Effectiveness of the Counseling Supportive Program on Sexual Quality of Life and depression among Hysterectomy women: A randomized, controlled trial (RCT)

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Abstract

Hysterectomy can disrupt reproductive health and sexual life, leading to decreased quality of life and potential depression. **Aim:** To evaluate the effectiveness of counseling supportive program in improving sexual quality of life and reducing depression levels in hysterectomy patients. **Design** A randomized controlled design was employed. **Setting** The study was conducted at the gynecology outpatient clinic of El-Mansoura University. **Sample** 58 hysterectomy women were selected through simple random sampling, divided into two equal groups, with data collected between November 2023 and April 2024. The program began post-discharge, with follow-up visits after 2 and 4 months. **Data Collection Tools** Three tools were used: **Structured Interviewing Questionnaire**: Socio-demographic data and sexual relations health. **Patient Health Questionnaire**: Assessing depression levels and self-reported sexual quality of life. **Knowledge and reported Practice Tools**: Nutrition, fluid intake, sleep patterns, pelvic floor muscles, and deep breathing exercises. **Results: Pre-Program**: 75.9% had low sexual quality of life, 48.3% had high depression, and 34.5% had poor self-practice. **Post-Program**: Significant improvements ($p = 0.001$) in knowledge and self-practice. **Conclusion :**The counseling supportive program significantly improves sexual quality of life and reduces depression among hysterectomy women compared to the control group. **Recommendations:** Counsel couples on sexual concerns, encourage healthy sexual behaviors, rehabilitate post-hysterectomy women and conduct larger studies for nationwide results.

Key Words: Hysterectomy, women, Counseling, Sexual Quality of Life, Depression

1. Introduction:

A hysterectomy is a surgical procedure in which the uterus, along with possibly the ovaries, cervix, and fallopian tube, are removed whole or in part. This clinical procedure is necessary for the following conditions. Vaginal issues include irregular periods, pain in the abdomen, and blood in the birth canal **(Ridwan et al.,2022).** A hysterectomy procedure has risks and benefits and has a strong impact on the sexual quality of life and sexual functioning

(Forbes et al., 2017).

A hysterectomy can be done in several different ways. It will depend on health history and the reason for surgery, such as abdominal hysterectomy, vaginal hysterectomy, laparoscopic hysterectomy, or robotic surgery **(American College of Obstetricians and Gynecologists,2016).**

It was demonstrated by **Pilli et al. (2020**) that the process affects women's psychology, both mental and physical. After surgery, the majority of them view hysterectomy as losing womanhood since they believe the uterus to be a symbol of femininity. They believe their bodies are incomplete and feel incomplete because of the loss of organs, yet their lives are in greater danger if they refuse to have a hysterectomy **(Bossicket al., 2018).** Due to the uncomfortable discomfort, they experience during sex and diminished lust, they feel unsettled in their sexual lives. This affects their perception that their partner is no longer attracted to them, which causes interpersonal issues **(Malyam et al., 2018; Schmidt et al.,2019).**

Surgery is a stressful situation for any woman and preoperative anxiety is an anticipated response to an ordeal that may threaten body integrity and self-image. Since the recovery after the surgery is gradual and improves the mental and physical aspects, at least 12 months of follow-up are needed to check the hysterectomy effects on sexual relationships **(Danesh, Hamzehgardeshi, Moosazadeh, &ShabaniAsrami,2015).**

Sexual quality of life is defined as status that describes the individual's subjective evaluation of the positive and negative aspects of one's sexual relationship, and his/her subsequent affective response to this evaluation. A state of sexual well-being encompassing physical, emotional, mental, social, and spiritual aspects throughout one's life is known as sexual health **(Erens, Mitchell, Gibson, Datta, Lewis, &Field, et al. 2019).**

The maintenance of healthy sexual relationships is significant in maintaining proper human relationships, and the feeling of well-being is an integral part of well-being and can improve their overall quality of life **(Chen et al, 2017).** The studies showed that women feel ambiguous about their womanliness due to the lack of a womb, which can decrease their sexual ability. In contrast, the lack of a womb conflicts with their roles as women and

reduces or destroys sexual desire **(Ilknur, Birsen, & Busra,2016).**

The results of studies show that no satisfying sexual relationship will result in stress, inability to do daily duties, problems in social activities and free time, change in sleeping pattern, fluctuation of mood, disturbance in communication, psychological disorders like stress, and a decrease in couple life quality **(Gueye, Diouf, Cisse, Coulbary, Moreau, & Diouf ,2014).**

A woman's sexual experience after a hysterectomy is the fear of facing negative reactions from the husband and the depression that the husband will reject her, thus making her use solutions such as escape strategies like running away from sexual intercourse **(Wang, Chen, &Huo, et al., 2013).**

In order to improve the quality of their post-operative sexual life, women who have hysterectomy often require assistance from their healthcare provider and family members, particularly their husbands. Peer support groups also play a significant role in lowering stress levels among these women by assisting them in regaining their self-confidence and enjoying a satisfying sexual life **(Janghorban, Latifnejad, Taghipour, Abbasi,& Lottes,2015).**

The counseling supportive program takes a holistic and client-centered approach, meaning that recognize individuals as experts on their own lives and agents of their change and respect each person's values, personal resources, and capacity for self-determination in the context of their own lived experience. This program includes knowledge and self-report practice, physical exercise techniques to improve sex activities and decrease depression **(Centre of Sexuality,2021).**

The knowledge including a balanced diet and adequate sleep is effective in reducing many common symptoms after a hysterectomy, such as sexual depression **(Sepehrirad, and Toozandehjani, 2015)**. A physical sex technique such as Kegel exercises strengthens the pelvic floor muscles, and this may mean more intense orgasms. Breathing exercises are used to treat depression through sends a message to the brain to calm down and relax. **(Bryan Bushman,2017).**

Significance of the study:

In Egypt the prevalence of hysterectomy was 1.131(59.15%) during January 2017 to December 2019(**Tara, M., etal.,2020). Also**, where hysterectomy is frequent, there were 473 recorded deaths and 966 new cases in 2020 (**National Cancer Institute**, 2020).

According to **National Health Interview Survey, 2021**: The age-adjusted percentage of women age 18 and older who had received a hysterectomy was 14.6% in the United States, and Asian women were less likely to have had a hysterectomy (6.1%). The percentage of women who have had a hysterectomy increased with age, from 2.8% for women ages 18–44 to 22.1% for women ages 45–64, 35.0% for women ages 65–74, and 41.8% for women age 75 and older.

Sexuality remains a largely unexplored area of research and there is an inadequate level of research on sexual quality of life in hysterectomy women **(Lonnee &Pinas, 2018).** Numerous studies have proven long- or short-term sexual relationship disorders after hysterectomy. The prevalence of such disorders ranges from 10% to 40% in different research. Painful intercourse, vaginal dryness, loss of the sexual tendency or decrease in it, involuntary vaginal contractions, a decrease in sexual sensitivity, pain, a decrease in orgasm satisfaction, or getting orgasm are among the sexual consequences. However, changes in mental image and self-confidence, fierce emotional sensitivity, and depression are known as psychological problems **(Kho, et al., 2019).**

So, it is crucial to comprehend how this procedure affects women's sexual and psychological well-being. The long-term effects of hysterectomy on sexual health must be evaluated and addressed by healthcare professionals due to its high occurrence rate, particularly in a cultural setting where talking about such subjects may be delicate. This study is important because it brings attention to a frequently overlooked aspect of women's health, enabling improved post-operative treatment, counselling, and support for hysterectomy patients.

Aim of the Study:

To evaluate the effectiveness of the counseling supportive program on sexual quality of Life and depression among hysterectomy women. It will be done through:

1. Assess the sexual quality of life among hysterectomy women.

2. Assess level of depression among hysterectomy women.

3. Design the counseling supportive program based on women' health needs.

4. Evaluate its effect on the hysterectomy women's sexual quality of life and level of depression.

Hypothesis:

It was hypothesized that the counseling supportive program will have a positive effect on sexual quality of life and the level of depression among hysterectomy women in the study group compared to control group.

2. Subjects and methods:

Research design:

A randomized controlled design was utilized to achieve the aim of the study. 58 women who had hysterectomies were divided into two equal groups (study and control groups); each group consisted of 29 hysterectomy women.

Setting:

The present study was conducted at gynecology outpatient clinic, El-Mansoura University.

Sampling: 58 hysterectomy women from a total of 63 hysterectomy women. 5 out of 63 hysterectomy women refused to participate in the study.

Inclusion criteria:

- The women undergoing both abdominal and vaginal Hysterectomy
- Married women are between the age of 30 to 65 years.
- The woman spent at least 4 weeks after the hysterectomy.

Exclusion Criteria:

- Women with a history of psychiatric disorders.

Randomization: Eligible hysterectomy women were simple random sampling (drawing lots). It selected after obtaining their consent to participate in the counseling supportive program.-S**ampling technique:**

The sample was selected by simple random technique

The women were allocated to one of two groups (29 women each).

A. Study group has received counseling supportive programs in the previously mentioned setting.

B. Control group: doesn't receive the counseling supportive program and

receiving routine nursing care, the control group was chosen first to ensure no contamination or bias in the sample of the study group. They were evaluated every two and four months.

Tools of the study: Three tools for data collection were used in the present study

First tools: A Structured Interviewing Questionnaire:

It was designed by the researchers and written in simple Arabic language. Data obtained were related to

A) **Demographic characteristics** of the studied hysterectomy women which included: age, level of education, occupation, number of children, and residence.

B) **Sexual relations health** of hysterectomy women to restore of sexual relations, sexual intercourse rate and causes of disrupted sexual activity.

The second tool: A) Patient Health Questionnaire (PHQ-9). The original scale was developed by Kroenke, Spitzer, & Williams in 2001. PHQ-9 is a diagnostic and dimensional guide to assessing the level of depression. It includes 9 elements, divided into 4 levels or degrees based on the frequency of difficulties: 0- no symptoms, 1- sometimes, 2- more than half of the days, 3 - almost every day. **Scoring system:** This test gives 3 sets of results: Low depression severity range (score 1-9 points), medium depression severity range (10-14 points), and high depression severity range (15-27 points).

B) The Sexual Quality of Life-Female (SQOL-F) questionnaire was used. The SQOL-F was first evaluated by **Symonds et al., in 2005**. A self-report instrument that focuses on sexual self-esteem, emotional and relationship issues. It consists of 18 items which are further divided into 4 dimensions. Psychosexual Feelings questions are item 2, 3, 7, 8, 10, 16, and 17, Sexual and Relationship Satisfaction questions are item 1, 5, 9, 13, and 18, Self-Worthlessness questions are item 4, 6 and 15, and Sexual Repression questions are item11, 12, and 14 and each item is rated on a six-point response (completely agree to completely disagree). The response categories could be scored either 1 to 6. **Scoring system:** A total score of 18–108 which means that a score lower than the average of the research population indicates a poor sexual quality of life, and a score higher than the average of the research population indicates the desired sexual

quality of life.

The Third Tool: A) Women's knowledge was designed and written in simple, clear Arabic language, and different illustrative pictures to facilitate understanding its content. It consists of nine close ended questions about nutrition and fluid (types of food, food contain omega 3, amount of water per day and type of fluid) and sleep pattern questions included (Sleep regularly, hours of sleep, time to rest, duration of time of rest and supportive cushions). **Scoring system:** correct and complete answer was scored (two points), the incomplete answer was scored (one point), while unknown or incorrect answer was scored (zero). The total score for all questions related to knowledge was poor if less than 50%, average if the score ≥ 50 to > 75 and good if the percent score was ≥ 75%.

B) Self- reported practice checklist of pelvic floor muscles and deep breathing exercise. The checklist was adapted from **Goda AA., et al., 2015**. It contained 8 items to assess the accuracy of applying the Kegel (6 steps) and deep breathing exercise (2 steps). This checklist contained step by step of deep breathing and Kegel exercises procedure. Scoring of pelvic floor muscles exercises checklist: Score (0) indicated not done, score (1) indicated done but not accurate, and score (2) indicated done and accurate. The total score was16 points: Poor application for deep breathing and Kegel exercise (women scored less than 4 points,) Fair application (score from 4-8 points.) Good application (score from 9-12 points.) Excellent application (13-16 points). These scores recorded after each follow up.

Procedures

The study was executed according to the following steps:

Ethical committee approval number & details

Ethical approval was received from the Local Research Ethics Committee of El-Mansoura University under ethical committee approval number (2023/555) as found that the research satisfied the requirements of ethical approval criteria according to the rules and regulations of the National Committee of Bioethics.

Approvals

To carry out the study, ethical considerations were maintained to ensure participants' rights. The necessary official approval was obtained from the director of

the university hospital at El-Mansoura University to collect the necessary data after explaining the purpose of the study, and written permission was obtained from each woman before conducting the interview and after giving a brief orientation to the purpose of the study. The participation is voluntary, with the right to withdraw at any time and the confidentiality of the information obtained. Also, the hysterectomy women were informed that the collected data would be used only for the purpose of the present study.

Tools Validity and Reliability:

Content validity was performed by five colleagues: Three professors from the Community Health Nursing Department and two professors from the Psychiatric and Mental Health Nursing Department of the Faculty of Nursing. All experts were affiliated with El-Mansoura University, Egypt. The developed tools were tested for reliability. The reliability test of the translated version was established by using Cronbach's alpha and Pearson correlation, which showed good internal consistency construct validity. Cronbach's alpha coefficient test = (0.95) for the depression level scale, (0.95) for the sexual quality of life scale, and (0.89) for Self-report practice.

Pilot study

It was carried out on 10% of the sample (6 hysterectomy women) . It was conducted to test the study process and evaluate the applicability and test the content clarity, the feasibility of the research process, and the time needed to fill in the tools. According to the pilot study result, no modifications were done to the study tools.

Field Work

After obtaining permission, data were collected at the gynecology outpatient clinic at El-Mansoura University Hospital. The researchers visited the research settings three days per week from 10.00 am to 3 pm. In order to achieve the research aim, the following steps were taken: interviewing, assessment, Formulation, implementation counselling supportive program (knowledge and physical sex exercise technique), and evaluation. These phases, covering six months.

I – Interview phase: The researcher interviewed women who were eligible for the study and met the requirements for inclusion. At the beginning of the interview, the researchers welcomed each woman, explained the study's aim, duration, what it

includes, and obtained their informed written consent. Three tools were used by the researchers to collect data: the first tool part (A) of which was used to collect demographic data, such as age, education, place of residence, and occupation, and also health status of hysterectomy women of present medical conditions. The part (B) of which was used to collect Patient Health Questionnaire (PHQ-9) to assessing the level of depression**.** The second tool was The Sexual Quality of Life-Female (SQOL-F) questionnaire was used, which explored the sexual self-esteem, emotional and relationship issues among the hysterectomy women. Finally, the Counseling Supportive Program to enhance women's knowledge and practice of physical sex exercise technique to improve sexual quality of life and decrease depression after hysterectomy. The researchers spent 30 minutes with each hysterectomy women and allowed them to answered all questions.

II – Formulation phase: Following the interview phase, the researchers prepared a description of the contents and methods in simple Arabic language to match the educational level of the women based on the objectives and program, which was then checked by experts in the same field.

III – Implementation of counselling supportive program (knowledge and physical sex exercise technique), The researcher made counselling for the hysterectomy women for two sessions , every session took 20 minutes, the knowledge include nutrition , fluid and sleep pattern and counselling the hysterectomy women for 3 sessions, and every session took 30 minutes, about physical sex exercise technique and deep breathing exercise to strengthen their pelvic muscles to improve intense orgasms through trying to stop the urine flow in the middle of urination , and must experience a feeling of squeezing and lifting in the same time. e.g., Kegel exercises, which help women to relax their pelvic floor muscles, thus improving sexual function. Techniques of pelvic floor muscle exercises: Kegel exercise, type A: the pelvic floor muscles are contracted and held as tightly as possible for a count of five, and are then relaxed for a count of five. The exercise is repeated 30 times a day (three sets of ten or two sets of 15). As the strength of the pelvic floor improves, the muscles are contracted for a count of ten and then relaxed for a count of ten. Kegel exercise, type B: the pelvic floor muscles are contracted and held as tightly as possible

and then relaxed in quick succession. This is repeated 20–50 times a day (two to five sets of ten). The researcher repeated the evaluation after two months then repeated for second time after 2 months again to evaluate the improvement. Deep breathing relaxation techniques enhancing depression level, count steadily from 1 to 5 then let it flow out gently and repeat for at least 5 minutes, lead to improving sexual quality of life and decrease depression. the researcher instructed the women that they can do these exercises at any position at any time also may be done during sexual intercourse.

Learning Materials: PowerPoint presentations using a laptop computer, and physical exercise videos. At the end of the sessions the participants received hand out contain.

IV – Evaluation Phase :The researchers followed up the women by follow up visit after two months in order to determine whether they were regularly performing cognitive and the pelvic floor muscles techniques and after four months, the researcher evaluated cognitive, the pelvic floor muscles and quality of sexual self-life of all hysterectomy women using counselling supportive program.

The knowledge discussed in the sessions were as follows:

- Session 1: Nutrition and fluid pattern.
- Session 2: Sleep pattern.

The physical sex exercise technique discussed in the sessions were as follows:

- Session 3,4: Kegel exercise techniques how to integrate exercise into daily life
- Session 5: Deep breathing exercise as types of relaxation techniques to improving sexual quality of life and decreased depression level.

Statistical analysis

Statistical presentation and analysis of the present study was conducted. Descriptive statistics were used to describe characteristics of the study subjects (e. g. frequency, percentages, mean, and standard deviation). Test of significance (Pearson correlation coefficient test) was used. Correlation coefficient was calculated between the Sexual quality of life and depression.

>0.05 Non significant <0.05 significant <0.001** High significant*

3. Results:

Table (1) shows the comparison between demographic characteristics of studied hysterectomy women. This table reveals

that; a total of 58 hysterectomy women were married with mean age hysterectomy women is 50.07±6.78 for study group and is 47.37±8.14for the control group. No statistically significant differences were found between the two groups (X2=-1.436, P=0.488). Moreover, Educational level: 58.6% of the study group don't read and write compared to 51.7 % among the control group. 13.8 % of control group had basic and technical education. Highly educated hysterectomy women were 13.8 % among both studied group with no statistically significant difference was found (χ 2 = 4.411, p = 0.22). Regarding to occupation, 65.5% of women in the study group were housewives compared to 72.4% in the control group . On the other hand, 34.5 % of women in the study group were working compared to 27.6% of the women in control group. Regarding number of children: 44.8% of women in the study group had ≥ 5 children compared to 41.4 of the women in control group. While 58.6%of women in the study group were from rural compared to 62.1 % of the women in control group. No statistically significant difference was found between both groups (χ 2 = 0.322, p= 0.57). Statistically analysis denotes homogeneity between the study and control groups in relation to sociodemographic characteristics.

Table (2) shows sexual relation health of the study and control group women: This table reveals that 51.7 % of the study group restore sexual relations 12 weeks from hysterectomy compared to 55.2% among the control group (χ 2 = 0.069, p = 0.792). In addition, 48.3 % of study group were have low sexual relations rate vs. 55.2 % in the control group (χ 2 = 1.709, p = 0.635). While 56.4 % of study group had dryness of vagina vs. 43.6 % in the control group (χ 2 = 0.957, p = 0.620). No statistically significant differences between the study and control groups in terms of restoring sexual relations, sexual intercourse rate and causes of disrupted sexual activity.

Table (3) shows the comparison between studied groups regarding knowledge about Nutrition and fluid Patterns, Sleep Patterns and total knowledge score: The table indicates that the study group had a highly statistically significant difference regarding nutrition, and fluid pattern and sleep patterns after (2 months, and 4 months) (p= 0.001). where there was a statistically notable improvement in total knowledge score in the study group compared to the control group

(p= 0.001).

The table (4) indicates the comparison between studied groups regarding self-reported -practice level it reveals a statistically significant differences in self-practice levels between the study and control groups (p= 0.001). The study group demonstrated significant improvements in self-practice levels compared to the control group.

Table (5) compares studied groups regarding depression levels after counseling supportive program that revealed statistically significant differences in depression levels between the study and control groups (p= 0.001). Specifically, depression levels decreased among study group after 2 and 4 months compared to the control group.

Table (6) shows the comparison between studied groups regarding dimensions of Sexual Quality of Life (SQOL) pre, after 2 months, and after4months. The table concludes that no statistically significant differences between control and study groups regarding all items of sexual quality of life domains (P>0.05) with no statistically significant difference between control and study groups, that entails homogeneity of both groups in preprogram and Significant differences were observed between the study and control groups across all dimensions of sexual quality of life at both the 2-month and 4-month post-hysterectomy (p= 0.001). The study group demonstrated higher levels of SQOL, indicating desired sexual quality of life.

Table (7): The table illustrates the correlation between (Sexual Quality of Life (SQOL) and depression) and (Total knowledge of counselling supportive program and self-Practice level). The table reveals a statistically significant negative correlations between both knowledge and self - reported practice and depression preprogram indicating that as the knowledge increase the depression decrease. After 2 months and 4 months of counseling supportive program of total knowledge demonstrates a strong negative correlation with Depression among the studied groups (p=0.001). Statistically significant positive correlations between both knowledge and self - reported practice and SQOL After 2 and 4 months of counseling supportive program (p= 0.001). When quality of life increases women's depression decease Additionally, self-Practice shows consistent

negative correlations with depression (p= <0.001), implying that better adherence to practice is linked to lower depression levels.

Table (8): The shows the correlation between sexual relation health of studied group with self – reported Practice, sexual quality of life (SQOL)and total knowledge (pre,2 months and 4 months) After counseling program: The table indicates that the study group after 2 months of the program, showed strong positive correlations are observed between restoration of sexual relations, and sexual intercourse rate with both SQOL, self -reported practice and total knowledge score (r = 0.686 to 0.856, p = < 0.001). After 4 months of the program, similar strong positive correlations persist, indicating consistent effects of the restoration of sexual relations, and sexual intercourse rate lead to improve self -reported Practice, SQOL and total knowledge score, (r = 0.665 to 0.852, p = < 0.001).

4. Discussion:

Hysterectomy one of the most gynaecological operations that has a markedly devastating effects on women's sexuality and psychological well-being. It also has a substantial impact on women's sexuality health relations, which can increase depression by causing bad body image and other issues **(Kho et al., 2019).**

The current study carried out to evaluate the effectiveness of the counseling supportive program on sexual quality of life and depression among hysterectomy women. the counselling program including knowledge regarding nutrition, fluid pattern and sleep pattern and self-reported practice of pelvic floor muscle strength led to decrease depression and restoration of sexual relations, and sexual intercourse rate that improve sexual quality of life. These findings corroborate and validate the current study's hypothesis, which held that women who get counseling support program had a positive effect on sexual quality of life and level of depression among hysterectomy women compared to the controls.

Regarding Socio-demographic characteristics of the studied groups. the present study revealed that, half of study group and more than one third of control group were age (≥50 years) with a mean age of 50.07±6.78 and 47.37±8.14 years respectively, more than half of study group and about half of control group didn’t read and write, two thirds of study group and less than three quarter of control group were housewives, less than half of study group

and control group had ≥ 5 children,less than two thirds of study group and two thirds of control group lived in rural area respectively. Additionally, there was no statistically significant differences between control and study groups regarding their sociodemographic characteristics (age, educational level, occupation, number of children and residence). This reflected homogeneity of the studied groups. This results is in the same line with **Elmoneim et al., (2017),** in Egypt who studied "Effect of Roy Adaptation Model on Sexual Function and Spousal Support among Women after Total Hysterectomy", revealed that the age ranged from 30-50 years old with average mean of 43.7 ± 10.1for the study group & 44.3 ± 9.8 for the control one, without any significant differences between both group (p. >0.05).

These results are in agreement with **Hosseini et al., (2016),** in Iran who investigated the "Application of the PRECEDE model to improve sexual function among women with hysterectomy", showed that there were no statistically significant differences between control and study groups regarding personal characteristics, majority of women were in age group (35-55 years) with the mean age of the women were (44.3±3.8 years).

The results of current study found that there was no statistically significant difference between control and study groups in all items related to knowledge about diet, hydration pattern, sleep patterns, and overall knowledge score at pre intervention phase ($p > 0.05$). this could be because hysterectomy topic is a sensitive and delicate topic that is not discussed in these context has cultural concern and is often neglected area in women's health.

On the other hand, there was a highly statistically significant difference between study and control groups in all items related to knowledge at post program ($p < 0.001$).
This result in the same line with **Hosseini et al., (2016)**, which reported that, the knowledge score in the experimental group was significantly higher after the intervention than it was before, while there was no significant difference in scores between the experimental and control groups.

Additionally; **Elmoneim**, **et al., (2017**), mentioned that, there is a significant improvement in women's knowledge, attitude and sexual function after the

application of model, likewise the mean total of sexual function score increased to a greater extent in the experimental group than in the control group.

Furthermore, **Shafeek et al., (2022),** in Egypt who investigated" the Effect of Roy's Adaptation Model on Sexual Function for Women after Total Hysterectomy", found a highly statistically significant difference in knowledge about hysterectomy between the control and study groups in all items related to the post-intervention phase. While he attempted to investigate the Effect of Roy's Adaptation Model on Sexual Function for Women after Total Hysterectomy.

Conversely, **Elgi, M. and Viswanath, L. (2019),** in India found that nearly two thirds of women had poor knowledge, two fifths had average knowledge, and none had good knowledge about the various aspects of hysterectomy knowledge. pertaining to their investigation on "Women's HysterectomyKnowledge."

Concerning self-report practice levels at pre and post program, the results of current study clarified that there was no a statistically significant difference between study and control groups at pre intervention phase ($P > 0.05$). This might be because women who participated in the study had low level of hysterectomy knowledge before intervention and this topic deals with a taboo subject in women's health that have a cultural concerns. Meanwhile, there was a highly statistically significant difference regarding self-report practice levels at post program phase ($P < 0.001$). The results of current study supported by **Atefeh et al., (2022),** in Iran found that a significantly higher odds ratio for better sexual function in both Kegel and gel groups. However, the odds of better sexual function for the Kegel group (OR = 4.19, 95% CI: 1.81-9.72, P = 0.001) was higher than the gel group (OR = 3.7, 95% CI: 1.42-7.52, P = 0.005).

The current study's results regarding depression levels showed that these levels decreased following a counselling supportive program with lower significance between the study group and the control group, at (pre, 2 months, and 4 months). Analysis of the psychological traits and medical conditions of the women undergoing hysterectomy revealed that a significant portion of the women experienced sexual disruptions that may have contributed to a negative thought

process, reduced treatment adherence, exacerbated negative emotions, and negatively impacted sexual quality of life. This implies that the specialized researchers had a significant role in the supportive counselling program sessions, helping the women to overcome this feeling, regain confidence, raise their self-esteem, and lower their depression levels. Additionally, the researchers attempted to reflect the participants to another source of femininity, supporting the genital system as their breast, which helps the woman feel more like a woman and improves their self-confidence in front of her husband and herself.

Zhang et al. (2018), conducted a study in China on the effects of psychological interventions on quality of life, negative emotions, and psychological rehabilitation in post-hysterectomy women. The study revealed that the women in the observation group received psychological interventions in addition to usual care, and that their scores on the Self-Rating Depression Scale (SDS) and Self-Rating Anxiety Scale (SAS) were significantly lower than those of the control group and the group prior to surgery. The two groups' discharge scores were noticeably different from one another.

Contrary to the results of this study, **Helmy et al. (2008),** examined the impact of education on women following hysterectomy and found that such sessions were unable to enhance the perception of low body image and low self-esteem among these women.

The current study results clarified no statistically significant difference between control and study groups at pre intervention phase in all items of sexual quality of life domains. While. highly statistically significant differences between the study and control groups were found across all dimensions of sexual quality of life at both the 2-month and 4-month post-hysterectomy ($p= 0.001$). The study group demonstrated higher levels of SQOL, indicating desired sexual quality of life. Proving the effectiveness of the counselling supportive program that included knowledge behavioural techniques (nutrition, fluid, sleep pattern, and physical sex exercise technique), in addition to participants greatly adhering to program self-practices, support women in resolving sexual ambiguities, creating healthy sexual conceptions, and enhancing the quality of their sexual lives

These findings are consistent with **Zhang, et**

al.'s (2018) study**,** research, which discovered that six months following surgery, women's coital pain and discomfort, sexual desire, orgasm, self-confidence in their femininity, and sexual arousal time all significantly improved in the study group as compared to the control group.

Rehan et al., (2023), conducted a study in Egypt to assess the impact of a psychosexual counselling program on the sexual quality of life of post-hysterectomy women. The study found statistically significant differences in psychosexual feeling and sexual quality of life subscales, including relationship satisfaction, between the study and control groups. After participating in the psychosexual counselling program, the study group's psychosexual feelings of sexual suppression were statistically higher than those of the control group.

Similarly; **Shafeek et al., (2022),** concluded that there were a highly statistically significant differences in all elements of female Sexual Function index including (desire, arousal, lubrication, orgasm, satisfaction and pain) in study group compared with control one at post intervention phase.

Moreover , **Elmoneim et al., (2017),** found that the RAM positively affected women's self-concept, physical adaptation, and interpersonal self-adaptation to post-hysterectomy sexual problems with a high statistical significance difference.

Furthermore; **Eid et al., (2018),** who examined the impact of an educational supportive program on marital satisfaction and self-esteem among women undergoing hysterectomy. They found that, three months after the supportive program was implemented, there was a significant statistical difference between the mean scores for the subgroups (desire, arousal, lubrication, orgasm, satisfaction, and pain) and the overall mean score . In addition here were significant statistical differences in the improvement of the total score of marital relation as well as the subgroups of marital relation (marital intimacy and marital adjustment) at two different time points following the intervention (one month and three months later).

In this respect, the previous finding aligned with the findings of **Clark et al., (2001)**, who found that changes in sexual function and marital intimacy scores among post-

hysterectomy women were more positive in the experimental group following the reframing program than in the control group. In addition to other research findings indicating the benefits of women-focused therapies in fostering compassionate communication and improving post-hysterectomy marital adjustment **(Gibson et al., 2013; Hashim et al., 2010).**

Also, Berlit et al., (2018), in Germany who studied "Sexual functioning after total versus subtotal laparoscopic hysterectomy". They found that total hysterectomies by abdominal or vaginal routes reduced FSFI scores significantly ($p < 0.05$) and reported that hysterectomy causes unfavourable effects on sexual functions at least in the first 6 months postoperative and this negative effect cannot be repaired by oestrogen replacement therapy.

The current study reports additional quantitative evidence indicating a positive correlation between the quality of life (QOL), self-practice, and total knowledge of the studied group and the restoration of their sexual relation health after the counselling program was implemented. This suggests that the supportive counselling program consistently had positive effects. In addition; depression and sexual quality of life are negatively correlated among the categories under investigation. This could be due to the fact of presence of a significant network of nerves and blood vessels that supply the uterus, ovaries, labia, and external genitalia all of which are linked to sexual satisfaction. In addition to, following a hysterectomy, there may be a decrease in vaginal sensation, dyspareunia, and a loss of vaginal elasticity and lubrication. Furthermore, there is a consistent negative correlation between self-practice and depression. This could be attributed to program instructions and improved participant adherence, which ultimately resulted in lower levels of depression.

These results are in line with those of **Saleh et al., (2022),** who investigated the relationship between sexual function, body image, and depression in women undergoing total versus partial hysterectomy. Their findings revealed a statistically significant negative correlation between the total FSFI score and depression and body image.

However, **Darwish, Atlantis, and Mohammed (2014),** found that hysterectomy for benign gynaecological disorders may have a positive correlation

with depression and is not negatively linked with anxiety. This could be because every person is unique.

5. Conclusion:

The results highlight the positive impact of the counselling supportive program on hysterectomy women's sexual quality of life and depression

6. Recommendations:

- The counselling supportive program should be integrated as an essential component for rehabilitating hysterectomy women to decrease depression and improve sexual relation.
- Conduct workplace training programs for hysterectomy women about how to deal with and manage depression and any issues about sexual relation.
- Conduct in-depth further study with a larger sample size of women chosen from various regions across Egypt, including their spouses.

Conflict of interest:

Authors declare no conflict of interest.

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Table (1): Comparison between demographic characteristics of study and control group hysterectomy women (n=58).

	Study (N=29)		Control (N=29)		Total (N=58)		Chi-square	
	N	%	N	%	N	%	X^2	P-value
Age								
<40	2	6.9	4	13.8	6	10.2	1.436	0.488
40- <50	12	41.4	14	48.3	26	44.8		
50 or more	15	51.7	11	37.9	26	44.8		
Mean±SD	50.07±6.78		47.37±8.14		48.72±7.55			
Marital status								
	29	100	29	100	58	100	0.000	1.000
Educational level								

Don't read and write	17	58.6	15	51.7	32	55.2	4.411	0.22
Read and write	8	27.6	6	20.7	14	24.1		
Basic education or technical diploma	0	0	4	13.8	4	6.9		
University or more	4	13.8	4	13.8	8	13.8		
Occupation of women								
House wife	19	65.5	21	72.4	40	69	0.322	0.57
Working	10	34.5	8	27.6	18	31		
Number of children								
<3	7	24.1	7	24.1	14	24.1	0.093	0.955
3- <5	9	31	10	34.5	19	32.8		
5 or more	13	44.8	12	41.4	25	43.1		
Residence								
Rural	17	58.6	18	62.1	35	60.3	0.072	0.788
Urban	12	41.4	11	37.9	23	39.7		

Table (2): Comparison between study and control group regarding women's sexual relation health

	Study (n = 29)		**Control (n = 29)**		**Chi-square**	
	N	%	N	%	X^2	P-value
Restore Sexual relations						
10 weeks ago	14	48.3	13	44.8	0.069	0.792
12 weeks ago	15	51.7	16	55.2		
Sexual intercourse rate						
Regular sexual relations rate	2	6.9	4	13.8	1.709	0.635
Low sexual relations rate	14	48.3	16	55.2		
Irregular sexual relations rate	7	24.1	4	13.8		
No sexual relations	6	20.7	5	17.2		
Causes of disrupted sexual activity						
Pain	14	35.9	12	30.8	0.957	0.620
Dryness of vagina	22	56.4	17	43.6		
Decreased sexual desire	3	7.7	5	12.8		

Table (3): Comparison between study and control groups regarding knowledge about nutrition fluid, and sleep patterns .

Outcome of	**Study (n = 29)**	**Control (n = 29)**	**Chi-square**

knowledge	Good		Average		Poor		Good		Average		Poor			
	N	%	N	%	N	%	N	%	N	%	N	%	X^2	P-value
Nutrition and fluid patterns after hysterectomy														
Pre	3	10.3	9	31.0	17	58.6	4	13.8	15	51.7	10	34.5	3.458	0.177
After 2 mons.	18	62.1	6	20.7	5	17.2	4	13.8	12	41.4	13	44.8	14.465	<0.001*
After 4 mons.	20	69.0	5	17.2	4	13.8	2	6.9	9	31	18	62.1	24.779	<0.001*
Sleep patterns after hysterectomy														
Pre	4	13.8	11	37.9	14	48.3	1	3.45	16	55.2	12	41.4	2.880	0.237
After 2 mons.	20	69.0	4	13.8	5	17.2	1	3.45	14	48.3	14	48.3	27.009	<0.001*
After 4 mons.	21	72.4	5	17.2	3	10.3	0	0	10	34.5	19	65.5	34.303	<0.001*
Total knowledge score														
Pre	3	10.3	11	37.9	15	51.7	2	6.9	14	48.3	13	44.8	0.703	0.704
After 2 mons.	18	62.1	7	24.1	4	13.8	2	6.9	11	37.9	16	55.2	20.889	<0.001*
After 4 mons.	20	69.0	6	20.7	3	10.3	1	3.45	8	27.6	20	69	30.041	<0.001*

Table (4): Comparison between study and control groups regarding self- reported -practice level after counseling supportive program

Practice	Study (n = 29)						Control (n = 29)						Chi-square					
	Pre		After 2 mons.		After 4 mons.		Pre		After 2 mons.		After 4 mons.		Pre		After 2 mons.		After 4 mons.	
	N	%	N	%	N	%	N	%	N	%	N	%	X^2	P-value	X^2	P-value	X^2	P-value
Excellent	2	6.9	12	41.4	10	34.5	2	6.9	2	6.9	0	0.0	0.927	0.819	26.047	<0.001*	41.658	<0.001*
Good	5	17.2	14	48.3	16	55.2	8	27.6	5	17.2	2	6.9						
Fair	12	41.4	2	6.9	3	10.3	10	34.5	10	34.5	10	34.5						
Poor	10	34.5	1	3.4	0	0.0	9	31.0	12	41.4	17	58.6						

Table (5): Comparison between Study and Control Groups Regarding Depression Levels after counselling supportive program

Depression	Study (n = 29)						Control (n = 29)						Chi-square	
	High		Medium		Low		High		Medium		Low			
	N	%	N	%	N	%	N	%	N	%	N	%	X^2	P-value

Pre	14	48.3	9	31	6	20.7	12	41.4	9	31	8	27.6	0.440	0.803
After 2 mons.	6	20.7	9	31	14	48.3	15	51.7	10	34.5	4	13.8	9.465	0.009*
After 4 mons.	2	6.9	4	13.8	23	79.3	17	58.6	11	37.9	1	3.45	35.275	<0.001*

Table (6): Comparison of sexual quality of life (SQOL) dimensions in the study and control groups pre, after 2month, and after4 months .

Items of QOL	Study (n = 29)				Control (n = 29)				Chi-square	
	High		Low		High		Low			
	N	%	N	%	N	%	N	%	X^2	P-value
Psychosexual Feelings										
Pre	18	62.1	11	37.9	17	58.6	12	41.4	0.072	0.788
After 2 mons.	5	17.2	24	82.8	20	69	9	31	15.818	<0.001*
After 4 mons.	2	6.9	27	93.1	25	86.2	4	13.8	36.657	<0.001*
Sexual and Relationship Satisfaction										
Pre	3	10.3	26	89.7	6	20.7	23	79.3	1.184	0.277
After 2 mons.	22	75.9	7	24.1	4	13.8	25	86.2	22.587	<0.001*
After 4 mons.	25	86.2	4	13.8	1	3.45	28	96.6	40.154	<0.001*
Self-Worthlessness										
Pre	20	69	9	31	22	75.9	7	24.1	0.345	0.557
After 2 mons.	6	20.7	23	79.3	24	82.8	5	17.2	22.371	<0.001*
After 4 mons.	3	10.3	26	89.7	27	93.1	2	6.9	39.771	<0.001*
Sexual Repression										
Pre	23	79.3	6	20.7	21	72.4	8	27.6	0.377	0.539
After 2 mons.	4	13.8	25	86.2	23	79.3	6	20.7	25.016	<0.001*
After 4 mons.	1	3.45	28	96.6	25	86.2	4	13.8	40.154	<0.001*
Total QOL										
Pre	7	24.1	22	75.9	8	27.6	21	72.4	0.090	0.764
After 2 mons.	23	79.3	6	20.7	6	20.7	23	79.3	19.931	<0.001*
After 4 mons.	27	93.1	2	6.9	3	10.3	26	89.7	39.771	<0.001*

Table (7): Correlation between the knowledge and self-reported practice and both depression and SQOL among study group

	Depression (n = 29).		SQOL (n = 29).	
	r	P-value	r	P-value
Pre				
Total knowledge of counselling supportive program	0.070	0.189	0.078	0.142

Self-Practice	0.017	0.746	0.018	0.736
After 2 mons.				
Total knowledge of counselling supportive program	-0.812	<0.001*	0.219	0.028*
Self-Practice	-0.718	<0.001*	0.641	<0.001*
After 4 mons.				
Total knowledge of counselling supportive program	-0.796	<0.001*	0.327	0.011*
Self-Practice	-0.832	<0.001*	0.822	<0.001*

Table (8): Correlation between sexual relation health with self -reported practice, sexual quality of life (SQOL) and total knowledge after counseling supportive program

Sexual relation health	**self -reported Practice (n =29)**		**SQOL (n =29)**		**Total knowledge score (n =29)**	
	r	P-value	r	P-value	r	P-value
Pre						
Restore Sexual relations	0.038	0.477	0.036	0.495	0.067	0.204
Sexual intercourse rate	0.046	0.386	0.080	0.133	0.010	0.853
After 2 mons.						
Restore Sexual relations	0.686	<0.001*	0.791	<0.001*	0.856	<0.001*
Sexual intercourse rate	0.837	<0.001*	0.856	<0.001*	0.741	<0.001*
After 4 mons.						
Restore Sexual relations	0.841	<0.001*	0.676	<0.001*	0.852	<0.001*
Sexual intercourse rate	0.736	<0.001*	0.665	<0.001*	0.850	<0.001*

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