

Sexual Dysfunction

How Serious Is Erectile Dysfunction in Men's Lives? Comparative Data From Korean Adults

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Purpose: Whereas sexual function has long been assumed to be an important component of adult men's lives, the impact of sexual dysfunction has not been estimated in parallel to other modern disease entities. We compared the seriousness of erectile dysfunction (ED) with that of other diseases by use of self-administered questionnaires.

Materials and Methods: Between January 2012 and July 2012, 434 healthy male volunteers (group 1) and 263 ED patients (group 2) were enrolled. The questionnaire consisted of the following: "If you must undergo only one disease in all your life, which disease could you select among these items or ED?" The comparative disease entities included hypertension, diabetes mellitus (oral hypoglycemic agent/insulin injection), hemodialysis, myocardial infarction, herpes zoster, chronic sinusitis, chronic otitis media, gastric cancer (early/late), lung cancer (early/late), liver cancer (early/late), and dementia.

Results: Group 1 recognized ED as being a more serious disease than hypertension, diabetes mellitus (oral hypoglycemic agent), herpes zoster, chronic sinusitis, and chronic otitis media. In comparison, group 2 recognized ED as being a more serious condition than diabetes mellitus (insulin injection) and dementia ($p < 0.001$ and $p < 0.001$, respectively). In particular, ED was deemed to be more serious than hemodialysis, gastric cancer (early), lung cancer (early), and liver cancer (early) by men in group 2 in their 30s to 40s, and these results were statistically significant compared with the same age subgroups in group 1 ($p < 0.001$, $p < 0.007$, $p < 0.02$, and $p < 0.007$, respectively).

Conclusions: In contrast with their healthy counterparts, Korean men with ED recognized ED as being as serious as hemodialysis, dementia, and early stage cancer, which reflects the severe bother of ED in Korean patients.

Keywords: *Erectile dysfunction; Quality of life; Questionnaires*

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INTRODUCTION

Erectile dysfunction (ED) has been defined as the inability to achieve or maintain an erection satisfactory for sexual performance [1], and it has a significant negative impact on quality of life (QoL) and the life satisfaction of both the affected individual and his partner [2,3]. Medical conditions highly associated with the likelihood of ED include hypertension and heart disease, prostatic diseases and their associated treatments, diabetes mellitus, spinal cord injury, multiple sclerosis, end-stage renal disease, depres-

sion, and antipsychotic use [3-15]. Reflecting the high prevalence of these conditions, the overall reported prevalence rate of ED in South Korea ranges from 8% to 45.8% according to patient demographics [16]. These findings show that ED is a common and major health problem; however, many people do not recognize that ED is a serious disease or a treatable medical condition [17].

Because the inability to function sexually can erode an individual's sense of self-esteem and lead to emotional and marital tension, it is not surprising that QoL is diminished in men with ED [18]. In fact, satisfaction with sexual life

has been shown to be an important predictor of satisfaction with life as a whole [19].

Numerous studies have assessed QoL in men with ED, but estimation of the seriousness of ED in comparison with other disease entities has not been reported previously in Korea. We believe that this comparison may not only provide a clear figure of the suffering caused by ED in each patient but also widen the public's understanding of ED.

MATERIALS AND METHODS

Between January 2012 and July 2012, a total of 697 men were enrolled in the study. Group 1 consisted of 434 healthy male volunteers and group 2 was composed of 263 patients with ED who had a confirmed diagnosis and were being treated by long-term medication through our institution. We defined healthy volunteers as men with an International Index of Erectile Function (IIEF-EF) score over 25. All subjects were older than 30 years and an inclusion criterion in both groups was that the men had sexual relationships at least twice a month. ED was defined in this series as an IIEF-EF score of less than 18 at the initial visit.

The subjects were asked to complete a questionnaire that consisted of the simple question, "If you must undergo only one disease in all your life, which disease could you select among these items or ED?" The comparative disease entities were hypertension, diabetes mellitus (oral hypoglycemic agent/insulin injection), hemodialysis, myocardial infarction, herpes zoster, chronic sinusitis, chronic otitis media, gastric cancer (early/late), lung cancer (early/late), liver cancer (early/late), and dementia. Because there are no

established specific criteria of disease for comparison with ED, we composed the list with items that the general public could easily understand. If the subject selected ED instead of another disease, the comparison disease was considered to be more serious than ED. We did not consider the interaction between diseases or the subjects' understanding of the degree of each disease. This was a simple comparison only.

All data were collated by using SPSS ver. 12.0 (SPSS Inc., Chicago, IL, USA) and were evaluated by use of the chi-square test. A p-value of < 0.05 was considered statistically significant.

RESULTS

The subjects' mean age was 43.2±11.7 years (range, 31 to 69 years) in group 1 and 48.3±13.2 years (range, 35 to 74 years) in group 2. Group 1 recognized ED as being a more serious disease than hypertension, diabetes mellitus (oral hypoglycemic agent), herpes zoster, chronic sinusitis, and chronic otitis media (Table 1). In comparison, group 2 considered ED as being more serious than diabetes mellitus (insulin injection) and dementia ($p < 0.001$ and $p < 0.001$, respectively).

In analyzing the differences by age groups, we divided group 2 into five age-based subgroups (30–39 years, 40–49 years, 50–59 years, 60–69 years, and over 70 years). In particular, ED was deemed to be more serious than hemodialysis, gastric cancer (early), lung cancer (early), and liver cancer (early) among men in group 2 in their 30s to 40s (Table 2), and these results were statistically significant

TABLE 1. The comparison between healthy volunteers (group 1) and ED patients (group 2)

| Variable | Group 1 (n=434) | Group 2 (n=263) | p-value |
|-----------------------|------------------------------|------------------------------|---------|
| Hypertension | 271:163 (62:38) ^a | 229:34 (87:13) ^a | - |
| Diabetes mellitus | | | |
| OHA | 258:176 (59:41) ^a | 201:62 (76:24) ^a | - |
| Insulin Injection | 144:290 (33:67) | 182:81 (69:31) ^a | < 0.001 |
| Hemodialysis | 109:325 (25:75) | 122:141 (46:54) | - |
| Myocardial infarction | 54:379 (12:88) | 64:199 (15:85) | - |
| Herpes zoster | 292:142 (67:33) ^a | 222:41 (84:16) ^a | - |
| Chronic sinusitis | 319:115 (74:26) ^a | 235:28 (89:11) ^a | - |
| Chronic otitis media | 307:127 (71:29) ^a | 227:36 (86:14) ^a | - |
| Gastric cancer | | | |
| Early | 170:264 (39:61) | 110:153 (42:58) | - |
| Late | 49:385 (11:89) | 72:191 (27:73) | - |
| Lung cancer | | | |
| Early | 166:268 (38:62) | 111:152 (42:58) | - |
| Late | 37:397 (9:91) | 69:194 (26:74) | - |
| Liver cancer | | | |
| Early | 163:271 (38:62) | 106:157 (40:60) | - |
| Late | 39:395 (9:91) | 67:196 (25:75) | - |
| Dementia | 202:232 (47:53) | 162:101 (62:38) ^a | < 0.001 |

Values are presented as no. of disease:ED (%).

ED, erectile dysfunction; OHA, oral hypoglycemic agent.

^a:Recognized erectile dysfunction more serious disease than various diseases.

TABLE 2. According to age group, answer distribution of erectile dysfunction patients (n=263)

| | 30s (n=44) | 40s (n=63) | 50s (n=56) | 60s (n=59) | Over 70s (n=41) |
|-----------------------|----------------------------|----------------------------|---------------|---------------|-----------------|
| Hemodialysis | 27:17 (61:39) ^a | 36:27 (57:43) ^a | 25:31 (47:53) | 20:39 (34:66) | 14:27 (34:66) |
| Gastric cancer, early | 24:20 (54:46) ^a | 34:29 (54:46) ^a | 23:33 (41:59) | 16:43 (27:73) | 13:28 (32:68) |
| Lung cancer, early | 25:19 (56:44) ^a | 33:30 (52:48) ^a | 24:32 (43:57) | 17:42 (29:71) | 12:29 (29:71) |
| Liver cancer, early | 26:18 (59:41) ^a | 33:30 (52:48) ^a | 22:34 (39:61) | 15:44 (25:75) | 10:31 (24:76) |

Values are presented as no. of disease:ED (%).

ED, erectile dysfunction.

^a:Recognized erectile dysfunction more serious disease than various diseases.

TABLE 3. The comparison according to 30s to 40s age group between healthy volunteers (group 1) and ED patients (group 2)

| | Group 1 (n=182) | Group 2 (n=107) | p-value |
|-----------------------|--------------------|----------------------------|---------|
| Hemodialysis | 54:128 (30:70) | 63:44 (59:41) ^a | < 0.001 |
| Gastric cancer, early | 68:114 (37:63) | 58:49 (54:46) ^a | 0.007 |
| Lung cancer, early | 72:110 (40:60) | 58:49 (54:46) ^a | 0.020 |
| Liver cancer, early | 70:112 (38:62) | 59:48 (55:45) ^a | 0.007 |

Values are presented as no. of disease:ED (%).

ED, erectile dysfunction.

^a:Recognized erectile dysfunction more serious disease than various diseases.

compared with the same age groups in group 1 ($p < 0.001$, $p < 0.007$, $p < 0.020$, and $p < 0.007$, respectively) (Table 3).

DISCUSSION

ED is an important health issue worldwide that affects nearly half of men over the age of 40 years. More than 152 million men worldwide experienced ED in 1995, and the number of patients with ED is expected to increase to 322 million [20]. The prevalence of ED may differ significantly depending on the evaluation method used. One of the most frequently cited epidemiological surveys reporting prevalence data for ED is the Massachusetts Male Aging Study, which was the first longitudinal, community-based, randomized, wide-scale epidemiological study of ED. In that study, 52% of men reported some degree of ED, with the probability of experiencing complete ED tripling from 5% to 15% between the ages of 40 and 70 years. According to the Global Study of Sexual Attitudes and Behaviors, the prevalence of ED in Korean men aged 40 to 80 years was higher than the global average and higher than that in other Asian regions [21,22]. Yang et al. [23] reported that the prevalence of ED in Korean men aged over 45 years was 41.5%, and Moreira et al. [22] reported that it was 31.9% in Korean men aged 40 to 80 years. The higher prevalence of ED may be attributed to the relatively higher prevalence of risk factors for ED. An increase in the aging population, rapid industrialization, westernization of the diet, and a reduction in physical activity in South Korea have changed disease patterns in men, increasing the prevalence of

chronic diseases such as hypertension, diabetes mellitus, obesity, coronary disease, and ED [24].

The launch of phosphodiesterase-5 inhibitors, an improved understanding of ED, an increased number of patients recognizing the need for treatment, and the availability of convenient oral medications for treatment have contributed to a significant increase in the number of patients visiting clinics for ED treatment. However, many people still believe that ED is a natural phenomenon of aging [17]. In addition, communication barriers between men and their physicians about ED and its treatment may still exist [25]. Typically, a man lives with his dysfunction for several months or years before seeing a physician for medical attention [25]. Several investigators have reported differences between the prevalence of ED and the percentage of patients receiving medical care for ED. Solstad and Hertoft [26] reported that only 5% of men with ED visit a clinic to manage their problem, and Moreira et al. [22] reported that only 2% of men and women in Korea had talked to a medical doctor about their sexual problems.

To further our understanding about the seriousness of ED, we assessed the severity of ED by use of a self-administered questionnaire in which we compared ED with other diseases instead of asking the patients directly about their QoL. In this way, we could understand the significant effect of ED on QoL in the affected men. We found that the patients with ED recognized ED as being more serious than diseases such as hemodialysis, dementia, and early stage cancer with statistical significance, particularly among men in early middle age. These results reflect that ED is a serious disease not only for the affected individual but also on a public health basis. In addition, the distress of patients with ED was more severe than that of healthy men, which suggests that it may be necessary to approach ED from a preventive standpoint.

QoL has become an important endpoint in clinical research on ED. Men with ED experience diminished self-image and emotional and psychosocial functioning, which consequently decrease their QoL [27]. Furthermore, ED contributes to decreased sexual satisfaction in an affected individual, and the decreased sexual satisfaction can diminish overall life satisfaction [19]. In many men whose QoL is already impaired by the presence of comorbid medical conditions, ED can have an additional negative impact; in fact, the psychological pain induced by ED can be more

disabling than the physical problems associated with chronic illness [28]. ED in a man also affects the sexual QoL of his partner [2,3]. Female partners of men with ED reported less frequent sexual desire and lower sexual satisfaction after their partner developed ED [3]. In one Swedish survey of 1,335 women, those who had partners with ED reported having sexual dysfunction themselves significantly more often than those with partners without ED [29]. In our study, although we did not ask about the QoL of patients with ED, we can predict that the QoL of the patients with ED was poor, corresponding to that of patients with hemodialysis, dementia, or early stage cancer.

Our study had several specific limitations. The questionnaire that we used was not validated but was arbitrary. In addition, comparison target diseases were selected randomly and were not representative of all diseases. The baseline demographics of the men enrolled in this study were not fully inspected and randomized; thus, the baseline comorbidity of each patient may have affected the patients' responses to the questionnaires. Finally, the number of patients in this series was not large enough to achieve regional representativeness. However, through the comparison of ED with other diseases, these data suggest that the general perception of ED in Korea is as important as that of other common chronic disease entities in adults, such as diabetes and hypertension.

CONCLUSIONS

ED is recognized as being a more serious disease than chronic diseases such as hypertension and diabetes mellitus by healthy adult Korean men. In particular, ED was recognized as being more serious than hemodialysis, gastric cancer (early), lung cancer (early), and liver cancer (early) by ED patients in their 30s to 40s. Therefore, we suggest that ED is a basilic subject in public health care in Korea.

CONFLICTS OF INTEREST

The authors have nothing to disclose.

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