La Prensa MedicaArgentina

Research Article

Investigating the Effect of Phlebotomy on Sexual Satisfaction of Patients with Type 2 Diabetes Admitted to Bandar Abbas Gas Condensate Refinery Clinic in 2016

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Abstract

Background: Diabetes, especially type 2 diabetes is a global health challenge and the leading cause of impotence in diabetic patients. Sexual health is an important issue that is often neglected in diabetic patients care. On the other hand, phlebotomy, as a traditional medicine procedure in Iran, has attracted the attention of many scientific circles. This study aimed to investigate the effect of phlebotomy on sexual satisfaction of patients with type 2 diabetes admitted to Bandar Abbas gas condensate refinery clinic in 2016.

Methodology: In this quasi-experimental study, based on the statistical estimations, 30 samples were divided into control or intervention groups. Multi-stage sampling method was used. Using convenience sampling method, volunteers were selected through utilizing notification system. Data were collected using demographic questionnaire, diabetes questionnaire and Larsson sexual satisfaction questionnaire. The validity of the questionnaire and its reliability were measured using content validity and Cronbach's alpha coefficient, respectively.

Results: Based on the independent t-test, there was no significant difference between the two groups in terms of age. The mean work experience of patients was 23.13 years in the intervention group and 12.1 years in the control group. Based on the independent t-test, there was no significant difference between the two groups in terms of work experience. The mean blood sugar levels were 86.211 mg/dl in the intervention group and 92.4 mg/dl in the control group. Based on the non-parametric Wilcoxon test, there was no statistically significant difference in blood sugar levels of patients, before and after performing phlebotomy.

Conclusion: Based on the results, it can be said that after conducting training sessions and performing phlebotomy, participants could establish frequent sexual contacts with their spouses and this resulted in their sexual satisfaction.

Keywords

Type 2 Diabetes; Phlebotomy; Sexual satisfaction

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Received: June 13, 2017 **Accepted:** June 22, 2017 **Published:** June 27, 2017

Introduction

Type 2 diabetes is a metabolic disorder characterized by a relative decrease in production and function of insulin and increased resistance to this hormone. 90 to 95% of diabetic patients suffer from type 2 diabetes. It mostly affects over 30 year old and obese people [1]. The World Health Organization has reported a 17% increase in the incidence of diabetes in developing countries. This indicates that 228 million diabetic patients live in developing countries who account for 75% of the all diabetic patients across the world. The total number of people with diabetes was 171 million in 2000 and it is estimated to reach 336 million in 2030 [2]. At least 50% of these people are unaware of their condition. The majority of these patients live in India (41 million), China (40 million), the U.S. (19 million), Russia (10 million) and its prevalence is reported as 7.3% in under 30 years old population [3]. Studies indicate that the prevalence of type 2 diabetes is about 8 to 7% in Tehran, its suburban areas and in Isfahan. The prevalence of diabetes is even higher in some other Iranian cities; so that in Yazd (central Iran) and Bandar-e Bushehr (southern Iran) the prevalence of type two diabetes is estimated as 16.3% and 13.6%, respectively [4]. However, it seems that its prevalence is lower in rural areas: for example, based on the national program for prevention and control of diabetes, its prevalence was about 3.07% in screened rural areas. Its prevalence is reported as 5% in Zanjan villages (West of Iran) [5]. Diabetes can affect physical and mental performance, development of complications, mental health conditions, personal, family and social relationships, sexual performance and perception of health [6]. It is impossible to prevent complications completely; however, it can be delayed with strict control of blood sugar. Regular medical care can prevent many diabetes complications, such as cardiac ischemia, stroke, retinopathy, nephropathy and neuropathy [7]. Oral medications lower blood sugar and insulin is the cornerstone of diabetes treatment. However, medication side effects, improper prevention and control of symptoms and reducing the effectiveness of medications over time have tempted researchers to explore new methods and appropriate procedures to control this disease and its complications [8]. Many diabetic patients can control their blood sugar through proper diet planning, regular exercise, weight loss, self-care behaviors and taking medications [9]. Physical activity plays a key role in the management and control of type two diabetes. In obese patients with type 2 diabetes, exercise along with proper diet improves glucose metabolism and reduces body fat, as well. Exercise along with weight loss increases insulin sensitivity and may reduce the need for insulin or oral medications [10]. Sexual satisfaction refers to pleasant feeling of sexual relationship and the ability to create mutual pleasure. Sexual satisfaction includes one's feelings about his body, interest in sexual activities, the need for sex partners and the ability to obtain satisfaction from sexual activity [11]. Sexual male dysfunction is among the complications of diabetes. Less vaginal lubrication is a possible outcome of neuropathy. Another possible change in the sexual function of women with diabetes includes decreased sex drive (no orgasm). Impotence occurs more frequently in diabetic men compared to their non-diabetic peers. This study aimed to investigate the effect of phlebotomy on sexual satisfaction of patients with type 2 diabetes admitted to Bandar Abbas gas condensate refinery clinic in 2016.

Methods and Materials

In this quasi-experimental study, based on the statistical estimates, 30 samples were divided into two control or intervention groups. Multi-stage sampling method was used. Using convenience sampling method, volunteers were selected through utilizing notification system. Data were collected using demographic questionnaire, diabetes questionnaire and Larsson sexual satisfaction questionnaire. The validity of the questionnaire and its reliability were measured using content validity and Cronbach's alpha coefficient, respectively. Complete enumeration survey method was used. Inclusion criteria included: attending no sexual training class or course, not using narcotic drugs and alcohol and libido medications and approval of type two diabetes by physician and clinical trials. Exclusion criteria included: extreme weakness, severe anemia and undergoing a convalescence period. After receiving a letter of introduction from faculty officials and obtaining permission from clinic authorities and security and research units, the study population consisting of patients with type 2 diabetes was specified and those who met the inclusion criteria were selected. In the first session, the researcher explained procedures and needed recommendations. After obtaining written informed consent and explaining research objectives to the research units, information was provided to the participants to complete the questionnaires. They were assured about the confidentiality of their responses and were asked to study the questions. Data were collected using these tools: demographic questionnaire (age, job, educational qualifications, work experience, working hours, marital status and residential status), Larsson sexual satisfaction questionnaire, industrial medicine records and interviews. Sexual satisfaction questionnaire: This questionnaire used a 5-point Likert scale and answers ranged from never (score 1) to always (score 5). Based on this questionnaire, scores generally ranged between 25 and 125. Levels of sexual satisfaction included: sexual dissatisfaction (scores below 50), low satisfaction (scores between 51 and 75), moderate satisfaction (scores between 76 and 100) and high satisfaction (score above 101). After collecting and encoding data, SPSS 22 was used for data analysis. Descriptive statistics was used to describe absolute, relative and percentage frequencies, the mean, the standard deviation and information associated with phlebotomy and features of diabetes. T-test, paired T-test, ANOVA and correlation coefficient were used to compare levels of sexual satisfaction before and after the phlebotomy. The significance level is considered as 0.05 (P-Value < 0.05) in the present study.

Results

Results are indicated by tables (Tables 1-5).

Discussion

Based on the findings, the first hypothesis indicating that "sexual satisfaction of patients with type 2 diabetes in the intervention and control groups significantly differs after performing therapeutic phlebotomy" was confirmed. This is consistent with the studies of Hogboom and Naghavi [12,13] suggests that phlebotomy therapy has a positive effect on increasing sexual satisfaction of the intervention group. According to Table 5 the mean post-test score of the intervention group has increased after phlebotomy therapy compared to the control group. This may be due to the fact that impotence is one of the main complications of diabetes. The prevalence of impotence is 1.9% in 40 years old males which increases with aging. Many studies have examined sexual disorders in diabetic men and women. Regarding men, 50% of sexual disorder cases occur before the age of 60. However, it seems less prevalent in diabetic women [14]. In diabetic patients, cardiovascular and neurological disorders as well as mental health problems are the main causes of low libido, less vaginal lubrication, stimulation and orgasm disorders and dyspareunia. On the basis of various studies, about 27.5%-75% of diabetic men suffer from sexual problems. Also, Brunner et al. in their study — conducted in Germany in 1995 — reported that 39% of diabetic men suffer from erectile dysfunction. Other studies [15] have reported 50%, too. Phlebotomy is one of the major pillars of Islamic and Iranian traditional medicine which excretes body waste and toxins and guarantees one's health. In his canon of medicine, Avicenna has prescribed phlebotomy for treatment of almost all diseases [16]. Phlebotomy helps regulate blood and lymph circulation systems [17]. Allegedly, phlebotomy improves the function of connective tissues; restores the blood flow toward skin and muscles; reduces pain and blood pressure and adjusts the immune system, the

Table 1: Mean age of participant's were482.1±. Most of participants were bachelor, married and resident in governmental houses.

Demoghraphic Charachtristic		Group control		Group intervention		P-Value
		Number	Step	Number	Step	
Education	Diploma	9	60	6	40	0.847
	Higher diploma	1	6/7	1	6/7	
	Bachelor	4	26/7	7	46/7	
	Master	1	6/7	1	6/7	
Marital status	Married	15	100	15	100	0.71
	Single	0	0	0	0	
	Divorced	0	0	0	0	
Residance	Native	11	73/3	2	13/3	0.02
	None-native	0	0	3	20	
	Governmental houses	4	26/7	10	66/7	
working Shift	Day	6	40	12	80	0.6
	Night	9	60	3	20	
Attitude about complementary medicine	Yes	13	7/86	10	7/66	0.39
	No	2	3/13	5	3/33	

Table 2: The mean and standard deviation of sexual satisfaction before and after phlebotomy in diabetic and non-diabetic groups.

Significance level		95 % Confidence interval				Degree of freedom	T-score		Mean (SD)		Group Variable
		Lower bound		Upper bound							
After	Before	After	Before	After	Before		After	Before	Control	Intervention	
0.47	0.50	-5.6	-3.4	3.6	4.5	28	-0.43	0.27	36 (6.67)	48.46 (7.78)	Age
						28			12.1 (6.79)	23.13 (8.68)	Work experience
						28			92.4 (8.57)	211.86 (44.13)	Blood sugar

Based on the independent t-test, there was no significant difference between the two groups in terms of the mean age of patients (P>0.05).

The mean work experience of patients was 23.13 years in the intervention group and 12.1 years in the control group. Based on the independent t- test, there was no significant difference between the two groups in terms of work experience (P>0.05).

The mean blood sugar levels were 86.211 mg/dl in the intervention group and 92.4 mg/dl in the control group. Based on the non-parametric Wilcoxon test, there was no statistically significant difference in blood sugar levels of patients, before and after performing phlebotomy (P>0.05).

Table 3: Distribution of the variables of sexual satisfaction of patients with diabetes before and after the intervention.

Test	Distribution	P-Value	Z	Variables
Kolmogorov-Smirnov test	Normal	0.090	0.152	Sexual satisfaction (before the intervention)
	Normal	0.126	0.182	Sexual satisfaction (after the intervention)

According to the table above and based on the Kolmogorov-Smirnov test, the variables of sexual satisfaction before and after the intervention followed normal distributions (p=0.090) and (P=0.126).

Table 4: Changes in the mean scores of sexual satisfaction of patients in the intervention group.

Significance level	Degree of freedom	T	95 % Confidence interval		The standard error (S)	SD	Mean	Group
			Lower bound	Upper bound				
0.605	14	0.529	-3.26	5.39	2.01	7.81	1.066	Before- after

The independent t-test results showed that there was no significant difference between the mean scores of sexual satisfaction of patients in the intervention group before and after the intervention (P>0.05).

Table 5: Changes in the mean scores of sexual satisfaction of patients in the control group.

Significance level	Degree of freedom	T	95 % Confidence interval		The standard error (S)	SD	Mean	Group
			Lower bound	Upper bound				
0.859	14	-0.81	-5.99	5.06	2.57	9.98	-0.466	Before- after

The independent t-test results showed that there was no significant difference between the mean scores of sexual satisfaction of patients in the control group before and after the intervention (P>0.05).

nervous system and the hormonal system [18]. Farahani et al. [19] investigated the effectiveness of phlebotomy in the treatment of low back pain and impotence. They concluded that phlebotomy has more short-term clinical benefits compared to routine care and yet fewer side effects. Also, the second hypothesis, indicating that "sexual satisfaction of patients with type 2 diabetes is different in the control group before and after the intervention" was not confirmed; because no significant difference was observed in the mean scores of sexual satisfaction in the control group before and after the intervention. Studies show that more than 50% of diabetic men suffer from erectile dysfunction and this disorder is more prevalent in those with type two diabetes. Also, diabetic men are observed to develop impotence ten years earlier than normal men. Premature ejaculation, delayed ejaculation and decreased libido are common in diabetic patients [20]. In diabetic women, reduced fertility, irregular menstrual cycles, or anovulatory cycles are possible and according to studies, metformin and different ovulation induction treatments are effective in these people. Diabetes also increases the risk of various kinds of sexual problems in women. Decreased libido, poor orgasm, decreased sexual arousal, dyspareunia and vaginal infections with different frequencies occur in a significant proportion of diabetic women. All the causes and factors which result in impotence in diabetic men may contribute to women's impotence, as well [21].

Conclusion

Based on the results, it can be said that after conducting training sessions and performing phlebotomy, participants could establish frequent sexual contacts with their spouses and this resulted in their sexual satisfaction.

Acknowledgement

This is a study obtained from MSC thesis and supported by Zabol University of medical science.

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