscopy. Introducing an interventional program in simple language, with different teaching media, and at nurses' places facilitate utilizing knowledge and eliminate any obstacles.

Regarding the relationship between the studied nurses' total knowledge score concerning the care of women undergoing hysteroscopy and their socio demographic characteristics. The present study showed that there was no statistical significant relationship between nurses' knowledge and their residence. These findings come in contrast with El-Toukhy et al., (2019) who mentioned that there was a statistically significance relation between the studied nurses' total knowledge score and their residence.

Moreover, findings of the present study showed that there was no statistically significant relationship between studied nurses' knowledge, age, educational levels, occupation and their years of experience. This finding did not come in line with Mohamed et al., (2020) who mentioned that the majority of the studied sample had a statistically significant relationship between their knowledge, and years of

experience. It may be due to different nursing samples that were used in their studies, and in addition to different universities policies in employing new staff, such as following the rotation policy may affect the nurses' knowledge in accordance with years of experience.

Concerning the statistical correlation between the studied nurses' total knowledge score and total practice level; the present study demonstrated that there was a highly statistically significant positive correlation between total knowledge score and total practice level of the studied nurses. When the knowledge increased, the practice of studied nurses improved. The study results were congruent with Ali et al., (2019). An increase of the studied nurses' knowledge is associated or accompanied with improved performance. An increase in the studied nurses' practice was due to improvement of knowledge utilized methods of teaching, utilized media and nurses desire to improve and update their knowledge and performance, the need for maintaining their jobs or their concept these policies are changeable.

Furthermore; the present study revealed that the studied nurses had inadequate level of performance before the program. But after introducing the intervention program, the nurses' performance improved. The current study findings were similar to Ahmed & Abdelhakm. (2017 who discovered that, prior to intervention, the greatest proportion of nurses lacked knowledge After the intervention, the majority of them had good knowledge. It may be

due to training sessions, using different teaching media including group discussion, demonstration, Re-demonstration, posters and brochures in introducing the study's nursing intervention program. All of this emphasized and achieved the first study hypothesis, in which nursing intervention program has a great role in improving nursing knowledge and practices.

Conclusion

Based on the results of the current study; it was demonstrated that majority of the studied nurses had lack of knowledge regarding hysteroscopy before introducing the nursing interventions program. After implementing the nursing intervention program, the studied nurses achieved a higher level of knowledge regarding the care of women undergoing hysteroscopy. On the other hand; level of performance for studied nurses regarding the care of women undergoing hysteroscopy before introducing the nursing intervention program was inadequate. But after implementing the nursing intervention program, the studied nurses achieved a higher level of performance regarding the care of women undergoing hysteroscopy and this result support the second hypothesis.

Recommendations

In light of the findings of present study the following recommendations are suggested. Regular training programs and orientation courses for maternity nurses' working in the Gynecological department regarding hysteroscopy

field based on their needs obtained. Instructional booklets, posters and brochures regarding hysteroscopy should be prepared for maternity nurses at all Gynecological departments about haw deal with hysteroscopy devices, instruments, cleaning, sterilization, storage, staff manipulation, taking off as well as communication and counseling skills that should be provided. Additionally, further research should be showed to assessment of knowledge and performance for other Gynecological procedures.

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