Marital, Sexual Satisfaction and Quality of Life among Post-hysterectomy Women: Impact of Nursing Counseling Guided by BETTER Model

Hanan Elzeblawy Hassan [1*], Walaa Khalaf Gooda [1], Tasneem RagabAhmed [2], Doaa Shehta Said Farag [3]

[1] Maternal and Newborn Health Nursing, Faculty of Nursing, Beni-Suef University, Egypt.
[2] Community Health Nursing, Faculty of Nursing, Beni-Suef University, Egypt.
[3] Maternal and Newborn Health Nursing, Faculty of Nursing, Helwan University, Egypt.
*Corresponding author: E-mail: nona_nano_1712@yahoo.com;

Abstract

Background: Hysterectomy, a challenging procedure that significantly impacts sexual function and women's quality of life, has received less attention in these areas. Sexual function deteriorates considerably post hysterectomy surgery. Decline can be noticed not just in the sexual relation frequency but also in the six dimensions of sexuality. Sexual function deterioration is most common and can result in unsatisfying sexual relations, low self-esteem, interpersonal issues, marital difficulties, and divorce, all of which lower quality of life. **Aim:** The study was conducted to evaluate the impact of nursing counseling using the BETTER model on marital, sexual satisfaction, and quality of life among post-hysterectomy women. **Subjects and Methods:** A quasi-experimental research design was used to study 45 women post-hysterectomy operations at Beni-Suef University Hospital in Egypt, using a purposive sample. The study utilized four tools, including a self-administered questionnaire, the ENRICH marital satisfaction scale, the Female Sexual Function Index (FSFI), and the quality of life enjoyment and satisfaction score. **Results:** The intervention improved women's marital satisfaction, sexual functioning, and quality of life enjoyment and satisfaction. Nursing counseling guided by the BETTER model also showed a positive association between the overall female sexual function index score and quality of life (P = 0.0001). **Conclusion:** The BETTER model-guided nursing counseling effectively improved post-hysterectomy women's marital satisfaction, sexual function, and quality of life, achieving the research's aim and hypotheses. **Recommendations:** Incorporate the BETTER sexual approach of a counselor for management of sexual dysfunction, psychological issues and handle sexual and mental health issues in all obstetrics and gynecological units.

Key word: Sexual satisfaction; quality of life; post-hysterectomy; counseling; BETTER Model

Introduction

"Hysterectomy is one of the most common gynecological surgical operations, in which the uterus is removed whole or partially. Although rates have started to decline in recent years, worldwide, hysterectomy is the second most common surgical procedure after caesarean section; about 300 out of every 100.000 women will undergo hysterectomy" (**Wan et al., 202**).

"The World Health Organization reports that about 20.0% of women who have hysterectomy postoperatively report a reduction in sexual function" (**WHO, 2019**). "Sexuality is a fundamental feature of the human person throughout life, and has significant implications for women physical, mental, and overall quality of life. Sexuality includes sexual orientation, gender, identities, and roles, as well as sex, intimacy, happiness, and reproduction. Also, sexuality is experienced in thoughts, fantasies, demands, beliefs, attitudes, values, activities, roles, and relationships. All aspects of sexuality are there, but not all are constantly felt or expressed" **(López et al., 2023; Ramadan et al., 2020).**

"Sexual function deteriorates considerably post hysterectomy surgery. Decline can be noticed not just in the sexual relation frequency but also in the six dimensions of sexuality (desire, arousal, lubrication, orgasm, satisfaction, and

sexual pain" (**Hassan et al., 2019**). "Sexual function deterioration is most common and can result in unsatisfying sexual relations, low self-esteem, interpersonal issues, marital difficulties, and divorce, all of which lower quality of life" (**Akhter et al., 2020; Nady et al., 2017; Nady et al., 2018; Mohammed et al., 2018**). "On the other hand, sexual satisfaction can increase closeness, warmth, trust, intimacy, support, and emotional communication between couples. It is significantly associated with sexual information in many aspects. However, the sexual life of women post hysterectomy is getting less attention due to sensitivity of the topic, misconceptions, decreased knowledge, and cultural, personal, or religious beliefs" (**Rokach et al., 2021**).

"Inhibited sexual desire is the issue with sexual dysfunction that affects post-hysterectomy women. It refers to a lack of sex-related sexual desire or interest. Lack of desire may be caused by hormonal changes, disorders, and anxiety. Dyspareunia can be caused by inadequate lubrication or infection" (**Hassan et al., 2021**). Managing psychological issues and sexual dysfunction will be more effective with supportive health education and counseling.

"Sexual oncology is a growing concern in nursing practice, with psychosexual counseling and education improving women's sexual function" (Molina-Mula & Gallo-Estrada 2020). "Oncology nurses must be sensitive to declining genital wellness" (**Badger et al., 2020; Abd El Salam et al., 2021; Hassan et al., 2021**). As well as Sexual counseling should be offered by the maternity nurse to improve women's sexual function and health, which are the mainstream of care after hysterectomy.

"Counseling is very important for the systematic evaluation of women's sexual lives, as well as the prevention of sexual dysfunction" [5]. "Chances for sexual adjustment are affected by nurses' advice of women's having hysterectomy. A woman should be advised to wait at least 6 weeks before engaging in sexual activity. By this period, tissue strength is sufficient, and full healing completely eliminates the risk of infection" (**Barber et al., 2022**).

"The assessment of sexual problems is a vital role for nurses to provide guidance related to post hysterectomy women and improvement of sexual activity. Nurses often struggle with communication with women, preventing comprehensive care. Incorporating relevant questions in nursing assessments allows women to discuss sexual health issues, promoting effective communication" (**Ibrahim et al., 2022**).

"About 80% of sexual problems can be solved if proper and adequate sexual health counseling is given. Several studies have shown that interviews based on the BETTER model reduce stress and anxiety and also, increase sexual satisfaction, as well as having a therapeutic effect on sexual functions" **(Shalamzari 2022).**

The BETTER counseling model, developed by Mick et al. (2004) assists oncology nurses in assessing sexual health and discussing sexual issues related to medical conditions. It improves sexual function through six phases, enhancing knowledge and sexual satisfaction **(Karimi et al., 2021)**

Significance of the Study

Hysterectomy surgery can significantly impact women's health, leading to increased depression, prolonged sadness, and low sexual function. Improving the quality of women's life in relation to health is crucial, but negative effects include hormonal changes and abdominal scars. Maintaining healthy sexual function and proper marital intercourse is essential for couples' wellbeing (**Alshawish, 2021; Korpe et al., 2022; Mohammadi-Zarghan & Ahmadi, 2021**).

Hysterectomy operations are performed globally, with over 500,000 in the US and 2-5 per 1000 in North America, Europe, Australia, and China for various causes (**Adam et al., 2023**). While in Egypt's, the hysterectomy incidence rate is 165.107 per year as reported by **Mahmoud et al., 2020**). Hysterectomy is linked to sexual dysfunction, with 34% of participants experiencing issues and 20%-40% of women with benign diseases experiencing worsening sexual function post-surgery (**Afiyah et al., 2020**).

Hysterectomies impact sexual life differently, with 20.0% of women experiencing impaired function post-excision, influenced by

age, menopause, chronic diseases, mental health, and surgery technique (**Peksoy Kaya & Terzioğlu, 2024**). According to **Ibrahim & Mohammed (2020),** 52.8% of Egyptians experience sexual dysfunction following hysterectomy. This indicates that a sizable proportion of Egyptian women are affected by the issue that has been raised (**Ibrahim & Mohammed, 2020).**

This research aims to explore the impact of nursing counseling guided by the BETTER model on marital, sexual satisfaction, and quality of life among post-hysterectomy women in Egypt, addressing barriers and false beliefs about sexual issues in Egyptian culture.

Operational Definitions

A BETTER counseling model: a way to treat sexual problems with women in oncology. Comprise six elements, such as: (Bring up): The counselor brings up the subject of having sex with the woman. (Explain): The therapist discusses the significance of sexual issues and how they affect one's quality of life. (Tell): The therapist promises to provide the woman all the information she needs to understand sexual difficulties. (Timing): The counselor sets the hour for counseling. (Education): The counselor clarifies any misunderstandings the lady may have regarding changes in sexual function following a hysterectomy. (Record): The counselor keeps a record of the crucial details of their conversations, assessments, and actions **(Mick et al., 2004).**

Sexual function: Sexual function refers to how women react to changes of hysterectomy in different stages of the sexual response cycle. Distorted sexual function after hysterectomy has a significant impact on women's satisfaction and feeling of inadequacy. So, it is an essential part of a good quality of life to have sexual satisfaction **(Nady et al., 2018; Mohammed et al., 2018).**

Sexual dysfunction: defined as a challenge that one or more people encounter during a specific stage of sexual engagement, involves desire, arousal, or orgasm **(Hassan et al., 2019).**

Marital satisfaction: The state in which husband and wife have a feeling of happiness and satisfaction with each other most of the time and a satisfying relationship can be assessed through mutual interest, mutual care, acceptance, and mutual understanding. For most adults, happiness in life mostly depends on successful marriage and satisfactory marital adjustment **Hassan et al., 2019).**

Quality of life: defined as individuals' view of place in life in relation to objectives, expectations, standards, and worries, as well as the culture and value system in which individuals live. "Quality of life is a wide notion that is intricately influenced by a person's physical and mental well-being, amount of independence, social connections, and interaction with key elements of the environment" **(Nady et al., 2018; Mostafa et al., 2018).**

Aim of the Study

The current study is conducted to evaluate the impact of nursing counseling guided by BETTER model on marital, sexual satisfaction, and quality of life among post-hysterectomy women. This aim will be achieved through:

1.Assess marital, sexual satisfaction, and quality of life among Post hysterectomy women.

2.Construct a nursing counseling guided by BETTER model about marital, sexual satisfaction, and quality of life among post hysterectomy women and according to women's needs.

3.Implement a nursing counseling guided by BETTER Model on marital, sexual satisfaction, and quality of life among post-hysterectomy women.

4.Evaluate the impact of nursing counseling guided by BETTER model on marital, sexual satisfaction, and quality of life among Post-hysterectomy women.

Study Hypotheses:

H1: Post hysterectomy women who receive nursing counseling guided by a BETTER model will enhance levels of marital satisfaction after the intervention compared to those who will

not receive it.

H2: Post hysterectomy women who receive nursing counseling guided by a BETTER model will enhance sexual satisfaction more than those who will not receive it.

H3: Post hysterectomy women who receive nursing counseling guided by a BETTER model will enhance their quality of life in terms of health more than those who will not receive it.

MATERIALS AND METHODS

Research Design

The study used a quasi-experimental design, a pre-post intervention approach, to assess cause-and-effect relations and operate the level of an independent variable (Gopalan et al., 2021).

Study Setting

This study was conducted at the Obstetric and Gynecological Department and outpatient clinic at Beni-Suef University Hospital, representing Beni-Suef City, Egypt. Justifications given for choosing the previously mentioned location include the fact that it takes into account the primary public hospital and welcomes numerous individuals, including women visiting with various socio-demographic traits, to acquire BETTER health services from various districts in Beni-Suef city.

Type of sample

A purposive sample was chosen from the above mentioned study setting.

Sample size

The sample consisted of 45 women who underwent hysterectomy operations who met the criteria presented to the aforementioned settings during the research period and met the inclusion criteria.

Inclusion criteria

- Married and have an active sexual relationship.
- Don't use medicines that have an impact on sexual health.
- Women are free from psychological disorders or chronic diseases and did not using antidepressant medications.
- Women are free from complications during or after the operation.

Exclusion criteria

- Women suffering from cancer and/or receiving chemotherapy treatment.
- Women undergoing any therapies aimed at improving quality of life should be excluded.

Tools of Data Collection

Four main tools were utilized in collecting data:

Too I: self-administrated questionnaire. (pre/post intervention)

It was constructed by the researcher after reviewing the related literature (Carlin et al., 2021; Barber et al., 2022). They translated into simple Arabic language, which comprised two main parts:

Part (1): Socio-demographic characteristics of women in the study, used to collect women's general characteristics such as (age, residence, occupation, level of education, telephone number).

Part (2): History of hysterectomy as a type of hysterectomy and indication of hysterectomy, cause of hysterectomy, and previous surgical procedures).

Tool II: ENRICH Marital Satisfaction Scale

A reliable instrument adopted from Fowers et al., (1993) and used to determine women's marital satisfaction level after hysterectomy. The scale consisted of 15 items, which are given a score based on a Likert scale with five possible responses (1 being strongly disagree, 2 being moderately disagree, 3 being

neither agree nor disagree, 4 being moderately agree, 5 being strongly agree). The total score was calculated by summing up the score of each item that ranged from 15-75 and verified into three categories:

- **High Satisfaction:** ≥75% (scores between 57 and 75).
- **Partial Satisfaction:** 50-75% (scores between 37 and 56).
- **Un-Satisfaction:** <50% (score less than 37).

Tool III: Female Sexual Function Index (FSFI)

Adopted from Rosen et al., (2000) and translated into Arabic to suit women's level of understanding, the Arabic (FSFI) tool was tested for validity and reliability and was locally accepted to be used in the assessment of Egyptian female sexuality by Anis et al., (2011). The FSFI is a brief six-item self-administered questionnaire designed to assess the main elements of women's sexual function after hysterectomy as desire, arousal, orgasm, lubrication, satisfaction, and pain. It consists of 19 questions to detect and evaluate female sexual function according to the following.

▪ **Desire domain** (questions 1, 2) included times of feeling sexual desire and level of sexual desire.

▪ **Arousal domain** (questions 3, 4, 5, 6) included times of feeling sexually aroused during sexual activity, level of being sexually aroused, the confidence of becoming sexually aroused at the sexual activity, and satisfaction with arousal during sexual intercourse.

▪ **Lubrication domain** (questions 7,8,9,10) included frequency of becoming lubricated or difficulty of becoming lubricated during sexual activity or intercourse, frequency of being lubricated until completion of sexual activity, and difficulty of being lubricated until completion of sexual activity or intercourse.

▪ **Orgasm domain** (questions 11,12, 13) included frequency of experiencing orgasm, difficulties of reaching orgasm, and pleasure with the ability to reach orgasm during sexual activity.

▪ **Satisfaction domain** (questions 14, 15, 16) included satisfaction with the degree of emotional closeness with a husband, satisfaction with a sexual relationship with a husband, and satisfaction with overall sexual life among husbands.

▪ **Sexual Pain domain** (questions 17,18,19) included the frequency of pain or discomfort during vaginal penetration, frequency of pain or discomfort following vaginal penetration, and the severity of pain during or following vaginal penetration.

Scoring system

- Scores range from either 0 (no sexual activity) or 1 (sexual dysfunction) to 5 (suggestive of normal sexual activity), A score of 0 or 1-5 was assigned to sexual satisfaction. A score of zero indicated that the woman had not engaged in any sexual activity in the preceding four weeks. A higher score indicated better sexual function.

- Adding the scores of the questions to make up the domain and multiplying the total by the domain factor, so give the domain score (i.e., desire is 0.6, arousal and lubrication are 0.3, and orgasm, satisfaction, and pain are 0.4).

- The overall score of sexual function was recorded using a Likert scale, the minimum score attainable is 1 and the maximum is 95, depending on the item and how confident the women were about being sexually aroused during sexual activity or intercourse.

List 1: Scoring system for sexual activity or intercourse

Domain	Questions	Score variation	Factor	Total Score
Desire	1,2	1-5	0.6	10
Arousal	3,4,5,6	0-5	0.3	20
Lubrication	7,8,9,10	0-5	0.3	20
Orgasm	11,12,13	0-5	0.4	15
Satisfaction	14,15,16	0 (or1) – 5*	0.4	15
Pain	17,18,19	0-5	0.4	15
Total scale Score variation =		1: 95		95

Range for item 14=0-5; Range for items 15 & 16 = 1-5.

The higher score indicated better sexual function, and the lower score indicated poor sexual function. Normal female sexual function was determined when the total scores were more than 25, and female sexual dysfunction was determined when the total score was less than 25.

Tool IV: Quality of Life Enjoyment and Satisfaction Questionnaire-Short Form (Q-LES-Q-SF)

Adopted from Endicott et al., (1993) and translated into Arabic to suit women's level of understanding, designed to assess the level of satisfaction and enjoyment in various daily activities of women after a hysterectomy operation. The scale consisted of 16 items. Overall, 15 general activity items and one item measuring overall life satisfaction make up the QLES-Q-SF. The general activity items and the overall life satisfaction items are combined to produce a final score. Scores for state of satisfaction vary from 16 to 80 on a five-point scale. Higher scores suggest higher happiness or enjoyment. The intra-class correlation coefficient was 0.87, while Cronbach's alpha was 0.75.

Quality of Life Enjoyment and Satisfaction score.

- **Good:** more than or equal to 75%.
- **Fair:** more than or equal to 50 to less than 75%.
- **Poor:** less than 50%.

Tools Validity

A panel of 5 experts in the field of maternity, obstetrics, and gynecological nursing evaluated the validity of the questionnaires to determine the clarity, relevance, comprehensiveness, and applicability of the tools. Moreover, Rosen et al., (2000) confirmed the validity of the female sexual function index (FSFI) for the English form and Anis et al., (2011) for the Arabic form..

Tools Reliability

Reliability was calculated by Cronbach's alpha coefficient test, and the internal consistency of the ENRICH marital satisfaction scale (Tool II) was 0.939, the FSFI tool (Tool III) was $\alpha = 0.85$ and Quality of life enjoyment and satisfaction (Tool IV) was $\alpha = 0.98$. Hence the questionnaires were found to be highly reliable.

Pilot Study

A pilot study on five women, 10% of cases, assessed sheet completion time, tool simplicity, clarity, viability, relevance, and practicality. No changes were made, retaining the women in the total sample.

Consent and ethical approval

The research was approved at Beni-Suef University's Faculty of Medicine ethical committee (Ref. No: FMBSUREC/07072024). An official consent from selected settings was obtained. Women were informed about the study's purpose, signed informed consent, and confidentiality was maintained. Confidentiality was maintained, and data was used only for research purposes. The study had no negative effects on women's physical, social, or psychological health.

Field Work

Data were collected from the Obstetrics and Gynecological Department and outpatient clinic at Beni-Suef University Hospitals, spanning three days per week. The research involved preparatory, interviewing, data gathering, planning, intervention, and evaluation phases, covering a period from July to December 2024.

Phase I (preparatory phase)

The researchers reviewed literature, developed research tools, and prepared a nursing counseling program for post-hysterectomy women using the BETTER model. They developed teaching methods and prepared an Arabic booklet.

Phase (1I): Interviewing and data gathering phase

The research involved interviewing qualified women after a hysterectomy operation to gather data. The researcher used four tools to

gather data. The first tool collected personal information; the second tool was the ENRICH marital satisfaction scale to determine marital satisfaction; the third one was called the FSFI that examined sexual function; and the final tool, the Q-LES-Q-SF, provided health-related quality of life issues. Interviews were conducted with 4-6 women weekly, taking 30 to 45 minutes for each one.

Phase III (Planning phase)

General and specific objectives were designed; the content of the nursing counseling guided by the BETTER model for post hysterectomy women was designed to enable the following objectives:

General objectives

The basic goal was to enhance, marital fulfillment, women's sexuality and healthiness-related quality of life through the use of nursing counseling guided by the BETTER model among post hysterectomy women.

Specific objectives

At the end of the program sessions, women should be able to:

- Explain the anatomy and physiology of the women reproductive system.
- Function of uterus.
- Specify hysterectomy (definitions, types, causes, methods, and complications).
- Explain misconceptions associated with hysterectomy.
- Explain physical and psychological problems post hysterectomy operation.
- Explain sexual problems post-hysterectomy.
- Explain sexual function, physiology of sexual response in men and women, and societal myths related to sexuality after hysterectomy.
- Explain the effect of hysterectomy on marital satisfaction, sexual life, and healthiness-related quality of life.
- Information to improve the psychological status after hysterectomy.
- The use of nursing counseling guided by the BETTER model among post hysterectomy women

The researcher initiated counseling sessions a month after surgery, using the BETTER model principles (Bring up, Explain, Tell, Time, Educate, and Record). Strategies included discussion, demonstration, re-demonstration, and role-playing in Arabic. Educational materials, such as booklets and images, were prepared. The researcher established counseling times and frequency for selected women.

Phase IV (the intervention phase) (program implementation)

The implementation phase involved using nursing counseling guided by the BETTER model in a scientific field (Quinn & Happell 2012). Women participated in individual sessions, lasting 2 hours each. The researcher ensured comfort, and some women attended seminars alone to discuss sexual concerns without shame. The sessions were classified as follows:

Stage 1: Bring up

The first session (theoretical); the researcher introduced the BETTER model to women, discussing counseling sessions, objectives, and sexual issues. They encouraged open discussions about intimacy and relationships post-hysterectomy operation.

Stage 2: Explain

The researcher discussed sexuality with women, emphasizing its importance in life. Topics covered included sexual function, physiology, and myths. The session also covered hysterectomy definitions, treatments, complications, and post-hysterectomy issues. The researcher emphasized emotional support and the impact of sexual problems on marital satisfaction and psychological well-being.

Stage 3: Tell

At the second session, the researcher advised women that if the intervention was not effective in helping problems, they would be referred to another professional who can help them.

Stage 4: Time

The researcher makes sure that the timeline for women is appropriate. Otherwise, the session can be rescheduled for a later time.

Stage 5 Educate

The third session focused on post-hysterectomy sexual issues, educating women on the female reproductive system, sexual therapy, reducing pain, increasing orgasm, and natural methods. The session also highlighted the importance of regular exercise, healthy nutrition, enhancing sexuality through communication, Kegel exercises, and lubricants, and relaxation techniques to reduce anxiety and stress. Women were advised to wait at least 6 weeks before engaging in sexual activity to ensure full healing and infection prevention.

Stage 6: record

At the fourth session, the counseling process was completed. All notes during previous sessions should be recorded, as should any interventions given to participating women at the conclusion of each session. An Arabic booklet was used to inform women of the training sessions' contents.

The counseling process was completed in the fourth session, with notes and interventions recorded and an Arabic booklet provided to women for information.

The break phase involved telephonic women for follow-up sessions and evaluation, promoting engagement in education. Researchers assured women to call for further discussion, either via phone or mobile communication programs.

Phase V: Evaluation phase

The BETTER model intervention was evaluated after three months, using marital satisfaction scales, women's sexual function index (FSDI), and The Q-LES-Q-SF, to assess women's sexual life outcomes and perceptions.

Statistical Analysis

The study used SPSS software to analyze data, test hypotheses, and compare characteristics of women. Descriptive statistics were used to describe characteristics, while Wilcoxon sign-ranked test was used to compare non-normally distributed variables. Fisher exact test or Chi-square test evaluated categorical variables. Pearson's correlation coefficient was used to compare ordinal data. All tests were two-sided, with P values less than 0.05 considered statistically significant.

Results

Table 1 clarifies that more than one-third of the studied women (37.8%) were in the age group ≥50 years with a mean age of 45.66±9.95 years. Nearly two-fifths of studied women (42.2%, 40.0%, and 44.4%, respectively) just completed secondary school, housewives, with the duration of marriage from 10 to 15 years. More than two-thirds (68.9%) lived in urban areas. Finally, three-fifths (60.0%) had not enough money to cover their basic needs.

Table 2 Reveals that nearly half of the studied women (48.9%) had abnormal uterine bleeding due to hysterectomy causes. Subtotal and abdominal hysterectomy (48.9% and 73.3%, respectively) was the most popular hysterectomy technique.

The impact of nursing counseling applied in accordance with the BETTER model on studied women's marital satisfaction was depicted in Figure 1. It showed that there was an improvement in the degree of women's marital satisfaction after intervention, as 24.4% of studied women reported a low level of marital satisfaction post-intervention compared to 55.6% of the studied women pre-intervention.

Table (3) shows the sexual dysfunction items among the studied women pre- and post-intervention of nursing counseling guided by the BETTER model. The table shows that most studied women exhibited decreased desire, decreased arousal, decreased lubrication, increased sexual unhappiness, and dyspareunia pre-intervention. Every element of sexual function showed a statistically significant

improvement, except for orgasm, as 55.6%, 35.6%, 53.3%, 55.6%, and 42.2%, respectively, had decreased desire, decreased arousal, decreased lubrication, sexual dissatisfaction, and dyspareunia post-intervention.

Table 4 demonstrates a marked improvement in sexual function following the intervention of nursing counseling guided by the BETTER model. Also, sexual functioning improved statistically significantly after the intervention, with 24.4% of women becoming sexually active, compared to only 13.3% of women before the intervention, and with 35.6% of women experiencing sexual dysfunction, as opposed to 55.6% of women before the intervention.

Table 5 declare a significant improvement in quality of life enjoyment and satisfaction (P = 0.0001) in the mean ± SD of quality of life enjoyment and satisfaction pre/post intervention; 25.7±12.9 and 40.6 ± 16.7, respectively) among women after nursing counseling guided by the BETTER model, with 15.6% reporting good levels of enjoyment and satisfaction compared to 0.0% before intervention.

Table 6 reveals that, nursing intervention significantly positively correlated with the overall female sexual function index score and quality of life after its adoption.

Table 7 shows 66.7% of post-hysterectomy women improved their health perception, with potential benefits including knowledge, self-awareness, and motivation to change behaviors like exercise.

Table 1. Distribution of the studied women regarding socio-demographic characteristics (n=45)

Variables		N =45	%
Age (years)			
< 30 year		7	15.6
30 < 40 year		10	22.2
40< 50 years		11	24.4
≥ 50years		17	37.8
Mean ± SD	45.66±9.95		
Range	29–54		
Residence			
Urban		31	68.9
Rural		14	31.1
Educational level			
Read and write		3	6.7
Primary education		10	22.2
Secondary education		19	42.2
University education		13	28.9
Occupation			
Employee		27	60.0
Housewife		18	40.0
Duration of marriage (years)			
5 – 9 year		17	37.8
10 – 15 year		20	44.4
> 15 year		8	17.8
Income			
Enough		18	40.0
Not enough		27	60.0

Table 2. Distribution of the studied women regarding the history of hysterectomy

Variables	N =45	%
Causes of hysterectomy		
Cancer	1	2.2
Uterine fibroids	6	13.3
Endometriosis	3	6.7
Abnormal uterine bleeding	22	48.9
Pregnancy or delivery-related causes	11	24.4
Uterine prolapse	2	4.4
Surgical techniques for hysterectomy		
Abdominal	33	73.3
Vaginal	7	15.6
laparoscopy	5	11.1
Type of hysterectomy		
Total	8	17.8
Subtotal	22	48.9
Hysterectomy with bilateral salpingo-oophorectomy	15	33.3

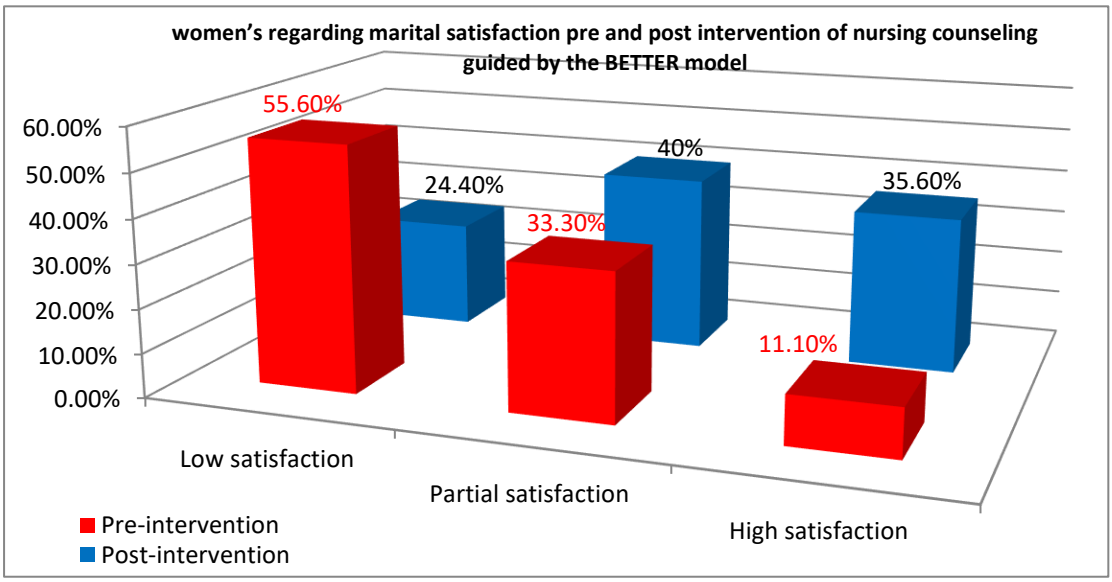

Fig. 1. Percentage distribution of studied women's regarding marital satisfaction pre and post intervention of nursing counseling guided by the BETTER model

Table 3. Distribution of the studied women regarding sexual dysfunction items pre and post intervention of nursing counseling guided by the BETTER model (n=45)

	Pre-intervention		Post-intervention		Fisher's	p-value
Variable	**No**	**%**	**No**	**%**	**Exact test**	
Decrease desire	34	75.6%	25	55.6%	5.88	0.0060
Decrease arousal	26	57.8%	16	35.6%	8.46	0.007 0
Decrease lubrication	37	82.2%	24	53.3%	11.40	0.0020
Orgasm failure	29	64.4%	20	44.4%	7.41	0.1040
Sexual dissatisfaction	33	73.3%	25	55.6%	4.66	0.0140
Dyspareunia	*27*	*60.0%*	*19*	*42.2%*	*6.87*	*0.0060*

Fisher's Exact t test P value less than 0.05 significant, P value more than 0.05 no significant

Table 4. Percentage distribution of the studied women regarding sexual function score pre and post intervention of nursing counseling guided by the BETTER model (n=45)

Variable	Pre-intervention		Post-intervention		X^2	p-value
	No	%	No	%		
Sexually active	6	13.3%	11	24.4%		
Average sexual function	14	31.1%	18	40.0%	11.70	0.003
Sexual dysfunction	25	55.6%	16	35.6%		

X2 (Chi-square test); P value less than 0.05 significant

Table 5. Quality of life enjoyment and satisfaction among studied women pre and post intervention of nursing counseling guided by the BETTER model (n=45)

Variable	Pre-intervention		Post-intervention		W	p-value
Quality of life enjoyment and satisfaction						
Mean ± SD	25.7±12.9		40.6±16.7		4.72	0.0001
Range	3.53–50		25–75			
Quality of life enjoyment and satisfaction level						
Poor	41	(91.1%)	26	(57.8%)		
Fair	4	(8.9%)	12	(26.7%)		
Good	0	(0.0%)	7	(15.5%)		

W, Wilcoxon sign rank test; P value less than 0.05 statistically significant;

Table 6. Correlation between women sexual function index score and quality of life pre intervention and Post intervention of nursing counseling guided by the BETTER model (n=45)

Quality of life	FSFI score	
	r	P
Pre intervention	0.086	0.485
Post intervention	0.362	0.015*

FSFI, Female Sexual Function Index **Significant* *r, correlation coefficient.*

Table 7. Health perceptions of studied women concerning changes that occurred post intervention (N=45)

Variables	N =45	%
Perception of health		
Improvement in women impression of health.	30	66.7
Knowledge		
Increased knowledge	27	60.0
Improve sexual performance post intervention	31	68.9
Self-awareness		
The pelvic floor musculature was better	24	53.3
Began to pay more attention to body	33	73.3
Practice pelvic floor exercises		
Increased self-confidence in relation to husband and felt more confident doing the PF exercises	29	64.4
Performs exercises and reduced sexual dysfunction	34	75.6
Motivation to practice physical exercise	28	62.2

Discussion

Hysterectomy affects every aspect of women's life, including sexual function and relationships. The impact of hysterectomy on women's marital, sexual function, and quality of life is a topic of growing interest. Negative sexual function after hysterectomy is mostly brought on by physical, functional, and anatomical changes, lifestyle challenges brought on by possible surgical complications (**Barber et al., 2022**).

Additionally, hysterectomy causes substantial emotional suffering like depression and a detrimental impact on intimate relationships, all of which lower one's life quality (**Stanca M et al., 2022**). Therefore, the aim of the current research was to evaluate the impact of nursing counseling guided by the BETTER model on marital, sexual satisfaction, and quality of life among post-hysterectomy women.

The present research findings describe the socio-demographic characteristics of the studied women and reveal that women's ages ranged between 29 and 54 years; more than one-third of the studied women were in the age group ≥ 50 years old, with a mean age of 45.66±9.95 years. Also, nearly two-fifths of studied women just completed secondary school, housewives, and with the duration of marriage from 10 to 15 years. More than two-thirds lived in urban areas. Additionally, three-fifths of the studied women had not enough money to cover basic needs. Therefore, this conclusion may be the result of cultural considerations.

This result is consistent with **Abd-El Gwad et al. (2020),** who conducted research in Egypt about "Body image, self-esteem, and quality of sexual life among women following hysterectomy" and reported that the majority of the studied women were 55-65 years old, and housewives. These results also matched with **Afify et al., (2022)** in Egypt, who showed that nearly half of the studied group were in the age group ≥50 years, more than half were housewives, approximately two-fifths had secondary education, and more than two-thirds lived in urban areas. From the researchers' point of view, this accordance was related to the same demography of the researches, which reflects the same cultures and characteristics.

On the other hand, results of the current research contradict **Ibrahim & Mohammed (2020)** at Ain Shams University, who conducted a study titled "Effect of nursing instructional guidelines on women's quality of life after hysterectomy added that the majority of women's were between the ages of 41 and 49.

Regarding the history of hysterectomy, the current research findings clarified that nearly half of the studied women had abnormal uterine bleeding as hysterectomy causes, and subtotal abdominal hysterectomy was the most popular hysterectomy technique. These findings were in accordance with **Webb-Tafoya (2021),** who represented that, nearly half of the studied women had a diagnosis of abnormal uterine bleeding as the main cause of hysterectomy. From the researcher's point of view, this might be related to the fact that the first symptoms-heavy or irregular bleeding-appeared to the woman without the need for a doctor, while the mining symptoms that require a visit to the doctor are experienced by the majority of women.

According to the results of the current research, subtotal abdominal hysterectomy was the most popular hysterectomy technique. This was in agreement with **Rehan et al. (2023)** in Menoufia, which mentioned that subtotal abdominal hysterectomy was the most popular hysterectomy technique.

From the researcher's point of view, this may be due to abdominal hysterectomy being the safest technique of hysterectomy, having fewer complications and total hysterectomy making women have early menopause. Also, it may be due to the cause of the hysterectomy and the doctor's decision.

In contrast, **Vilkins et al. (2020),** who conducted a study in Michigan titled "Effects of shared decision-making on opioid prescribing following hysterectomy," found that total laparoscopic hysterectomy was the most popular kind of hysterectomy.

Concerning marital satisfaction pre and post intervention of nursing counseling guided by the BETTER model, the present research findings demonstrated that preceding the intervention, more than half of women reported poor marital satisfaction, as well as there was an improvement in the degree of women's marital satisfaction after intervention. From the researchers' point of view, the sexual relationship between any couple is instinctive and natural. This relationship may be a successful relationship or suffer from some problems. Therefore, it is natural that sexual desire, arousal, lubrication, orgasm, and satisfaction affect marital satisfaction, either positively or negatively for both spouses.

The lack of marital satisfaction can be related to many factors, such as shame, embarrassment, and a lack of women's knowledge to discuss these issues with other people. Also, many people consider talking about such issues taboo. However, post-attendance of the nursing counseling sessions utilizing the BETTER model application that involved different teaching methods and by using simple clear Arabic language, a significant improvement in marital satisfaction had occurred.

Women have troubles in numerous communities regarding sexual confidence, self-respect, and difficulty to precise concerns or keep up autonomy in marital connections. Subsequently, counseling models involving the BETTER model were utilized to empower post-hysterectomy women to talk about sexual matters with medical teams **(Mohammadi-Zarghan & Ahmadi (2021).**

The World Health Organization believes that it is important to understand and help with sexual problems and concerns; also, it is important to educate couples about sexual problems so can be treated better. However, sexual health is often ignored by doctors and nurses **(WHO, 2017).**

These findings are in agreement with the results of the study carried out by **Shahin et al. (2021),** in Egypt, who have similarly reported that counseling based on BETTER model had a significant effect in enhancing sexual health, satisfaction, and psychosomatic state of women with breast cancer and declared that BETTER model can be utilized in chronic states as it is simple and stressed on sexual aspects.

Moreover, **Karimi et al. (2021)** distinguish between BETTER and PLISSIT counseling models, regarding the sexual assertiveness of women who had sexual troubles following labor and illustrate that the BETTER model had an effect than the PLISSIT model in enhancing women's sexual assurance, and results supported the findings of the study.

The above-mentioned results supported the first study hypothesis, which stated that "Post-hysterectomy women who receive nursing counseling guided by a BETTER model will enhance levels of marital satisfaction after the intervention than those who will not receive it".

According to the current research findings, most studied women exhibited decreased desire, decreased arousal, decreased lubrication, increased sexual unhappiness, and dyspareunia pre-intervention; this may be related to embarrassment, lack of access to information, low education about sex, and ignorance of communication about sexual concerns by the health care provider.

Parallel with the present research findings in line with **Zarghan et al. (2021),** who studied "Marital adjustment, sexual function, and body image after hysterectomy," illustrated that marital adjustment and sexual function decrease after hysterectomy". In this respect, **Masaud et al. (2021,)** who studied "Impact of protocol of nursing intervention on sexual dysfunction among women with cervical cancer" stated that, the majority of women had sexual dysfunction at pre-intervention.

These results were congruent with **Cruz e al. (2020),** In Brazil, who studied "Sexual function and stress urinary incontinence in women submitted to total hysterectomy with bilateral oophorectomy", it was observed that women who had undergone total hysterectomy had FSFI scores below the cutoff point and were at a higher risk of developing sexual dysfunction.

Also, various studies demonstrated that hysterectomy has a significant influence on sexuality and eventually the sexual function of women. Hence, sexual activity is associated with a sense of apprehension, insufficiency; lack of sexual desire, orgasm, and various sexual disarrangements (**Riazi1 et al., 2021**). This agreement guarantees that the sexuality after hysterectomy experiences negative effects. Therefore, it is crucial to raise awareness of this problem.

The current research results clarified a marked improvement in sexual function following the intervention of nursing counseling guided by the BETTER model; as well as sexual functioning improved statistically significantly after the intervention. Results confirmed the success of the intervention in improving sexual function among

women with hysterectomy. This finding finds support in the study of **Karakas & Aslan (2019),** who conducted research on the "Application of the BETTER model in sexual therapy for females with sexual dysfunction" and concluded that BETTER model-based sexual counseling was beneficial in enhancing sexual function and sexual satisfaction.

Moreover, these findings were corroborated with **Shi et al. (2020)** who found that a positive psychology intervention by a nurse significantly improved sexual satisfaction in early-stage cervical cancer patients, highlighting the beneficial effects of such counseling.

The above-mentioned results were also supported by **Ali et al. (2021)** who showed that more than three-quarters of the investigated women had pre-program sexual distress and all of them had no post-program sexual distress. The overall sexual distress measure shows a highly statistically significant difference for women.

Also, **Hassan's 2019** study, "Comprehension of dyspareunia and related anxiety among Northern Upper Egyptian Women: Impact of nursing consultation context using the PLISSIT model", found significant differences in desire, motivation, and enjoyment among Northern Upper Egyptian Women when using the PLISSIT model for understanding dyspareunia and related anxiety (P = 0.001).

The researcher's point of view, improvements in sexual function may be attributed to women's active participation in practical sessions where women learned how to manage post-hysterectomy sexual problems, including effective communication before having sexual intercourse and relaxation activities including walking, strengthening pelvic muscles, utilizing Kegel exercises, and use of lubricating gels (**Hassan, 2020; Mohamed et al., 2023; Hassan et al., 2023; Omran et al., 2024; Abdelazim, 2023**).

On the other hand, the present research findings are in disagreement with the results of **Lauterbach et al. (2021),** who showed improvements in vaginal elasticity, mobility, and FSFI scores following hysterectomy. The studies point out positive results; the main reason from the researcher's point of view for this difference may be due to relief from gynecological pathology, which is treated by hysterectomy, as the decrease of dyspareunia and relief from dysmenorrhea.

The above-mentioned results supported the second research hypothesis, which stated that "Post-hysterectomy women who receive nursing counseling guided by a BETTER model will enhance sexual satisfaction (will have a positive effect) after the intervention than those who will not receive it".

The study found that nursing counseling, guided by the BETTER model, significantly improved the quality of life enjoyment and satisfaction among women, despite their low levels of satisfaction and enjoyment before the intervention (P = 0.0001).

The BETTER model shows a positive impact of nurse counseling on post-hysterectomy women's quality of life, with physical and psychological categories having the most significant influence. This result was in agreement with **Hakami et al. (2022),** who illustrated that the BETTER model had an effect than the PLISSIT model in enhancing women's quality of sexual life.

Results also matched with the many studies researches, which supported these conclusions. The quality of life will actually decline the more physically and psychologically of women with cervical cancer (**Gilani et al., 2022; Ali et al., 2021; Masaud et al., 2021; Hassan et al., 2021**).

The above-mentioned results supported the third first research hypothesis, which stated that "Post-hysterectomy women who receive nursing counseling guided by a BETTER model will enhance quality of life in terms of health than those who will not receive it".

Concerning the correlation between women's sexual function index score and quality of life pre/post-intervention of nursing counseling guided by the BETTER. The current research results showed that there was a statistically significant positive correlation between the overall female sexual function index score and quality of life. This result highlights the positive effect of nursing counseling utilizing the BETTER model application in enhancing post-hysterectomy women's sexual function, which reflected on improving their quality of life.

Similarly, the findings of the current study agree with **Salim et al. (2023),** who found a positive correlation between female sexual function index scores, marital satisfaction, and quality of life among

the studied women. Moreover, Hassan et al. (2023), in Egypt, found that using the BETTER model in nursing counseling effectively improved infertile women's sexual function and marital satisfaction post-intervention.

Sexuality, a vital aspect of life, can improve wellness, self-esteem, resilience, coping, emotional connections, family stability, and overall well-being, meeting women's both physiological and psychological needs (**Zuitasari et al., 2022; Hassan 2019; Farag et al., 2024; Barber et al., 2022**) .

The study found that over two-thirds of post-hysterectomy women experienced improved health perceptions after receiving nurse counseling using the BETTER model, which improved understanding of bodies, partner-partner relationships, sexual relations, and regular exercise. These findings matched results of the study done by Barber et al. [75].

To improve women's sexual quality of life and overall well-being, health care providers must have a greater awareness of the influence of sexual function on a woman's life, give more comprehensive care of sexual problems in their daily work, actively research sexual health education programs, and provide patients with appropriate rehabilitation options. Therefore, the BETTER model, which is post-hysterectomy-centered and stresses the formation of an acceptable atmosphere between women and the counselor, allows women to better disclose their sexual issues, particularly post-hysterectomy.

Conclusion

In the light of the study findings, it was concluded that the study's findings supported the three research hypotheses by showing that implementing nursing counseling interventions driven by the BETTER model was effective in enhancing marital, sexual satisfaction and quality of life for post-hysterectomy women.

Recommendations

1. Incorporate the BETTER sexual approach of a counselor for management of sexual dysfunction, psychological issues and handle sexual and mental health issues in all obstetrics and gynecological units.

2. All post hysterectomy women should receive printed booklets containing components of the BETTER model and how to apply them to enhance quality of life among women after hysterectomy. Booklets should be kept in all obstetrics and gynecological units.

3. Implement awareness programs and provide guidelines to couples that highlight future postoperative sexual life, to enhance marital, sexual satisfaction, and quality of life after a hysterectomy operation.

4. Ongoing teaching programs for maternity and oncology nurses regarding effects of the BETTER model on women's sexuality and emotional well-being. As well as on strategies to address women's sexual problems after hysterectomy to create a collaborative plan of care and coordinate its components.

5. Duplicate this study using a large sample and in various settings to generalize results for subsequent research.

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