

Effect of Nursing Instructions Guided by BETTER Model on Sexual Dysfunction, Anxiety and Marital Satisfaction among Infertile Women

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Abstract: *Background:* Infertility have adverse effects on the sexual and psychological status of women and the BETTER model demonstrated a significant impact on addressing the multifaceted challenges faced by infertile women. *Aim of the study:* aimed to evaluate the effect of nursing instructions guided by BETTER model on sexual dysfunction, anxiety and marital satisfaction among infertile women. *Design:* A quasi experimental design (one group pre-posttest) was used in the current study. *Setting:* The study was conducted in the Gynecology clinic at Benha university hospital, Egypt. *Sample:* A purposive sample was utilized, which included 60 infertile women. *Tools:* Four tools were used in the current study: *First tool:* A structured interviewing questionnaire that consisted of *First part:* The general characteristics and the health history, *Second part:* Anthropometric data, *Third part:* Assessment of knowledge about fertility and infertility. *Second tool:* Female sexual function index (FSFI). *Third tool:* Taylor anxiety scale. *Fourth tool:* ENRICH marital satisfaction scale. *Results:* The majority of the studied women had a satisfactory knowledge after the nursing instructions. Also, there was a highly statistically significant difference between before and after nursing instructions regarding mean sexual function indicator scores. Only about one third of the studied women had sever anxiety after nursing instructions. Also, more than two thirds of the studied women had marital satisfaction after nursing instructions. *Conclusion:* There was a highly statistically significant difference between before and after nursing instructions regarding mean sexual function indicator scores, mean anxiety scores and total marital satisfaction scores. *Recommendations:* Reapplying nursing instructions guided by other models such as PLISSIT model for infertile women.

Keywords: Anxiety, BETTER model, Marital satisfaction, Nursing Instructions, Sexual dysfunction.

1. INTRODUCTION

Infertility is the inability to get pregnant even after having frequent and unprotected sex for one year. Infertility is a medical condition that can cause psychological, physical, mental, spiritual and medical detriments to the patient. Infertility frequency in the world is 3%-7% and infertility results from female related factors in approximately 37% of all infertility cases. Infertility can affect both men and women and is usually self-diagnosable by an inability to get pregnant [1].

Though, sexual dysfunction is a problem in a person's sexual desire, arousal or orgasm. Sexual dysfunction is common and affects as many as 30% of men and 40% of women. Also, sexual dysfunction is even more common for couples

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dealing with infertility. Often, people ignore or downplay the sexual problems of infertile couples. Some sexual problems may go away when the pressures of infertility treatment end but, sexual difficulties often linger or get worse after treatment ends or a couple becomes parents. Even couples who never have major sexual problems often find that there are times of less sexual desire and satisfaction [2].

Furthermore, anxiety is a certain consequence to infertility that is a multidimensional stressor which requiring many emotional adjustments that can cause not only anxiety but also stress and depression [3]. Anxiety and infertility treatments are related in a complex way. Also, women seeking infertility treatment have higher rates of anxiety and depressive symptoms. The psychological impact of infertility medication in particular clomifene citrate may be an important independent risk factor for the development of anxiety [4].

Nevertheless, marital satisfaction is a mental state that reflects the perceived benefits and costs of marriage to a couple. The more costs a marriage inflicts on a person, the less satisfied one generally is with the marriage and with the husband or the wife. Similarly, the greater the perceived benefits are, the more satisfied one is with the marriage and with the marriage couple. Accordingly, knowing the factors associated with marital satisfaction in the infertile couples can help the couples to keep on their treatment and increase their success chance [5].

Certainly, the BETTER model has been introduced as a structured approach for nurses to address sexual issues with oncology clients. Although this model is designed for a specific population and professions, the components of the model can be taken into consideration by all health professionals when addressing clients with varying disabilities. The model is consisted of six stages; Bring up, Explain, Tell, Time, Educate and Record [6]. In several studies, using the model in sexual counselling has been shown to have a healing effect on sexual functions [7].

Also, nurse practitioners (NPs) are in a position to support continuity of care for patients seeking fertility assistance and play an essential role in the health history, physical exams and lab investigations of the couple. Also, the nurse must be knowledgeable and equipped in all stages of the treatment to prevent the crisis and to provide the necessary assistance for the couples to cope with their crisis. The nurse can initiate timely pharmacologic infertility management. Assessment, diagnosis and treatment of fertility issues within primary care can effectively reduce the emotional and financial burden on couples, helping some avoid lengthy wait times and achieve pregnancy sooner [8].

1.1 Significance of the study

Infertility frequency in the world is 3%-7% and infertility results from female related factors in approximately 37% of all infertility cases. In Egypt, Prevalence of infertility according to a study conducted by the Egyptian Fertility Care Society affects 12 percent of Egyptian couples [9]. The ability of reproduction is closely connected with sexual and marital satisfaction and psychological status. So, sexual intercourse may lose its spontaneity and erotic value because the main aim becomes conception leading to sexual dysfunction. Also, many couples describe the period of diagnosis and treatment of infertility as the most stressful period of their life so, anxiety and marital dissatisfaction are typical reactions to infertility [10].

Moreover, the BETTER model which is developed for oncology nurses is not only limited to oncology, but also used in other clinical areas as in infertility clinics that has a great effect in decreasing anxiety and increasing sexual and marital satisfaction [7]. Also, the most important role of a fertility nurse is to be able to efficiently and empathetically assists infertile couples through each step of a treatment process [11]. Therefore, this study was conducted to evaluate the effect of nursing instructions guided by BETTER model on sexual dysfunction, anxiety and marital satisfaction among infertile women.

1.2 Aim of the study

The aim of the present study was to evaluate the effect of nursing instructions guided by BETTER model on sexual dysfunction, anxiety and marital satisfaction among infertile women.

1.3 Research Hypotheses

1- Infertile women who were subjected to nursing instructions guided by BETTER model had a positive effect on sexual dysfunction after the nursing instructions than before.

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2- Infertile women who were subjected to nursing instructions guided by BETTER model had a positive effect on anxiety after the nursing instructions than before.

3- Infertile women who were subjected to nursing instructions guided by BETTER model had a positive effect on marital satisfaction after the nursing instructions than before.

1.4 Research design:

A quasi-experimental design was utilized in this study. A quasi-experimental design is an empirical study in which the researcher can examine a causal relationship without putting anyone in a physical danger in one group before and after nursing instructions [12].

1.5 Setting

The study was conducted in the Gynecology clinic at Benha university hospital that is located at the center of Benha city in Egypt. This location of the hospital is easy to be reached to provide more health services for women. The Gynecology clinic is located at the first floor and consists of examination room that contains sonar set, sonicate, weighting scale for accurate examination of women. The clinic provides many medical services that help diagnosing and treating various diseases such as gynecological diseases, menstrual cycle disturbances and primary and secondary infertility.

1.6 Sample

Type of sample: A purposive sample was used in the current study.

1.7 Sample size

The sample size was consisted of (60) infertile women consuming 6 months. The process of data collection was carried out in the period from the beginning of December 2022 and completed by the end of May 2023.

1.8 Inclusion criteria

- Infertile women after one year of regular unprotected intercourse.
- All participants who had sex with a partner in the previous 4 weeks.
- The spouse was already with the wife and was not traveling.

1.9 Exclusion criteria

- The presence of family disagreements within the last weeks.
- The presence of physical problems such as spinal cord injury, malformation, paralysis and limb abnormality.
- Psychological problems.
- Medical illnesses such as cardiovascular disease, pulmonary disorders and diabetes.
- Facing stressful events such as death or acute illness of close relatives.

1.10 Tools for Data Collection

Four main tools were used for data collection in the present study.

1.10.1 A Structured Interviewing Questionnaire (Tool I)

This tool was designed by the researcher after reviewing current and related literatures [9] and was written in an Arabic language in the form of close and open-ended questions. The tool encompassed three major parts:

1.10.2. First part: The general characteristics and the health history of the studied women that consisted of (13) questions and used to assess the personal data such as (age, place of residence, educational level and occupation) and the health history that was composed of menstrual cycle history such as (menarche age, menstrual cycle nature, menstrual cycle duration and bleeding amount), infertility treatment history such as (duration of marriage, duration of infertility, previous an external fertilization process and its results) and medical and surgical history such as (suffering from chronic diseases and previous surgeries).

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1.10.3 Second part: Anthropometric data to calculate Body Mass Index (BMI) of the studied women and consisted of (3) items. Using a portable distance scale, the researcher measured the weight and height of the studied women. Then, the studied women' BMI was estimated as $\frac{kg}{m^2}$.

1.10.4 Third part: Assessment of the studied women knowledge about fertility and infertility before and after nursing instructions that carried out after one month. The part used to assess the general knowledge regarding the natural ways to improve fertility and conception chances and the diagnostic tests of infertility that consisted of (10) questions such as (definition of fertility, the natural ways to improve fertility, the factors that affect a woman's fertility, effect of sexual health on fertility, the effect of obesity on fertility, definition of infertility, types of infertility, the diagnostic tests for women and men infertility and infertility treatment).

Scoring System:

Scoring system for general knowledge of the studied women was calculated as the following: Each given answer about fertility and infertility was correct and women were asked to select from these answers. Correct answer was considered for the woman select and was scored as (2). Incorrect answer was considered for the answer that the woman not select and was scored as (1). Total knowledge score was 20 and the higher scores represent higher levels of knowledge and was categorized as the following: Unsatisfactory < 60 % of total score knowledge. Satisfactory \geq 60 % of total score knowledge.

1.10.5 Women Assessment Sheet Regarding Sexual Function (Tool II)

The tool was adopted from [13] and was written in an Arabic language. The tool evaluated six sexual domains; sexual desire, arousal, lubrication, orgasm, satisfaction and pain throughout the sexual intercourse. The tool had 19 questions to assess the degree of women's sexual function before and after nursing instructions in the form of close ended questions.

The first domain is (Desire): which evaluated through two questions (times and level of sexual desire). **The second domain is (Arousal):** which evaluated through four questions (times and level of arousal during a sexual intercourse, in addition to the confidence about becoming sexually aroused during a sexual intercourse and satisfaction about sexual desire). **The third domain is (Lubrication):** which evaluated through four questions (frequency and difficulty of lubrication, in addition to frequency and difficulty of lubrication maintainence). **The fourth domain is (Orgasm):** which evaluated through three questions (frequency and difficulty of orgasm, in addition to satisfaction with the orgasm-inducing capacity during sexual intercourse). **The fifth domain is (Satisfaction):** which evaluated through three questions (satisfaction about emotional closeness during sexual intercourse and about sexual relationship with the couple and overall sexual life). **The sixth domain is (pain):** which evaluated through three questions (frequency of pain or discomfort during and after vaginal penetration and the intensity of pain during or after vaginal penetration).

Scoring System

The questions were divided into six subscales: sexual desire (questions 1 and 2), arousal (questions 3, 4, 5 and 6), lubrication (questions 7, 8, 9, and 10), orgasm (questions 11, 12, and 13), satisfaction (questions 14, 15 and 16) and pain (questions 17, 18, and 19). The score range for questions 3 to 14 and 17 to 19 between 0–5; for questions 1, 2, 15 and 16 between 1–5. The full-scale score range was from 2 to 36, with the higher scores indicating better sexual function.

1.10.6 Women Assessment Sheet Regarding Anxiety (Tool III)

The tool was adapted from [14] and modified by researcher. The tool was translated into the Arabic language. Also, the tool was composed of 50 items to determine anxiety levels through psychosomatic manifestations before and after nursing instructions. The tool was divided to physical or somatic manifestations items such as (tired quickly, there are attacks of nausea, headaches, diarrhea, feeling hungry, constipation, warmth of hands and feet, degree of sweating, the heart pounding, shortness of breath and stomach troubles).

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In addition, psychological manifestations items such as (degree of nervousness, working under tension, degree of concentration on one thing, worrying over money and business, degree of blushing, worrying about over possible misfortunes, the nightmares, sleeping disturbances, feeling embarrassed, sensitivity when dealing comparing with others, capability to be happy as others, degree of calm, crying easily, degree of happiness, feeling of nervous, restlessness, exciting and worrying toward things, feeling frightened of things or people, feeling with self-consciousness and self-confidence).

Scoring System

The tool was composed of 50 items within the rank of two points Likert scale ranging like 1= Yes, 0 = No. The replies indicating anxiety were counted, giving a score from 0 to 50 with the higher scores representing a higher level of anxiety. Scoring was easily accomplished by summing scores for items. The total score ranged from 0–50. The following guidelines were recommended for the interpretation of scores: 0–9, normal or no anxiety; 10–18, mild to moderate anxiety; 19–29, moderate to severe anxiety and 30–50, severe anxiety.

1.10.7 Women Assessment Sheet Regarding Marital Satisfaction (Tool IV)

The tool was adapted from [15] and modified by researcher. The tool was translated into the Arabic language. The tool was used to assess the marital satisfaction of the studied women before and after nursing instructions and included two dimensions: the first dimension was marital satisfaction (MS) such as (Unpleasure with the communication and understanding between the couples, there are un meeting needs by the relationship, dissatisfaction with the way of handling the responsibilities as parents, don't regret on the relationship with the husband, not even for a moment and dissatisfaction about the relationship with the parents in law and/or friends).

The second dimension was idealized distortion (ID) such as (understanding between couples, a pleasure with the husband' personality characteristics and personal habits, a pleasure with handling of role responsibilities in the marriage, completely understanding of mood changes of the woman by the husband, the success of the relationship, a pleasure with the way of making decisions and resolving conflicts, a pleasure with the financial position and the way of making financial decisions, a pleasure with managing the leisure activities and the time that the couples spend together, a pleasure with expressing affection and relating sexually and a satisfaction with practicing the religious beliefs and values)[16].

Scoring System

The tool was consisted of 15 items with total score 30 and the higher scores represent higher levels of marital satisfaction. The tool included three points Likert scale ranging like 2= Agree, 1= To Some Extent, 0= Not Agree. It was divided into two levels as the following: Unsatisfactory < 60 % (< 45 points). Satisfactory \geq 60 % (\geq 45 points).

1.10.8 Tools validity

Validity was done by panels of three expertise in the field of (Maternal and Newborn Health Nursing) who interviewed the four tools for content accuracy and internal validity. Also, professors were asked to judge the items for completeness and clarity.

1.10.9 Tools reliability

Cronbach alpha reliability test was done through SPSS computer package. This test for tool II (Female sexual function index FSFI) was 0.923 [13]. Also, this test for the third tool (ENRICH Marital Satisfaction Scale) was 0.871. and for the fourth tool (Taylor Anxiety Scale) was 0.845.

1.11 Ethical Consideration

An official permission to conduct the proposed study was obtained from the Scientific Research Ethics Committee, faculty of nursing – Helwan university. Participation in the study was voluntary and a woman was given complete full information about the study and their role before signing the informed consent. The ethical considerations were include explaining the purpose and nature of the study, stating the possibility to withdraw at any time, confidentiality of the information where it was not be accessed by any other party without taking permission of the participants. Ethics, values, culture and beliefs was respected.

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1.12 Pilot Study

A pilot study was conducted on a sample of 10 % of the total period of the sample collection that was 6 months and included (6) of infertile women collected within 2 days/week for 2 weeks to test the feasibility of different tools and help in time planning. No modifications were carried out, so all infertile women were included in the study.

1.13 Field Work

The process of data collection was carried out in the period from the beginning of December 2022 and completed by the end of May 2023, consuming 6 months, after obtaining all official permissions. The researcher met the infertile women attending to the previous setting 2 days/week from 10 am – 2 pm until reaching the foreordained sample size. The researcher introduced herself to gain the women's confidence and agreement as well as obtained the consent to participate in the study then, the researcher explained the aim of the study to each woman. The researcher interviewed 2 – 3 women in day and divided the women into four equal groups, each group composed of 15 women to organize and ease the study work. The fieldwork was conducted through four phases: assessment, planning, implementation and evaluation.

1.13.1 Assessment phase

The researcher visited the Gynecology clinic to evaluate the place and assessed the rate of infertile women. Also, the researcher explained the aim of the study to staff nurses to facilitate the conduction of this study.

Then the researcher selected women who fulfilled the study criteria. Then the researcher conducted the assessment process for each woman.

Also, the infertile women in the gynecology clinic were interviewed to collect the general characteristics and personal data. So, the researcher used four tools in the current study; structured interviewing questionnaire (tool I) that consisted of the general characteristics and the health history sheet and anthropometrics sheet in the pretest as well as assessment of knowledge about fertility and infertility sheet before and after nursing instructions.

Furthermore, the researcher used female sexual function index (FSFI) (tool II), Taylor anxiety scale (tool III) and ENRICH marital satisfaction scale (tool IV) before and after nursing instructions.

1.13.2 Planning phase

The researcher prepared a booklet, power point presentations and videos as well as the media that was handouts and pictures. Also, teaching methods was used: lecture and group discussion. Then, the researcher planned the dates for follow up for each woman.

1.13.3 Implementation phase

The researcher distributed the tools for each woman individually in the first interview with each group and helped women who couldn't read and write to fill the sheet. Also, the application of nursing instructional program directed by the BETTER model was distributed to the women.

The researcher met each group on a regular basis for follow up. At the end of each meeting, feedback was invited; women's questions were discussed to explain any understanding. Also, all ethical considerations were respected. The gathered data helped the researcher to assess their general condition and provide appropriate intervention accordingly. Moreover, the researcher showed sympathy and concern for the infertile women to gain trust and create an atmosphere of cooperation for the benefit of infertile women.

The researcher conducted five sessions; session one conducted in 40 minutes in the waiting place of the gynecology clinic in which the researcher greeted the women and introduced herself and then explained the BETTER model, objectives, stages and its effects.

Also, the researcher conducted session two in 30 minutes that included discussion of sexual health, sexual dysfunction and the measures to improve the sexual dysfunction.

Furthermore, the researcher conducted session three in 30 minutes in which the researcher explained causes of anxiety and the measures for managing anxiety.

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Moreover, the researcher conducted session four in 30 minutes in which the researcher explained causes of marital dissatisfaction and measures for improving marital satisfaction.

Also, the researcher conducted session five in 20 minutes in which the researcher summarized the program and its objectives and showed appreciation of infertile women for their time and cooperation.

The researcher used teaching strategies through the five sessions as lecture, discussion, demonstration, power point presentation, booklet and videos. Also, the researcher used evaluation methods as feedback in discussion, ask questions and redemonstration.

1.13.4 Evaluation phase

In this phase, after nursing instructions was done after one month for each woman for assessing the effect of nursing instructions guided by BETTER model on sexual dysfunction, anxiety and marital satisfaction through meeting or a phone call using the third part of a structured interviewing questionnaire (tool I) to reevaluate the general knowledge of the studied women and tool II, III and IV. This phase included the same questions as in the pre nursing instructions.

1.14 Statistical analysis

Data were collected, revised, coded and entered to the Statistical Package for Social Science (SPSS) version 23. The quantitative data were presented as mean, standard deviations and ranges. Also, qualitative variables were presented as number and percentages. The comparison between groups with qualitative data was done by using Chi-square test. Also, the comparison between two paired groups with quantitative data and parametric distribution were done by using Paired t-test. Spearman correlation coefficients were used to assess the correlation between two quantitative parameters in the same group. The confidence interval was set to 95% and the margin of error accepted was set to 5%. So, the p-value was considered significant as the following: $P > 0.05$: Non-significant (NS). $P < 0.05$: Significant (S). $P < 0.01$: Highly significant (HS).

2. RESULTS

Table (1) shows that, the mean age of the studied women was 25.97 ± 5.19 and more than two thirds of them (66.7 %) were from rural area. Moreover, more than half of the studied women (51.7%) had a secondary education. In addition, about two thirds of the studied women (60.0%) were house wives. **Table (2)** illustrates that, more than half of the studied women had menarche before age of 11 years and the mean menarche age of the studied women was 11.45 ± 1.14 . In addition, half of the studied women (50.0 %) had abundant bleeding amount. Furthermore, the menstrual cycle duration of more than two thirds of the studied women (66.7 %) lasted 3-7 days. While, the menstrual cycle duration of more than one third of the studied women (33.3 %) lasted more than 7 days. **Table (3)** points out that, the mean years of infertility of the studied women was 3.37 ± 2.09 . Moreover, the most of the studied women (93.3 %) had no an external fertilization process (test tube babies). In addition, more than two thirds of the studied women (73.3 %) had no any chronic diseases. Also, less than one third of the studied women (28.3%) didn't perform any surgeries. **Table (4)** shows that, the majority of the studied women were overweight (86.7%) and the mean body mass index (BMI) of the studied women was 27.64 ± 2.34 . **Table (5)** illustrates that, there was a highly statistically significance difference between before and after nursing instructions regarding the studied women knowledge about fertility at ($p - \text{value} < 0.01^{**}$). **Table (6)** shows that, there was a highly statistically significance difference between before and after nursing instructions regarding the studied women knowledge about infertility at ($p - \text{value} < 0.01^{**}$). **Figure (1)** shows that, there was an improvement regarding the studied women's knowledge after the nursing instructions than before. In addition, the majority of the studied women (88.3%) had a satisfactory knowledge after the nursing instructions. Furthermore, there was a highly statistically significant difference between before and after nursing instructions regarding total knowledge scores at ($p - \text{value} < 0.01^{**}$).

Table (7) reveals that, there was a highly statistically significant difference between before and after nursing instructions regarding desire, arousal, lubrication, orgasm, satisfaction and pain score at ($p - \text{value} < 0.01^{**}$). **Figure (2)** points out that, the mean sexual function indicator scores of the studied women after nursing instructions was 25.92 ± 4.22 . Moreover, there was a highly statistically significant difference between before and after nursing instructions regarding mean sexual function indicator scores at ($p - \text{value} < 0.01^{**}$).

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Table (8) points out that, there was a highly statistically significant difference between before and after nursing instructions regarding mean Taylor anxiety scale score at ($p - \text{value} < 0.01^{**}$). **Figure (3)** shows that, there was a decrease regarding the studied women's severe anxiety level that only about one third of the studied women (30.0 %) had severe anxiety after nursing instructions compared to the majority of the studied women (85.0 %) had severe anxiety before nursing instructions. In addition, there was a highly statistically significant difference between before and after nursing instructions regarding levels of anxiety at ($p - \text{value} < 0.01^{**}$).

Figure (4) shows that, more than two thirds of the studied women (66.7 %) had marital satisfaction after nursing instructions. Also, there was a statistically significant difference between satisfaction and dissatisfaction regarding total scores of ENRICH scale interpretation before and after nursing instructions at ($p - \text{value} < 0.05^*$).

Table (9) reveals that, there was a negative correlation between age and arousal, lubrication, orgasm and satisfaction scores before the nursing instructions as increasing of the studied women age reduce arousal, lubrication, orgasm and satisfaction scores. In addition, there was a strong positive correlation between age and psychological manifestations before nursing instructions. While, there was a strong negative correlation between age and somatic manifestations after nursing instructions. Furthermore, there was a strong negative correlation between age and psychological manifestations after nursing instructions. **Table (10)** shows that, there was a negative correlation between years of marriage and a weak negative correlation between years of infertility and the sexual function indicator Mean scores before nursing instructions. While, there was a strong positive correlation between years of marriage and years of infertility and the sexual function indicator Mean scores after nursing instructions.

Table (11) points out that, there was a strong negative correlation between Body Mass Index (BMI) and orgasm score before nursing instructions. Furthermore, there was a strong negative correlation between BMI and somatic and psychological manifestations after nursing instructions. While, there was a strong positive correlation between BMI and ENRICH scale total scores after nursing instructions.

3. DISCUSSION

The utilization of nursing instructions guided by the BETTER model has demonstrated a significant impact on addressing the multifaceted challenges faced by infertile women, particularly in the realms of sexual dysfunction, anxiety and marital satisfaction. Therefore, the current study aimed to assess the effect of nursing instructions guided by BETTER model on sexual dysfunction, anxiety and marital satisfaction among infertile women. In relation to the sociodemographic data of the studied women, the current study findings illustrated that half of the studied women were aged ≤ 25 years and the other half were > 25 years with mean age 25.97 ± 5.19 . On the same line, [17] in a study entitled "Evaluation of factors associated with sexual function in infertile women, Iran" reported that more than half of studied women were aged more than 25 years with mean age 36.7 ± 7.8 . While [18] in a study entitled "Infertility-Related stress and life satisfaction among Chinese infertile women: a moderated mediation model of marital satisfaction and resilience, China" were opposing the current study findings as the stated that nearly two thirds of study sample were above 40 years. Regarding residence the current study findings revealed that more than two thirds of studied women were from rural areas. On the same line [19] in a study entitled "The relationship between marital satisfaction and depression in infertile couples, Iran" stated that more than half of studied subjects were resident in agricultural districts. In disagreement with the current study, [20] in a study entitled "Factors associated with marital satisfaction in infertile couple: a comprehensive literature review, Iran" revealed that nearly half of studied subjects were lived in towns and urban areas.

Considering education, the current study findings revealed that more than half of the studied women had a secondary education. On the same line [21] in a study entitled "The Effect of BETTER-Based Sex Counselling on Sexual Quality of Life in Infertile Women, Iran" stated that more than half of studied women had secondary education. In disagreement of this results [22] in a study entitled "Infertility-Related stress and life satisfaction among Chinese infertile women: a moderated mediation model of marital satisfaction and resilience, China" which reported that nearly two thirds of study sample had a basic education.

As regards to occupation, the current study findings demonstrates that about two thirds of the studied women were housewives, [22] was in congruence in a study entitled "Evaluation of sexual function among infertile women and their sexual self-concept, Iran" as they reported that the majority of studied women are not working. On the other hand, [7] in a study entitled "Sexual counselling in women with primary infertility and sexual dysfunction: Use of the BETTER model, Turkey" stated that more than half of studied women were working.

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Concerning the studied women's health history, the current study findings revealed that regarding menstrual cycle history more than half of the studied women had menarche before age of 11 years with mean age 11.45 ± 1.14 . Also, half of the studied women had regular menstrual cycle and half of the studied women had abundant amount. For instance, a study conducted by [23] in a study entitled "Sexual satisfaction among infertile couples: demographics and psychosocial health factors, Jordan" found a similar prevalence of early menarche among women experiencing infertility and two thirds of the studied women had regular menstruation. On the other hand, [24] in a study entitled "Sexual function and satisfaction in couples with infertility: a closer look at the role of personal and relational characteristics, Canada" diverged in its observations regarding menstrual regularity among women facing infertility as less than one third reported irregular menstrual cycle and more than half of women had moderate amount of bleeding.

In relation to infertility treatment history, the current study findings revealed that more than one third of the studied women had more than 7 years of marriage with mean 6.44 ± 5.04 years and more than two thirds of the studied women had less than four years of infertility with mean 3.37 ± 2.09 years. In agreement with the present findings, a study conducted by [25] in a study entitled "Emotional disorders, marital adaptation and the moderating role of social support for couples under treatment for infertility, Romania" similarly reported an extended duration of marriage from 7-10 years with mean years 7.9 ± 4.30 among women experiencing infertility and the research highlighted that a significant proportion of participants had been married for several years, aligning with the notion that infertility often becomes a prominent concern for couples after an extended period of attempting to conceive. Also, [24] in a study entitled "Sexual function and satisfaction in couples with infertility: a closer look at the role of personal and relational characteristics, Canada" presented similar observations regarding the duration of infertility. The findings indicated infertility duration 3-6 years with mean 4.8 ± 2.11 years of infertility among the study participants compared to the current study's results. Also, in contrast [26] that conducted a study entitled "The Effect of Sexual Education based on Sexual Health Model on the Sexual Function of Women with Infertility, Iran" illustrated that the mean duration of marriage of nursing instructions and control groups were 8.52 ± 4.65 and 8.77 ± 4.76 years respectively. From the researchers' point of view such discrepancies highlighted the heterogeneity in infertility experiences among women and underscored the need for personalized approaches in fertility treatments and support. These differences might stem from variations in the studied women's regional factors, emphasizing the importance of considering diverse contexts in interpreting infertility-related research.

As regards previous an external fertilization processes, the current study findings indicated that most of the studied women didn't undergo this process. Also, regarding suffering from any chronic diseases, more than two thirds didn't suffer from any chronic diseases and relating to previous surgeries, less than one third didn't perform any surgeries. In alignment with the current study, [25] in a study entitled "Emotional disorders, marital adaptation and the moderating role of social support for couples under treatment for infertility, Romania" similarly found a significant proportion of women not undergoing external fertilization processes, indicating that assisted reproductive technologies may not be universally pursued or accessible among women dealing with infertility. Regarding previous surgeries, [7] who conducted a study entitled "Sexual counselling in women with primary infertility and sexual dysfunction: Use of the BETTER model, Turkey" agreed with the current study's observation that nearly one-third of participants didn't undergo any surgical procedures. However, [27] in a study entitled "Relationship between marriage satisfaction and sexual functions in couples undergoing infertility treatment, Turkey" presented contrasting results regarding the prevalence of chronic diseases among women experiencing infertility. The findings suggested a higher incidence of chronic health conditions compared to the current study's observation. These discrepancies emphasize the importance of considering the health diversity within the population of women dealing with infertility. From the researchers' point of view, an external fertilization process or assisted reproductive technologies such as in vitro fertilization was the last choice of the women for infertility treatment and this might be due to the high costs of these technologies. Also, there was no relationship between suffering from chronic diseases and performing previous surgeries and infertility.

Regarding assessment of the studied women according to their anthropometric measurements, the current study illustrated concerning weight that more than half of the studied women were below ≤ 75 Kg, also more than two thirds of the studied women had ≤ 165 cm height, while regarding body mass index, the majority of the studied women were overweight with a mean BMI of 27.64 ± 2.34 . This aligns with the results of [28] in a study entitled "Effect of Nursing Counselling Based on BETTER Model on Sexuality and Marital Satisfaction among Infertile Women, Egypt" who similarly identified a high prevalence of overweight women as the current study that showed the mean weight of study and control groups were

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86.18 ± 6.99 and 83.04 ± 11.49 kg respectively. In contrast [29] who conducted a study entitled “The Effect of Sexual Counselling Using BETTER Model on Sexual Function of Women with Infertility, Iran” stated that more than three quarters of studied women had a lower mean BMI among their study participants with mean BMI 23.12 ± 4.82. From the researchers’ point of view according to the women’s anthropometric measurements, there was a relationship between obesity or overweight of the women and suffering from infertility so, enhancing awareness through awareness campaigns for the women through the media must be conducted or through educational booklets that were distributed in the hospitals about the risks of obesity on fertility.

As regards the studied women’s knowledge about fertility, the current study results revealed that there was a highly statistically significance difference between before and after nursing instructions regarding definition of fertility, natural ways to improve fertility, factors that affect a woman’s fertility, effect of sexual health on fertility and effect of obesity on fertility.

On the same line, [30] in a study entitled “Fertility awareness and knowledge among Indian women attending an infertility clinic, India” who stated that prior consultation for infertility has been found to improve knowledge in some areas of infertility. Similarly, [31] in a study entitled “An integrative review of fertility knowledge and fertility-awareness practices among women trying to conceive, USA” also stated that the majority of the study subjects believed that they should receive fertility-awareness education because of having poor knowledge regarding fertility. Concerning the studied women’ knowledge about infertility, the current study results revealed that there was a highly statistically significance difference between before and after nursing instructions regarding definition of infertility, types of infertility, diagnostic tests for women infertility, diagnostic tests for men infertility and infertility treatment. For instance, [28] in a study entitled “Effect of Nursing Counselling Based on BETTER Model on Sexuality and Marital Satisfaction among Infertile Women, Egypt” reported similar positive outcomes, emphasizing the effectiveness of prior consultation for infertility in enhancing knowledge among women attending an infertility clinic. This convergence strengthens the evidence supporting the impact of educational interventions on infertility awareness. In relation to total knowledge scores of the studied women, the current study results indicated that there was a highly statistically significant difference between before and after nursing instructions. Similarly, [32] in a study entitled “Knowledge of infertility among infertile women in Bauchi, Northern Nigeria” and [33] in a study entitled “Fertility Awareness and Knowledge among Infertile Women in Georgia” reported analogous results, demonstrating that interventions targeting specific knowledge domains could lead to a substantial overall improvement in women’s understanding of relevant topics. On the contrary, [34] in a study entitled “Infertile couples’ needs after unsuccessful fertility treatment, Iran” suggested that the success of interventions might not be universally consistent. From the researcher’s point of view, the existence of both agreeing and disagreeing studies underscored the need for a comprehensive understanding of the diverse factors influencing the effectiveness of educational nursing instructions in enhancing knowledge about fertility and infertility among women. While, in the current study, these satisfactory results after nursing instructions achieved through using different educational methods as power point presentations, videos and printed materials such as booklet that facilitated the access to information and enhanced the women knowledge about fertility and infertility.

In relation to mean sexual function indicator scores, there was a highly statistically significant difference between before and after nursing instructions regarding desire, arousal, lubrication, orgasm, satisfaction and pain score at ($p - \text{value} < 0.01^{**}$). Also, less than one third of the studied women had improved sexual function after the nursing instructions.

The result was agreed with [29] who conducted a study entitled “The Effect of Sexual Counselling Using BETTER Model on Sexual Function of Women with Infertility, Iran” who mentioned that all domains of female sexual function index in exception of pain had a significant elevation ($p < 0.001$) post nursing instructions and sexual counselling may be utilized to enhance infertile woman’s sexuality. Also, [21] who conducted a study entitled “The Effect of BETTER-Based Sex Counselling on Sexual Quality of Life in Infertile Women: A Randomized Controlled Clinical Trial, Sexuality and Disability, Iran” who found that the mean scores for sexual function, sexual self-efficacy and marital satisfaction were improved among studied groups 4 and 8 weeks post nursing instructions than pre nursing instructions. On the contrary, [35] in a study entitled “The Effect of Sexual Counselling and Education Approaches on Improving the Sexual Function of Infertile Women: A Systematic Review of Clinical Trials in Iran” argued that according to the type of counselling or education, the improvement of sexual function dimensions is different. From researcher’s point of view, infertile women

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had troubles regarding sexual confidence, self-respect and difficulty to precise their concerns or keep up autonomy in marital connections. Subsequently, counselling models involving BETTER model was utilized to empower infertile women and men to talk about sexual matters with each other and with medical teams. The World Health Organization (WHO) [36] believed that it was important to understand, help and educate couples about sexual problems so could be treated better. However, sexual health was often ignored by doctors and nurses.

Regarding mean Taylor anxiety scale scores, there was a highly statistically significant difference between before and after nursing instructions at ($p - \text{value} < 0.01^{**}$). Also, there was a decrease regarding the studied women's severe anxiety level that only about one third of the studied women had sever anxiety after nursing instructions compared to the majority of the studied women had sever anxiety before nursing instructions. In addition, there was a highly statistically significant difference between before and after nursing instructions regarding levels of anxiety at ($p - \text{value} < 0.01^{**}$). In agreement of the current study [37] in a study entitled "Effect of preparation program on reducing anxiety level among women undergoing Assisted Reproductive Treatment Process, Egypt" who indicated that the nursing instructions was effective by a reduction in the women having clinically relevant symptoms of anxiety and/or depression in the nursing instructions group compared with the control group. On the contrary, a study conducted by [38] that entitled "Effect of cognitive behavioural therapy on anxiety and depression of infertile women, Iran" illustrated that, there was no significant effect of counselling on anxiety and depression scores. From the researcher's point of view, this controversy might be due to type of the sample, different personal characteristics as (age, occupation, income and education of the study sample), different culture of the study sample. While in the current study, the decrease in anxiety levels achieved through the steps of BETTER model such as bringing up for the topic that tested the acceptance of the women to talk about infertility and sexual issues and relieved shame in addition to, telling the women that if the nursing instructions was not effective in resolving the women problem, a referral would be made to another professional who could address the problem and this step made the women more comfortable and reassured and decreasing anxiety.

Considering total ENRICH scale score, Also, more than two thirds of the studied women had marital satisfaction after nursing instructions. Also, there was a statistically significant difference between satisfaction and unsatisfaction regarding total score of ENRICH scale interpretation before and after nursing instructions at ($p - \text{value} < 0.05^*$). The results of [39] who conducted a study entitled "Effect of Marital Relationship Enrichment Program on Marital Satisfaction, Marital Intimacy, and Sexual Satisfaction of Infertile Couples, Iran" agreed with the study findings as showed that, the application of the Enrichment Program on Marital and sexual Satisfaction had improved marital and sexual satisfaction immediately post program and eight weeks after the program ($P < 0.001$). On disagreement of the current study [17] who conducted a study entitled "Evaluation of factors associated with sexual function in infertile women, Iran" indicated that other models such as ESEM model had significant effect in enhancing sexual health, satisfaction and psychosomatic state of women higher than BETTER model. From the researcher's point of view, the discrepancies in nursing instructions effectiveness regarding marital satisfaction might be due to the variations in women's community. While, in the current study, the improvement in marital satisfaction achieved through the educational methods such as a discussion in groups of women with the same infertility problems that made the women aware that infertility was a global problem and there were diversity of infertility treatments and this discussion in groups made the women more reassured and more satisfied.

Concerning the correlation between study parameters as regarding the correlation of age and age at the first menstruation with the calculated scores before and after nursing instructions, the current study revealed that, there was a negative correlation between age and arousal, lubrication, orgasm and satisfaction scores before the nursing instructions as increasing of the studied women age reduce arousal, lubrication, orgasm and satisfaction scores. In a similar vein, [38] in a study entitled "Effect of cognitive behavioural therapy on anxiety and depression of infertile women, Iran" observed a negative correlation between age and specific aspects of sexual function, aligning with the current study findings on arousal, lubrication, orgasm, and satisfaction. On disagreement [37] in a study entitled "Effect of preparation program on reducing anxiety level among women undergoing Assisted Reproductive Treatment Process, Egypt" who reported nuanced findings with age showing a positive correlation with sexual satisfaction among studied women. In addition, there was a strong positive correlation between age and psychological manifestations before nursing instructions. While, there was a strong negative correlation between age and somatic manifestations after nursing instructions. furthermore, there was a strong negative correlation between age and psychological manifestations after nursing instructions. [29] who conducted a study entitled "The Effect of Sexual Counselling Using BETTER Model on Sexual Function of Women with

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Infertility, Iran” aligned with the current study results who reported a strong negative correlation between age and somatic manifestations after nursing instructions. This suggests a potential pattern where younger individuals might exhibit more somatic manifestations compared to their counterparts post-nursing instructions. On the other side [40] who conducted a study entitled “Comparison of anxiety scores between unexplained primary and secondary infertile couples, Turkey” reported that there was no correlation between age and somatic manifestations neither before or after nursing instructions.

Regarding the correlation of years of marriage and years of infertility with the calculated scores before and after nursing instructions, the present study illustrated that, there was a negative correlation between years of marriage and a weak negative correlation between years of infertility and the sexual function indicator Mean scores before nursing instructions. while, there was a strong positive correlation between years of marriage and years of infertility and the sexual function indicator Mean scores after nursing instructions. [21] who conducted a study entitled “The Effect of BETTER-Based Sex Counselling on Sexual Quality of Life in Infertile Women: A Randomized Controlled Clinical Trial, Sexuality and Disability, Iran” aligned with the present study results, reporting a positive correlation between years of marriage and sexual satisfaction before nursing instructions. Their results suggested that, in some cases, longer marital durations were associated with higher sexual satisfaction. On the contrary, [25] who conducted a study entitled “The Effect of Sexual Education based on Sexual Health Model on the Sexual Function of Women with Infertility, Iran” and supported the idea that the duration of marriage could influence badly on sexual experiences.

As regards the correlation of anthropometric measurements with the calculated scores before and after nursing instructions, the current study revealed that, there was a strong negative correlation between Body Mass Index (BMI) and orgasm score before nursing instructions. Furthermore, there was a strong negative correlation between BMI and somatic and psychological manifestations after nursing instructions. While, there was a strong positive correlation between BMI and ENRICH scale total score after nursing instructions. On the same line Also, [21] in a study entitled “Factors associated with marital satisfaction in infertile couple: a comprehensive literature review, Iran” observed a strong positive correlation between BMI and overall relationship satisfaction as measured by the ENRICH scale. This suggests that the impact of BMI on relationship dynamics might be multifaceted. In contrast [38] in a study entitled “Effect of cognitive behavioural therapy on anxiety and depression of infertile women, Iran” reported no significant correlation between BMI and somatic and psychological manifestations after nursing instructions. So, the study emphasized potential variations in these associations across different populations. Also, [21] who conducted a study entitled “The Effect of BETTER-Based Sex Counselling on Sexual Quality of Life in Infertile Women: A Randomized Controlled Clinical Trial, Sexuality and Disability, Iran” reported conflicting results that there was a weak positive correlation between BMI and orgasm scores before nursing instructions.

Table (1): Distribution of the studied women according to their sociodemographic data (N= 60).

SOCIODEMOGRAPHIC DATA	No.	%
AGE (YEARS)		
≤ 25 years	30	50.0
> 25 years	30	50.0
Mean±SD	25.97 ±5.19	
Range		
PLACE OF RESIDENCE		
Rural	40	66.7
Urban	20	33.3
EDUCATIONAL LEVEL		
Can't read & write	4	6.7
Primary Education	8	13.3
Secondary Education	31	51.7
University Education	17	28.3
OCCUPATION		
Working	24	40.0
Not Working (housewives)	36	60.0

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Table (2): Distribution of the studied women according to their menstrual cycle history (n = 60).

HEALTH HISTORY	NO.	%
MENSTRUAL CYCLE HISTORY		
Menarche Age		
≤ 11 years	34	56.7
> 11 years	26	43.3
Mean±SD	11.45 ± 1.14	
Range	10 – 14	
Menstrual Cycle Nature		
Regular	30	50.0
Irregular	30	50.0
Bleeding Amount		
Little	3	5.0
Moderate	27	45.0
Abundant	30	50.0
Menstrual Cycle Duration		
Less than 3 days.	0	0
3-7 days.	40	66.7
More than 7 days.	20	33.3

Table (3): Distribution of the studied women according to their infertility treatment history & medical and surgical history (N = 60).

HEALTH HISTORY	No.	%
INFERTILITY TREATMENT HISTORY		
Years of Marriage (Years)		
≤ 7 years	35	58.3
> 7 years	25	41.7
Mean±SD	6.44 ± 5.04	
Range	1 – 15	
Years of Infertility (Years)		
≤ 4 years	41	68.3
> 4 years	19	31.7
Mean±SD	3.37 ± 2.09	
Range	1 – 9	
Previous An External Fertilization Process		
Once	4	6.7
More than once	0	0
No	56	93.3
MEDICAL AND SURGICAL HISTORY		
Suffering from Any Chronic Diseases		
Diabetes Mellitus	4	6.7
Pressure	12	20.0
Heart Disease	0	0
Rheumatism	0	0
No	44	73.3
Previous Surgeries		
Thyroidectomy	0	0
Appendectomy	9	15.0
Umbilical Hernia	8	13.3
Exploration (Endoscopic)	16	26.7
No	17	28.3
Abscess & cholecystectomy	10	16.7

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Table (4): Distribution of the studied women according to their anthropometric measurements (N= 60).

ANTHROPOMETRIC MEASUREMENTS	NO.	%
WEIGHT		
≤ 75 Kg	32	53.3
> 75kg	28	46.7
Mean±SD	74.03 ± 7.94	
Range	60 – 87	
HEIGHT		
≤ 165 cm	40	66.7
> 165 cm	20	33.3
Mean±SD	163.57 ± 5	
Range	155 – 176	
BODY MASS INDEX (BMI)		
Normal	8	13.3
Underweight	0	0
Overweight	52	86.7
Mean±SD	27.64 ± 2.34	
Range	23.05 – 31.25	

Table (5): Distribution of the studied women according to their knowledge about fertility before and after nursing instructions (N = 60).

WOMEN'S KNOWLEDGE ABOUT FERTILITY	BEFORE				AFTER				CHI-SQUARE	
	CORRECT		INCORRECT		CORRECT		INCORRECT		X ²	P-value
DEFINITION OF FERTILITY	N	%	N	%	N	%	N	%		
The natural ability to produce offspring.	24	40.0	36	60.0	50	83.3	10	16.7	23.831	0.000**
The ability to conceive a biological child.	17	28.3	43	71.7	45	75	15	25	26.162	0.000**
The couple's ability to conceive through normal sexual activity.	7	11.7	53	88.3	55	91.7	5	8.3	76.885	0.000**
The ability of an adult woman to produce fully mature eggs.	12	20.0	48	80.0	40	66.7	20	33.3	26.606	0.000**
Don't know.	7	11.7	53	88.3	0	0	60	100.0	7.434	0.006**
THE NATURAL WAYS TO IMPROVE FERTILITY										
A healthy weight.	4	6.7	56	93.3	55	91.7	5	8.3	86.724	0.000**
Regularly having sex.	2	3.3	58	96.7	43	71.7	17	28.3	59.769	0.000**
Avoid smoking and alcohol.	11	18.3	49	81.7	50	83.3	10	16.7	50.714	0.000**
Avoid drinking coffee.	13	21.7	47	78.3	45	75.0	15	25.0	34.171	0.000**
A healthy food.	5	8.3	55	91.7	0	0	60	100.0	5.217	0.022*
THE FACTORS THAT AFFECT A WOMAN'S FERTILITY										
Ghee.	2	3.3	58	96.7	55	91.7	5	8.3	93.868	0.000**
Skinny.	24	40.0	36	60.0	50	83.3	10	16.7	23.831	0.000**
Getting Older.	8	13.3	52	86.7	47	78.3	13	21.7	51.055	0.000**
Psychological Stress.	26	43.3	34	56.7	40	66.7	20	33.3	6.599	0.010**
THE EFFECT OF SEXUAL HEALTH ON FERTILITY										
Increased fertility.	8	13.3	52	86.7	56	93.3	4	6.7	77.143	0.000**
Decreased fertility.	5	8.3	55	91.7	43	71.7	17	28.3	50.139	0.000**
No effect.	11	18.3	49	81.7	57	95	3	5.0	71.81	0.000**
THE EFFECT OF OBESITY ON FERTILITY										
Ovulation defect.	25	41.7	35	58.3	54	90.0	6	10.0	31.158	0.000**
Irregular menstruation.	20	33.3	40	66.7	51	85.0	9	15.0	33.147	0.000**
Increased chances of miscarriage.	10	16.7	50	83.3	48	80.0	12	20.0	48.187	0.000**
Polycystic ovary syndrome.	7	11.7	53	88.3	42	70.0	18	30.0	42.254	0.000**

Statistically significance: X² = Chi-square test P-value: level of significance P>0.05: Non significant (NS); *P <0.05: Significant (S); **P <0.01: Highly significant (HS).

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Table (6): Distribution of the studied women according to their knowledge about infertility before and after nursing instructions (N= 60).

WOMEN'S KNOWLEDGE ABOUT INFERTILITY	BEFORE				AFTER				CHI-SQUARE	
	CORRECT		INCORRECT		CORRECT		INCORRECT		χ ²	P-value
DEFINITION OF INFERTILITY	N	%	N	%	N	%	N	%		
A disease affecting the reproductive system, whether in males or females.	18	30.0	42	70.0	53	88.3	7	11.7	42.254	0.000**
The inability to achieve pregnancy after 12 months or more of sexual intercourse.	13	21.7	47	78.3	47	78.3	13	21.7	38.533	0.000**
Inability to conceive despite having frequent sexual intercourse without using a condom for at least one year.	15	25.0	45	75.0	56	93.3	4	6.7	57.982	0.000**
The inability to have children after two years of normal sexual life.	12	20.0	48	80.0	55	91.7	5	8.3	62.484	0.000**
Don't know.	2	3.3	58	96.7	0	0	60	100.0	2.034	0.153
THE TYPES OF INFERTILITY										
Primary infertility.	16	26.7	44	73.3	50	83.3	10	16.7	38.923	0.000**
Secondary infertility.	24	40.0	36	60.0	57	95.0	3	5.0	41.368	0.000**
Don't know.	16	26.7	44	73.3	0	0	60	100	18.462	0.000**
THE DIAGNOSTIC TESTS FOR WOMEN INFERTILITY										
Laparoscopy.	16	26.7	44	73.3	48	80.0	12	20.0	34.286	0.000**
Endoscopy of the uterus and tubes.	20	33.3	40	66.7	52	86.7	8	13.3	35.556	0.000**
Examination of ovarian reserve.	17	28.3	43	71.7	49	81.7	11	18.3	34.478	0.000**
Hormonal examination.	25	41.7	35	58.3	60	100.0	0	0	49.412	0.000**
Don't know.	5	8.3	55	91.7	0	0	60	100.0	5.217	0.022*
THE DIAGNOSTIC TESTS FOR MEN INFERTILITY										
General physical examination and medical history.	5	8.3	55	91.7	45	75.0	15	25.0	54.857	0.000**
Semen analysis.	25	41.7	35	58.3	58	96.7	2	3.3	42.553	0.000**
Ultrasound imaging of the scrotum.	13	21.7	47	78.3	50	83.3	10	16.7	45.748	0.000**
Hormone level test.	20	33.3	40	66.7	54	90.0	6	10.0	40.752	0.000**
Don't know.	4	6.7	56	93.3	0	0	60	100.0	4.138	0.042*
INFERTILITY TREATMENT										
Stimulating ovulation with fertility drugs.	30	50.0	30	50.0	58	96.7	2	3.3	33.409	0.000**
Sperm retrieval.	22	36.7	38	63.3	54	90.0	6	10.0	36.746	0.000**
Performing surgery to restore fertility.	20	33.3	40	66.7	54	90.0	6	10.0	40.752	0.000**
Assisted reproductive technologies.	10	16.7	50	83.3	46	76.7	14	23.3	43.393	0.000**
Don't know.	2	3.3	58	96.7	0	0	60	100	2.034	0.154

Statistically significance: X² = Chi-square test P-value: level of significance P>0.05: Non significant (NS); *P <0.05: Significant (S); **P <0.01: Highly significant (HS).

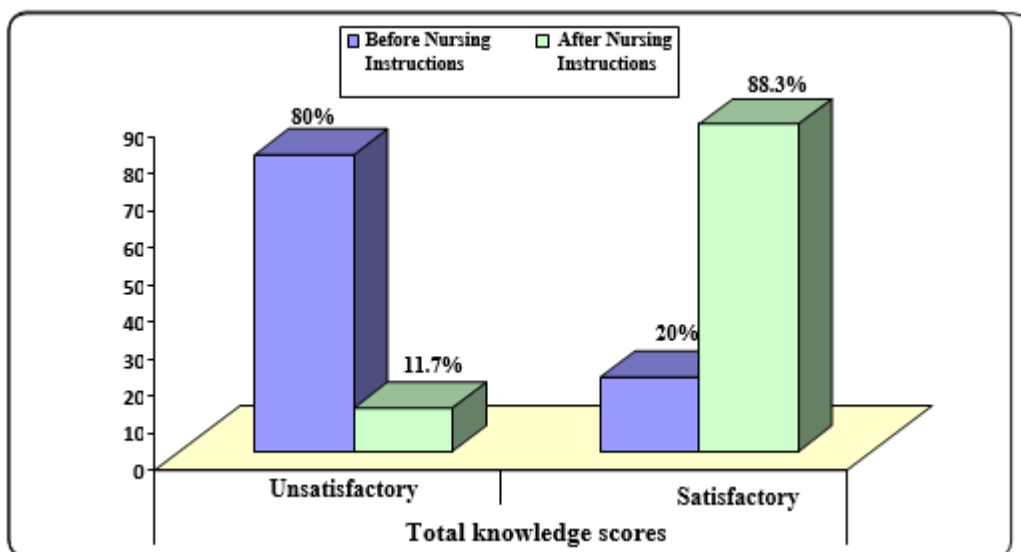


Fig. 1: Distribution of the studied women according to total knowledge scores (before & after nursing instructions) (N = 60).

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Table (7): Total sexual function indicator score (before and after nursing instructions) (N = 60).

THE SEXUAL FUNCTION DOMAINS		BEFORE NURSING INSTRUCTIONS	AFTER NURSING INSTRUCTIONS	PAIRED T-TEST	P-VALUE
		No. = 60	No. = 60		
Desire score	Mean±SD	2.7 ± 0.84	3.84 ± 0.53	-13.019	<0.001**
	Range	1.2 - 4.8	3 - 4.8		
Arousal score	Mean±SD	2.66 ± 1.03	3.81 ± 0.73	-11.757	<0.001**
	Range	1.2 - 4.8	2.4 - 4.8		
Lubrication score	Mean±SD	3.56 ± 0.97	4.68 ± 0.84	-13.377	<0.001**
	Range	1.8 - 5.7	3 - 5.7		
Orgasm score	Mean±SD	3.59 ± 1.12	4.7 ± 1	-13.424	<0.001**
	Range	1.6 - 6	2.8 - 6		
Satisfaction score	Mean±SD	3.84 ± 1.16	4.98 ± 1.03	-13.019	<0.001**
	Range	1.2 - 6	2.4 - 6		
Pain score	Mean±SD	2.8 ± 0.97	3.91 ± 0.75	-13.424	<0.001**
	Range	1.2 - 6	2.4 - 6		

Statistically significance: Paired t-test P-value: level of significance P>0.05: Non significant (NS); *P <0.05: Significant (S); **P <0.01: Highly significant (HS)

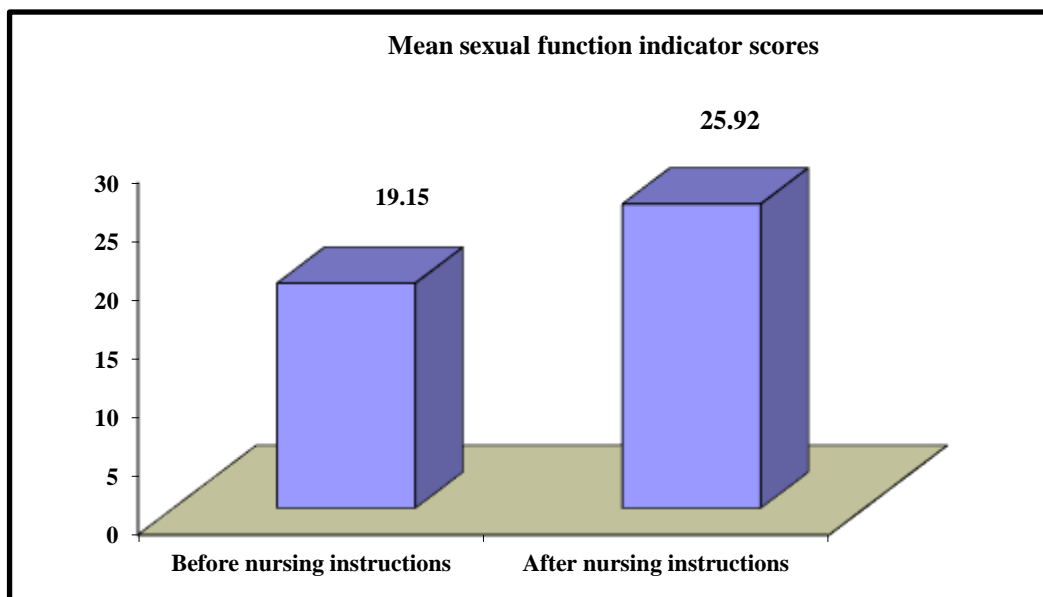


Fig.2: Mean sexual function indicator scores (before and after nursing instructions) (N = 60).

Table (8): Mean Taylor anxiety scale score (before & after nursing instructions) (N = 60).

TAYLOR ANXIETY SCALE		BEFORE NURSING INSTRUCTIONS	AFTER NURSING INSTRUCTIONS	PAIRED T-TEST	P-VALUE
		NO. = 60	NO. = 60		
		N	%		
Physical or somatic manifestations	Mean±SD	2.33 ± 1.19	1.82 ± 0.91	-2.627	0.011*
	Range	0 - 4	1 - 3		
Psychological manifestations	Mean±SD	35.83 ± 7.24	25.33 ± 6.68	10.579	<0.001**
	Range	15 - 41	15 - 38		
Mean Taylor Anxiety Scale score	Mean±SD	37.65 ± 7.1	27.67 ± 6.20	-10.868	<0.001**
	Range	17 - 44	17 - 39		

Statistically significance: Paired t-test P-value: level of significance P>0.05: Non significant (NS); *P <0.05: Significant (S); **P <0.01: Highly significant (HS).

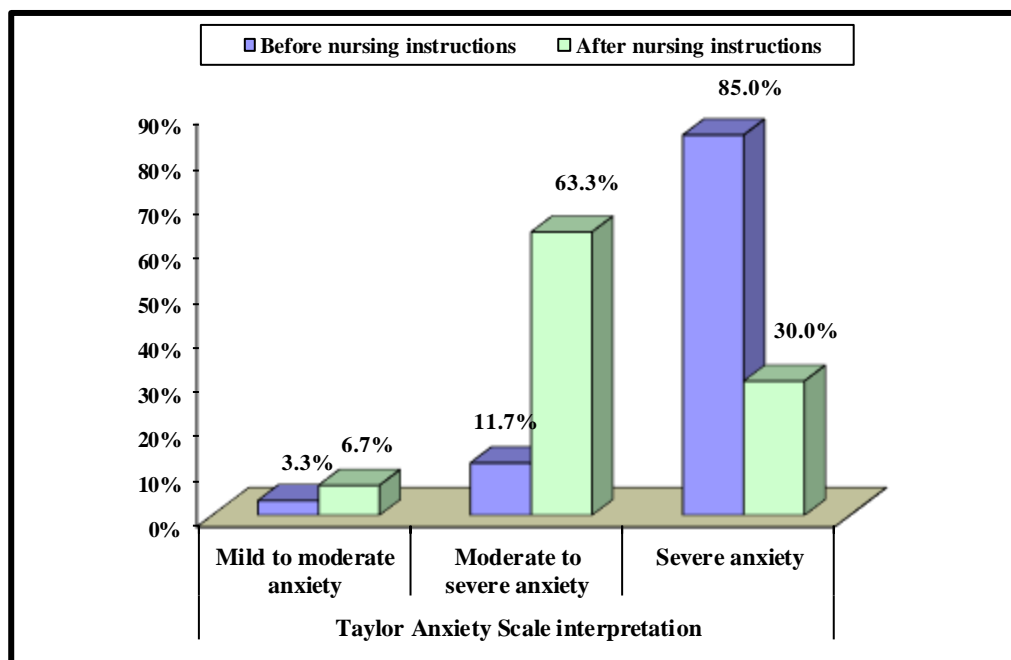


Fig.3: Total scores of Taylor anxiety scale interpretation (before and after nursing instructions) (N = 60).

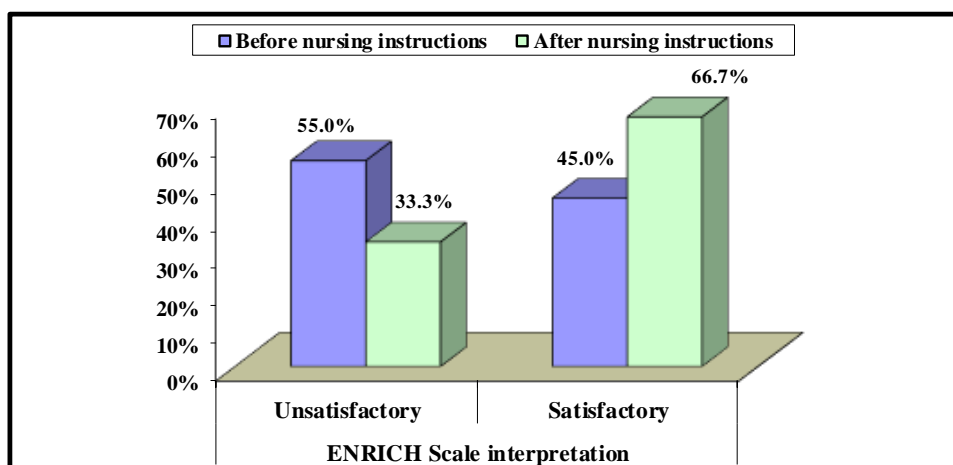


Fig. 4: Total scores of ENRICH scale interpretation (before & after nursing instructions) (N = 60).

Table (9): Correlation of age and age at the first menstruation with the calculated scores before and after nursing instructions (N = 60).

ITEMS	AGE		MENARCHE AGE	
	R	P-VALUE	R	P-VALUE
BEFORE NURSING INSTRUCTIONS				
The sexual function indicator Mean scores	-0.253	0.051	0.176	0.180
Desire score	-0.223	0.087	-0.069	0.599
Arousal score	-0.301*	0.020	-0.058	0.662
Lubrication score	-0.274*	0.034	0.279*	0.031
Orgasm score	-0.292*	0.023	0.365**	0.004
Satisfaction score	-0.300*	0.020	0.322*	0.012
Pain score	0.034	0.799	0.194	0.138

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Taylor anxiety Mean scores	0.437**	0.000	-0.006	0.962
Physical or somatic manifestations	0.170	0.195	0.145	0.268
Psychological manifestations	0.430**	0.001	-0.094	0.476
ENRICH scale total scores	0.241	0.064	0.261*	0.044
AFTER NURSING INSTRUCTIONS				
The sexual function indicator Mean scores	-0.146	0.267	0.446**	0.000
Desire score	0.527**	0.000	0.190	0.146
Arousal score	0.619**	0.000	0.157	0.230
Lubrication score	0.552**	0.000	0.464**	0.000
Orgasm score	0.727**	0.000	0.564**	0.000
Satisfaction score	0.631**	0.000	0.545**	0.000
Pain score	-0.542**	0.000	-0.527**	0.000
Taylor anxiety Mean scores	0.043	0.746	-0.122	0.353
Physical or somatic manifestations	-0.463**	0.000	-0.317**	0.002
Psychological manifestations	-0.524**	0.000	-0.671**	0.000
ENRICH scale total scores	-0.224	0.085	0.615**	0.000

P>0.05: Non significant (NS); P <0.05: Significant (S); P <0.01: Highly significant (HS) Spearman correlation coefficients.

Table (10): Correlation of years of marriage and years of infertility with the calculated scores before and after nursing instructions (N = 60).

ITEMS	YEARS OF MARRIAGE		YEARS OF INFERTILITY	
	R	P-VALUE	r	p-value
BEFORE NURSING INSTRUCTIONS				
The sexual function indicator Mean scores	-0.302*	0.019	-0.236	0.069
Desire score	-0.243	0.061	-0.202	0.122
Arousal score	-0.296*	0.022	-0.293*	0.023
Lubrication score	-0.322*	0.012	-0.227	0.082
Orgasm score	-0.327*	0.011	-0.243	0.062
Satisfaction score	-0.347**	0.007	-0.248	0.056
Pain score	-0.060	0.649	-0.003	0.980
Taylor anxiety Mean scores	0.417**	0.001	0.383**	0.002
Physical or somatic manifestations	0.605**	0.000	0.542**	0.000
Psychological manifestations	0.408**	0.001	0.360**	0.005
ENRICH scale total scores	0.160	0.222	0.277*	0.032
AFTER NURSING INSTRUCTIONS				
The sexual function indicator Mean scores	0.267**	0.039	0.297**	0.057
Desire score	0.615**	0.000	0.273*	0.038
Arousal score	0.742**	0.000	0.341**	0.009
Lubrication score	0.543**	0.000	0.326**	0.010
Orgasm score	0.615**	0.000	-0.247	0.057
Satisfaction score	0.425**	0.003	0.283*	0.030
Pain score	-0.527	0.000	-0.412**	0.000
Taylor anxiety Mean scores	-0.140	0.287	-0.186	0.155
Physical or somatic manifestations	-0.361**	0.005	-0.329*	0.010
Psychological manifestations	-0.436**	0.003	-0.344*	0.009
ENRICH scale total scores	0.625**	0.000	0.294*	0.020

P>0.05: Non significant (NS); P <0.05: Significant (S); P <0.01: Highly significant (HS) Spearman correlation coefficients.

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Table (11): Correlation of anthropometric measurements with the calculated scores before and after nursing instructions (N = 60).

ITEMS	WEIGHT		HEIGHT		BODY MASS INDEX (BMI)	
	R	P-VALUE	R	P-VALUE	R	P-VALUE
BEFORE NURSING INSTRUCTIONS						
The sexual function indicator Mean scores	-0.409**	0.001	-0.421**	0.001	-0.221	0.089
Desire score	-0.282*	0.029	-0.416**	0.001	-0.075	0.569
Arousal score	-0.367**	0.004	-0.460**	0.000	-0.137	0.295
Lubrication score	-0.467**	0.000	-0.435**	0.001	-0.290*	0.024
Orgasm score	-0.500**	0.000	-0.353**	0.006	-0.376**	0.003
Satisfaction score	-0.393**	0.002	-0.489**	0.000	-0.160	0.221
Pain score	-0.122	0.352	-0.100	0.449	-0.101	0.440
Taylor anxiety Mean scores	0.466**	0.000	0.400**	0.002	0.310*	0.016
Physical or somatic manifestations	0.111	0.398	-0.098	0.455	0.264*	0.042
Psychological manifestations	0.483**	0.000	0.434**	0.001	0.286*	0.027
ENRICH scale total scores	0.100	0.449	-0.041	0.757	0.195	0.136
AFTER NURSING INSTRUCTIONS						
The sexual function indicator Mean scores	0.422**	0.001	-0.374**	0.003	0.371*	0.004
Desire score	0.274*	0.034	0.402**	0.001	0.541**	0.000
Arousal score	0.388**	0.002	0.477**	0.000	0.377**	0.002
Lubrication score	0.430**	0.001	0.344**	0.007	0.298*	0.021
Orgasm score	0.492**	0.000	0.273*	0.035	0.410**	0.001
Satisfaction score	0.378**	0.003	0.417**	0.001	0.265*	0.032
Pain score	-0.636**	0.000	-0.613**	0.000	-0.515	0.000**
Taylor anxiety Mean scores	0.173	0.186	0.262*	0.044	0.075	0.570
Physical or somatic manifestations	-0.397**	0.002	-0.522**	0.000	-0.422**	0.001
Psychological manifestations	-0.416**	0.001	-0.395**	0.000	-0.527**	0.000
ENRICH scale total scores	0.387**	0.000	0.601**	0.000	0.522**	0.000

P>0.05: Non significant (NS); P <0.05: Significant (S); P <0.01: Highly significant (HS) Spearman correlation coefficients.

4. CONCLUSION

Based on the study findings, it was concluded that nursing instructions guided by BETTER model had a positive effect on sexual dysfunction, anxiety and marital satisfaction among infertile women. Moreover, there was a highly statistically significant difference between before and after nursing instructions regarding mean sexual function indicator scores and mean anxiety scores. Also, only about one third of the studied women had sever anxiety level after nursing instructions compared to the majority of the studied women had severe anxiety before nursing instructions. Furthermore, more than two thirds of the studied women had marital satisfaction after nursing instructions and the results of the current study supported the research hypothesis and achieved the aim of the study.

5. RECOMMENDATIONS

Based on the main study findings, the following recommendations are suggested:

- Reapplying nursing instructions guided by other models such as PLISSIT model for infertile women.
- Replicating the current study by using larger samples of the population and include more than one hospital with different affiliations in different regions in Egypt in order to generalize the findings.

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Recommendations for further studies:

- Applying regular periodical training programs based on sexual dysfunction, anxiety and marital satisfaction for nurses who are working in fertility clinics to provide proper counseling services for the infertile women.
- Guidelines for nursing about applying BETTER model for breast cancer's women must be made available in the hospital.

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