

# Psychosocial Causes, Consequences Classification and Treatment of Erectile dysfunction

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## INTRODUCTION

It is a universal truth that erectile dysfunction (ED) affects human lives. It may be psychological, emotional, or social. ED describes several conditions that harm a person's . ED is the inability to get or maintain an erection long enough to have sexual intercourse (for both partners). ED is a common condition linked to increasing age and age-related diseases. Ancient Indian Script, the Charka Samhita (volume 3, chapter 2), mention about sexuality and erectile dysfunction. Twelve varieties of aphrodisiacs are categorized by age and specific complaints of quality of erection, maintenance of erection, and premature ejaculation. Charaka advised abstinence until age 16 and after age 70 (Nag, 1984). Men with ED suffer from depression and low self-esteem and experience difficulties establishing and maintaining relationships. The severity of erectile dysfunction has been classified as mild, moderate, or severe. Men who achieve satisfactory sexual performance in 7–8 attempts out of 10 are classified as having mild erectile dysfunction, those who achieve 4–6 out of 10 are classified as moderate, and those who achieve 0–3 out of 10 are classified as severe. The exact prevalence of erectile dysfunction is unknown. It is common and strongly age-related (Feldman et al., 1994), affecting more than 20% of men under 40 years of age, more than 50% of men over 40 years of age, and more than 66% of men over 70 years of age (Feldman et al., 1994; Heruti et al., 2004). It may affect 10% of healthy men and significantly greater numbers of men with existing comorbidities such as hypertension (15%), diabetes mellitus (28%) and heart disease (39%) (Feldman et al., 1994; Wagner et al., 1996).

According to Ayurveda, ED is a condition of low vitality. Generally, vitiation of vata dosha is responsible for Klaibya or ED. On the basis of the cause, seven types of Klaibya are mentioned in Ayurvedic texts, e.g. Manasik klaibya is caused by psychological factors, Doshaj klaibya is caused by physiological factors, Shukrakshayaj is caused by deficiency of Shukra dhatu, Vyadhi is caused by some other disease like diabetes, Aghataj is caused by surgical or accidental trauma,

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Shukranirodhaj is caused by suppression of sexual urge and Sahaj means congenital. Primary ED is if a male has never been able to attain or sustain an erection. Secondary ED is acquired later in life by a man who was previously able to attain erections. Secondary ED is much more common than primary ED. Many factors can increase the risk of ED, including lifestyle habits, genetics, neurological-psychiatric disorders, drug use, and cardiovascular conditions (Allen & Walter, 2019).

Various factors can cause ED. Organic causes for ED constitutes hormonal, drug-induced, vascular, traumatic/post-surgical, and neurological causes, while depression, relationship problems, and performance anxiety constitute psychogenic causes. Health professionals categorized it broadly. It can be categorized into four types: (1) Vascular ED: This includes causes that affect the blood vessels. That sends blood to the tissues in the penis that allow men to get and maintain an erection or the valves in the penis that generally hold the blood inside. Arteries to the penis are blocked, decreasing the amount of blood flow to the penis, and causing ED. Diabetes, high cholesterol levels, high blood pressure, and smoking contribute to atherosclerosis and, ED. Vascular ED is the most common type of ED. Sometimes blood leaks out of the veins in the penis too fast, decreasing blood pressure in

the penis and thus interfering with achieving or maintaining an erection. (2) Neurogenic: This occurs because of nerve problems, which prevent signals from traveling from the brain to the penis to create an erection. This can happen because of trauma, pelvic surgery, radiation therapy, or neurologic conditions like stroke, spinal stenosis, and multiple sclerosis. (3) Hormonal ED: Hormonal ED refers to ED that happens because of testosterone deficiency or, in few cases, because of thyroid issues. To rule out physical ED or ED related to medical conditions, the healthcare provider may perform tests such as the following : (a) Complete blood count (CBC), (b) Fasting glucose or glycated hemoglobin, (c) Comprehensive metabolic profile (d) Thyroid-stimulating hormone (e) Lipid profile (f) Serum total testosterone (4) Psychogenic ED: Psychogenic ED involves psychological conditions (conditions that affect men thought, feeling or behavior) that can cause ED. Psychological factors are responsible for about 10%-20% of all cases of ED. It is often a secondary reaction to an underlying physical cause. However, the most common psychological causes and consequences of ED.

### **Stress, Anxiety and Guilt**

Stress can be job-related, money-related, or the result of marital problems, among other factors. Anxiety: Once a man experiences ED, they may become overly worried that the problem will happen again. This can lead to “performance anxiety,” or a fear of sexual failure, and consistently lead to ED. It has been found (Velurajah et al., 2022) that erectile dysfunction was associated with an increased risk of anxiety disorders (posttraumatic stress disorder, obsessive-compulsive disorder, social phobia/social anxiety disorder, and panic disorder). A man may feel guilty that they are not satisfying their partner.

### **Depression**

A common cause of ED, depression affects a person physically and psychologically. Depression can cause ED even when a man is completely comfortable in sexual situations. Drugs used to treat depression may also cause ED. The relationship between erectile dysfunction and depression has also been found to be reciprocal. Studies found that not only does depression contribute to an increased risk of erectile dysfunction, but also the experience of erectile dysfunction is associated with a three-fold increase in the risk of a subsequent diagnosis of depression (Atlantis & Sullivan, 2012).

### **Low Self-esteem and Emasculated**

This can be due to prior episodes of ED (thus a feeling of inadequacy) or can be the result of other issues unrelated to sexual performance. ED decreases self-confidence and self-worth, isolation and loneliness, rumination and catastrophizing, and a more negative body image (Dewitte et

al., 2021). Even a single occurrence of erectile dysfunction can trigger feelings of humiliation and shame, as well as worry that one’s partner might leave them and feelings of letting their partner down (Sheng, 2021). erectile dysfunction is associated with loss of self-esteem, but sildenafil produced substantial improvements in self-esteem, confidence, and relationship satisfaction (O’Leary et al. 2006). The negative psychological impact of ED is characterized by men feeling emasculated, old, and concerned about the romantic relationship with their partner (Tomlinson & Wright, 2004), resulting in anxiety, relationship strain, and loss of self-esteem and self-confidence (Jonler et al. 1995, Althof 2002). Men who experience ED can suffer the effects of low self-esteem (Araujo et al., 1998). The result from another study showed that there is a significant relationship between ED and the feeling of guilt, blaming oneself, as well as the feeling of letting down the partner during intercourse. The study also showed a significant relationship between ED and the feeling of failure as a man. This feeling might lead to a loss of self-confidence and self-esteem and subsequently cause relationship problems (Cappelleri, 2005).

### **Indifference**

This may come as a result of age and a subsequent loss of interest in sex, be the result of medications, or stemming from problems in a couple’s relationship

### **Masturbation**

It has psychological and physical components. Masturbating too often may reduce men’s level of sexual satisfaction through something called “death grip” syndrome — being able to reach orgasm during masturbation but not during partnered sex or penetrative sex.

### **Pornography Use**

While watching porn is not inherently bad or harmful, excessive use of pornography may contribute to both depression and sexual dysfunction such as ED. Research also suggests that if men spend much time in watching and masturbating to pornography, men may develop unrealistic expectations about sex or sexual partners.

### **Sexual Trauma**

Psychological effects of ED may stem from childhood abuse or sexual trauma.

### **Relationship Issue**

These psychological responses can also act as a self-fulfilling prophecy, as worry about letting one’s partner down or worry that their partner might leave them can lead to the affected individual withdrawing intimacy at a time when their relationship is particularly vulnerable, resulting in their partner feeling unwanted and unloved. Most people who have

a partner who suffers from erectile dysfunction report that it is a problem for their relationship. Common affective responses (when a partner suffers from erectile dysfunction) include feelings of being unattractive, feelings of rejection, feeling unloved, and frustration (Sheng, 2021). Erectile dysfunction can also cause trust issues in partners who interpret a man's erection as a sign of sexual attractiveness (Dewitte et al., 2021). Erectile dysfunction can lead to intimacy withdrawal, and such changes in sexual behavior can cause confusion for the partner, worry about an affair, and a belief that the man is losing interest. These anxious thoughts can majorly impact self-esteem and feelings of attractiveness (Li et al., 2016). Erectile dysfunction can also affect sexual partners in other ways. For example, studies of heterosexual couples have observed a positive association between erectile dysfunction and female sexual dysfunction (Wang et al., 2022). After their partner had developed erectile dysfunction, women report a decrease in sexual impetus, including a decrease in sexual desire, sexual arousal, and orgasm during sexual intercourse that, in turn, led to discontent in the relationship, lower sex-life satisfaction, and general life satisfaction. A partner's understanding of erectile dysfunction is also important for couple outcomes. Most patients with erectile dysfunction (~87%) and their partners (~82%) rate open discussions of erectile function and sexual activity as important for maintaining a good relationship, and almost all people with erectile dysfunction (~95%) felt that their partner's support was important. However, a substantial number of individuals (~22%) felt that their partner's reaction had been adverse. The attitude, behavior, and understanding of the sexual partner are important, influential factors in managing erectile dysfunction, and interventions that focus on couples rather than just the affected individual are thought to be a better approach to improving erectile function (Li et al., 2016).

### Quality of Life

People who suffer from erectile dysfunction show a more significant deterioration in psychological, social, and physical well-being compared with those without erectile dysfunction. A systematic review of eight studies found that partners of those who suffer from erectile dysfunction report a lower quality of life (Elterman et al., 2021). Huri et. Al, 2016, reported that ED does affect the psychological well-being of people.

### Treatment Approaches for ED

Early identification of associated risk factors with ED can help in prevention as well as management. Management of related illness is like diabetes, high blood pressure, vascular heart diseases, substance abuse, neurological or psychiatric illness and so on can help in prevention and early management of ED.

Age appears to be strongly related to the ED and contribute to high probability of other illness. Managing good body weight with exercises and healthy lifestyle may prevent in occurrences of illnesses as well as age related ED.

### Medical Treatments

Drug treatment is a first line treatment for insufficient penile rigidity for satisfactory sexual intercourse. These medicines basically oral phosphodiesterase-5 inhibitors (PDE5Is) which work by relaxing smooth muscles and increasing blood flow in the penis during sexual stimulation. Oral medicines are easy to take and have quick result within 2-3 hours helps in improving response to sexual stimulation. Many studies suggest that drugs improves penile rigidity, sexual desire, successful penetration, orgasmic function, and overall satisfaction (Chen, et al 2004; Raina, et al, 2005). Certain precautions should be considered while taking these medicines as it can cause side effects. Side effects of all ED medicines directly affect the erection. It includes such as headaches, nausea, dizziness, vision and hearing changes (Dhir, et al, 2011). A serious side effect seen in penile erection that is a condition which is called ' priapism' in which erection lasts for many hours. These drugs should not be combined with Nitrates which is being used for treatment of heart diseases. Because 'Nitrates' also widen and relaxes blood vessels. When it is combine with PDE5Is can cause a sudden drop in blood pressure faint or dizziness or fall. While treating elderly men, their sensitivity should be checked before drug use. Tadalafil, Sildenafil, Vardenafil and Avanafil are also phosphodiesterase type 5 (PDE 5) inhibitor drugs for penile erection. Medicines should be taken before 1-2 hours of sexual stimulation for best result. Supplements such as vitamins and mineral are used as alternative medicines and may help in better erection. However it should to be taken when prescribed by health care professional.

### Hormone Replacement Therapy

Hormone replacement therapy is helpful for men who have low level of testosterone in their blood. It is used for increasing the level of testosterone which improve energy, mood and bone density in the men. It can used as cream or gel, topical solution, skin patch, injectable form and pellet form placed under the skin. It is not recommended for who have normal level of testosterone because it can cause side effect as including a high red blood cell count and problems urinating. Some other methods of medications are available in the form of injectable or suppository. Injecting a medicine called alprostadil into the penis increases the blood level resulting stronger erections in many men. It directly flows blood to penis and trigger an automatic erection. Suppository medicines are different than other medicine because of its delivery method. It is a

small pellet of alprostadil which inserted about an inch into urethra. Once it is inserted, it melts or dissolves and releases its medication. It has quick results within 8 to 10 minutes which may last 30 to 60 minutes.

### **Vacuum Erection Device (VED)**

VED is a second-line treatments for erectile dysfunction. The vacuum works as pulling blood into the penis and provide good and satisfactory erection. Vacuum device has three parts such as plastic tube which is used around the penis, the second is pump and last is elastic ring which work to maintain erection.

### **Penile Implants and Surgery**

Surgery and implants are considered only when other forms of treatment are failed. 'Inflatable Penile Prosthesis' that is 3-piece hydraulic pump or 'Semi-rigid Penile Prosthesis' that is two semi-rigid but bendable rods are implant for erection. It also show high rate of satisfaction in the patient.

### **Psychological Intervention**

#### *Lifestyle modification*

Lifestyle always contributes to prevalence and alleviation of symptoms of many diseases. Many diseases are closely related to our lifestyle and called as lifestyle diseases. Lack of physical activities, exercises, unhealthy eating, poor sleep hygiene, alcohol & substance abuse or dependence are associated with obesity, diabetes, stroke and heart disease (Mathur, & Mascarenhas, 2019). Obesity, lack of physical activity, unhealthy diets, smoking, and alcohol dependence, depression are risk for ED. Quite interestingly, all these factors affect the driving force of the blood genital flow by decreasing of nitric oxide. Healthy lifestyle with nutrient intake directly improves the nitric oxide production as well as increasing the level of testosterone. It also indirectly helps in ending or alleviation of symptoms of many diseases which can cause ED. Healthy lifestyle as maintaining sleep hygiene, adapting healthy eating pattern and water intake, increasing physical activities to maintain a body weight, quitting substances in the life will help improvement from the illness.

#### *Stress management*

Management of psychological or emotional issues is also required because these are associated directly or indirectly in prevalence of ED. Stress management techniques should be addressed to alleviate the symptoms affecting the illness. Stress management techniques are as communication skills, conflicts management techniques, problem solving technique, cognitive restructuring and different relaxation exercises with yoga are helpful. Stress, anxiety and depression can cause of psychological ED and managing these can help in restoration of ED.

#### *Cognitive Behavioral Therapy (including third wave approaches such as mindfulness)*

Cognition plays a significant role in experience erectile difficulties. Negative perception induce spectator role and start self-monitoring about performance. So any cues present are picked quickly as a signal of failure and interpreted negatively. As it is perceived negatively, it creates distraction from erotic cues. Performance anxiety produces inhibition in genital arousal by activating sympathetic nervous system activity (Janssen M, et al., 2000). *Cognitive behavior therapy including mindfulness based intervention targets on negative cognition and it is replaced with positive one.*

#### *Relaxation exercises*

Relaxation therapy should be taught to patient using Jacobson's progressive muscular relaxation technique or Benson Henry relaxation technique. This can be combined with the biofeedback machine so as to facilitate objective evidence and mastering of anxiety by the patient.

#### *Psychoeducation*

ED can start at any age. In Indian society sexual performance is believed to strongly associated with masculinity and proud of men. Any dysfunction or loss of erectile capacity may cause profound grief, feeling of embarrassment and guilt with low self esteem. Fear of future as being rejected, possible extramarital affair of partner or divorce are some reasons for non-disclosure. Hiding problems, rejecting situation for intimacy with partner and poor communication may compound the conflict and emotional turmoil. It results in fear, conflicting and strain relationship between the partners and delay in treatment as well. ED is a result of many biological causes as heart disease, diabetes, blood pressure, liver disease, or other medical conditions. Actually it may be a forewarning sign of progressive coronary disease. So delay in medical intervention may cause serious underlying condition. Seeking knowledge regarding symptoms, causes, associated problems and different modality of treatment will help to overcome from the problem of couples. They are also advised to talk over the issue and try to understand each-other. Poor communication is the primary barrier in the dealing with emotional problems of ED. Providing accurate and scientific knowledge is helpful for individual as well as couple.

#### *Myths clarification*

Sexual myths or misconceptions are also be targeted for intervention of couple. Myths are related to our cultural and religious beliefs system with poor education level in the couple (Vaishnav, et al., 2020). Many people in India believe that sexual inadequacy is the outcome of childhood misdeed which produces intense guilt feeling. Correcting myths and sexual beliefs with knowledge of sex will help not only the individual



to come out from the guilt and many more emotional problems but also educates to choose right treatment.

#### *Master and Johnson Technique of Behavioral therapy:*

**This** Technique based on behavior therapy which formulate that performance anxiety can be removed with systematic desensitization. Patient and his spouse, both are included in this program. The program starts with the counseling of their problems. The sexual inadequacy is thought the problem of an individual. However it is best understand the problem of couple instead. Problems are discussed in round table that both have to work together to treat ED. Wife's support is required for successful treatment. Critical comments and rejection as verbal or non- verbal may impact the result. Initial sessions basically focused on scientific facts about productive biology and human sexuality. Couples are educated about certain facts like sexual functioning is a naturally occurring phenomenon, sexual malfunctioning by male and female and similarity and common human sexual response cycle (Gupta, et al., 1989). Stages of common human response cycle which are as passing through stages of four: (i) excitement phase (ii) plateau phase (iii) orgasm (iv) restoration phase. Hence impediment at any stage precipitates sexual inadequacy. Fear of performance, Anxiety about loss of masculinity, sexual frustration, and serious emotional breakdown, poor support by wife, social pressure, and so on are some of obstruction in good erection and smooth progress of the cycle to its completion. 'Sensate Focus « Programme is a learning method for couple. Three goals for treating impotence are (Masters & Johnson):(i) Remove fear for sexual performance(ii) Reorientation of involuntary behavior and accustomed spectator's role(iii) relieve the wife's fear for her husband's sexual performance. Before initiating the successful sensate focus program certain do's and don'ts are discussed with couple. Decision to progress onto second stage is based on couple's progress report. First Stage of sensate focus program (Gupta, et al., 1989): (i) learning the technique of touching different parts of the partner's body except the genital organs (ii) communicating to the partner what he/she feels pleasurable (iii) touching the genitals is strongly prohibited. Second stage of sensate focus program (Gupta, et al., 1989): (i) mutual stimulation of the genital organs without striving for orgasm (ii) learning and telling each other what is most satisfying as genital stimulation technique (iii) refraining from any attempt at intromission to test his virility. Instructions about position of the partners during this program. Second stage is persists for many weeks unless couple learns pleasure through genital stimulation without striving for orgasm. Sexual pleasures are attained without 'performance anxiety' by couple with 'squeeze technique and 'Teasing method' in Non-demanding position. After many sustained erections, couple is allowed to attempt coitus in 'Lateral coital position' with active participation husband and wife both.

#### *Couple therapy and family therapy*

Therapy is done with couples because intimate relationships are considered as issue of couples instead issue of an individual. Principles of effective couples therapy is used by therapist to improve communication and emotional relationship and decreasing emotional avoidance by modifying dysfunctional behavior between the couples. Power structure and its impact on relationship are assessed to understand power struggle and conflicts between them. Conflicts resolution, anger management, problem solving skills and communication skills is emphasized in the sessions. Communication skills as active listening, understanding partner's view with non-judgmental way, verbal and non-verbal communication are learnt. Couples also learn to encourage and empathize by which love and tenderness can be expressed. Overall couples learn expressing their feeling, understanding each-other with communication skills and unlearn emotional rejections or their past childhood experiences which impacts on their present relationship. Dysfunction of individual resultant disturbed relationship of couples becomes a conflicting issue in the families. These issues are sometimes dragged to 'Panchayat' or even 'High court'. Family therapy is required in some cases, because family has a significant role in the treatment of individual as well as couples.

#### *Ayurvedic treatment for ED in India*

Ayurvedic medicines are herbal medicines which rich in minerals and antioxidants and have aphrodisiac properties. Ayurvedic medicines are considered best treatment of erectile dysfunction treatment as made of herbs and natural ingredients, safe to consume as no side effects. These herbal remedies directly address the root causes of ED. Herbal Remedies as Ashwagandha, Shilajit, Safed Musli and Gokshura are helpful in reducing stress, improve overall sexual health and stamina needed to improve blood circulation, which is essential for achieving and maintaining an erection. Ayurveda also emphasizes the role of lifestyle modification, exercise, adequate sleep, healthy diet in overall health. Yoga, meditation and Panchakarma Therapy also recommended for improvement of sexual function. This includes consuming foods that support reproductive health and avoiding those, that may affect it negatively. Yoga and meditation may improve from stress and anxiety which could be caused of sexual dysfunction. Panchakarma Therapy is aims to detoxify the body of toxins.

#### **CONCLUSION**

Along with pharmacological treatment psychoeducation, lifestyle modification, stress management, cognitive behavioural therapy, relaxation exercises, myths clarification, couple therapy and family therapy, Master and Johnson technique of behavioural therapy, Ayurveda treatment are also

helpful as well as effective in the management of ED. Mayo Clinic emphasized that the causes of ED can be physical or mental, which include: alcohol use, illicit drug use, smoking, diabetes, high cholesterol, heart disease, blocked blood vessel, obesity, metabolic syndrome, some medications, such as blood pressure medications, sleep disorders, scar tissue inside the penis, disease, multiple, anxiety, stress, depression, relationship issues. The causes and consequences of ED can be reciprocal. It could lead to symptoms such as depression, anxiety, poor emotional mood, and low self-esteem (Montorsi et al., 2006). Psychological effects of ED in males contain a reduced sense of self-worth and loss of identity. These feelings can amplify a sense of anxiety and depression, as well as a decline in levels of sexual satisfaction (Albaugh et al. 2017). Men with more significant psychological impact of erectile dysfunction also reported greater impairment in functional status, lower sexual self-efficacy, more significant depression, and anxiety at the last intercourse is associated with psychological impairment. Severe ED was significantly associated with not having a regular sex partner, a history of prostate cancer, and worse scores on measures of positive affect, belonging/loneliness, sexual self-efficacy-strength, psychological adjustment, marital happiness, anxiety at last intercourse, and depression. (Latini et al 2002, Latini et al 2006). Satisfaction with erection quality and satisfaction with erection hardness correlated positively with improvement in emotional well-being (Kaminetsky et al. 2009). Most of the individuals experiencing ED exhibited a moderate level of general well-being, and a moderate level of self-esteem and utilized both adaptive and maladaptive coping strategies. (Singh et al 2023).

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