

THE PREVALENCE OF ERECTILE DYSFUNCTION IN THE BRAZILIAN MALE POPULATION

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ABSTRACT

This study aims to evaluate the prevalence of ED and associated risk factors in Brazilian male populations, to discuss ways of prevention and to list available treatments. Erectile dysfunction (ED), better known as impotence, is characterized by the persistent inability of a man to achieve or maintain a penile erection sufficient for satisfactory sexual performance. It may be caused by physical problems or psychological difficulties. In Brazil 45% of the male population over 18 years, expresses some degree of ED. Men with ED often have doubts about their sexuality and are influenced by popular myths, establishing a vicious cycle that affects the health and quality of life. There is a clear association between the risk factors for heart disease,

diabetes and ED. The health professional must develop a self-criticism of their own difficulty in addressing the issue with the patient. Despite the number of treatment options for ED (which currently are simple and easily accessible) a large portion of their holders do not voluntarily submit to the doctor because of embarrassment.

KEYWORDS: Erectile dysfunction, Prevalence, Brazil.

INTRODUCTION

The interest in researching the prevalence of erectile dysfunction of the Brazilian male population is partly because the subject is permeated with many taboos, prejudices and popular myths, constructed socio-historical regarding the Brazilian male sexuality. Also, the lack of information on it still raises many questions.

Erectile dysfunction (ED), better known as impotence, is characterized by the persistent inability of a man to achieve or maintain a penile erection sufficient for satisfactory sexual performance.^[2-9] There are an estimated 140 million cases worldwide, with projections of up to 300 million for the year 2025. Data from two large national surveys taken in 2006 and in 2010, revealed that in Brazil 45% of men over 18, have some degree of ED.^[10,22]

Sexuality is a fundamental aspect of the quality of life in both men and women and can be understood as a complex activity that involves different stages – desire, sexual attraction and sexual behavior. From a physiological point of view, male, sexual function involves obtaining and maintaining of penile erection, sperm emission, ejaculation and orgasm. Nevertheless, over time, men experience fewer spontaneous erections and greater stimulation becomes necessary so as to achieve a full erection.^[1]

It is important to note that many men experience temporary problems of erection at certain times of their lives, whether physiological or psychological. Such problems can be more casual and do not mean that ED will become a chronic condition. It is also worth adding that a man can harm his erections due to the excessive concern with his performance capability, even when there are no physical problems. For this reason, one can only characterize ED when the problem persists and continues over the time.^[11]

There are certain well known risk factors most commonly correlated with ED: hypertension, diabetes mellitus, heart disease, smoking, excessive alcohol consumption, obesity, prostate disease, depression and age.^[12,13] Socioeconomic factors such as low income, low educational level, unemployment and single marital status have also been associated with the presence of erectile difficulties.^[14,15]

This study aims to evaluate the prevalence of ED and associated risk factors in Brazilian male populations, to discuss ways of prevention and to list available treatments.

METHODS

This study consists of a descriptive review of the literature. The descriptive research works with the characteristics of a population or a phenomenon, establishing correlations between variables and defining the nature of such correlations without committing to the explanation of the phenomena described.^[16]

Electronic research into the MEDLINE, LILACS and SCIELO databases and PUBMED website was carried out in order to identify articles published from 2000 to 2016. In the first search, the terms “erectile dysfunction” and “sexual dysfunction” were used, while in the second one, the terms “the prevalence of erectile dysfunction” and “erection problems” were used. The PUBMED website also used the terms “Brazil” and “male”, combined with the terms described above.

To meet the inclusion criteria, only complete, review and original articles written in Portuguese, English, Spanish and French that assessed sexual function using validated instruments were selected; publications such as theses, dissertations and monographs. Articles were excluded if they were written in languages other than those stated, if they mentioned female sexual dysfunction, if they were duplicates, if they were published before 2000 or if they were irrelevant to the topic.

An analytical and selective reading of the information contained in the sources of interest (according to the quality and relevance of the content to the proposed theme) was carried out. Then the articles were grouped by subject. Finally, interpretation, discussion, construction and presentation of the literature review were performed.

LITERATURE REVIEW

Erectile dysfunction

Sexuality is expressed in values and behaviors, such as desire, pleasure and corporeality, which are often related to the quality of life. According to the World Health Organization (WHO), this means to be in a state of physical, mental and social well-being. The terms “health” and “quality of life” must be considered adjuncts. Good expression of sexuality depends on the health view in a comprehensive way. It can be said that health, quality of life and sexual function are closely related. In this context, expression of sexuality, which contributes decisively to the quality and longevity of affective relationships, should be considered an important component of overall health.^[17]

The literature informs us that ED may be presented by changing one or more of the three mechanisms responsible for the erection: obstruction of the arteries, inability of blood vessels within the penis to store the blood and damage to the nerves of the penis or pelvic area. It also can be caused by other psychological disorders such as low levels of male hormones.^[18]

The first and most extensive study on the prevalence of ED was conducted by Kinsdy et al. (1948) who interviewed 15,781 men between 18 and 80 years of age from a representative sample of the United States of America (USA) population stratified by age, education, work and home. The authors concluded that ED was present in the 1% of the male population before the age of 19, 3% up to 45 years old, 6.7% between 45 and 55 years old and 25% up to 75 years old. Difficulty achieving erection was reported by one in 50 individuals at 40 years of age and one in four at the age of 65.^[19]

In Brazil, a study led by Abdo et al. (2006) was conducted in 18 major cities and interviewed men over 18 years of age. It showed that the prevalence of ED in the sample was 45.1% (31.2% minimal ED, 12.2% moderate ED and 1.7% complete ED), focusing each year (new cases) in one million people aged between 40 and 70 years^[17], demonstrating that this disease should be considered an important public health problem in our country. The prevalence of ED increased with age and with the presence of concomitant problems such as hypertension, diabetes and abnormal prostate, among other criteria. Men with ED more frequently reported negative repercussions in various situations, such as low self-esteem, relationship problems (with partner, children and/or friends), at work or at leisure, when compared to men with other sexual dysfunctions (such as premature ejaculation, lack of sexual desire and orgasmic dysfunction).^[20]

In a study led by Moreira Jr et al. (2004)^[21], 71,503 men were evaluated, whose average age was 49.8 years. The sample was predominantly white, married Catholic men. With respect to education, the proportion of participants with high school (38.4%) or higher education (34.9%) in this study was higher than the percentages found in the Brazilian male population (17.2% and 8.6% respectively). High blood pressure (31%), hypercholesterolemia (18%) and diabetes mellitus (14%) were the most commonly encountered medical problems among the patients studied. Among the 24 states surveyed, the majority of men included in this study were from São Paulo (29%), Minas Gerais (12%), Rio de Janeiro (12%), Rio Grande do Sul (8%) and Bahia (6%).

In total, 53.5% of men have reported some degree of ED. The frequency of minimal, moderate and complete dysfunction was 20.8%, 26.3% and 6.4%, respectively. The presence and extent of the severity of ED is associated with advancing age. Moderate and complete ED frequency increased with age, exceeding 8.8% and 1.5%, respectively in men under 40 years of age and exceeding 46.7% and 26.1% of men aged 70 or older. The ratio of minimum

dysfunction, nevertheless, remained stable between 14% and 26%. About 75% of participants did not have erectile dysfunction before 40 years of age. This percentage decreases to 13% among those aged 70 or older.^[21]

Through an unprecedented initiative of the Brazilian Society of Urology (SBU) in partnership with Eli Lilly of Brazil, the Movement for Men's Health, itinerant caravan traveled to 22 Brazilian cities between March and September 2010, serving 9,982 men and updating ED data in Brazil. In the Southeast, 4,873 men were attended to by the Movement in the cities of Vitória; Belo Horizonte; São Paulo, Campinas, Santos, São José dos Campos, Ribeirão Preto, São Bernardo dos Campos and Guarulhos, in São Paulo; and Rio de Janeiro, Nova Iguaçu and Niterói, in Rio de Janeiro. Of these, 1,780 complained of ED symptoms, totaling 36.5% of this population with some degree of ED. Even so, based on the consultations, the survey showed that ED is definitely the main complaint when it comes to male sexuality.^[22] In the Midwest, 77.3% of men over the age of 18 showed some degree of ED, making it the region with the highest average among all regions evaluated.^[23] In the southernmost part of the country, 1,322 men were attended to by the Movement in the cities of the region. Of this number, 670 complained of symptoms of ED. The average 50.7% of men who had some degree of ED was above the national average.^[24]

As erectile dysfunction is closely linked to issues of masculinity, it can not be treated as secondary issue, as it is indicative in many cases of more serious diseases that can jeopardize men's health. Data taken from all of the cities which the Movement visited show that of the 4,392 men with some degree of ED who were treated, 56% were diagnosed as hypertensive, 19% diabetic, 13% with high cholesterol and 12% were cardiac patients.^[24] It was also observed that patients with more than 100 centimeters in waist circumference had ED, as well as did smokers, sedentary men and patients with thyroid problems. "Individuals undergoing certain types of surgery may also have their impaired sexual function. Surgical interventions in the large intestine, rectum and prostate as well as treatments with radiation therapy in the pelvic area all damage nerves and blood vessels, disrupting the erection process".^[23]

Physiology of erection

The human penis is an external male sexual organ. It is a reproductive, intromitting organ that additionally serves as the urinal duct. The main parts are the root (radix); the body (corpus); and the epithelium of the penis including the shaft skin and the foreskin covering the glans penis. There are three separate chambers in the normal penis: two interconnected erectile

chambers, called the corpora cavernosa, which make up the penis volume and the urethra, a tube for the conduction of both urine and semen. Erectile chambers are attached to the pubic bone and extend from the abdominal part to the visible portion of the penis. This anchor helps keep the penis hard when the chambers are filled with blood. Each erectile chamber is formed by a similar spongy fabric which fills with blood during the excitement phase. Blood becomes trapped in the penis, increasing its size and hardening it for penetration.^[25]

Erection occurs from erotic stimuli (sight, touch, smell and thoughts) capable of producing excitation signals to the brain, by the sense organs determined by emotional, behavioral, and organizational issues, a process regulated by the central nervous system (CNS) and through sophisticated mechanisms (orchestrated by both the spinal cord and the brain) sending messages to the penis and releasing substances related to relaxation of smooth muscles, essential for the flow of blood and imprisonment in the lacunar spaces of the penis - erection. Regulated by cyclic GMP (cGMP), which is part of nitric oxide (NO), phosphodiesterase 5 promotes the breakdown of cGMP to GMP, causing vasoconstriction, resulting in blood exit from the corpora cavernosa and the subsequent loss of erection.^[12]

Prevention and treatment for Erectile Dysfunction

Before the 1970s, almost all cases of ED were considered as the result of psychological causes and treatment usually consisted of empirical administration of testosterone or referral to a psychiatrist.^[26] Over the past decade, advances in the pharmacological treatment of ED caused increasing interest in the problem, which led to several population studies that have shown that most men with ED have a mixed condition that may be either predominantly functional or predominantly physical.^[27]

Although there are worrisome data on the prevalence of ED in Brazil, there is still strong resistance in seeking medical attention either due to fear, embarrassment, misinformation or even inaccessibility. Only 23% of men diagnosed with ED ever follow up with urologist.^[24]

On one hand, a visit to the doctor is not a priority. On the other hand, the survey identified a typically Brazilian characteristic, that is, self-medication. Out of a sample of 338 men, 9% reported that they regularly take medications for erectile dysfunction and 57% do so without medical advice. In another sample of 925 men, 22% said that they also who have taken medications for ED, 70% of them doing so without medical advice.^[24]

Phosphodiesterase type 5 inhibitors (PDE5Is) are the most widely used oral therapy. They act by promoting relaxation of the muscle cells of the cavernous tissue, a necessary condition for obtaining erection.^[6] Sildenafil, vardenafil and tadalafil are the main drugs that have been successful in the treatment of ED. The most common adverse effects are headache, flushing, dyspepsia, nasal congestion, vision abnormalities and diarrhea. Patients must ingest the drug between 1-2 hours before sexual activity.^[20,28]

In that they do not stimulate the cascade of events or prevent a catabolic step, PDE5Is do not interfere with the ability to produce an erection. Therefore, sexual stimulation is needed for the drug to be effective. This means that PDE5Is are facilitators, but not provocateurs, of erection.^[29]

The practice of physical exercise, a potent anxiolytic and antidepressant, deserves attention because of the benefits provided in decreasing risk factors and improved cardiorespiratory fitness. Exercise also provides a significant increase in production and decrease in NO degradation, similar to those provided by the facilitators of male erection drugs, the PDE5Is. Furthermore, physical exercise contributes significantly to improving self-image and self-esteem, providing greater security to sexual activity.^[17]

As a second treatment option for ED, self-administered intracavernous injections of vasoactive drugs can be used. The third option consists of penile prostheses, which can be flexible, articulated and inflatable.^[30]

New therapeutic targets and molecular strategies will help improve the quality of erections and sexual satisfaction. In order to cure ED, if it is really possible, some recent studies suggest regular use of medications with endothelial proven action, such as statins or PDE5Is, taken daily in order to provide the feeling of being always ready to have sex. The best treatment for ED is prevention. In this sense the man's knowledge of cardiovascular health and the relationship of ED with traditional risk factors should help doctors motivating adherence to and of adopting a healthier lifestyle.^[13]

DISCUSSION

The subject of ED is unfortunately discussed too little and individuals who suffer from it find it difficult to talk to any of their family or friends. The reason is that because they think that if they do, their manhood would be questioned and they would be made fun of because of it.

They do not have good acceptance of the problem and feel embarrassed to bring it to medical attention, because we live in a society where masculinity has a leading role and it is believed that quality of life revolves around one's sexual performance. Difficulty in achieving erection ends up impacting negatively on men's self-image and on many aspects of their quality of life, interfering with social and family relationships and in professional income, perhaps causing constraints and disagreements with a partner, thus undermining the quality of life of the couple.

Data revealed that in Brazil, 45% of the male population over 18 years of age express some degree of ED. The increase in the number of ED records accompanies the growing interest of society in the subject. Although the prevalence of organic erectile dysfunction increases with age, a significant number of men under the age of 40 years suffer from these causes due to risk factors (cited in every study on ED reported in this paper) such as hypertension, diabetes mellitus, heart disease, smoking, alcoholism, obesity, prostatic diseases and depression, among others.^[3]

It is important to consider that if one partner has problems with sexual function, both are affected. In this way, a realistic approach should work with the pair to recover the physical ability and the emotional aspect of both. Treatment options and the risks and the chances of success, must be clearly discussed. It is important that both the patient and his partner are really involved in the diagnosis and engaged in various stages of treatment and that in fact, the couple includes not only the normal erectile process, as the causes and treatments available for men who have erection problems.

ED is predominantly considered a vascular disease, they have common risk factors, and possibly share mechanisms in its pathogenesis.^[4] Endothelial dysfunction can be an early marker of the presence of subclinical atherosclerosis. Data revealed that when ED is manifested in the young population, it is associated with increased risk of future cardiac events, while this prognosis is less important in older men. Ramirez-Ramos *et al.* (2015)^[31] estimates that men with diabetes have a higher prevalence of ED compared to the general population, reaching 52% of the population in Latin America. Both endothelial dysfunction and ED are characterized by malfunction of metabolic pathways responsible for NO release.

The use of PDE5I drugs have been recommended in oral therapy for the treatment of ED. These drugs act by promoting relaxation of muscle cells of the cavernous tissue, a necessary

condition to obtain erection. These drugs can be purchased at any pharmacy without a prescription and self-medication has been the easiest way to deal with the problem that has long plagued the men without much possibility of effective treatment, they don't realize that they can cause adverse side effects, without identifying the underlying cause of their problem.^[32]

The point is not in the impairment itself but in the way one experiences the problem. Despite the changes that are already being felt in recent years, some men with ED still resist seeking help because of shame, personal beliefs, myths or for thinking that there is no solution for ED. Identification for help search patterns among men with ED is significant for doctors who want to identify possible barriers to seeking help for sexual problems. Moreover, a better understanding of sexual health issues as to for help seeking behavior can increase access to various types of treatments available and thus improve the quality of life of these individuals.^[15]

CONCLUSION

ED has long ceased being a particular problem and has become a public health problem. Data show that its prevalence has increased in recent decades in Brazil. Studies also show that the prevalence and severity of ED increase significantly with aging and risk factors such as physical inactivity, high blood pressure, hyperlipidemia, alcoholism, smoking and some lifestyle habits may also compromise male sexual function. It must be noted that ED can also be a marker for both diabetes and cardiovascular disease in young males, not only middle aged or elderly ones. It is also concluded that, ED can occur to any man and it cannot be treated as a permanent condition. Although not curable, ED can be treated by various methods available.

Conflict of Interest

The authors declare that there is no conflict of interest.

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