

Effect of PLISSIT Model Sexual Counseling on Sexual Function among Women with Diabetes

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Abstract:

Background: The PLISSIT model is a tool for both assessing and managing a patient's sexuality concerns. It is thought that an intervention plan prepared within the framework of the PLISSIT model will guide maternity nurses in solving sexual problems of diabetic women and providing integrated care and help them to express their sexual problems. this study was aimed to evaluate the effect of PLISSIT model sexual counseling on sexual function among women with diabetes. **Research design:** A quasi-experimental study design was used. **Setting:** The study was conducted at Gynecological and Diabetic Clinics at Ain Shams University Hospital. A purposive sample technique was used to recruit one hundred and ten (110) diabetic women in the study. Subjects were randomly divided into two groups control and intervention based on the following inclusion criteria; educated women with type 2 diabetes mellitus in reproductive age, they indicate to be dissatisfied about their sexual functioning and that they would like to talk about their sexual problem(s). The intervention group received sexual counseling based on the PLISSIT model on four levels, including Permission, Limited Information, Specific Suggestion and Intensive while the control group receives routine care. Three Tools were used for data collection as follows: 1- A Structured interview schedule to collect socio demographic data, 2- The Female Sexual Function Index "FSFI" to measures sexual function. 3-The Revised Dyadic Adjustment Scale (RDAS) , It assesses couple relationship satisfaction within three overarching categories .**Result:** the study showed no statistical significant difference between control and intervention group regarding couples satisfaction and total score of female sexual function at base line assessment ($p=0.725$, $p=0.461$ respectively). While, there was highly statistical significant difference between control and intervention group regarding couples satisfaction and total score of female sexual function after intervention ($p=0.001$, $p=0.001$ respectively).**Recommendation:** Using sexual counseling based on PLISSIT model in addressing sexual dysfunction for diabetic women with preparation of secure environment in the Gynecological and Diabetic Clinics in Hospitals to discuss sexual problems with women freely. Beside Integrate the concept of psychosexual counseling based on PLISSIT model in addressing sexual dysfunction into undergraduate curricula for faculties of nursing.

Apreviation: PLISSIT

P: Permission:

LI: Limited Information

SS: Specific suggestion

IT: Intensive Therapy

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I. Introduction:

Diabetes mellitus (DM) is one of the most common chronic diseases in nearly all countries. In 2014, more than 387 million people had diabetes, and this is expected to rise to 592 million by 2035, rendering previous estimates very conservative (International Diabetes Federation, 2014). Moreover, in Egypt had been estimated to be the 9th country in the prevalence of diabetes, by the year 2025, more than 9 million Egyptians (13% of the population above 20 years old) will have diabetes (The World Diabetes Market Report, 2012). Diabetes has been known as one of the major health challenges in developed and developing countries and imposes a large economic burden to patients, families, and healthcare systems although adequate control of glucose level in diabetes management is crucial to prevent complications. (Jason G. ,2016).

Diabetes is known to cause multiple physical, psychological, and sexual dysfunctions. In recent studies, the prevalence of female sexual dysfunction in diabetic women ranged between 27 to 75%.This wide ranges

might be due to the small number of subjects in each study and the subjective nature in determining the presence or absence of sexual dysfunction among women (Maria I., 2014)

There are many risk factors for the developments of DM (include sedentary lifestyle, obesity, and increased caloric consumption. Type 1 (T1DM; insulin dependent) and Type 2 (T2DM; noninsulin-dependent) DM can be major causes of system wide micro and macro-vascular complications that ultimately impede the ability to sexually arouse males and females, so that they may be able to adequately perform sexual intercourse (Maria I., Giuseppe B., and Katherine E.(2014).The normal female sexual response needs the integrity of the sensory and autonomic nervous systems in order to respond to erotic stimuli, as well as of the vascular districts that supply blood to the external genitalia and vagina. Diabetes may affect all of these integrated systems, leading to sexual dysfunction. The mechanisms involved include vascular and neurological damage, hyperglycemia, infections, and hormonal disorders. Many women with diabetes experience sexual problems. A mixed pattern of dysfunctional symptoms has commonly been reported, such as reduction or loss of sexual interest or desire, arousal or lubrication difficulties, dyspareunia, and loss of the ability to reach orgasm (Bargiota A, 2011).

A number of sexual-counseling frameworks are available for health care providers to use as supportive and effective strategies to conduct sexual intervention in clinical practice. PLISSIT model is a modeling system used in the field of sexology to determine the different levels of intervention for individual clients. The model was created in 1976 by Jack S. Annon. The letters of the name refer to the four different levels of intervention that a sexologist can apply: permission (P), limited information (LI), specific suggestions (SS), and intensive therapy (IT) (Mansour, S. E., and Mohamed, H. E. 2015). Furthermore ,The PLISSIT model is a tool for both assessing and managing a patient's sexuality concerns. It is thought that an intervention plan prepared within the framework of the PLISSIT model will guide nurses in solving sexual problems of women and providing integrated care and help them to express their sexual problems (Nabila E. S., Marwa A.S., 2015).

The maternity nurse is an ideal member of the health team to counsel, consult, and manage women's with diabetes in sensitive aspect as human sexuality. Maternity Nurses and other health professionals have a responsibility to provide women's holistic health care. Sexual health is very important aspect of holistic health care, which need a promotion. The maternity nurse care can play a critical role as a sex educator and sex counselor in this context; also she has an important role to assess the knowledge about needs for sexual health. (Kotronoulas, G, Papadopoulou, C, and Patiraki, E., 2015) .

Justification of the study:

In fact, sexual satisfaction is a natural need, which is similar with other basic needs. Both women and health care providers appear to have difficulty with discussing sexual problems during care. Therefore, sexual counseling model for care providers, such as the PLISSIT model, might be a useful tool to improve the discussion of sexual issues with pregnant diabetic women. So the nurse should be paying attention to the women's knowledge, thoughts, and attitudes toward sex are essential for restoring successful sexual function with type 2 diabetes mellitus.

The Aim of study

The study aimed to evaluate the effect of sexual counseling based on PLISSIT Model on sexual function among women with diabetes .

Research Hypothesis

Sexual function of diabetic women who receive counseling session based on PLISSIT model gain higher score in sexual function than those who not receive it.

Operational definition

Sexual function in this study refers to all the dimensions of sexual functioning, including desire, arousal, lubrication, orgasm, satisfaction and pain

II. Subjects & Method

Research design: A quasi-experimental study design was used.

Setting : The study was conducted at Gynecological and Diabetic Clinics in Ain Shams University Hospital.

Sample size, type, and technique

The required sample size was one hundred and ten women based on the following equation

$$n = \frac{t^2 \times p(1-p)}{m^2}$$

n = required sample size

t = confidence level at 95% (standard value of 1.96)

p = estimated prevalence of sexual problem among diabetic women.

m = margin of error at 5% (standard value of 0.05)

A purposive sample technique was used to recruit one hundred and ten (110) diabetic women in the study. Subjects were randomly divided to two groups control and intervention. Based on the following criteria; educated women with type 2 diabetes mellitus, aged 18 –48 years (reproductive age), who indicate to be dissatisfied about their sexual functioning ,sexually active women in last four weeks and that they would like to talk about their sexual problem(s). This sample size reached to ninety (90) women as 11women lost in pilot study and nine (9) women were lost at the time of the follow up, they were withdrawal due to cultural issues and shame.

Tools of data collection: three tools were utilized as follows:

1- A Structured interview Schedule: This tool was developed by the researchers which included the following: firstly socio-demographic data of women including age, duration of marriage, education, occupation ,residence and mobile phone numbers to facilitate follow up, secondly past and present history about diabetes and type of sexual dysfunction consequences ..

2- Female Sexual Function Index "FSFI" was adopted and translated to Arabic then validated by (*Anis, T. H., Gheit, S. A., Saied, H. S., and Al kherbash, S. A., (2011)*) to measures sexual function. It consists of 19-items that are subdivided into six domains: desire (2 items), arousal (4 items), lubrication (4 items), orgasm (3 items), satisfaction (3 items) and pain (3 items). Each domain is rated on a scale of 0–6, full scale range from 2 - 36 with higher scores indicating better sexual function. Overall test-retest reliability coefficients were cronbach's alpha values of 0.84. Likert scale was used to record the overall score of sexual function, minimum score was (2) and maximum score was (36). If the total female score was below or equal (28.1), she was considered to have female sexual dysfunction. A total score of 28.1 was taken as the cutoff point for the Arabic version FSFI to distinguish between women with FSD and those with normal function.

3-The Revised Dyadic Adjustment Scale (RDAS) was adopted then validated by (*Crane, D. R., Middleton, K. C., and Bean, R. A., 2000*). It is a self-report questionnaire about women and her husband's adjustment and satisfaction (it's taken from the woman's opinion). It assesses couple relationship satisfaction within three overarching categories including: 1- consensus (in decision making, values and affection), 2- satisfaction (in the relationship with respect to stability and conflict regulation), 3- Cohesion. This scale included only 14 items divided into the following (1-6 asked about consensus and 7-10 asked about satisfaction then 11-14 discuss Cohesion issues), each of which asks the respondents to rate certain aspects of her/his relationship on a 6 points scale. Scores on the RDAS range from 0 to 69 with higher scores indicating greater relationship satisfaction and lower scores indicating greater relationship distress. The cut-off score for the RDAS is 48 such that scores of 48 and above indicate non-distress and scores of 47 and below indicate marital/relationship distress. The scale was translated into Arabic language the correlation coefficients (r) obtained from the test-retest evaluations were 0.90. In addition the researcher utilized to **supportive materials** as visual materials were used for explanation and education like posters and educational video presented through laptop.

The quantitative face validity and the qualitative content validity of the tools were assessed through jury consist of 5 expert faculty members in obstetric and gynecological nursing field. The expert panel mostly indicated that the tools were easy to read and understand. The reliability was evaluated on the basis of the test-retest method, the correlation coefficients (r) obtained from the test-retest evaluations were 0.8.

Pilot Study:

Pilot study was carried out before starting data collection; and conducted on 10% (11diabetic women) were selected randomly and excluded from the main study sample to test the validity, it was done to estimate the time required for filling out the sheets and also to check the clarity, applicability and relevance of the questions for tools. Based on the results of the pilot study, the necessary modifications were carried out like changes for some questions and rephrase to others.

Ethical consideration

A necessary approval was obtained from scientific research ethical committee in Faculty of Nursing at Ain Shams University and official permission was granted from the directors of the Ain Shams University Hospital before starting the study and data collection . An informed consent to participate in the current study was taken after the purpose of the study was clearly explained to each woman. Confidentiality of obtained personal data, as well as respect of participants were ensured'. A summary of the intervention was explained to each woman before volunteering to participate in the study and women were informed that they can withdraw from the study at any time. No invasive procedure was required.

Field Work:

Phase 1:

After official permissions to carry out the study granted from the director of the Ain Shams University Hospitals. The data collection started at the beginning of September 2017 to the end of March 2018. Researchers visited data collection site (Gynecological and Diabetic Clinics at Ain Shams University Hospitals) from 9.00 am to 1.00 pm for three days per week. Tools of data collection were answered by the subjects twice pre and post intervention and follow up except the structured interview Schedule was only used once in the first session it took from 30-45minutes for each subject to fill the tools of data collection. This phase apply on all studied women control and intervention groups.

Phase 2:

At the beginning of the interview, the researcher explained to women the aim of the study, scheduled times and frequency of counseling sessions and follow up, with save mobile phone numbers to all selected women to assure adherence to the interventions. Confidentiality of the information was ensured to gain women confidence and trust. The researchers established the session's environment to be comfortable and quiet in the private room to enhance privacy during counseling sessions and data collection with 3 tools : A structured interview Schedule ,The Female Sexual Function Index and the Revised Dyadic Adjustment Scale (It is a self-report questionnaire about women and her husband's adjustment and satisfaction ,it's taken from the subject's opinion and during counseling sessions). This phase apply on women of intervention group only.

Phase 3:

The participated women received the counseling session individually. Then the intervention start included "The Application of PLISSIT Counseling Model for sexual therapy, the subjects within the intervention group were given individual eight counseling sessions; each session lasting 45-60 minutes within two months, the researchers used a well prepared visual materials in the form of posters and educational videos showed with laptop related to the patient's problems or needs.

Steps of PLISSIT Counseling Model Sexual Intervention according to Nami Chun, (2011) were achieved:

During the first stage of the counseling provided in accordance with the PLISSIT Model, the opinions concerns, anxiety, knowledge, and care necessities of women regarding the effects of diabetes on their sexual lives were evaluated.

- I. Permission: The researchers talk about diabetes and sexuality with patients. The researcher provided a permission to think and talk about the sexual issues, sexual feelings /relationships and normalize this concern in a safe and comfortable environment. At this step, the researchers asked an open –ended questions .
- II. Limited Information: The researchers offered brief information to the patient about the effect of diabetes on sexual function. In this stage, the researchers focused on addressing and correcting myths. The first two steps of the PLISSIT model focus on the invitation to the patient to talk about sexuality and on the normalization of the sexual problem.

Compared to the previous steps, the researchers utilized to additional knowledge and skills as problem solving approach to carry out the third step of the model, Specific Suggestions.

III. Specific suggestion: The researchers used a problem solving approach in addressing patient's issues that experienced personally. Counseling was given depending on women's necessities, (the effects of the diabetes on their sexuality, sexual problems that may be experienced in their lives, coping methods, and so on).For example if a women expresses anticipatory anxiety about sexual intercourse with her husband for fear of discomfort, the researchers addressed relaxation strategies, Examples of specific suggestions include appropriate medications under doctor prescription like the use of lubricants, lifestyle changes, or medication adjustment. These suggestions are aimed to directly help the patient within a relatively short period of time.

IV. Intensive Therapy

Fourth step of the model, Intensive Therapy, this step always include referring the patient to specialized care. In some cases applied to complex sexual problems or problems that were not efficiently helped in the previous steps. For example, referral to a gynecologist or psychologist may be necessary in case of relationship problems.

Phase 4:

Evaluation and follow up phases each session the researcher take feedback from intervention group about influence of last session instructions through utilized to 2nd and 3rd tools to evaluate the effectiveness of PLISSIT model in enhancing sexual functioning, and couples satisfaction (baseline before intervention, end of

intervention sessions and after 6 months). Women in control group benefited only from the clinical care, they were not given any additional counseling .but the researcher follow up them and evaluate sexual functioning, and couples satisfaction (baseline , follow up and after 6 months).

Statistical analysis:

The collected data were organized, tabulated and analyzed. Data were presented in tables and charts using numbers and percentage, statistics and associations were done using mean, standard deviation SD .The data were analyzed using SPSS version 18.0. Data were presented using descriptive statistics in the form of frequencies and percentages for qualitative variables, means and standard deviations for quantitative variables. Qualitative variables were compared using chi-square test. The t-test were employed to compare quantitative data, it was used for within-group comparisons and between groups' comparisons. Test of significance was used to determine whether there is a statistically significant difference between the study and control groups.

Limitations of the Study:

Nine participated diabetic women dropout from the study after filling the interview schedule, either they considered the sexual issues are prohibited to be discussed openly (culture issue), or due to social difficulties.

III. Results:

Table (1): Comparison between Control and Intervention Groups Regarding their General Characteristics(n= 90).

General characteristics	Control group n=44		Intervention group n=46		X ²	P value
	No.	%	No.	%		
Age					2.08	0.087
18- 30	7	19.5	11	22.6		
30- 40	13	26.5	11	22.6		
40-48	24	54.0	24	54.8		
Mean ±SD	42.56 ± 3.83		43.02 ± 3.12			
Educational qualification					1.23	0.076
Primary	7	15.0	9	18.2		
Secondary	25	58.0	23	52.3		
University	12	27.0	14	29.5		
Occupation					2.691	0.086
House wife	13	29.4	16	31.0		
Working	31	70.6	30	69.0		
Residence					3.59	0.092
Urban	34	76.3	33	70.7		
Rural	10	23.7	13	28.3		
Duration of marriage					1.09	0.061
> 10 years	6	10.6	7	11.5		
10-15 years	25	59.0	24	53.5		
< 15 years	13	30.4	15	35.0		

Table (1) indicates that no statistical significant difference between control and study group regarding their personal characteristics. These proved through these percentages 54.5% of women in control were in age between 40-48 years old compared to 54.6% of women in the study group. As regard educational level, more than half of 58.0% of women in control group had secondary level education versus 52.3% in intervention group. Concerning occupation, 70.6% of women in control group were working compared to 69.8% in intervention group. As regard place of residence, 76.3% of women in control group were from urban area compared to 70.7% in intervention group. Moreover, 30.4% of women in control group were married for more than ten years compared to 35% of women in the study group.

Table (2): Compression between Studied Women According to Female Sexual Function Scores and Revised Dyadic Adjustment Scale Pre- Intervention:

Items	Control Group n=44	Intervention Group n=46	Independent T test	P Value
Desire	4.03 ± 0.78	4.12 ± 0.66	1.06	0.352
Arousal	2.76 ± 1.02	2.31 ± 0.98	2.02	0.451
Lubrication	3.04 ± 1.00	2.99 ± 1.12	1.98	0.263
Orgasm	3.23 ± 1.05	3.12 ± 0.99	2.87	0.861
Satisfaction	2.97 ± 1.21	2.88 ± 1.02	2.34	0.338
Pain	3.32 ± 1.11	3.11 ± 1.04	1.08	0.376
Total FSF score	19.42 ± 6.89	19.36 ± 6.88	2.23	0.461
Total RDAS Score	41.64 ± 3.22	41.33 ± 2.99	1.234	0.725

FSF "female sexual function" - RDAS "Revised Dyadic Adjustment Scale" for marital satisfaction **Table (2)** displays that there was no statistical significant difference between control and study group regarding total Revised Dyadic Adjustment satisfaction scale, subtotal and total score of female sexual function pre intervention assessment.

Table (3): Comparison between Studied Women According to Female Sexual Function Scores and Revised Dyadic Adjustment Scale through Follow Up after 6 Months:

Items	Control group n=44	Intervention group n=46	Independent T test	P Value
Desire	4.02 ± 1.41	6.42 ± 0.53	7.52	0.01
Arousal	2.00 ± 0.72	4.66 ± 0.88	6.04	0.02
Lubrication	1.98 ± 0.88	5.88 ± 1.49	6.35	0.03
Orgasm	2.89 ± 0.98	4.75 ± 1.43	6.52	0.04
Satisfaction	2.88 ± 1.41	6.76 ± 1.34	9.75	0.01
Pain	2.98 ± 1.54	1.23 ± 0.23	5.85	0.01
Total FSF Score	19.42 ± 6.89	34.62 ± 1.40	25.54	0.001
Total RDAS	44.67 ± 4.17	64.02 ± 0.73	18.92	0.001

Table (3) clarifies that there was statistical significant difference between control and study groups regarding total score of Revised Dyadic Adjustment Scale (**RDAS**) satisfaction scale for couples, and total score of **female sexual function** post intervention by 6 months , **FSF score** range from 2 -36 with higher scores indicating better sexual function(34.62 ± 1.40). Moreover, there highly significant difference between control and study group regarding subtotal domains of FSF (arousal, lubrication, orgasm, satisfaction, and pain)

Fig.(1): Couples Satisfaction Pre , Post Sexual Counseling Application and Follow Up among Intervention Group (n=46)

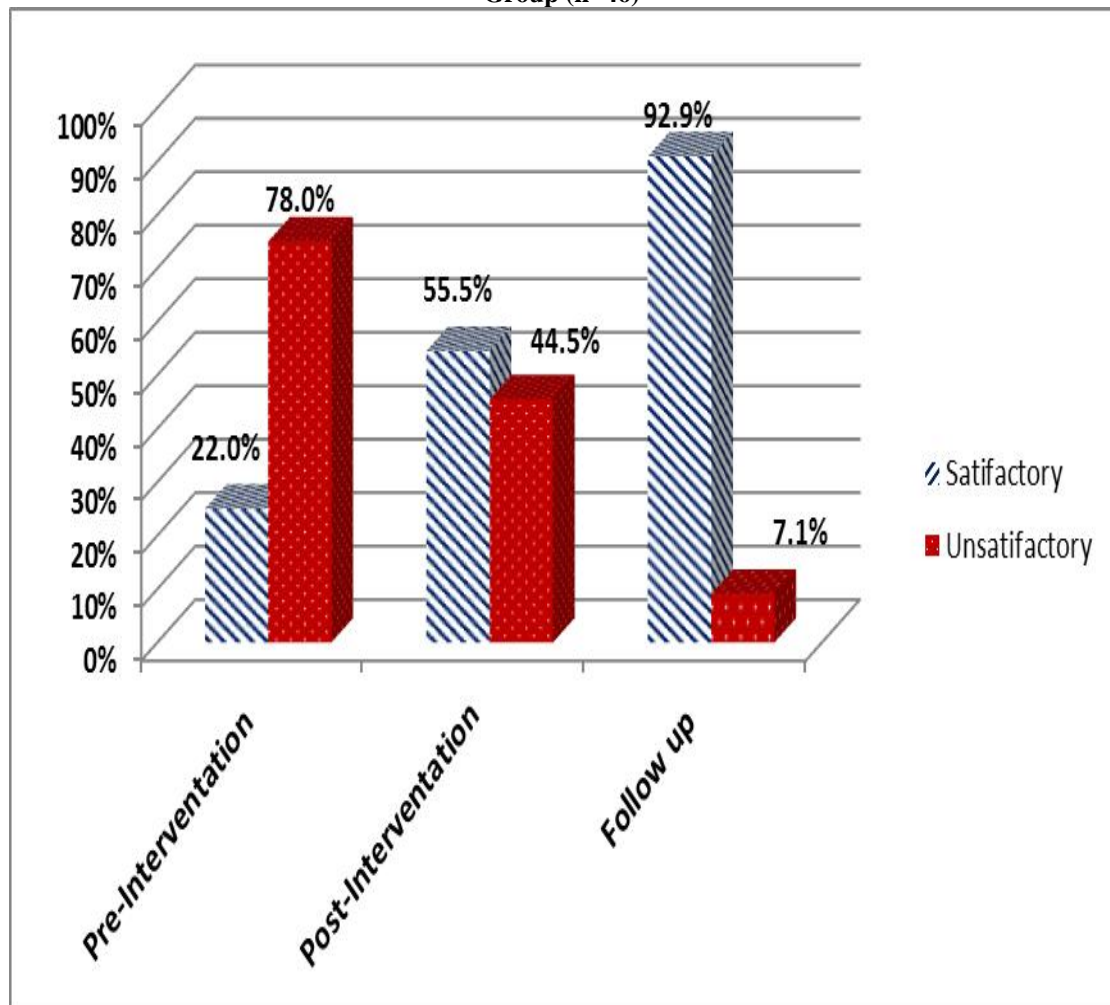


Table (4): Comparison of Total Female Sexual Function Scores and Total Revised Dyadic Adjustment Scale Pre, Post- Counseling and Follow Up among Studied Groups:

Items	Pre- intervention	Post-intervention	Follow up (6 months)	F test	P value
Total FSF:					
Intervention Group	19.36 ± 6.87	30.68 ± 5.21	34.63 ± 1.40	20.66	0.001**
Control Group	19.42 ± 6.89	19.42 ± 6.89	20.34 ± 5.32	3.34	0.987
Total RDAS:					
Intervention Group	41.32 ± 2.98	64.02 ± 0.73	67.34 ± 2.34	16.88	0.001**
Control Group	41.62 ± 3.22	44.67 ± 4.17	44.88 ± 5.00	3.86	0.05

Table (4) displays that there was a highly statistical significant on total score of FSF and total RDAS post counseling application in the intervention group. While the improvement of total score of FSF in the control group was not significant.

IV. Discussion:

Diabetes mellitus is common health problem in Egypt and Northern Africa (Bos & Agyemang, 2013). Diabetes in Egypt needs advancement in the way of counseling and treatment. Sexual problems of women with diabetes deserve more attention in clinical research and practice sexual dysfunction is prevalent in women with type 2 diabetes mellitus, but remains one of the most frequently neglected complications in diabetes care. Both women and health care providers appear to have difficulty with discussing sexual problems in diabetes care. A sexual counseling model for health care providers, such as the PLISSIT model, might be a useful tool to improve the discussion of sexual issues in women with type 2 diabetes mellitus. Another study demonstrated that PLISSIT model can meet the sexual health needs of clients in a primary health care setting and can be used easily by health workers in this setting for addressing sexual complaints and dysfunctions (Fatemeh Rostamkhani, Fatemeh Jafari, Giti Ozgoli, Masomeh Shakeri, 2015).

The present study showed that the total size of sample was ninety (90) diabetic pregnant women were varied between 18-48 years, the mean age of women with diabetes was (42.56 ± 3.83), (43.02 ± 3.12) for control and intervention group respectively, the higher percent of diabetic women suffered from sexual dysfunction lies between 40-48 years. As regard educational level, around the half of women 52.3% for intervention group had secondary level of education. Concerning occupation nearly two thirds of women in intervention group were working and came from urban area, Moreover, more than thirds of study group's women were married for more than ten years. In addition the results displays there was no statistical significant difference between control and study group regarding their socio-demographic characteristics

These findings of current study are come in line with (Taghdisi MH, 2011) who mentioned that, middle and late adulthood populations are the major drivers of the increasing prevalence of diabetes in Egypt and Africa in general. Furthermore, the current findings came in line with the study results of (Nuriye B.D., 2014) who emphasized that most people with diabetes in low and middle income countries are between 40 and 60 years old for both sexes, while the current study results disagree with (Giraldi A., and Kristensen E. (2010) who stated that, people who develop diabetes are usually under the age of 20. Moreover the findings of current study agreement with (Forouyan Elyasi, 2015) who stated that, the prevalence rates of diagnosed diabetes are significantly lower among adults with higher levels of educational attainment.

The findings of the current study regarding Sexual problems pre- counseling among both control and intervention group with diabetes that have been reported dyspareunia due to decreased vaginal lubrication, low libido and experiencing orgasm problem these complications affected on the degree of sexual satisfaction these main consequences of the diabetic neuropathy and vascular changes. In addition the present study illustrated that women with diabetes type 2 have many Sexual problems lead to marital relationship distress associated with lower overall quality of marital relation, this is not surprising because the relation between marital relation, DM, and sexual dysfunction is well established in the literature the current findings displays that marital satisfaction scale at base line assessment pre intervention were (42.64 ± 3.21, 42.33 ± 2.98) for control and intervention groups respectively. In addition, the findings displays no statistical significant difference between control and intervention group regarding subtotal with total score of female sexual function and marital satisfaction scale.

The findings of the current study supported by (Shabnam Omidvar, 2013) who revealed that nearly 82% of women with diabetes were afflicted in the area of dysfunction in sexual desire, 78.3% had problems of arousal, 47.5% experienced dysfunction in orgasm, and 45.5% were not satisfied with sexual functioning, 39.4% experienced pain during intercourse, and 36.1% had disorders in vaginal lubrication. furthermore, (Fatemeh R., Fatemeh J., Giti O., Masomeh S. (2015) who evaluated the sexual function of 50 married women with type 2 diabetes and reported that diabetes significantly impairs sexual performance and the ability to achieve orgasm was affected by all stages of sexual functioning.

The researchers observed that the findings of current study converted to highly statistical significant difference between control and intervention group regarding to FSFI total score post 6 months of sexual counseling session's based on PLISSIT model. This improvement of FSFI reflected upon enhanced to couples

satisfaction scale (RDAS) (Revised Dyadic Adjustment scale) as marital satisfaction and conflict regulation for couples in the relationship with marital life stability for intervention group. The current findings were congruent with another study in Egypt (Mansour SE, Shebl AM, Waheda SM, 2014) found the efficacy of PLISSIT model in women with dyspareunia. There was statistically significant difference between pre- and post-intervention FSFI scores in the domains of desire ($P < 0.001$), arousal ($P < 0.001$), orgasm ($P = 0.002$), satisfaction ($P < 0.001$), and pain ($P < 0.001$). Moreover these study (Mansour, S., and Mohamed, H., 2015) who carried out semi-experimentally and a pretest-post-test designed control group to investigate the effectiveness of sexual counseling on the improvement of sexual functioning of female and mentioned that there was significant relationship between the two groups in the overall scores of sexual functioning, sexual desire, arousal, moisture, orgasm and sexual satisfaction, in a way that in all cases the scores of the experimental group were significantly higher than those of the control group ($p < 0.001$). However, t-test reported no significant difference between the two groups in terms of sexual pain component.

the current study may be had been proven the positive efficiency of the sexual counseling depend on PLISSIT model, this revealed in figures 1 which illustrated the significant difference of intervention group regarding Couples satisfaction from 22.0 ,55.5 to 92.9 respectively pre , post counseling and follow up (after 6 months). The current study findings are matching with (Shamsi M. (2010) study results who mentioned that the application of the educational program of metabolic control and the reduction of cardiovascular risk factors on patients with type 2 diabetes it has a positive effect on sexual function of patients and their partners satisfaction Finally, according to the higher score in sexual function was significantly greater in the intervention group than in the control group in all domains of sexual function and marital satisfaction among pregnant diabetic women , it can be concluded that the combination of sexual counseling can affect sexual function and couples satisfaction , and this could be the reason for the effectiveness of the PLISSIT model as a tool for both assessing and managing a patient's sexuality concerns despite disorders in their sexual desire and function arisen with diabetes

V. Conclusion & Recommendations:

The current study has been proven the positive efficiency of the PLISSIT model, this revealed in all domains of sexual function. **So the study concluded** that positive effectiveness of sexual counseling on enhancing sexual function and couples satisfaction of studied women with diabetes more than who receives routine care only. **In the light of these results of the present study the researchers are**

Recommended the following:

- Adopting of sexual counseling based on PLISSIT model in addressing sexual dysfunction for diabetic women with Preparation of secure environment in the hospital outpatient units to discuss sexual problems with women freely.
- Integrate the concept of sexual counseling based on PLISSIT model in addressing sexual dysfunction into undergraduate curricula of faculties of nursing.
- Further studies are needed to compare effect of PLISSIT model versus other models as ALARM on improving sexual function among women with diabetes.

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