

Implementation of PLISSIT model on Female Sexual Dysfunction and Sexual Quality of life among Married Circumcised Women at Minia Governorate, Egypt

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Abstract

Background: Even though a person's sexual well-being is an indicator of general health. Still largely ignored in Eastern societies like those of Egypt, and particularly Upper Egypt, female circumcision is one of the most frequent health issues that have a considerable detrimental influence on a woman's sexual function. **Aim of the study:** to evaluate the effect of PLISSIT model on female sexual dysfunction and sexual quality of life among married circumcised women at Minia governorate. **Subjects and Methods:** Quasi- experimental design (pre-post study) was conducted at outpatient obstetrics and Gynecology clinics at Minia university hospital for maternity and children. A purposive sample of One hundred and twenty five married circumcised women was included in this study. **Data was collected** through three main tools structured interviewing questionnaire, Female Sexual Function Index and Female Sexual Quality of Life Questionnaire In addition to, a supportive material (guidelines) was distributed to the studied women. **Results:** The current study clarified that, the mean age of circumcised women was 27.6 ± 3.5 years, there was a highly statistically significance difference related to the Female sexual function International Index of Erectile Function and Female sexual quality of life scores at pre-post intervention and follow up of the intervention (PLISSIT model) at (P-Value < 0.001). **Conclusion:** Implementation of sexual guidance premised on PLISSIT model had a significant effect in improving the sexual function and sexual quality of life among circumcised women. **Recommendation:** More research is required to fully understand how female genital mutilation affects women's physical, mental, and social health. In addition, Verification of the PLISSIT model on a variety of women complaining of dysfunction in outpatient clinics and educational guidelines should include information on how to handle circumcision-related sexual difficulties.

Keywords: PLISSIT Model, Sexual Dysfunction, Sexual Quality of life, Circumcised

Introduction

The terms "female genital mutilation" and "female genital cutting" used interchangeably to describe the non-therapeutic practice of physically altering a woman's genitalia (UNICEF, 2022). Because it compromises children's right to bodily integrity and may result in expensive medical expenses, this kind of Genital based violation was often criticized as immoral and counterproductive (Tordrup et al., 2022). The United Nations' Sustainable Development Goals (SDG) calls for an end to the practice; measuring progress in this area was hampered by a lack of trustworthy baseline prevalence statistics at the national and regional levels (United Nation, 2022). Female genital cutting (FGM/C) was broken down into four subcategories by the World Health Organization,

each with its own unique set of potential health problems: Deleterious non-medical modifications to the female genitalia include clitoris glans amputation (Type 1), clitoris glans amputation and labia minora amputation (Type 2), vaginal entrance constriction (also known as infibulation), and clitoris glans amputation with labia minora amputation (Type IV) (WHO, 2022a).

It was estimated that almost all women in Somalia, Guinea, and Djibouti have been subjected to FGM/C, while the prevalence of this practise varies widely among continents and countries. The prevalence of FGM/C was highest in areas with a large concentration of migrants and refugees (NHS Digital, 2022). Among the countries where FGM was most common, it occurs in 98% of cases in Somalia, 96% in

Guinea, 93% in Djibouti, and 91% in Egypt (**Farouki, L. et al., 2022**).

Approximately 125 million females under the age of fifteen have been subjected to FGM in numerous African and Asian nations due to cultural, traditional, hygienic, and religious beliefs. FGM negatively impacted the mental and physical health of women because of the stigmatisation they experienced after the procedure. Stress, melancholy, and loneliness were other outcomes of FGM. Further, it was associated with both immediate and long-term repercussions such as hemorrhage, inflammation, benign tumor and sores, persistent pelvic pain, persistent cystitis, trouble with periods, maternal and fetal problems, and sexual dysfunction (**Mohamed et al., 2022**). Sexual and reproductive health problems, including as sexual dysfunction, Dysparunia, infertility, clitoral cysts, lower sexual desire and pleasure, and recurrent bacterial infection, have all been associated to FGM (**Adelekan et al., 2022**).

The sexual drive was one of the hallmarks of the human species also has far-reaching consequences for health and happiness. Female sexual dysfunction, which may affect desire, arousal, and/or orgasm, was common among women. Many things, such as emotional abuse, sexual assault, melancholy, anxiety, and distraction, may lead to sexual dysfunction in women (**Johnsdotter, 2018**). "Sexual quality of life" often used to refer to a woman's satisfaction with her sex life and the various aspects that contribute to that satisfaction. The belief that one's physical body has the ability for and the right to feel sexual emotions was examined, as well as other factors related to one's personal relationships (**Corona, et al., 2016**).

The topic of circumcision should be discussed more openly with female patients, and if the surgery has already been performed, it should be done so with the goal of improving the patient's health. Some of the physical issues that have been linked to circumcision were: inflammation, pain, infertility, incontinence, difficulty urinating, fear of coitus / pain, coital failure, erogenous problems, fertility problems, and chronic viral infections (HIV, hepatitis), as well as psychological issues like nightmares and depression (**Ismail et al., 2017**).

Disseminating information about Kegel exercises, which aim to strengthen the pelvic floor muscles and may improve sexual dysfunction, was crucial. Also, it helps with bladder and bowel control while making climax more sensual. A woman may do this exercise by tensing and holding the targeted muscle for a time before releasing it, after she has located the muscle and achieved a relaxed stance. It was suggested that women do this many times each day. Improving results requires a slow and steady increase in training duration and frequency (**Lianne et al., 2017**).

The PLISSIT paradigm was created to aid doctors in their care of women's sexual health (**Annon, 1976**). There were four distinct phases to the PLISSIT model. Giving women the "Permission" to talk about issues that might affect their sexual health was to "allow" them (or "P"). "Limited Information" (LI) since it was only touches on a narrow slice of the wide world of sexuality. As challenges arise during therapy, help patients work through them by providing "specific ideas" (SS). Intensive therapy (IT) may be helpful for those whose issues, such as interpersonal conflicts or mental health problems, were not addressed after three sessions of treatment (**Swearingen & Jacqueline, 2019**). The PLISSIT framework may help nurses feel more comfortable having conversations about sexual health with their patients, providing more in-depth care, and supporting their female patients through sexual health challenges (**Saboula & Shahin, 2015**).

Specialist maternity nurses were equipped with the knowledge and expertise to advice and care for women who have had circumcision, as well as the maturity and empathy to address sensitive issues, such as human sexuality. Health care providers, notably specialized maternity nurses, have a responsibility to ensure that expecting mothers get the highest standard of treatment. Advocacy and education on sexual health were important parts of any healthcare plan. The maternity nurse's role in educating and counseling patients about sexual health was unique. People who have had circumcision were experiencing sexual dysfunction often linked with it may benefit from "patient education," which include teaching those in need about self-care, emergency situations, and lifestyle changes (**Kotronoulas et al., 2015**).

Significance of the study:

Despite growing international condemnation, the practise of female genital mutilation (FGM) persists at high rates across most of North and East Africa. However, proponents of abolishing the practise confront special challenges due to the depth of the practice's cultural roots in Egypt. Eighty-six percent of married Egyptian women aged 15 to 49 have undergone female genital mutilation (FGM), with the great majority (74%) undergoing medically assisted surgery. Eighty-six percent of married women in Egypt were between the ages of 15 and 49 have undergone FGM, with the majority (74%) doing so under medical supervision. Although there has been a movement in public opinion towards circumcision in recent years, many Egyptians continue to support (FGM) (UNFPA, 2022).

To hasten the removal of FGM, UNFPA and UNICEF have been running a joint campaign since 2008. As the problem of medicalization, enforcement of the FGM/C prohibition statute, and community-level social change in Egypt continue to rise in importance this year, the A Joint Program was working closely with the Egyptian government to find solutions. The sixth of February marked as International Day of Zero Tolerance for Women. The United Nations has designated today as International Day to End FGM. Initially released in 2003 (UNFPA and UNICEF, 2022). International Day of Zero Tolerance for Gender-Based Violence: Quickening the Pace of Investment to Cease FGM was the focus for 2018 (Arora, 2022).

The government of Egypt is made up of 26 governorates. No current residents of Cairo, Alexandria, Port Said, or Suez are indigenous to Egypt. There is a mixture of urban and suburban areas in each of the other 22 governorates. There are a total of 25 governorates in Egypt, with 9 in the Nile Delta, 8 in the Nile Valley, and the remaining 5 in the Frontier Governorates along the country's eastern and western borders (El-Zanaty, 2015). According to a recent report from the Tadwein Center for Gender Studies in Cairo, Egypt (a nation with more than 102 million people), FGM has been practised on 86% of poor women between the ages of 18 and 35. FGM Even though this was a decrease from 2014's National Health Survey data, it's merely a decrease of 1% (Holleis, 2022).

A woman's health benefits from engaging in sexual activity extend beyond the obvious. A woman's general well-being and sense of fulfilment in life might be negatively impacted by sexual dysfunction. However, a broad range of medical conditions may impair a person's ability to experience sexual pleasure, which was crucial to their well-being. For many people, resuming sexual activity was the first step in finding one's footing again after experiencing a loss of identity. Many patients avoid discussing their sexuality with their doctors since there were currently no established rules or criteria for doing so (Lcia et al., 2017). To the best of the researchers' knowledge, no studies had been conducted in the Obstetrics and Women's Health Nursing department on the topic of female circumcision and its effects on married women's sexual function and sexual quality of life; thus, it is essential to employ the PLISSIT model when talking about FSF, particularly sexual dysfunction, which is one of the more common consequences of female circumcision.

Aim of the study

The aim of this research was to:

Evaluate effect of implementation of PLISSIT model on female sexual dysfunction and sexual quality of life among married circumcised women at Minia Governorate.

Methods**Research hypotheses:**

- 1- Circumcised women who use sexual guidance premised on PLISSIT model will have improvement in their sexual dysfunction and Sexual Quality of life.

Research Design: The present investigation was carried out using a quasi-experimental approach (a pre-post study). The use of a pre- and post-test design in research was a common example of a quasi-experimental approach. The quasi-experimental approach was similar to experimental research, but it was not the same thing. Testing a new mass-casualty triage system using a quasi-experimental design would involve selecting a group of Medical Services (MS) personnel, having them first take part in a pre-test session based on triage scenarios, then having them take part in training (PLISSIT Model), and finally comparing post-

test results with pre-test scores. It may be concluded that the triage instruction was effective if test results improve thereafter.

Research Setting: The study was carried out at Minia University Hospital for Maternity and Children's outpatient obstetrics and gynecology clinics. The hospital serves not only the city of Minia but also its nine other centers and villages. The hospital has four stores; the first floor houses the pediatric clinic, antenatal care clinic, infertility clinic operating rooms, and private department. The first floor also houses the card and newborn registration offices, X-ray, MRI, and free trade pharmacy. Gynecological services, an intensive care unit, and laboratory services located on the second story. Antenatal, high-risk pregnancy, birth, and postpartum rooms located on the third floor. The pediatric department and critical care unit were located on the fourth floor. The hospital is open 24 hours a day; however outpatient clinics open at 9 A.M. to 1 P.M.

Clinics, particularly gynecological clinics, were chosen because of their large numbers of cases and the staff's willingness to help researchers choose a representative sample and implement the PLSSIT Model with the patient.

Sample type:

A purposive sample was utilized. An arbitrary selection was made. For this research, participants were recruited from obstetrics and gynecology outpatient clinics at the time of their normal follow-up appointment for (family planning service, complaining of moderate or any gynecological disorders, accompanying family members, and volunteer female nurses and physicians).

The following were used to determine who would and would not be part of the sample:

Criteria for inclusion:

1. Age from 18 to 45 years
2. Married and Educated women
3. Free from medical and psychological disorder
4. Not receiving chemo or radio therapy

Criteria for Exclusion criteria:

1. Uncircumcised women
2. Pregnant women
3. Widowed, divorced and women whose husbands travel for long period
4. Free from major gynecological problems
5. Women who suffer from many chronic conditions, including urinary infections and reproductive problems

Sample Size:

In order to calculate the size of the sample, following this approach, which makes the assumption that the level of significance was 5% and the research power was 80% (**Charan & Biswas, 2013**). According to information gleaned from published sources (**Sichieri et al., 2009**):

$$n = \frac{2(Z\alpha/2 + Z\beta)^2 \times p(1-p)}{(d)^2}$$

Where p = pooled fraction from prior research; d = predicted proportional difference in occurrences; $Z\alpha/2=1.96$ (at 5% level of significance) and $Z\beta = 0.84$ (at 80% power of study). Therefore,

$$n = \frac{2(1.96 + 0.84)^2 \times 0.184(1-0.184)}{(0.1375)^2} = 124.5$$

Accordingly, the sample size required was 125.

Tools of data collection:

For data collection, three main tools were used: It consisted of:

Tool I: Interviewing assessment tool.

Interviewing questionnaire was developed by the researchers after reviewing of related literature, consisted of (21) items. It encompassed three main parts:

Part 1: concerned with women' demographic characteristics: such as age, residence education, occupation, husband education & occupation and marriage years.

Part 2: Obstetrical history: such as previous gynecological operations, delivery method, if normal vaginal delivery how, and if she had perineal tear.

Part 3: Sexual history: such as circumcision age, place & by whom, frequency of sexual intercourse, husband has sexual problem & if yes, what was it, present sexual problems, duration of sexual problems, consult for a solution or help for the sexual problem and if no, why not?.

Tool II: Female Sexual Function Index (FSFI) scale (Pre and posttest)

was developed by (**Rosen et al., 2000**). It contained 19 elements on this scale, which were grouped into six categories: desire (2 items), arousal (4 items), lubrication (4 items), orgasm (3 items), pleasure (3 items), and pain (3 items). This method was devised to assess whether or not women who had just undergone circumcision had any sexual difficulties over the prior four weeks. There was a 0–5 rating scale for each category; a score of 0 indicated that the patient had not engaged in any sexual

activity, a score of 1 indicated dysfunction, and a score of 5 indicated optimal sexual health (suggestive of normal sexual activity).

Scoring system:

Domain scores were calculated by adding all the points earned on the several questions that made up the domain, multiplying that total by the domain factor, and finally encoding the product into a dysfunction score. Each question was

assigned a score from 2 (very low) to 36 (very high) on a Likert scale, with the domain weights added in. To be diagnosed with female sexual dysfunction, total score had to be less than or equal to 26.55. This value served as the FSFI's threshold for identifying FSD patients from healthy controls among female patients. (See table below).

Domain	Questions	Score Range	Factor	Minimum Score	Maximum score	Dysfunction Scores
Desire	1,2	1-5	0.6	1.2	6.0	≤ 4.28
Arousal	3,4,5,6	0-5	0.3	0	6.0	≤ 5.08
Lubrication	7,8,9,10	0-5	0.3	0	6.0	≤ 5.45
Orgasm	11,12,13	0-5	0.4	0	6.0	≤ 5.05
Satisfaction	14,15,16	(0or1)-5*	0.4	0.8	6.0	≤ 5.04
Pain	17,18,19	0-5	0.4	0	6.0	≤ 5.51
Full scale score range				2.0	36	≤ 26.55

* Range for item 14 = 0-5, range for item 15 & 16 = 1-5

Tool III: Female Sexual Quality of Life Questionnaire (FSQoL) scale (pre & posttest) (Symonds et al. 2005).

Emotion, sexuality, feelings of worthlessness, and repressing one's own emotions all play a role. It included 18 questions on the sexual satisfaction of circumcised women, with responses ranging from 0 (strongly agree) to 5 (strongly disagree). The things rated as positive had their points flipped. The scale's maximum score was 90. According to the study's authors, a total index score between 45 and 90 suggested acceptable FSQOL for women, whereas a score below 45 indicated poor FSQOL. The next procedure should be used to convert this to a score between 0 and 100: A standardized score of 100 was equivalent to an unstandardized score of 90.

There was no minimum required score on the index, and a high score indicated a great sexual quality of life (Turgut N. & Gölbaşı Z., 2010).

Validity: The Jury committee, composed of faculty members from Minia University's Department of Nursing who specialize in obstetrics and gynecology, validated the equipment. The Jury committee checked the instruments to make sure they met the criteria of being concise, specific, thorough, easily comprehensible, and appropriate, as well as in line with the

goals of the research.

Reliability: The questions on the Female International Index of Erectile Function have an average reliability of 0.90, according to Cronbach's alpha, whereas the questions on the Female Sexual Quality of Life Questionnaire have an average reliability of 0.89. Using a Pearson correlation analysis on the two data sets and determined the reliability of the instrument.

Ethical considerations

Taking ethical considerations into account, both the dean of Minia University's College of Nursing and the director of the Maternity and Children's Hospital at Minia University provided formal approval and authorization for the pilot study and the real research to be conducted. All the married women who were circumcised gave their verbal approval for the study. People were not coerced into participating and were instead encouraged to do so after being explained the survey's purpose and context. There was always the option for the married women who underwent circumcisions to not take part. There were no health risks from being outside. The identities of all those who took part were kept confidential.

Pilot study

To test the feasibility of the instruments, the time needed to apply them, the study

technique, the fieldwork, the place most suited to collecting data from the women, and any potential impediments, this pilot study interviewed 12 married women who had been circumcised. The equipment was not altered in any way. Thus, the pilot study's participants were also utilized in the larger sample.

Maneuver of Intervention: The study was carried out through three phases: preparatory, operational and evaluation phase, data collection process was extended from the beginning of May to the end of October 2021.

Preparatory Phase (Pretest):

After receiving approval from the nursing faculty's research ethics board and the hospital's top administrator, researchers set out to conduct the study. Beginning in May 2021 and ending in October 2021, data collected. At Minia Hospital, researchers spent two days a week, from 9:00 am to 1:00 pm, collecting information at the obstetrics and gynecology outpatient clinics. Researchers introduced themselves to women, explained the study's purpose, and obtained oral consent for participation from the selected women for ethical issues before beginning interviews. Women were also given a schedule for counseling sessions and follow-up, as well as a contact number in case they needed to reach researchers. To earn women's trust and confidence, it was cleared that t participation was entirely voluntary, and that their data would be kept private. An in-depth interview schedule, the Female Sexual Function Index, and the Female Sexual Quality of Life scale were used to compile information for the study (pretest). Circumcised married women with sexual dysfunction were asked to fill out a questionnaire about their demographic characteristics (age, residence education, occupation, husband education & occupation, and marriage years), obstetrical history (previous gynecological operations, delivery method, if normal vaginal delivery, how, and if she had a perineal tear), and sexual history. The questionnaire's completion took around the average amount of time (15-25 minutes). Interviews with each woman were conducted separately. There were 10-15 ladies interviewed each week (4-6 per day). Scheduled sessions or telephone calls were utilized to gather data before, throughout, and six months after the intervention, with the

exception of the first session, during which a structured interviewing questionnaire was administered. Each of the ladies in the studies went through this stage.

Operational Phase:

The purpose of the programme was to assess how the PLISSIT model affected female sexual dysfunction and sexual quality of life among married circumcised women. The study's participants were divided into 5 groups, each with 25 women. Two times every week, alternating between Saturday and Monday, the researchers and participants went to the data collection site. For each group, the educational programme lasted two weeks. A total of eight sessions made up the programme, and each one was designed to cover a distinct topic. In order to make its information easier to understand, the researchers created it as a handout (booklet) and Power Point slides with easy Arabic language and other informative images was used to describe how circumcision impacted sexual health, sexual quality of life and how to improve it using the PLISSIT model as a guide. It included two parts, the first of which dealt with the anatomy of the female reproductive system, definition, type and complication of circumcision and the female sexual cycle. The second section addressed the causes, types, and treatment of female sex dysfunction. This included engaging in Kegle exercise, maintaining a healthy diet, engaging in healthy lifestyle choices, discussing sexual concerns with the husband, and using medications to treat vaginal dryness, inflammation, and other conditions that might affect female sex function. Each session lasted one hour in total, with 5- to 10-minute breaks spaced out every 30 minutes.

These sessions were conducted in the waiting area of Minia University Hospital for Maternity and Children's outpatient obstetrics and gynecology clinics with some privacy. Every session ended with the researchers drawing a conclusion and giving the lady a chance to ask questions. To make it easier to get in touch with women who didn't show up for their scheduled session, their phone number and complete address were gathered to discourage dropout from the trial. The researchers sent the booklet to them through

the WhatsApp application or any available means of communication, also to make sure that the women in the study followed the instructions and used the care that was given successfully. The researchers assisted ladies in overcoming any difficulties related to sexuality issues and offered any necessary guidance or care to women while they were on holiday.

These sessions were carried out in accordance with the PLISSIT Model of sex therapy, which was established by psychologist Jack Annon and was predicated on the premise that most individuals may find relief from sexual-related issues by adhering to a simple four-step for sexual counseling model. Permission (P), Limited Information (LI), Specific Suggestions (SS), and Intensive Therapy (IT) were the four tiers of intervention, which were together referred to as "PLISSIT" (IT) (Annon JS., 1976).

1. Permission step: She discussed her own sexual concerns, her views about her interactions with males, and the researchers' discussions about sexuality and circumcision helped mainstream these topics for women. The researchers at this stage offered free-form questions such (Circumcised married women often report sexual issues, such as lack of desire or difficulty with satisfaction. Just how have you been impacted? I'm curious as to the nature of the sexual difficulties you've encountered).
2. Limited information: In this phase, the researcher educated the participant on circumcision, including its kind, its effects on sexual function and quality of life, and the myths that circulate about it. Both the patient's invitation to discuss sexuality and the normalization of the sexual issue were crucial to the first two stages of the PLISSIT paradigm. As part of the model's third phase, researchers used a combination of prior knowledge and specialized talents to address the issue at hand.
3. Specific suggestion: In their investigation into the frequent difficulties that women experience, the researchers took a constructive tack by focusing on potential solutions rather than the issues themselves. This was done in order to foster a more upbeat and optimistic tone for their work. When administering therapy, great attention

was given to the specific requirements of each woman in order to provide the best possible outcome (the effects of the Circumcision on their sexuality, sexual problems that may be experienced in their lives, coping methods, and so on).

4. Intensive Therapy: If the ladies had complicated sexual difficulties or those problems were not effectively assisted in the previous rounds, they were always sent to expert treatment. Relationship issues, for instance, may call for a visit to the gynecologist or the psychologist. If a pregnant woman was experiencing discomfort, she was advised to see an obstetrician so that she might get lubricants.

Evaluations phases (posttest) and follow up: After one, three, and six months of the educational programme, evaluation and follow-up phases were completed. Scheduled appointments and phone calls were used throughout the intervention's evaluation and follow-up stages. In order to assess the efficacy of the PLISSIT model in promoting sexual functioning and sexual quality of life among circumcised women, the researchers collected comments from participants after each session by using the second and third instruments.

Statistical design:

With the assistance of the social science program and the statistical package, the gathered information on the participants in the study was arranged, tabulated, and subjected to statistical analysis (SPSS 25.0). The analysis of the quantitative data was performed using the mean and standard deviation (SD), while the analysis of the qualitative data was performed using frequency and percentages. To establish connections between different sets of qualitative data, statistical techniques such as the chi-square test and Fisher's exact test were used. In order to accomplish this goal, the Friedman test, which used to analyze continuous quantitative data, was used to the comparison of the means of the groups. Excel graphs were used to display this information in a graphical style. P-values for correlation tests those were lower than 0.05 considered significant, but P-values that were higher than 0.05 do not meet the criteria for significance. Statistical significance of the results was explained as follows:

$P \leq 0.01$ Highly significant

$P \leq 0.05$ Significant

$P > 0.05$ No significance

Results

Table (1): illustrates that, 42.4% of the studied sample aged between 20 – 25 years with mean 27.6 ± 3.5 years, 50.4% lived in the rural area, 59.2% were higher education, 52.0% of them were employees, 79.2% of the studied sample their husband's education were higher education, 54.4% of the husbands were employee, 50.4% of the studied sample their marriage years ranged between 3 years or more.

Table (2): Clarifies that, 90.4% of the studied sample didn't have previous gynecological operations, 80.8% of them had vaginal delivery, 57.4% delivered vaginally with episiotomy, while nearly three quarter of them 70.0% had surgically repaired of the perineal tear.

Table (3): presents that (56.8%) of the studied sample got circumcision for less than 11 years. (70.4%) of them had circumcision at other sites than medical center. (38.4%) of them had circumcision by midwife, while (35.2%) had frequency of intercourse 2-4 times per week. In addition, (51.2%) & (73.4%) of the studied sample their husbands had (sexual problem and premature ejaculation) respectively. (27.9%), of studied sample had loss of genital sensation (arousal), while (39.6%) of them had sexual problems for more than 2 years.

Figure (1) describes that, (60.4%) of the studied sample didn't get solution or consultation for their sexual problems, while less than half of them were consulted for solution (39.6%).

Figure (2) illustrates that, more than quarter of the studied sample didn't consult for solution related to husband refusal (29.9%).

Table (4) describes that after follow up 6 months after intervention, circumcised women who use sexual guidance premised on PLISSIT model had the highest mean scores related to their female sexual function index domains and total mean scores of female sexual function had a significant improvement from 13.7 pre-

interventions to 29.6 after six months of the intervention with P – value $\leq .000$. at (**P-Value** < 0.001).

Figure (3) shows that, 88.8% of the studied sample had sexual dysfunction at pre-intervention decreased to 34.4% post-intervention, 11.2% hadn't sexual dysfunction at pre-intervention increased to (65.6%) at post-intervention, while most of them hadn't sexual dysfunction (81.6%) after follow up 6 months after intervention.

Figure (4) illustrates that, (86.4%) of the studied sample had poor sexual quality of life pre-intervention decreased to 56.8% post-intervention, while (85.6%) of them had good sexual quality of life at follow up 6 months after intervention

Table(5): Shows that, there was not statistically significance relation between studied sample demographic characteristics with their Female sexual function International Index of Erectile Function score in all items except education at pre & post intervention with ($p=.024$ & 0.04) respectively. While, at follow-up there was not statistically significance relation all items except education and occupation with ($p= .001$ & 0.024) respectively.

Table (6): Shows that there was not statistically significance relation between studied sample demographic characteristics with their Female sexual quality of life at pre-intervention in all items. While, there was not statistically significance relation at post-intervention in all items except education and occupation with ($p= .001$ & 0.003) respectively. Meanwhile, There was not statistically significance relation between studied sample demographic characteristics with their Female sexual quality of life at follow-up in all items except education with ($p= .001$).

Table (7): Represents that, there was a highly statistically significance difference between Female sexual function International Index of Erectile Function and Female sexual quality of life scores at pre /post and follow up 6 months after intervention at (P -Value < 0.001).

Table1. Number and distribution of the Demographic characteristics among the studied sample (n= 125)

	N	%
Age (Years)		
15 – 20	6	4.8
20 – 25	53	42.4
25 – 30	46	36.8
More than 30	20	16.0
Mean ±SD	27.6 ±3.5	
Residence		
Rural	63	50.4
Urban	62	49.6
Education		
Basic education	15	12.0
Secondary education	36	28.8
Higher education	74	59.2
Occupation		
Employee	65	52.0
Private work	40	32.0
Others	20	16.0
Husband Education		
Basic education	8	6.4
Secondary education	18	14.4
Higher education	99	79.2
Husband occupation		
Employee	68	54.4
Private work	50	40.0
Others	7	5.6
Marriage (Years)		
< 3	62	49.6
3 or More	63	50.4

Table 2. Number and distribution of the obstetric history among the studied sample (n= 125)

	N	%
Do you have any previous gynecological operations		
No	113	90.4
Yes	12	9.6
Delivery method		
Vaginal	101	80.8
C.S	24	19.2
If normal vaginal delivery, how? (n=101)		
No tear	3	2.9
Episiotomy	58	57.4
Perineal tear	40	39.6
If Perineal tear (n=40)		
Was left	12	30.0
Surgically repaired	28	70.0

Table 3. Number and distribution of the sexual history among the studied sample (n= 125)

	N	%
How old were you when you got Circumcised?		
< 11	71	56.8
11 or More	54	43.2
Circumcision Place		
Medical center	37	29.6
Other	88	70.4
Circumcision by whom		
Physician	37	29.6
Nurse	40	32.0
Midwife	48	38.4
Frequency of sexual intercourse		
Once a week	20	16.0
1 – 2 weeks	25	20.0
2 – 4 weeks	44	35.2
More than 1 month	36	28.8
Do you think your husband has sexual problem?		
No	61	48.8
Yes	64	51.2
If yes, what is it? (n=64)		
Premature ejaculation	47	73.4
Erectile dysfunction	15	23.4
Impotence	2	3.1
Do you have any sexual problem?		
No	14	11.2%
Yes	111	88.0%
If yes, what is it? (n=111)		
Loss of genital sensation (arousal)	31	27.9
Dyspareunia	25	22.5
Inability to orgasm	24	21.6
Reduced libido (desire)	15	13.5
Reduced vaginal lubrication	16	14.4
Duration of sexual problems (n=111)		
< one year	28	25.2
1 – 2 years	39	35.2
> 2 years	44	39.6

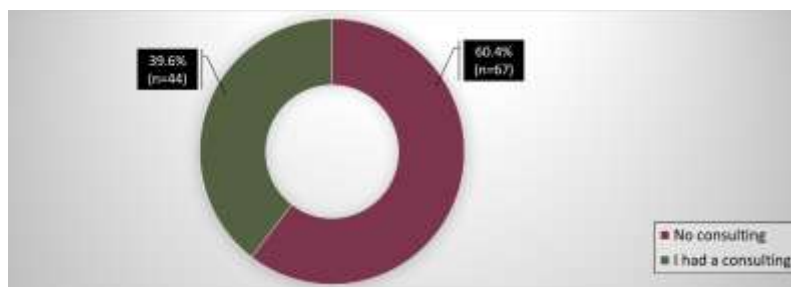
**Figure (1):** Percentage distribution of the studied sample regarding getting solution or consultation for their sexual problems (n= 111)**Figure (2):** Percentage distribution of the studied sample regarding reasons for not getting solution or consultation for their sexual problems (n= 111)

Table 4. Comparison between means scores of the studied sample female sexual function index in pre/post intervention at follow up of intervention(n= 125)

Female Sexual Function Index	Pre-Intervention	Post-Intervention	Follow-Up	ANOVA Test	
	Mean ±SD	Mean ±SD	Mean ±SD	F	P
Desire	2.6 ±0.8	3.9 ±0.6	4.2 ±0.6	213.719	<0.001**
Arousal	1.9 ±0.7	4.4 ±0.4	4.7 ±0.5	914.161	<0.001**
Lubrication	3.0 ±0.7	3.2 ±0.4	4.1 ±0.5	130.205	<0.001**
Orgasm	2.3 ±0.9	4.6 ±0.3	4.7 ±0.3	669.951	<0.001**
Satisfaction	1.9 ±0.1	4.7 ±0.6	6.0 ±0.8	1629.950	<0.001**
Pain	1.9 ±0.2	5.2 ±0.8	5.9 ±0.8	1489.583	<0.001**
Total Score	13.7 ±5.0	26.1 ±1.6	29.6 ±1.9	839.789	<0.001**

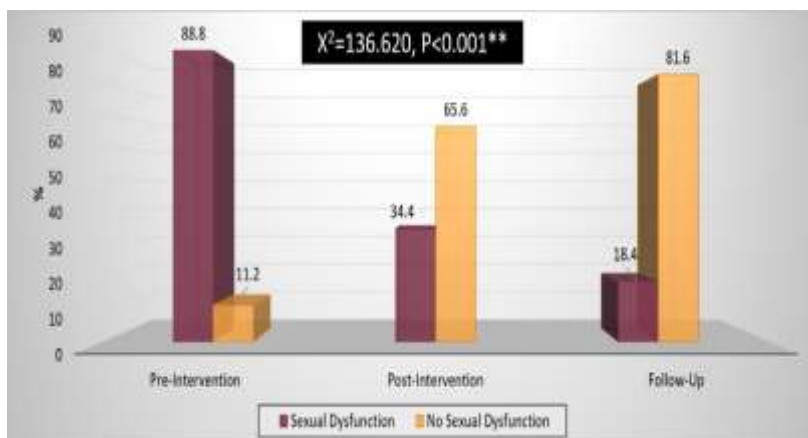


Figure (3): Comparison of the studied sample regarding to their female sexual function index between pre / post and at follow-up of educational program. (n= 125)

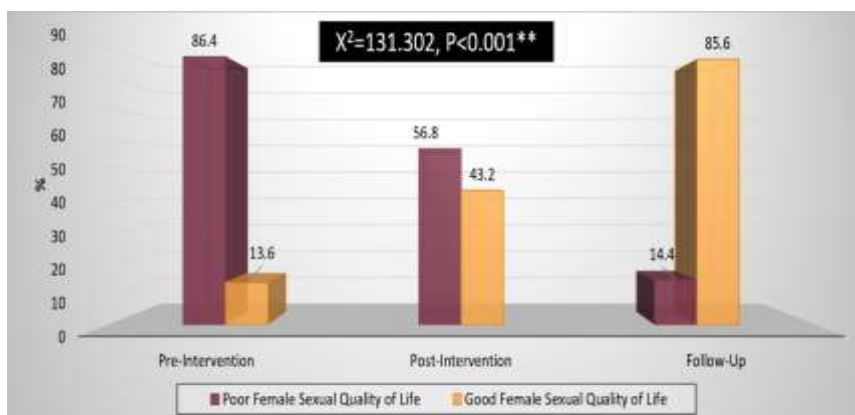


Figure (4): Comparison of the studied sample regarding to their sexual quality of life between pre / post and at follow-up of educational program. (n= 125)

Table 5. Association between the demographic characteristics of the studied sample and Female sexual function International Index of Erectile Function score at pre / post and follow-up of intervention(n= 125)

	Pre – Intervention				Post – Intervention				Follow – Up			
	Sexual Dysfunction (n=111)		No Dysfunction (n=14)		Sexual Dysfunction (n=43)		No Dysfunction (n=82)		Sexual Dysfunction (n=23)		No Dysfunction (n=102)	
	N	%	N	%	n	%	N	%	n	%	n	%
Age (Years)												
15 – 20	5	4.5	1	7.1	3	7.0	3	3.7	1	4.3	5	4.9
20 – 25	47	42.3	6	42.9	23	53.5	30	36.6	15	65.2	38	37.3
25 – 30	42	37.8	4	28.6	12	27.9	34	41.5	5	21.7	41	40.2
More than 30	17	15.3	3	21.4	5	11.6	15	18.3	2	8.7	18	17.6
Chi – Square [X², P]	X ² =0.762		P=0.859		X ² =4.740		P=0.192		X ² =6.150		P=0.105	
Residence												
Rural	57	51.4	6	42.9	23	53.5	40	48.8	10	43.5	53	52.0
Urban	54	48.6	8	57.1	20	46.5	42	51.2	13	56.5	49	48.0
Chi – Square [X², P]	X ² =0.359		P=0.549		X ² =0.250		P=0.617		X ² =0.540		P=0.462	
Education												
Basic education	15	13.5	0	0.0	9	20.9	6	7.3	8	34.8	7	6.9
Secondary education	35	31.5	1	7.1	17	39.5	19	23.2	15	65.2	21	20.6
Higher education	61	55.0	13	92.9	17	39.5	57	69.5	0	0.0	74	72.5
Chi – Square [X², P]	X ² =7.476		P=0.024*		X ² =11.261		P=0.004*		X ² =41.858		P<0.001**	
Occupation												
Employee	58	52.3	7	50.0	19	44.2	46	56.1	9	39.1	56	54.9
Private work	35	31.5	5	35.7	15	34.9	25	30.5	6	26.1	34	33.3
Others	18	16.2	2	14.3	9	20.9	11	13.4	8	34.8	12	11.8
Chi – Square [X², P]	X ² =0.109		P=0.947		X ² =1.936		P=0.380		X ² =7.421		P=0.024*	
Husband Education												
Basic education	8	7.2	0	0.0	2	4.7	6	7.3	1	4.3	7	6.9
Secondary education	17	15.3	1	7.1	5	11.6	13	15.9	3	13.0	15	14.7
Higher education	86	77.5	13	92.9	36	83.7	63	76.8	19	82.6	80	78.4
Chi – Square [X², P]	X ² =1.957		P=0.376		X ² =0.832		P=0.660		X ² =0.263		P=0.877	
Husband occupation												
Employee	61	55.0	7	50.0	22	51.2	46	56.1	12	52.2	56	54.9
Private work	45	40.5	5	35.7	17	39.5	33	40.2	8	34.8	42	41.2
Others	5	4.5	2	14.3	4	9.3	3	3.7	3	13.0	4	3.9
Chi – Square [X², P]	X ² =2.252		P=0.324		X ² =1.734		P=0.420		X ² =3.006		P=0.222	
Marriage (Years)												
< 3	58	52.3	4	28.6	21	48.8	41	50.0	11	47.8	51	50.0
3 or More	53	47.7	10	71.4	22	51.2	41	50.0	12	52.2	51	50.0
Chi – Square [X², P]	X ² =2.789		P=0.095		X ² =0.015		P=0.902		X ² =0.035		P=0.851	

Table 6. Association between the demographic characteristics among the studied sample and Female sexual quality of life scores

	Pre – Intervention				Post – Intervention				Follow – Up			
	Poor Quality (n=108)		Good Quality (n=17)		Poor Quality (n=71)		Good Quality (n=54)		Poor Quality (n=18)		Good Quality (n=107)	
	N	%	n	%	n	%	n	%	n	%	n	%
Age (Years)												
15 – 20	5	4.6	1	5.9	4	5.6	2	3.7	1	5.6	5	4.7
20 – 25	44	40.7	9	52.9	34	47.9	19	35.2	11	61.1	42	39.3
25 – 30	42	38.9	4	23.5	24	33.8	22	40.7	5	27.8	41	38.3
More than 30	17	15.7	3	17.6	9	12.7	11	20.4	1	5.6	19	17.8
Chi – Square [X², P]	X ² =1.539		P=0.673		X ² =2.941		P=0.401		X ² =3.660		P=0.301	
Residence												
Rural	54	50.0	9	52.9	37	52.1	26	48.1	7	38.9	56	52.3
Urban	54	50.0	8	47.1	34	47.9	28	51.9	11	61.1	51	47.7
Chi – Square [X², P]	X ² =0.051		P=0.822		X ² =0.193		P=0.661		X ² =1.115		P=0.291	
Education												
Basic education	12	11.1	3	17.6	12	16.9	3	5.6	8	44.4	7	6.5
Secondary education	35	32.4	1	5.9	27	38.0	9	16.7	10	55.6	26	24.3
Higher education	61	56.5	13	76.5	32	45.1	42	77.8	0	0.0	74	69.2
Chi – Square [X², P]	X ² =5.102		P=0.078		X ² =13.693		P<0.001*		X ² =36.121		P<0.001**	
Occupation												
Employee	55	50.9	10	58.8	35	49.3	30	55.6	8	44.4	57	53.3
Private work	35	32.4	5	29.4	18	25.4	22	40.7	6	33.3	34	31.8
Others	18	16.7	2	11.8	18	25.4	2	3.7	4	22.2	16	15.0
Chi – Square [X², P]	X ² =0.438		P=0.803		X ² =11.485		P=0.003*		X ² =0.751		P=0.687	
Husband Education												
Basic education	5	4.6	3	17.6	5	7.0	3	5.6	1	5.6	7	6.5
Secondary education	17	15.7	1	5.9	9	12.7	9	16.7	3	16.7	15	14.0
Higher education	86	79.6	13	76.5	57	80.3	42	77.8	14	77.8	85	79.4
Chi – Square [X², P]	X ² =4.899		P=0.086		X ² =0.469		P=0.791		X ² =0.104		P=0.949	
Husband occupation												
Employee	58	53.7	10	58.8	38	53.5	30	55.6	11	61.1	57	53.3
Private work	45	41.7	5	29.4	28	39.4	22	40.7	5	27.8	45	42.1
Others	5	4.6	2	11.8	5	7.0	2	3.7	2	11.1	5	4.7
Chi – Square [X², P]	X ² =1.958		P=0.376		X ² =0.647		P=0.724		X ² =2.100		P=0.350	
Marriage (Years)												
< 3	55	50.9	7	41.2	35	49.3	27	50.0	9	50.0	53	49.5
3 or More	53	49.1	10	58.8	36	50.7	27	50.0	9	50.0	54	50.5
Chi – Square [X², P]	X ² =0.558		P=0.455		X ² =0.006		P=0.938		X ² =0.001		P=0.971	

Table 7. Association between the studied sample Female sexual function International Index of Erectile Function and Female sexual quality of life scores at pre / post and follow-up of intervention (n= 125)

	Poor Quality		Good Quality		Chi-Square	
	N	%	N	%	X ²	P
Pre-Intervention						
Sexual Dysfunction	108	100.0	3	17.6	100.159	<0.001**
No Dysfunction	0	0.0	14	82.4		
Post-Intervention					49.854	<0.001**
Sexual Dysfunction	43	60.6	0	0.0		
No Dysfunction	28	39.4	54	100.0		
Follow-Up					93.255	<0.001**
Sexual Dysfunction	18	100.0	5	4.7		
No Dysfunction	0	0.0	102	95.3		

Discussion

Female genital cutting was a terrible habit that has devastating effects on their overall health. A severe type of violence, it debilitates women by preventing them from fully participating in public life (UNFPA, 2022). FGM has no positive health effects. Hemorrhaging, urinary problems, vaginal troubles, menstrual difficulty, a higher risk of neonatal fatalities, psychological disorders, and

death were only some of the health complications associated with FGM. A 14-year-old Egyptian girl died during surgery in 2020. According to data collected in 2015 by the Egyptian Health Interview Survey, 87.0% of Egyptian women aged 15–49 have had FGC (El Zanaty, 2015).

Therefore, the purpose of this study was to evaluate the effect of implementation of PLISSIT model on female sexual dysfunction

and sexual quality of life among married circumcised women at Minia Governorate. Discussion and comparison of the current study's findings with those of similar studies and the relevant literature, as well as the researcher's interpretation of the current findings, would be followed.

Demographic characteristics, obstetric and sexual history of the studied sample:

Regarding Demographic characteristics (Table 1), the current study illustrated that near than half of the studied sample aged between 20 – 25 years with mean 27.6 ± 3.5 years, half of them were lived in the rural area, and employee, more than half were higher education while more than three quarter of the studied sample their husbands education were higher education, nearly half of the husbands were employee, half of the studied sample their marriage years ranged between three years or more. The researchers saw that a person's socioeconomic level determines the degree to which the society in which they live accepts or rejects dangerous behaviors like FGC. It was evident that poverty, lack of education, illiteracy, and poor social standing all had a role in FGC, particularly in rural areas where culture has a bigger role in forming individuals' attitudes and, therefore, their behavior.

The findings were congruent with those of **El-Dirani et al., (2022)** found that while most of the women in their study resided in rural areas, there was a broad range of individual, family, community, and structural variables for FGM/C. Having college-educated parents and residing in a city were both protective factors against FGM/C. Most research has shown that being Muslim, believing that FGM/C has religious justifications, and having a family history of FGM/C all increase the likelihood of undergoing these procedures. FGM/C was also linked to alternative measures of women's social standing, such as early marriage and lack of formal education. Similar findings were reported by **Rawat & Tirkey (2022)** who found that the incidence of FGM was greater in rural regions, among married women with lower levels of education, who were also more inclined to support the continuation of FGM practise. Findings from this research

corroborated those from **Ali et al., (2019)** in that FGC was more widely accepted and supported by women who were older, rural, less educated, not in the labor force, and had a lower socioeconomic position. This could be due to the fact that cultural factors, such as educational background and economic standing, play a considerable influence in influencing individuals' worldviews. Similarly, **Yousef et al. (2017)** found that women's support for FGC was significantly correlated with factors including location, education level, and socioeconomic status. Also the research agreed with **Mahmoud, (2015)** who reported that half of cases originated in rural regions.

The minimum age at which girls in a given society undergo FGC varies. FGC, however, was often performed on young females **UNICEF, (2016); WHO, (2018b)**. This research comprised one hundred and twenty five married women who had had circumcised; their ages varied from 10 to over 30 years old, with a mean of 27.6 ± 3.5 . **Abd Elwahed et al. (2019)** reported similar results, FGC having been performed on almost seventy percent of women who were circumcised before the age of 15. Results were consistent with those published by **(Mahmoud, 2015)** who determined a mean age of FGM of 25.7 ± 3.2 years. In line with the results of **Rasheed et al. (2011)** and **El Zanaty, (2015)** most of the ladies in these studies had their circumcisions performed between the ages of nine and fifteen. **Tamire & Molla, (2013)** stated that cultural ideas that this practise improves one's prospects for marriage, fertility, and chastity suggest that it is best carried out at a young age. It's a must-have if you want to get married.

Regarding distribution of the obstetric history among the studied sample (Table 2), the study results clarified that, most of the studied sample didn't have previous gynecological operations. In addition, more than three quarter of them had vaginal delivery. More than half of the sample were delivered vaginally with episiotomy, while nearly three quarter of them had surgically repaired of the perineal tear. These results were consisted with **Mahmoud, (2015)** who

observed that more than half of the circumcised women were had normal delivery.

Regarding distribution of the sexual history among the studied sample (Table 3), revealed that more than half of studied sample got circumcision for less than eleven years. nearly three quarters of them had circumcision at other sites than medical centers. More than one third of them had circumcision by midwife, had frequency of intercourse 2-4 times per week. In addition, nearly half and three quarter of the studied sample, their husbands had (sexual problem and premature ejaculation) respectively.

These findings were in agreement with **Hehir, (2021)** who reported that female genital cosmetic surgeries (FGCSs) were becoming more common among adolescents, and some of these young people were deciding to have the procedure done for cultural reasons. It would seem that race was the lens through which this distinguishing characteristic was analysed. This was also supported by **Mohamed et al., (2019)** found that midwives formerly performed FGM/C but that this practise has become more institutionalized and now carried out by other medical professionals. These findings were congruent with those of **Ali et al., (2019)** who observed that less than two-fifths of women had circumcision by Dayas/TBAs, highlighting the possible negative impact performed by daya or traditional birth attendance, especially among the rural population. Nearly half of FGM/C cases were reported to have been done by doctors, which was consistent with the findings of **Ismail et al., (2017)**. Some medical experts advocated for the medicalization of FGM/C as a means to minimize the severity of the procedure and the resulting problems. They found that doctors were more likely to execute type I FGM/C (62.1% of cases) than midwives but that both forms of FGM/C had a detrimental impact on women's libido. Thus, research had demonstrated that medicalizing FGM/C would not diminish the long-term problems of FGM/C, making it a violation of the code of medical ethics. It would also hamper international efforts to end this dangerous practice.

In a same vein of, **El Zanaty (2015)** reported that female circumcisions were performed by Dayas at a rate of 50 percent. Also, **Mahmoud, (2015)** who placed over half of all FGM in the hands of Dayas and midwives. In addition, **Huidy, (2014)** demonstrated that around two-thirds of the individuals surveyed received FGC at private clinics; the data suggested that the majority of circumcisions took place in the home. The majority of these attacks have been traced back to Daya, as shown by **Rasheed et al. (2011)**. Consistent with the findings of **Abo Baker, (2009)** their research also showed that the majority of FGCs were done on women in the comfort of their own homes, and

Nearly less than third of them had loss of genital sensation(arousal), while more than one third of them had sexual problems for more than 2 years (**Table 3**). These results were in line with **Shafaati et al., (2022)** who reported that the mutilated women were reported to have various sexual problems including disorder in the whole or a part of their sexual stages.

These findings were in accordance to **Wilson & Zaki, (2022)** who clarified that women who had a history of female genital mutilation (FGM) suffered from pain during sex, sexual shame, vaginal dryness during sexual intercourse, orgasmic dysfunction, and dissatisfaction. In addition, female genital mutilation (FGM) has been linked to decreased sexual desire, insecurity, and poor self-esteem. Also, they were in line with **O'Neill et al., (2021)** who reported that they were resulted from the painful trauma, sense of humiliation, and being deceived by parents, negative genital imagination, lack of sense of body ownership, and sexual life vandalism. Also, in agreement with the present finding research by **Abdel Hafeez et al., (2020)** who cited research showed that FGM causes sexual dysfunction, but not in the way that traditions intended: rather, it causes sexual dysfunction (the loss of the ability to end activated desire and join a desire-free latent period), which in turn causes pelvic congestion, psychological distress, and depression. Also, The finding was in line with **Abd Elwahed et al., (2019)** who revealed that more than a quarter of women who had circumcised had long-term issues, the most

common of which were sexual difficulties some of these issues included a decline in sexual interest or satisfaction and even dyspareunia.

In agreement with the present finding a research by **Yassin et al., (2018)** whom found that more than two third of the group exposed to FGM/C had dyspareunia (pain felt during sexual intercourse). It also jibed with research of **Ibrahim et al., (2018)** revealed that women who'd undergone FGM were more likely to have dyspareunia and a decline in sexual desire they rationalized that constriction of the vaginal opening and the spasm of the surrounding muscles that result from fibrosis and hard scar tissue after FGM may account for this. When women experience physical discomfort during sexual activity, they were more likely to lose interest in and enjoyment of sexual activity.

Consistent with the results of **Adam et al., (2010)** ; **Berg & Denison, (2013)** & **Sharfi et al., (2013)** the researchers located that circumcised women reported experiencing dyspareunia and did not enjoy sexual involvement. (These findings provide support to the theory that dyspareunia was more prevalent among women who have undergone FGM/C as compared to non-FGM/C women.

The results backed with a study by **Rosen & Barsky, (2006)** revealed that women who've had FGM had dyspareunia and a decrease in sexual desire. The researchers' opinions, This may be because FGM led to the formation of fibrosis and stiff scar tissue, both of which may restrict vaginal entry and lead to muscular spasm, making sexual activity unpleasant or even painful. As a result of the mental effects of the trauma, women may lose interest in and pleasure from sexual engagement, which will be facilitated by the physiological factors.

Regarding distribution of the studied sample getting solution or consultation and reasons for not gotten help for their sexual problems (Figure 1, 2), results revealed that nearly two third of them didn't consult for a solution or help for their sexual problem. Meanwhile more than quarter of them didn't consult due to their husband refusal. The results of this study were consisted with the observation made by **Ismail et al., (2017)** Girls

and women who have had FGM/C afraid of their parents' response if they show any signs of distress and choose not to speak out.

In the view of the researchers many individuals tend to overstate the negative health implications of FGM/C. There would be less of an acceptance for FGM/C if religious and medical authorities succeed in showing that all types of FGM/C, including type I, associated with a wide variety of health problems, one of which is sexual dysfunction.

As regard Comparison between means scores of the studied sample female sexual function index in pre/post and at follow up of intervention (Table 4), described after follow up 6 months after intervention , circumcised women who use sexual guidance premised on PLISSIT model had the highest mean scores related to their female sexual function index domains and total mean scores of female sexual function had a significant improvement from less than quarter pre-interventions to more than quarter after six months of the intervention with a highly statistically significance difference related to desire, arousal, lubrication, orgasm, satisfaction, pain and total score at pre-intervention and post-intervention at follow up after intervention at (P-Value <0.001).

These findings corroborated the findings of **Mohamed et al., (2022)** located the mean total FSFI score for mutilated ladies had the lowest mean total FSFI scores (nearly quarter) indicated FSD that was prevalent among mutilated somalian women. It was also noted in studies done by **Fite et al. (2020)** and **Pérez-Lopez et al. (2020)** found that female genital mutilation (FGM) was linked to decreased sexual arousal, decreased sexual pleasure, and an increased risk of pain during sex in women. These findings corroborated those of **Ismail et al., (2017)** who found that FGM/C was associated with diminished female sexual functioning, as measured by a difference in both the overall and subscale scores of the Female Sexual Functioning Index (FSFI). Sexual activity has also slowed down, which is another sign of degeneration. These results were in line with **Biglu et al., (2016)** that had looked at the connection between FGM/C and a woman's ability to have sexual

relations. The overall scores for circumcised women were found to be higher than those of uncircumcised women (17.9 ± 5.39 versus 25.3 ± 4.34 , $p = 0.000$).

The present outcome gone along with **Mahmoud, (2015)** who found a strong correlation between FGM and female sexual function, with the latter being negatively affected in every way (namely desire, arousal, lubrication, orgasm, satisfaction, and pain). The difference between the mean and median scores for female sexual function was statistically significant (14.3 ± 5.93 versus 25.9 ± 3.44).

On the other hand, **Catania et al. (2007)** found that women who had undergone FGM/C had higher scores in a number of areas of the FSFI. **Thabet & Thabet, (2003)** who also detected no decline in sexual function among FGM/C women. These findings ran counter to **Alsibiani & Rouzi, (2010)** who found no significant difference in the mean desire or pain score of studied Saudi women. Even though the arousal, lubrication, orgasm, and satisfaction scores were all higher in the uncircumcised group, there were still statistically significant differences between the two groups.

As regarding Comparison of the studied sample regarding their female sexual function index between pre / post and follow-up of intervention (Figure 3), showed that great majority of the studied sample had sexual dysfunction at pre-intervention decreased to more than one third post-intervention, less than one quarter hadn't sexual dysfunction at pre-intervention increased to nearly two thirds at post-intervention, while most of them hadn't sexual dysfunction at follow up after intervention. These results concurred with those of an Egyptian study by **Mansour et al., (2014)** who similarly discovered that the PLISSIT intervention model helped women with dyspareunia restore sexual function.

Regarding Comparison of the studied sample regarding to their sexual quality of life scores between pre / post and follow-up of intervention (Figure 4), the current study illustrated that, majority of the studied sample had poor sexual quality of life pre-intervention

decreased to more than half at post-intervention, while majority of them had good sexual quality of life at follow up after educational program. Investigators assumed that low sexual quality of life among the studied population was at least in part due to the widespread practise of removing healthy parts like the clitoris and/or other sensitive portions of the female genitalia without any medical need.

Consistent with these findings, **Abd Elwahed et al., (2019)** who found that female cutting significantly correlated with sex enjoyment, with higher sex pleasure rates among uncircumcised women. While, **Anis et al., (2011)**, **Andersson et al. (2012)**, and **Oyefara (2015)** all reported that sexual functioning was significantly worse in circumcised women, and these findings corroborated their findings. These results showed that FGC had a detrimental effect on women's sexual well-being; they should be taken seriously as they emphasized the significant sexual implications that women face as a result of this humiliating technique that violates their genital integrity.

Regarding association between the demographic characteristics of the studied sample and Female sexual function International Index of Erectile Function score at pre / post and at follow-up of intervention (Table 5). The results of the current research who clarified that there were not statistically significance relation between studied sample demographic characteristics with their female sexual function International Index of Erectile Function score in all items except education at pre-post intervention with ($p=.024$ & 004) respectively. While, at follow-up there was not statistically significance relation in all items except education and occupation with ($p=.001$ & $.024$) respectively. The researchers' opinions were more efforts should be made to educate women about the effects of FGM on sexual health..

The present study's findings confirmed with those of **Orji & Babalola, (2006)**; **Mojahed et al., (2020)** who stated that higher levels of education could explain the observed decline in FGM. Similar findings of **Ziaei et al., (2010)**; **Forouyan et al., (2015)** found no

statistically significance relation between age and sexual dysfunction among their female subjects of the study.

While the study results in contrast to the findings of **Ali et al., (2019)** who found correlation between women's sexual pleasure and demographic variables including age, marriage age, income and social class, also disagreed with **Abd El-Naser et al., (2010); Adam et al., (2010) & Abdel-Azim, (2013)** found that these parameters all significantly associated with women's sexual satisfaction.

Regarding association between the demographic characteristics of the studied sample and female sexual quality of life scores at pre / post and at follow-up of intervention (Table 6), based upon the current study results, there was not statistically significance relation between studied sample demographic characteristics with their Female sexual quality of life at pre-intervention in all items. While there was not statistically significance relation at post-intervention in all items except education and occupation with ($p = .001$ & $.003$) respectively. Meanwhile, there was not statistically significance relation between studied sample demographic characteristics with their Female sexual quality of life at follow-up in all items except education with ($p = .001$).

The results of the present study were in line with **Shafaati et al., (2022)** who reported that women with lower levels of income, having more spouse's violence, and decreased frequency of intercourse, spouse's infidelity. Also, in line with **Sena et al., (2017)** who reported that the sexual quality of life in mutilated women with educated, employed, and age younger than 30 was better than the others. However, it was not significantly correlated with residence. According to the researchers' point of view, the reason for the observed difference might be due to cultural differences, increased adaptation of women over time or religious reasons, and adherence to customs. In a study, despite the sexual dysfunction in mutilated women, there was no significant change in the quality of life and general health of mutilated women compared to non-mutilated ones.

Results from the present research were consistent with previous research of **Emam et al., (2018)** found that the Female Sexual Function Index (FSFI) subscales of desire, arousal, orgasmic pleasure, and pain all improved when the PILLIST model was applied. Women's desire, arousal, contentment, orgasmic, and painful experiences all improved following therapy sessions. Congruent with **Rostamkhani et al., (2015)** who also observed substantial improvements in FSFI sub-domain scores, such as sexual desire, arousal, orgasm, pleasure, and pain, when utilizing the PLISSIT model to treat sexual dysfunction. It's possible that the program's used by nurses might help enhance women's sexual health.

Similarly, **Palmisano, (2016)** found that the PLISSIT model for assessing and treating sexual health was a valuable instrument that provided fundamental structure to sexual inquiry and therapy. Outcomes of **Sung et al., (2011)** was consistent with the current findings that sexual-counseling tactics and intervention helped the subject improve their sexual health. In addition, **Saboula & Shahin, (2015)** found that all aspects of sexual functioning improved after intervention, which was in keeping with the existing outcomes.

Effect of PLISSIT model application in improving sexual function and FSQOL

The results of the current study showed that there was a highly statistically significance difference between female sexual function international index of erectile function and female sexual quality of life scores at pre /post and follow up 6 months after intervention at (P -Value < 0.001) (**Table 7**).

These results were consistent with those found by **Mansour et al., (2014)** said that the FSFI improved significantly across all subscales after the intervention. Furthermore **Rostamkhani et al., (2015)** demonstrated that the PLISSIT model was effective in treating sexual dysfunctions and complaints among primary care patients. **Hassan, et al. (2018)** reported that after six months of intervention of sexual counseling sessions based on the PLISSIT model, there was a positive change in sexual performance index values across all SD domains, resulting in a highly statistically

significant difference in the FSFI total score at follow-up.

Finally, from the researchers' point of view female circumcision is a terrible practice since it was often performed on young girls under hazy and confusing conditions, when they were too young to fully comprehend what was happening. The fact that they exposed their bodies to strangers, some of whom behaved aggressively and caused them harm, only served to deepen their resentment. Women's sexual pleasure may be affected by the trauma of FGC and the feelings of shock and terror it evokes in them. It was possible that the success of the PLISSIT model in treating circumcised women with sexual health problems at gynecological clinic was due to the researcher's use of the model as a tool for diagnosing and managing patients' sexuality issues.

Conclusion:

It was shown that circumcised women's sexual function and sexual quality of life were significantly improved after receiving sexual counseling based on the PLISSIT paradigm. And there were statistically significant changes between pre- and post- PLISSIT model-based sexual counseling for women and follow-up 6 months later (P<0.001).

Recommendation:

The psychological, physiological, and social effects of FGM on women need more study. Further, educational programs by the nursing team that focus on sexual health care should be planned ahead of time to protect against dangers linked with FGM and its detrimental repercussions. The PLISSIT model should be applied on a wide range of women who complaining of sexual dysfunction, to increase women's knowledge on how to deal with sexual issues after circumcision.

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