

# Pattern of erectile dysfunction in Jeddah city

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## ABSTRACT

**Objective:** The aim of this study was to determine the demographic features of erectile dysfunction patients attending different specialized clinics in Jeddah city, and to identify possible risk factors associated with erectile dysfunction problem.

**Methods:** All newly erectile dysfunction patients (n=388) who attended 6 andrology and urology clinics within a period of 3 months were subjected to a modified structural interview questionnaire to collect demographic data and risk factors for erectile dysfunction.

**Results:** The study revealed the following results among erectile dysfunction patients; Saudi patients constituted (81%). The age ranged from 20-86 years with mean age of  $43.23 \pm 12.56$  years, 73% were married with one wife, 23.5% married with two wives, and 8% were single. About one-half (43%) were less than secondary education

level. Retired patients constituted (13%) of all patients. Lack of exercise was the most frequent risk factor among 82% of patients, followed by smoking (56%), use of regular medication (44%), diabetes (30%), hypertension (15%), history of pelvic surgery (14%) alcoholism (13%), and drug addict (8%).

**Conclusion:** Erectile dysfunction is a problem of not only old age but also of middle and young age. This might be attributed to the high frequency of some risk factors such as diabetes mellitus, hypertension, smoking, alcohol consumption, and drug addiction. This finding may reflect the necessity for construction of prevention strategies.

**Keywords:** Erectile dysfunction, risk factors.

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Until 1990, impotence was the term used in the literature and meant erectile dysfunction in some articles, whereas in others, it meant male sexual dysfunction, including libidinal, orgasmic, and ejaculatory dysfunction. Erectile dysfunction is one of the most common diseases of male sexual dysfunction. Erectile dysfunction is often assumed to be a natural concomitant of the aging process to be tolerated along with other conditions associated with aging. This assumption may not be entirely correct. For the elderly and for others, erectile dysfunction may occur as a consequence of specific illnesses or of medical treatment of certain illnesses. Apart from the age, which affects both the libido and the ability to sustain an erection sufficient for intercourse, other important risk factors for erectile dysfunction include

diabetes mellitus, hypertension, smoking, hyperlipidemia, vascular disease, drugs, neurogenic disorder, peyronie's disease, lack of sexual knowledge, poor sexual techniques, inadequate interpersonal relationships or their deterioration, and many chronic diseases especially renal failure and dialysis. Obesity, over-consumption of alcohol and lack of regular exercise may also contribute to the problem.<sup>1</sup> Moreover impotence was statistically associated with vasodilators and antihypertensive, cardiac, and hypoglycemic medications.<sup>2</sup> The aim of the present study is to study the pattern of erectile dysfunction among patients attending the different andrology and urology clinics in Jeddah, Saudi Arabia, through the following: 1. To determine the

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**Table 1** - Age distribution of erectile dysfunction patients in Jeddah City, Saudi Arabia, 1999.

Age group (yr)	No (%)
20-29	63 (16)
30-39	97 (25)
40-49	103 (26.5)
50-59	77 (20)
60-69	41 (10.5)
70-79	7 (2)
Total	388 (100)
$\bar{X} \pm SD$ 43.23 ± 12.56 $\bar{X}$ =Arithmetic mean, SD=Standard deviation	

demographic features of erectile dysfunction patients, and 2. To identify possible risk factors associated with erectile dysfunction.

**Methods.** *Research design.* This is a multicenter cross-sectional study of erectile dysfunction patients attending selected andrology and urology clinics in Jeddah, Saudi Arabia.

*Study sample.* A number of fourteen hospitals and medical centers in Jeddah city are known to provide medical care for erectile dysfunction patients, apart from other medical services. Such hospitals and medical centers are 5 governmental and 9 private hospitals and medical centers that provide their services through specialized andrology and urology clinics. Thus 14 specialized clinics are available for ED patients. However it has been noticed that in governmental hospitals such specialized services provide their service mainly through their urology clinics, while such services are given in private hospital mainly through andrology clinics. Using the proportionate allocation method of sampling, 2 governmental clinics (out of 5 clinics), and 4 private clinics (out of 9 clinics) were chosen. The choice was based upon the interest of the specialists running such clinics, and their willingness to participate in the present study. Thus a total of 6 specialized clinics were chosen (3 andrology and 3 urology). The National Institute of Health (NIH) consensus conference defined erectile dysfunction as the inability of male to achieve or maintain an erection sufficient for satisfactory sexual performance.<sup>3</sup> Based on this definition and detailed sexual history, newly ED patients who attended the selected six clinics during an allocated period of 3 months (n=468) constituted the target sample for the present study. Those who agreed to participate in the present study were 388 patients with a response rate of 83%.

**Technical design.** All the erectile dysfunction patients were subjected to a structural interview questionnaire. The questionnaire comprises of the following two parts: 1. Sociodemographic data: Data about age, education, occupation, marital status were collected. 2. Possible risk factors: Histories of some risk factors were carried out for each patient, such factors included diabetes, hypertension, heart disease, smoking. Positive history was confirmed from the patient's files through previous diagnosis and or medication.

**Analysis of data.** The data were analyzed using the Statistical Package of Social Science (SPSS) and Epi Info. software programs for cross-tabulation and computations. Ninety five percent confidence intervals for the frequency of risk factors were calculated, and rank order of each frequency was estimated accordingly.

**Results.** *Sociodemographic characteristics of erectile dysfunction patients.* A total of 388 patients were interviewed, 314 Saudi (81%) and 74 non-Saudi (19%). The age of such patients ranged from 20-86 years with a mean age  $43.23 \pm 12.56$  years, Table 1 shows that the modal age group is 40-49 years. Table 2 shows the distribution of erectile dysfunction patients according to marital status, education and occupation. Table 3 shows the pattern of ED in the 388 patients. One third (35%) of patients complained of sudden ED, while in the other two thirds the

**Table 2** - Distribution of the (388) erectile dysfunction patients according to marital status, education and occupation, Jeddah, Saudi Arabia 1999.

Characteristic	No (%)
<b>Marital Status</b>	
Married	349 (90)
Divorced	6 (2)
Single	32 (8)
Widowed	1 (0)
<b>Number of wives</b>	
One wife	255 (73)
Two wives	82 (23.5)
Three wives	10 (3)
Four wives	2 (0.5)
<b>Education</b>	
Less than secondary	156 (42.5)
Completed secondary	92 (24)
High Education	130 (33.5)
<b>Occupation</b>	
Government Employee	155 (40)
Private Employee	141 (36)
Student Employee	12 (3)
Retired	51 (13)
Others	29 (8)
Results are shown for cases whose data are available	

**Table 3** - Distribution of the 388 erectile dysfunction (ED) patients according to the pattern of erectile dysfunction, Jeddah, Saudi Arabia, 1999.

Pattern	No (%)
<b>Type of onset</b>	
Sudden	135 (35)
Gradual	250 (65)
<b>Age of onset (year)</b>	
<20	9 (2)
20-	96 (25)
30-	92 (24)
40-	99 (26)
50-	72 (19)
60+	14 (4)
<b>Duration (year)</b>	
<1 year	99 (25.5)
1-	185 (48)
5-	59 (15)
10+	45 (11.5)

**Table 4** - Frequency (95% CI) and rank order of some possible risk factors for 388 erectile dysfunction patients in Jeddah City, Saudi Arabia, 1999.

Rank Order	Risk factors	No (%)	95% CI
2	Smoking (current & ex-smoking)	217 (56)	51.0 - 60.8
4	Diabetes	115 (30)	25.1 - 34.1
3	Medication	169 (44)	38.7 - 48.5
5	Alcohol	49 (13)	9.3 - 15.9
6	Drugs	30 (8)	5.0 - 10.4
1	Lack of exercise	314 (82)	78.4 - 86.0
5	Family history	42 (11)	7.8 - 14.0
6	Cardiac disease	20 (5)	3.0 - 7.4
5	Hypertension	57 (15)	11.2 - 18.2
5	Pelvic trauma	15 (4)	2.0 - 5.8
6	*STD	25 (7)	4.4 - 9.4
5	Surgery	54 (14)	10.5 - 17.3

\*STD-Sexually transmitted disease, CI-Confidence interval, Age (x±SD) 43±12.56 years

**Table 5** - Frequency of use of different types of medication by the erectile dysfunction patients, Jeddah, Saudi Arabia, 1999.

Type of medication	No. (%)
*Yes	169 (44)
Diuretics	14 (4)
Antihypertensive	57 (15)
Cardiac	21 (5)
Anti Psychotic	11 (3)
Antacid	2 (0.5)
Hypoglycemic	115 (30)
Prostate drugs	4 (1)
No	219 (56)

\*Some patients take more than one type of medication

condition was gradual (65%). The mean age of onset was  $39.57 \pm 12.44$  years. With regards to the duration of erectile dysfunction, the average duration of ED was  $3.5 \pm 5.1$  year. About one half of the patients (48%) suffered from ED for a period of 1-5 years, one-fourth (25.5%) less than one year, and one-fourth (27%) for more than 5 years. Those who suffered from 10 or more years constituted about 12% of all patients. Some risk factors for erectile dysfunction can be found in Table 4 that shows the frequency and rank order of some possible risk factors for ED among patients. Lack of exercise ranked first as risk factor constituting 82% of patients. This was followed by smoking, where about one-half of the patients (56%) were either current smokers (40%) or ex-smokers (16%). Current smokers were either cigarette smokers (21%), shesha smokers (15%), or both (4%). The use of regular medication ranked the third most frequent risk factor (44%). Diabetes was reported in (30%) of patients, while hypertension was in (15%). Other risk factors were drug addiction (8%), alcohol consumption (13%), cardiac diseases (5%), history of pelvic surgery (14%), family history of ED (11%), and pelvic trauma (4%). Table 5 shows the frequency of use of medication by the erectile dysfunction patients.

**Discussion.** The subjects in the present study were presented for the first time to selected andrology and urology clinics and centers, complaining of erectile dysfunction. Of 468 patients attending these clinics, 388 patients participated in the study. The age distribution shows that the majority of such patients were less than 50 years with the mean age of  $43.23 \pm 12.56$  in contrast to most of the previous studies, which indicated older aging, for e.g. the mean age of 59.4 in Minneapolis study,<sup>4</sup> and 52.6 years in Riyadh.<sup>5</sup> However the study showed erectile dysfunction to be an age dependent disorder, a finding which is similar to most of previous studies. The patients in the present study were experiencing difficulties with erectile functioning for a substantial period of time before attending the concerned clinics for treatment, with average duration of  $3.5 \pm 5.1$  year. About 12% have had complaints for more than a ten year duration. This finding is in agreement with the finding of Carroll et al<sup>6</sup> who stated that 11% of his patients had not achieved penetration for intercourse for more than 10 years. However, the fact that our patients in the present study attended the clinics for the first time would reflect the long duration passed before they seek the specialized medical care that have become available recently in the Kingdom.

The onset of erectile dysfunction was reported in the present study by about 65% to worsen gradually. This figure was relatively higher than the figure of 59% reported by Shorm et al<sup>7</sup> while it was less than the figure of 88% reported by Carroll et al.<sup>6</sup> On the

other hand about one-third of patients in present study had sudden erectile dysfunction. In this group of patients the condition might be of psychogenic origin, especially that the evidenced erection by masturbation practices in some of the patients (17%) perhaps exclude the organic origin in such patients.

An increased rate of cigarette smoking among impotent men has been reported as 58% of current smokers and 81% of current and ex-smokers combined in a group of 178 patients who were referred for evaluation of impotence.<sup>8,9</sup> Similar rates of (82%) cigarette smoking (current and combined) among impotent men have been reported by Bahren et al.<sup>10</sup> In the present study smoking ranked the 2nd most frequent risk factor associated with ED (56%). This figure though lower than the figures mentioned above, when compared with the figures of 20-30% among certain Saudi population<sup>5,12</sup> will be considered high, reflecting its possible role as risk factor. The nicotine inhaled in cigarette smoke may cause ED secondary to its local and generalized effect on blood vessels. The effect of smoking can be evident on the small penile vasculature resulting in a lower mean penile blood pressure compared to non-smokers,<sup>5</sup> this would explain the significant positive correlation between the duration of smoking and the severity of ED in the present study.

History of diagnosed and treated hypertension was present in 15% of our patients. This is nearly similar to the prevalence of hypertension in impotent patients in Western reports that range between 16 to 20%.<sup>5</sup> However, such prevalence of (15%) is higher than the prevalence of (4%) among the normal Saudi population,<sup>13</sup> a finding that may reflect the role of hypertension as risk factor among the impotent patients.

Most studies documenting drug-induced impotence have been subjective, and based on case reports, uncontrolled studies and clinical impressions.<sup>14</sup> Morley et al,<sup>15</sup> noted that 16 of the 200 most widely prescribed drugs in the United States have been reported to cause impotence. Slag et al<sup>4</sup> found a 25% prevalence of drug-associated impotence in a medical outpatient population. However 44% of our patients gave history of taking medications, a figure which is higher than that reported by the previous study.

Diabetes mellitus is the leading organic cause of impotence. In as many as 60% of diabetic men erectile dysfunction will develop sometime during the course of their disease.<sup>16</sup> It is hypothesized that cavernosal artery insufficiency, corporeal veno-occlusive dysfunction, autonomic neuropathy, or some combination thereof is the major organic pathophysiologic mechanism leading to persistent erectile impairment in diabetes mellitus.<sup>5</sup> The prevalence of diabetes mellitus in different reported groups of impotent patients varied between 8 to

22%.<sup>3,5,17</sup> However, the prevalence of diabetes mellitus among our ED patients was 30% which is high enough to reflect the association with the condition of ED especially if compared with the prevalence of 6% among the adult male and 7% female Saudi populations.<sup>18</sup>

In conclusion, it seems that erectile dysfunction is a problem of not only old age but also of middle and young age, and this might be attributed to the high frequency of some risk factors such as diabetes mellitus, hypertension, smoking, alcohol consumption, and drug addiction. This finding may reflect the necessity for construction of prevention strategies.

**Recommendations.** 1. Emphasis should be placed on the importance of obtaining a detailed sexual history as part of every medical history. It is important that physicians and other health care providers in the primary health care centers treating patients for chronic conditions periodically inquire into the sexual functioning of their patients and prepare to offer counsel for those who experience erectile difficulties. 2. It is necessary to construct preventive strategies for the risk factors associated with erectile dysfunction, since some of these factors were presented in high frequencies. Preventive programs for quitting smoking, indicating and presenting to the public that smoking is one of the most important factors associated with erectile dysfunction. Also the importance of controlling diabetes in diabetic patients. 3. Published lists of prescription drugs that may impair erectile functioning often are based on reports implicating a drug without systematic study. Such studies are needed to confirm the validity of these suggested associations. 4. Education of the public on aspects of sexual dysfunction and the availability of successful treatment components is essential, media involvement in this effort is an important. This should be combined with information designed to protect men and their partners from economic and emotional losses. 5. It is important to know more about the different aspects of erectile dysfunction in certain groups of chronic conditions such as diabetics, hypertensive patients, smokers, and as a result of surgery and trauma. These will help us improve our diagnostic skills, as well as our therapeutic options.

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