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# Erectile Dysfunction and Quality of Life

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## 1. Introduction

Erectile dysfunction (ED) affects the quality of life (QoL) of millions of people worldwide (Rosen et al., 2004; Aytac et al., 1999; National Institutes of Health Consensus Development Panel on Impotence, 1993). Nowadays, QoL measurements have become an important health status indicator in determining the general health of a person. ED affects a man's self-esteem, relationships with sexual partners, family, friends and colleagues and overall QoL.

The impact of ED on QoL has been becoming very important in the management of ED. QoL is used to assess the overall well-being of a person. Most of the medical treatments for ED now are focussing on improving QoL of patients (Althof, 2002).

## 2. What is quality of life/ health-related quality of life

### 2.1 Quality of life

QoL is defined as the perception of a person's life in the cultural and value systems in which he or she lives in regards to his or her goals, expectations and standards. QoL is affected by a person physical health, psychological state, level of independence, social relationships, environment and spiritual/religion/personal beliefs (WHOQOL, 1997).

QoL is a construct that encompasses physical function, psychological function, somatic sensation, social interaction, occupational and financial (Schipper et al., 1996). QoL is a good indicator of functional status and well-being of a person who undergone treatment for medical conditions (Stewart et al., 1989). QoL is becoming important in the evaluation of treatment and assessment of medical conditions (Wagner et al., 2000).

The overall QoL encompasses disease free, physical, emotional and social well-being (Tsai et al., 2008). QoL is one's ability to enjoy normal life activities. Some medical treatments can impair one's QoL while there are treatments can improve it.

The main goal of health care is to maintain or improve the QoL of people. Apart from health status, factors such as religion, environment, financial etc are important determinants of a person's QoL (Chen et al., 2005; WHOQOL, 1997).

## 2.2 Health-Related Quality of Life

Health-Related Quality of Life (HRQoL) is widely used among health care/medical professionals and is an important measure to assess a person's well-being (Wilson and Cleary, 1995). HRQoL includes the physical, functional, psychological, emotional, social function, mental and overall well-being of an individual (Fallowfield, 2009).

ED can affect both men and women, as they may suffer due to ED. Men will also suffer if their female partners have sexual dysfunction. These problems need to be looked into as an overall health issue (Wagner et al., 2000).

## 3. ED and QOL

ED is associated with many psychosocial problems such as decreased QoL, low self-esteem, depression, anxiety, relationship problems, and marital tension (Althof, 2002; Litwin et al., 1998; Shabsigh et al., 1998). According to many studies, it is undeniable that ED has a strong impact on QoL (Tsai, 2008; Althof, 2002; Litwin et al., 1998).

There are many studies showing ED has an effect on QoL of men with this condition (Rosen et al., 2004; Althof 2002). Satisfaction in sexual life has been shown to affect overall satisfaction in life (Fugl-Meyer et al., 1997). Studies have shown that QoL parameters, especially social relationship and psychological well-being is affected by ED (Tsai et al., 2008; Litwin et al., 1998). Men with ED suffer deterioration in emotional well-being as noted in some studies (Litwin et al., 1998; Rosen, 1998).

One HRQOL study showed that ED is associated with physical function and emotional function (Litwin et al., 1998). This study also found that emotional domains are more affected than physical domains in patients with ED.

The majority of studies showed that men who suffer ED will have poor QoL especially in physical, mental and social domains (Sanchez-Cruz et al., 2003). Laumann et al. 1999 found there is an association between ED with health status and emotional function / problems / satisfaction, stress, deterioration of general health and physical satisfaction.

### 3.1 Young and old men

Younger males show lower social function as compared to older men and significant differences were observed between non-ED and ED subjects in young age group (Sanchez-Cruz et al., 2003). For example, it was found that men with ED tend to have lower QoL especially among young men compared to men without ED. One of the reasons is probably older men reported more sexual satisfaction than younger men as reported in one study (Gralla et al., 2008).

### 3.2 Sexual activity and QoL

Satisfaction in sexual activity is important in achieving good QoL. Sexual activity has been found to contribute to the overall QoL (Robinson & Molzahn, 2007). The psychological and social well-being of a man will be affected if he lacks sexual activity. However, there are some men who consider ED as a part of the aging process (Martin-Diaz et al., 2006).

### 3.3 ED with co-morbid condition and QoL

It is difficult to assess the real effect of ED on QoL because ED could be due to psychological or other medical conditions. It was also found that men with ED with co-morbid medical condition such as hypertension or diabetes mellitus have lower QoL (Rosen et al., 2004). Men with both comorbid medical condition and ED were found to have poorer QoL as they are more distressed and less satisfied with their sexual life (Berardis et al., 2002). It is noted that a man's age is associated with QoL as suggested by Guest & Gupta, (2002). The QoL of men with ED who are younger than 65 years was found to be poorer (Guest & Gupta, 2002) compared to men of similar age who do not suffer ED (Kind, 1999). Those men younger than 45 years old were found to have poorer QoL compared to those aged 74 years or older. The deterioration of QoL in the younger age group was noted due to deterioration of erectile function (Feldman et al., 1994). The QoL in the older group was much better because they focus less attention or less emphasize on sexual activity (Guest & Gupta, 2002). Men from all age groups who had co-morbid illnesses were found to have poorer QoL as compared to those without co-morbid illnesses. ED has been shown to have contributed to the deterioration of emotional well being and relationship but improved after treatment (Paige et al., 2001). Some men with ED tend to worry about their sexual performance thus this may lead to premature ejaculation (Williams et al., 1984).

### 3.4 ED and relationship with partner

ED can lead to the breakdown of relationships due to conflicts with their partners and this affects their general health and QoL (Guest & Gupta, 2002). Study has shown that approximately 12%-28% of men with ED believed ED is one of the main causes that affect their relationships (Guest & Gupta, 2002).

Men with ED who are single were found to be unable to develop a new relationship, thus, this affects their QoL (Guest & Gupta, 2002). This suggests ED may hinder them from forming a new relationship or may deteriorate their current relationship which may lead to separation.

However, sometimes relationships can be improved through other ways other than having sexual intercourse such as focusing family activities or having relaxation. Pharmacological intervention has shown to improve men's QoL e.g sildenafil citrate and transurethral alprostadil (Quirk et al., 1998; William et al., 1998; Kaiser et al., 1997).

### 3.5 Quality of life following treatment of ED

Several studies showed sexual function improves the QoL in both men and their partners following treatment (Rosen et al., 2004; Shabsigh et al., 2001). It has been shown that the mood, overall sexual function, satisfaction in relationships and their overall QoL improves after treatment of ED (Rosen et al., 2004).

The level of sexual life satisfaction which was noted to be low prior to treatment for ED, were significantly improved after treatment (Fugl-Meyer et al., 1997). Men with ED and depression, their QoL were also improved after undergoing treatment for depression (Muller & Benkert, 2001).

## 4. Anxiety

Anxiety is a feeling of worry, fear, nervousness and apprehension exhibited by psychological, and physiological state such as emotional, cognitive and behavioral symptoms. Anxiety due to daily activities may lead to distress and deterioration of normal activity (Corretti & Baldi, 2007).

Anxiety disorders include panic disorder (PD), specific and social phobia, obsessive-compulsive disorder (OCD), post-traumatic stress disorder (PTSD), acute stress disorder (ASD), and generalized anxiety disorder (GAD) (Corretti and Baldi, 2007).

The relationship between anxiety and sexual function is complex. However, anxiety and ED can have a two-way or bilateral relationship. Anxiety can cause sexual dysfunction and sexual dysfunction can cause anxiety. Sexual dysfunction and anxiety are not causally related. They may express differently but the symptoms may derive from one common source (Corretti and Baldi, 2007).

Anxiety contributes to the development of problems associated with ED. Psychological impact from ED can lead to uneasiness, distance and conflicts (Hedon, 2003). This will lead to low sexual contact, less time together and lack of communication between partners which can lead to deterioration of relationship (Hedon, 2003).

The prevalence of anxiety disorder were noted to be varies from 1.7% - 37% in men with ED (Mallis et al., 2005; Farre et al., 2004; Lee et al., 2000). Some studies showed there were some relationships or association between anxiety and ED (Corona et al., 2006; Sugimori et al., 2005).

### 4.1 ED and performance anxiety

If a man suffers some degree of ED, he may feel worried of the condition and this may lead to performance anxiety. Performance anxiety will affect men such as embarrassment if they are unable to perform, achieve erection or unable to satisfy their partners. They will feel disappointed and guilty, thus, this will affect their QoL.

When a person suffers from anxiety disorder, it is important to investigate his/her sexual life and vice-versa. Studies have shown that anxiety plays a major role in the development of ED.

There are many factors which can lead to anxiety and to ED. For example, job related stress and family problems (divorce, conflicts) which can increase anxiety thus leading to ED (Hedon, 2003).

Anxiety can impair sexual arousal/desire via increased sympathetic tone which leads to weak erection (Graziottin, 2000; Maggi et al., 2000; Kaplan, 1988). Anxiety can also impact orgasm where it can lead to premature ejaculation (PE) (Dunn et al., 1999; Zilbergeld, 1999; Hawton & Catalan, 1986). Anxiety can affect the ejaculation control through sympathetic hyperactivity (Williams, 1984; Wolpe, 1982).

Men who are anxious during sexual intercourse are found to be worried about their sexual performance and this affects their sexual satisfaction (Kaplan, 1989; Kaplan, 1974). There are

other studies which support these findings (Corona et al., 2006; Corretti et al., 2006; Tignol et al., 2006).

## 5. Depression

Depression can lead to feelings of fatigue, worthlessness, suicidal thoughts, agitation, weight loss or weight gain. It can be caused by grief, family and social isolation, physical, genetics, biological, psychological factors. All these contribute to the deterioration of QoL. The person may not sleep well and/or eat well and may resort to smoking, alcohol or drugs to overcome the depression.

Many studies have shown an association between ED and depression regardless of sociodemographic or co-morbidities (Shabsigh et al., 2006; Moreira et al., 2001; Araujo et al., 1998; Feldman et al., 1994). In a study by Araujo et al., 1999, subjects who were depressed were found to have a 1.82 times higher chance of getting ED compared with patients without depression. Another study showed men with ED were 2.6 times more likely to have depressive symptoms as compared to men suffering from benign prostatic hyperplasia (BPH) alone (Shabsigh et al., 1998).

Depression most of the time is due to the loss of mood/interest in daily activities. ED can affect the mood, family or partner relationships thus affecting QoL (Rosen et al., 2004).

Depression and ED is a two-way or bilateral relationship (Shabsigh et al., 2001; Araujo et al., 1998; Smith, 1998). ED has aetiology in affective components which were described in many studies (Smith, 1998; Barlow, 1986; Hengeveld, 1983; Jacobs et al., 1983). It was noted that depression may cause or exacerbate ED and that ED may cause depression. Until today, no one knows which one comes first. Patients presenting with ED should be screened for depression while patients with depression will need to be screened for ED (Araujo et al., 1998). One study by Nicolosi et al., 2004, found a relationship between ED, depression, sexual activity and sexual satisfaction.

ED associated with depression has been observed in many studies (Araujo et al., 1998). Men with ED tend to feel embarrassed, frustrated and sad. This will affect his self-esteem thus lead to depression. Men often associate their ability to perform sex with their manhood and self-esteem. When they are unable to perform, they will feel disappointed and this will lead to depression. If the condition is not treated, ED may affect his relationship with his partners, friends and family. If the men treated for depression, it may become worse as medication may have side effects on erection (Bartlik et al., 1999).

Depression is found to affect sexual performance as indicated in the Massachusetts Male Aging Study (MMAS) (Araujo et al., 1998). The findings of this study showed that those who are depressed are more likely to suffer moderate and severe ED (Araujo et al., 1998). This study also shows that the cognitive and behavioral factors may also contribute to sexual performance. Another study showed patients who were depressed are twice likely as the general population to have sexual dysfunctions (Angst, 1998).

Depressed men can be too critical of themselves. This will lead to performance anxiety and thus will hinder their ability to achieve an erection. Depression also can affect sexual drive (Heiman & Rowland, 1983; Bartlik et al., 1999) and sexual drive is important for helping



men to achieve an erection. Men with low sexual drive (libido) tend to have difficulties in achieving erection.

Depression is found to be associated with neurophysiological disturbances which can affect the autonomic nervous system. Due to this, the parasympathetic nervous system unable to assist the relaxation of the penile smooth muscle tissue which require for erection (Saenz de Tejada I, 1985). Men with severe depression can develop a reversible loss of nocturnal penile tumescence (Roose et al., 1982). Studies have shown depression can deteriorate the erectile function but improved following treatment with antidepressants (Nofzinger et al., 1993).

It was found that men with the severe depression had higher chance of getting moderate and severe ED (Melman & Gingell, 1999). The relationship between depression and ED is affected by the low frequency of sexual intercourse and poor sex life.

ED is one of the symptoms of depressive disorder which associated with deterioration or loss of sexual drive, erectile function, and sexual activity (Seidman et al., 2001). This condition will get worse if the person is on medications such as antidepressants which can cause ejaculation, erection, orgasm and libido problems (Nurnberg et al., 2001; Seidman & Roose, 2000; Rosen et al., 1999).

### **5.1 Depression, ED and treatment**

Depression with ED or vice versa is treatable. With proper counseling, men will be able to overcome the depression and cope with ED as there are many treatment options available for ED.

The inability to achieve and maintain sexual performance often causes other problems apart from problems related to sexual activity. It is important for a man to seek help if he is experiencing depression or ED or both.

Studies have shown that treatment is successful in improving the QoL in men with ED comorbid with depression.

## **6. Marital problem**

Many men with ED will stay silent and not like to talk about their problems to others. Men with ED tend to think they are failures and thinking their partner is not happy. These men will find excuses to avoid having sex or having intimate relationships.

Some will find excuses or changing their topics of conversation to avoid talking about sex. When men start to withdraw themselves from their partners and others, they will be thinking of their ED problem. Thus, this may affect their daily activities and general health.

When a man is unable to perform sexual intercourse or unable to satisfy his partner's sexual needs, he may feel useless, embarrassed and guilty. Thus, he may find difficult to communicate with his partner about ED. ED affects a man's life and marriage and it was noted that ED contributed to one in five failed marriages (Wespes et al., 2002).

ED affects men psychologically. Because of miscommunication and misunderstanding, the partner may abandon him. Men tend to blame their partner for leaving them due to ED.

Men are found to be sensitive in their relationships. Any withdrawals from the relationship due to ED may affect their overall general health and well-being (National Institutes of Health Consensus Development Panel on Impotence, 1993). The relationship between sexual and marital problems was more obvious in men compared to women as shown in one study (Rust et al., 1988).

From the partner point of view, the partner will feel unattractive, lonely, depressed and unwanted. The partner may think that their partner is having an affair. This becomes worse when men do not communicate with their partner regarding their ED. Many men refuse to seek medical advice due to apprehension. Apart from that there are also misunderstanding and poor communications which may lead to the relationship breakdown with their partners.

The prevalence of sexual dysfunction was noted higher in women especially when their partner suffering from ED. Women who have been sexually active before will suffer some sexual dysfunction. The severity of ED can influence their partners' sexual satisfaction and frequency of orgasm (Fisher et al., 2005). Women suffer deterioration of sexual desire, unable to achieve orgasm and dissatisfied with their sexual life when their partner suffering from ED. However, this improved after their partners' undergone treatment. One study has shown women whose partners who were on pharmacological therapy (e.g. PDE5 inhibitors) had more satisfying sexual satisfaction than those whose partners did not use pharmacological therapy (Fisher et al., 2005).

## 7. Summary

Although ED is not a life-threatening condition, it has an effect on not only the QoL of men but that of their sexual partners as well. The effect of ED on QoL is hard to determine because the dysfunction can be due to the psychological problem. However, ED can cause anxiety, sadness, depression, low self-confidence, low self-esteem, marital tension, deteriorating relationships, guilt, anger, frustration etc. All these will lead to deterioration of QoL.

It is important for men to discuss their anxiety regarding their ED with their partners. It will help them to reduce their fears while their partner will be able to help them to cope. Men should realize that they are not alone in ED. There are many avenues where they can seek help where they are many qualified ED medical professionals who can provide counseling and also there are treatments and guidelines available in the management of male sexual dysfunction (Wespes et al., 2009). Men should communicate with their partners because they need moral support to overcome their ED problem. When it comes to HRQoL for men, it is vital to assess their erectile function.

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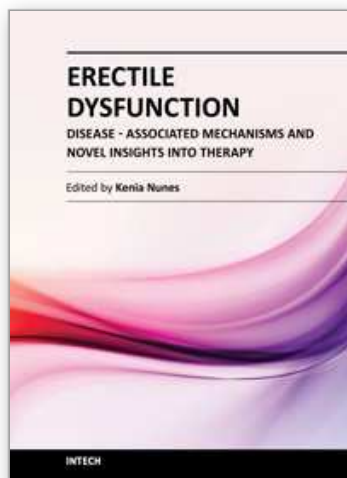
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## **Erectile Dysfunction - Disease-Associated Mechanisms and Novel Insights into Therapy**

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Erectile dysfunction is a widespread problem, affecting many men across all age groups and it is more than a serious quality of life problem for sexually active men. This book contains chapters written by widely acknowledged experts, each of which provides a unique synthesis of information on emergent aspects of ED. All chapters take into account not only the new perspectives on ED but also recent extensions of basic knowledge that presage directions for further research. The approach in this book has been to not only describe recent popular aspects of ED, such as basic mechanism updates, etiologic factors and pharmacotherapy, but also disease-associated ED and some future perspectives in this field.

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