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Demographic Profile and Associated Psychological Factors among Patients with Erectile Dysfunction Attending Tertiary Care Centre at Raigarh (Chhattisgarh)

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ABSTRACT

Background: Erectile dysfunction (ED) is defined as the inability to attain or maintain a penile erection sufficient for successful vaginal intercourse. ED is a common problem worldwide that affects men with increasing age. ED not only deteriorates sexual life of men but also makes them prone to experience psychological distress. ***Aim:*** Present study aimed at investigating the demographical profile and psychological factors were correlated with the ED. ***Methods:*** The cross-sectional study design with the total 197 patients in ED were selected in 18 to 60-year age groups, from Late Lakhiram Agrawal Memorial Govt. Medical College, Raigarh, C.G., India (LAMGMC) and associated hospital. The $\chi 2$ test was used for analyzing the data. ***Results:*** Total 197 patients were selected, the majority of the patients were mildly affected by ED (n=99, 50.9%). There were Significant correlations between patient's psychological factors e.g. Dissatisfaction on household income (P=0.030), Blame themselves (P= 0.001), feeling of guilt (P=0.000), less desirable (P= 0.000), feeling hurt (P= 0.000), feeling of anger or bitterness (P=0.000), depression (P=0.005), feeling like a failure (P=0.000), Worry of ED will affect closeness with a partner (P= 0.000), and worry for a future relationship (P= .001), and the association of socio demographic factors were insignificant. ***Conclusion:*** ED is a significant

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health problem and affect psychological well-being of patients. Besides pharmacological therapy, patient education on ED also plays an important role in the management of ED. Assessment early diagnosis and treatment of ED and psychological problems are crucial for patients, as untreated psychological problems can further worsen the ED condition as well as impair patients' overall QoL.

Keywords: *Erectile Dysfunction, Psychological Factors*

Erectile dysfunction (ED) is a common problem worldwide that affects men with increasing age. Inadequate penile erection or erectile dysfunction is defined as the inability to attain or maintain a penile erection sufficient for successful vaginal intercourse (National Institutes of Health Consensus Development Panel, 1993). This clinical disorder was described in early historical records, with descriptions of poor penile erection in men found in ancient Egyptian scriptures that are more than 5000 years old (Shah, 2002).

Erectile dysfunction (ED) is a common medical disorder worldwide that primarily affects men older than 40 years of age (Lewis, Fugl-Meyer, Corona, Hayes, Laumann, Moreira Jr, & Segraves, 2010), with 22.5% of men aged between 40 and 80 years reporting to have ED in the United States (McCabe, & Althof, 2014). The Prevalence of ED was 6.4% in the Asian males, across the 20–75 years age range. The prevalence of ED across all regions increased with age, with the highest rates seen in men aged >60 years (Tan, Low, Ng, Chen, Sugita, Ishii, & Sand, 2007).

Several epidemiological studies have shown that Diabetes mellitus, hypertension, hyperlipidemia, metabolic syndrome, depression, and lower urinary tract infections are significant risk factor for erectile dysfunction. Findings from other studies have shown that certain environmental and lifestyle factors, such as smoking, obesity, and limited or an absence of physical exercise, might also be important predictors of erectile dysfunction (Shamloul, & Ghanem, 2013).

The association of depression and erectile dysfunction (ED) has been firmly established, in the patients, those who suffer from minor depression, and restoration of erectile capacity can lead to an improvement in mood. Diagnosing depression in ED patients is important, not only because depressed patients are more likely to drop out of treatment for ED, but also because untreated depression can be life-threatening (Makhlouf, Kparker, & Niederberger, 2007; Seagraves, 2000). Erectile dysfunction not only deteriorates sexual life of men and his spouse but also makes them prone to experience psychological distress (Huri, Sanusi, Razack, & Mark, 2016; Latini, Penson, Colwell, Lubeck, Mehta, Henning, & Lue, 2002). The psychological impact of ED can be seen in their current marital relationship, the willingness to discuss ED, the feeling of guilt and denial,

depression, anger, a decrease in self-confidence and self-esteem, as well as the feeling of failure as a man.

A series of studies have been conducted in search of the psychological factors and to describe the demographic profile of the patients with ED (Huri, et al., 2016; Shamloul, & Ghanem, 2013; Makhlouf, et al., 2007; Latini, et al., 2002; Seagraves, 2000). As a step towards an even more precise depiction of ED as a psychological and social challenge, we have conducted the current study. The objectives of this study were to investigate 1) the magnitude of ED within a sample of Raigarh Chhattisgarh adults, and 2) Psychological factors of ED in this population. Although in part, this is a replication of previous studies, this study is the first to examine the demographic features of ED and to explore the psychological factors within the same sample.

Objective

The main objective of the present study was to investigate the correlation of demographical profile and psychological factors with the erectile dysfunction.

METHODOLOGY

Sample

The study was conducted at the department of Psychiatry, LAMGMC and associated hospital. From July 2016 to January 2017. Total 210 patients were approached for the treatment at Department of Psychiatry LAMGMC Raigarh. Out of these 210 patients, 14 respondents were excluded, as they did not fulfill the inclusion criteria, or not agreed to take part in the study. As a result, only 196 patients were eligible and completed the study.

Inclusion criteria

Patients who visited the hospital with the history of erectile dysfunction (between 18 to 60 years of age group). Patients with erectile dysfunction having repeated failure to perform sexual acts due to inadequate penile erection (ED for >3 months duration) and amenable for interview were included in the study.

Exclusion criteria

Patients with vision or hearing impairments, intellectual impairment, sever medical complications were excluded from the study. Informed consent was obtained from patients before the data collection.

Research design

A cross-sectional study design and purposive sampling technique was used.

Measures

Sociodemographic data were collected using structurally designed sociodemographic questionnaire containing basic demographic details of the patients. Psychological factors were assessed using a Cognitive psychological scale based on Erectile Dysfunction - Effect on Quality of Life (ED-EQoL, Huri, et al., 2016).

Each psychological question was scored as 0 – not affected at all, 1 – affected a little, or 2 – affected somewhat. The total cumulative score was calculated, and a score of less than 15 indicated that the patient was mildly affected by ED, a score of 15–28 indicated that the patient was moderately affected by ED, and a score of 29 and greater indicated that the patient was severely affected by ED.

Data Analysis

The patients' sociodemographic details were analyzed using descriptive statistics. The descriptive statistics were expressed as frequency (N, %) and mean ± standard deviation. The association between psychological factors, demographic factors and ED was assessed by using Pearson's $\chi 2$ correlation.

RESULT

Table no. 1 Overall psychological scales

Mild	99	(50.5)
Moderate	75	(38.3)
Sever	22	(11.2)

Note*: Data reported as number (percentage).*

Table no. 1 shows the overall psychological factors and it reveals that the majority of the patients were mildly affected 99 (50.9%), 75 (38.3%) Moderate and 22 (11.2%) were sever affected with erectile dysfunction.

Table no. 2 Patients' demographic characteristics

Demographic Characteristics	**Number of patients**	**percentage**
Age		
Mean±SD	29.77±7.05	
Religion		
Hindu	143	73.0
Muslim	19	9.7
Sikh	8	4.1
Christian	26	13.3

Education		
Primary	54	27.6
Higher -Secondary	88	44.9
Graduate	46	23.5
Postgraduate	8	4.1
Occupation		
Employed	166	84.7
Unemployed	30	15.3
Marital Status		
Married	94	48.0
Unmarried	102	52.0
Locality		
Rural	148	75.5
Urban	40	20.4
Semi-urban	8	4.1
Family Type		
Nuclear	93	47.4
Joint	103	52.6

Demographic Characteristics

Table no.2 shows that all the subjects are aged between 18-45 years with the mean age of 29.77±7.05. The majority of the patients were educated up to higher-secondary level (n= 88; 44.9%), employed (n=166; 84.7%), belonged to Hindu religion (n= 143; 73%), unmarried (n=102, 52.0%), residing in rural area (n=148, 75.5%), and living in a joint family (n=103; 52.6%).

Table No. 3 Psychological factors associated with ED patients

Psychological Factors	Psychological-scale Mild	Moderate	Sever	Total	$\chi 2$	p- value
Dissatisfaction on household income						
Not at all	17	7	1	25	10.68	**.030***
A little	60	37	11	108		
Somewhat	22	31	10	63		
Blame themselves						
Not at all	48	28	1	77	17.57	**.001***
A little	29	22	8	59		
Somewhat	22	25	13	60		
Feelings of guilt						
Not at all	16	6	1	23	22.10	**.000***

A little	68	42	8	118		
Somewhat	15	27	13	55		
Less Desirable						
Not at all	62	21	1	84	46.14	**.000***
A little	25	21	6	52		
Somewhat	12	33	15	60		
Feeling hurt						
Not at all	8	7	0	15	20.25	**.000***
A little	76	50	9	135		
Somewhat	15	18	13	46		
Feel "less a man"						
Not at all	12	5	0	17	24.46	.000[a]
A little	81	55	12	148		
Somewhat	6	15	10	31		
Angry or bitter						
Not at all	80	36	1	117	63.27	**.000***
A little	13	25	7	45		
Somewhat	6	14	14	34		
Depression						
Not at all	6	3	0	9	4.42	**.005***
A little	19	9	2	30		
Somewhat	74	63	20	157		
Low self-esteem						
Not at all	13	1	0	14	14.75	.351[a]
A little	6	9	0	15		
Somewhat	80	65	22	167		
Feel like a failure						
Not at all	51	23	1	75	27.61	**.000***
A little	33	21	10	64		
Somewhat	15	31	11	57		
Feel had let down partner						
Not at all	11	6	0	17	28.34	.000[a]
A little	86	62	14	162		
Somewhat	2	7	8	17		
Worry ED will affect closeness with partner						
Not at all	76	28	1	105	63.75	**.000***
A little	16	18	4	38		
Somewhat	7	29	17	53		

Worry for future relationship						
Not at all	13	6	1	20	19.74	**.001***
A little	71	49	8	128		
Somewhat	15	20	13	48		
Preoccupied with ED						
Not at all	12	6	0	18	26.24	.000[a]
A little	82	62	13	157		
Somewhat	5	7	9	21		

***Notes**: χ2 test was done to obtain the P-value; [a] P-value was not reliable as more than 20% of the cells have expected frequencies that are less than 5; * P-value was significant (P<0.05).*

Psychological factors associated with ED patients

Table no. 3 shows the associations between patient's psychological scale and psychological factors. It reveals that there were Significant correlations between patient's psychological scale and a dissatisfaction on household income (P=0.030), blame themselves (P= 0.001), feeling of guilt (P=0.000), less desirable (P= 0.000), feeling hurt (P= 0.000), feeling of anger or bitterness (P=0.000), depression (P=0.005), feeling like a failure (P=0.000), Worry ED will affect closeness with a partner (P= 0.000), and Worry for a future relationship (P= .001). Other associations were found to be insignificant.

Table no. 4 lists the association between patient's psychological scale and demographic characteristics. It shows that the association of sociodemographic factors were insignificant.

Table no. 4 the association between psychological scale and demographic characteristics

Demographic Factors		**Psychological-scale**			**Total**	**χ2**	**p- value**
		Mild	**Moderate**	**Sever**			
Religion							
	Hindu	73	55	15	143	.49	.998
	Muslim	9	7	3	19		
	Sikh	4	3	1	8		
	Christian	**13**	**10**	**3**	**26**		
Education							
	Primary	27	22	5	54	1.70	.945
	Higher secondary	44	33	11	88		
	Graduate	23	17	6	46		
	Postgraduate	5	3	0	8		
Occupation							
	Employed	84	64	18	166	.166	.920
	Unemployed	15	11	4	30		

Marital status							
	Married	48	37	9	94	.506	.777
	Unmarried	51	38	13	102		
Habited							
	Rural	75	57	16	148	.105	.999
	Urban	20	15	5	40		
	Semi urban	4	3	1	8		
Family type							
	Nuclear	46	36	11	93	.105	.949
	Joint	53	39	11	103		

Notes: *$\chi 2$ test was done to obtain the P-value; * P-value was significant (P <0.05); a P-value was not reliable as more than 20% of the cells have expected frequencies that are less than 5.*

DISCUSSION

Association between demographic characteristics and ED

In our study, we did not find any significant association between demographic characteristics and ED. Similar findings were consistent with a population-based study conducted in Singapore (Tan, Hong, Png, Liew, & Wong, 2003) who did not find any significant association between demographic factors except age. A study carried out to evaluate the erectile dysfunction (ED) in adult kidney transplant patients (Rebollo, Ortega, Valdes, Fernández-Vega, Ortega, García-Mendoza, & Gómez, 2003), and a study on Association of psychological factors with ED (Huri, et al., 2016), they also did not find any significant association between demographic factors except age and ED. It shows that ED increases with advancing age and is most likely due to a gradual decrease in physiological function of a person with advancing age. It is expected that ED will become a major problem in the future, as the elderly population is growing year by year ((Huri, et al., 2016).

However, studies done in erectile dysfunction among hypertensive patients reported a significant correlation between lower educational level (69.1%, P=0.026) and ED (Fadzil, Sidi, Ismail, Hassan, Thuzar, Midin, & Das, 2014). A study of ED in Turkey shows that the prevalence of moderate or severe ED was significantly associated with increasing age, low educational level, unemployment as well as between household income (Akkus, Kadioglu, Esen, Doran, Ergen, & Anafarta, 2002). It is believed that a well-educated person is more likely to be well paid, having better access to health care centers, and subsequently living a more positive lifestyle (Huri, et al., 2016).

Although this study was conducted in an urban setting where the majority of the participants were well educated (Higher –Secondary level, 44.9%; Graduate, 23.5%) and of younger age (29.77±7.05 years). Sexual dysfunction still occurred among patients. The possible reason for

this occurrence might be because they have poor access to health services and stigma related to ED, which prevents them to access the health services early.

Association between Psychological factors and ED

Studies have shown that sexual dysfunction can significantly affect man's self-esteem, confidence, and relationship (Arrington, Cofrancesco, & Wu, 2004). A normal sexual function is one of the basic fundamental identities of men, and its deterioration can indirectly affect their psychological well-being. Thus, sexual incompetency due to failing in producing and maintaining a sufficient erection during intercourse can significantly affect men's overall health and QoL (Huri, et al., 2016).

The overall psychological scales showed that the majority of the participants (50.5%) were mildly affected by ED. Most of them felt angry, bitter and, depressed because of ED. This indicates that ED can affect the psychological well-being of a person (Huri, et al., 2016).

The study showed a significant correlation between ED and depression. This finding was consistent with other studies conducted worldwide and reported a strong correlation between depression and sexual dysfunction, with the occurrence of depression being twice as high in men with ED compared to healthy men (Shiri, Koskimäki, Tammela, Häkkinen, Auvinen, & Hakama, 2007; Arrington, Cofrancesco, & Wu, 2004; Seidman, 2002; Seidman, Roose, Menza, Shabsigh, & Rosen, 2001) . In addition, a recent study also reported a significant correlation between depression and ED (Huri, et al., 2016).The occurrence of depression is mainly because of the fact that penile erection is a sign of masculinity. Any decline in penile erection will mean a decline in manhood. This might subsequently lead to the feeling of "worthlessness" and might aggravate the current depressive symptoms. However, an appropriate treatment of ED might help in alleviating both ED and depressive symptoms (Cheng, Ng, & Ko, 2007). Thus, men with ED should seek treatment to improve his sexual dysfunction as well as their psychological well-being.

The study also shows a significant relationship between sexual dysfunction and feeling of anger or bitterness. This finding was consistent with prospective results from the Massachusetts Male Aging Study (Huri, et al., 2016; Araujo, Johannes, Feldman, Derby, & McKinlay, 2000). The feeling of anger or bitterness toward themselves results from their disability to produce a sufficient erection during intercourse (Araujo, et al., 2000). Delay in seeking treatment results in poor sexual satisfaction, decrease in sexual intimacy, and QoL ((Huri, et al., 2016). Thus, the sexual dysfunction should be treated immediately to get the early benefit for both man and his spouse.

CONCLUSION

Despite our best effort, there are limitations of our study. Small sample size, we have not taken general population, did not considered the effect of medications, substance use, and chronic diseases.

ED is a significant health problem and affect psychological well-being of patients. Besides pharmacological therapy, patient education on ED also plays an important role in the management of ED. Assessment early diagnosis and treatment of ED and psychological problems are crucial for patients, as untreated psychological problems can further worsen the ED condition as well as impairs patients' overall QoL.

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