Patients' knowledge about risk factors for erectile dysfunction is poor

Baumgartner, M K; Hermanns, T; Cohen, A; Schmid, D M; Seifert, B; Sulser, T; Strebel, R T
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Abstract

Introduction. Well informed and educated patients ideally manage to prevent or delay the onset of severe chronic diseases. With respect to erectile dysfunction (ED) this is of importance because ED is considered to herald debilitating cardiovascular diseases like coronary artery disease. Aim. This survey aimed to assess patient's knowledge about risk factors (RF) for ED and to identify their preferred source of information. Main Outcome Measures. Knowledge of RF for ED and sources used to gather information about ED as reported by patients with ED. Methods. Between July 2004 and June 2006, 126 patients who presented at our outpatient clinic for an assessment of their ED were prospectively evaluated. The patients received a questionnaire about their demographic and socioeconomic circumstances, their strategies to gather information about ED, and their knowledge of specific RF for this disease. The questionnaire was completed by 81 patients (64%). Results. Forty-one patients (51%) could not name one single RF for ED. Three men knew more than three RF. The two most popular sources of information were the Internet and general practitioners. Well-educated patients were significantly better informed than others. Patients using the Internet as source for health information were significantly younger and had a better knowledge about RF for ED compared to those not using the Internet. Conclusions. Patients' knowledge about RF for ED is poor. The Internet seems to be the most useful information source for patients with ED and is predominantly used by younger and better educated patients. Given that ED is considered to be a precursor lesion of severe cardiovascular diseases, patient information and education deserves more attention.
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Running title
Patients knowledge about erectile dysfunction

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Erectile dysfunction, health knowledge, internet, risk factors
Abstract

Introduction

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Aim

This survey aimed to assess patient's knowledge about risk factors (RF) for ED and to identify their preferred source of information.

Main outcome measures

Knowledge of RF for ED and sources used to gather information about ED as reported by patients with ED.

Methods

Between July 2004 and June 2006, 126 patients who presented at our outpatient clinic for an assessment of their ED were prospectively evaluated. The patients received a questionnaire about their demographic and socioeconomic circumstances, their strategies to gather information about ED and their knowledge of specific RF for this disease. The questionnaire was completed by 81 patients (64%).

Results

Forty-one patients (51%) could not name one single RF for ED. Three men knew more than three RF. The two most popular sources of information were the internet and general practitioners. Well-educated patients were significantly better informed than others. Patients using the internet as source for health information were significantly younger and had a better knowledge about RF for ED compared to those not using the internet.

Conclusions
Patient’s knowledge about RF for ED is poor. The internet seems to be the most useful information source for patients with ED and is predominantly used by younger and better educated patients. Given that ED is considered to be a precursor lesion of severe cardiovascular diseases, patient information and education deserves more attention.
Introduction

Since the introduction of PDE-5-Inhibitors for the treatment of erectile dysfunction (ED) some years ago, media and in particular internet presence of the topic ED has increased substantially [1]. It has been reported that patients use the internet and other information sources for various medical questions [2-6]. Sacchetti and colleagues consider the internet to be a valuable educational tool for patients caring about their personal health maintenance [1]. Well informed and educated patients or healthy individuals possibly help to lower health care expenses and ideally prevent or delay the onset of chronic diseases [7-9]. This might be true also for men being at risk for or suffering from ED. With respect to ED this is of particular importance because ED is considered to herald debilitating cardiovascular diseases like coronary artery disease [10-12]. However, with regard to ED it is not known how useful the different information sources are. Davison and colleagues focused on information sources used by patients to gather information about sexual function before and after treatment of prostate cancer. The authors also tested patient’s knowledge about different treatment options for ED after cancer treatment [13]. Low and colleagues performed structured interviews to assess men’s perception of ED [14]. They interviewed 17 men and concluded that many misconceptions existed about causes and definitions of ED.

To the best of our knowledge, patient’s awareness about RF for ED has, so far, not been studied using a self administered questionnaire. Therefore, the objective of this survey was to determine patient’s knowledge about ED and its risk factors (RF) and to identify preferred information resources. Furthermore, we wanted to determine socioeconomic or demographic parameters associated with patient’s knowledge about ED.
Patients and methods

Study design

Between July 2004 and June 2006, patients who presented at our outpatient clinic for a primary assessment of their ED were prospectively evaluated. A self-administered survey assessing patient’s knowledge about ED was performed. Only patients with self-referral or referral by their general practitioner were included into the study. Patients referred to our outpatient clinic by urologists or other specialists in the field of ED were excluded. Additionally, patients were excluded if they were unable to answer the questionnaire due to language-related problems. All patients received a questionnaire prior to the first consultation, with the request to return it at their first visit.

The questionnaire contained 10 questions about demographic and socioeconomic data, about information gathering and knowledge of RF of ED (Appendix 1). Further assessment of the patients contained a detailed recording of the patients’ history, the 5-item International Index of Erectile Function questionnaire (IIEF-5) and physical as well as laboratory examinations [15].

Patient characteristics

Eighty-one of 126 patients (64%) returned the questionnaire. The median patient age was 47 years (range 21-75 years) and the median IIEF-5-Score was 6 (range 3-21). Sixty nine men (85%) indicated to be in an ongoing relationship with a median duration of 12 years (range 0.5-40). Median duration of ED before seeking professional help was 24 months (range 2-240). Median duration of education was 12 years (range 6 -19). The majority of men went to primary school, followed by high school and an apprenticeship (48 %) (Table 1). Thirty percent of the patients had an academic degree.
Statistical analysis

The software SPSS 13 (SPSS Inc., Chicago, USA) was used for statistical analysis. Nonparametric Spearman rank correlations were used to assess correlations between age, duration of ED, income, education and knowledge about ED.

Results

Forty-two patients (52%) did not know any RF for ED. Twenty-one patients (26%) knew one RF, 15 patients (19%) two or three RF and three patients (4%) knew more than three RF (Fig. 1). The most frequently quoted RF for ED was psychological distress. Further RF mentioned were the following, in decreasing order: diabetes mellitus, smoking, medication and cardiovascular disease. None of the patients identified neurological disorders to be a RF for ED (Fig. 2).

Before seeking a specialist, 33 patients (41%) used other sources to gather information about ED. These included general practitioners, internet, television, print media and friends. The two most popular information sources were the internet and the general practitioners (Fig. 3). These two sources were reported to provide the best information. In general, the quality of the provided information was rated low and only 20 (25%) of the patients considered themselves to be well informed about ED.

Well educated patients were significantly better informed than others (Fig. 4). The data also showed that better education and higher income correlated positively (p<0.001, r=0.39). However, there was no significant correlation between income and knowledge, as well as between duration and severity of ED with knowledge. Moreover, a significant negative correlation between knowledge and severity of ED was detected (r=-0.30, p=0.03).
Patients having seen a general practitioner were not better informed about ED than other patients. On the other hand, patients using the internet as source for information gathering had a better knowledge of RF for ED and were significantly younger than those not using the internet (mean age: internet users vs non-internet users: 29 years vs 43.5 years, p=0.03(Fig. 5).
Discussion

Accumulating evidence suggests that organic ED is mainly a vascular disease, based on endothelial dysfunction [10-12,16]. ED and more severe diseases like coronary artery disease and arteriosclerosis in general are known to share many RF [12,17-19]. Consequently, ED is considered to be a precursor of these diseases even in the absence of apparent cardiovascular risk factors. Hence, patients being informed about this association might be aware of subsequently following diseases.

In this perspective, the results of the main focus of the present study, i.e. knowledge of risk factors for ED, are ambiguous. Although increased internet and media presence possibly did decrease the embarrassment of patients to seek professional help, its impact on patient’s knowledge about RF for ED seems to be limited. About half of the patients were not able to quote one single risk factor for ED and only 22% of the patients knew 2 or more RF. Moreover, psychological disorders were the most frequently reported RF. This is in contrast to the aforementioned evidence suggesting that ED is more frequently rather an organic than a psychological disorder. This observation underlines the need to provide lay people with simple and comprehensible messages, highlighting the relationship between ED and cardiovascular risk factors.

As expected, socioeconomic factors did influence the knowledge of patients, but a higher education was the only factor that was significantly associated with better knowledge about RF for ED. This is in accordance with the findings of Goff and colleagues in the REACT trial, where patients in lower socioeconomic groups showed to have lower knowledge about heart attack symptoms [20].

In accordance with the results of other studies younger and better educated patients used the internet more frequently to address questions concerning ED and thus showed significantly better knowledge about RF for ED [1,3,5]. Of note is the fact that
a longer duration or a more severe ED did not increase the interest of patients in gathering information about ED. These findings, however, are in contrast to the findings recently published by several study groups, demonstrating that men with more severe ED were more likely to seek medical help earlier than men with mild to moderate ED [21,22]. In our survey, this lack of increased interest was not attributable to differences in the demographic data (e.g. patient’s age, socioeconomic background or internet access) of patients with a longer duration of ED and patients with a shorter duration of ED symptoms.

With regard to patient education, it is of concern that patients who had previously turned to their general practitioners were no better informed about RF for ED than the other patients. This highlights the need for improvement of education in the field of ED not only for patients, but also for general practitioners, as recently reported by several authors[23-26]. Moreover, recently Parish et al and Rosen et al proposed that sexual health education should receive far more attention already in the curriculum of medical school and the residency training [27, 28]. In addition, communication barriers between patients and general practitioners might be present. As recently reported by Hartmann and Burkhard, a short patient questionnaire could be of help for patients and physicians for initiating communication about ED [29].

Considering the delay of approximately 2 years between the onset of symptoms and the first consultation, considerable embarrassment to talk about ED still seems to be present in patients suffering from ED. However, the time delay more than halved compared to data from the late nineteen-nineties reporting a mean duration of disease between 4.2 and 5.9 years before seeking professional help[15, 30, 31]. This effect might possibly be attributed to an increased media presence of ED in recent years; however the present survey did not address this question which therefore remains unanswered. However, as mentioned, readily available questionnaires in the
doctor’s office would help to lower the patient’s threshold to address the issue of ED and thus help to shorten patient’s time delay to seek professional help [26].

There are limitations to our study that need to be addressed. First of all, there is a bias in the study population as we included patients with self-referral and patients who had been referred by their general practitioner. However, as mentioned earlier these two groups didn’t differ in terms of knowledge about ED or their demographic data. Due to the local health care setting, the study population does not perfectly represent the social and demographic stratification. Patients of lower socioeconomic status were overrepresented, as in Switzerland, patients with higher socioeconomic background tend to consult urologists in a private office and not outpatient clinics of public hospitals. This is mirrored in the high number of patients excluded from the study because they were not able to complete the questionnaire that was rendered in German only. In the same perspective, the number of patients accessing the internet as source of information was low, considering the comprehensive accessibility of the internet in Switzerland and when compared to other studies [9, 13, 32]. Therefore, general knowledge about ED possibly is higher in the naïve population compared to our study population. Additionally, no comments can be made concerning men without ED, as we did not include such a control group in the current study. This would be of considerable interest in a further study, as only the awareness of risk factors for a specific medical disorder such as ED before the onset of the disease helps to prevent it.

**Conclusion**

Patient’s knowledge about RF for ED is poor. About half of our patients could not quote one single risk factor for ED. The internet is the predominant and most useful
information source for patients with ED, which is mostly used by younger and better educated patients. With respect to ED, which is considered to be a precursor lesion of severe cardiovascular diseases, we believe that patient information and education should receive even more attention.

References


15. Rosen RC, Cappelleri JC, Smith MD, Lipsky J, Pena BM. Development and evaluation of an abridged, 5-item version of the International Index of Erectile


Appendix, Figures and Tables

Appendix 1: Questionnaire

<table>
<thead>
<tr>
<th>Question</th>
<th>Response Options</th>
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<tbody>
<tr>
<td>1. How long do you already suffer from erectile dysfunction?</td>
<td></td>
</tr>
<tr>
<td>2. Did you search for information about causes for erectile dysfunction in the past?</td>
<td></td>
</tr>
<tr>
<td>2a. If yes, where did you get the information from?</td>
<td>(Internet, TV, radio, newspaper, friend, general practitioner or other)</td>
</tr>
<tr>
<td>3. Which information source do you consider the best for you?</td>
<td></td>
</tr>
<tr>
<td>4. At the moment, do you feel to be well informed about erectile dysfunction?</td>
<td></td>
</tr>
<tr>
<td>5. Are you aware of risk factors for erectile dysfunction?</td>
<td></td>
</tr>
<tr>
<td>6. What is your professional qualification? What is your current occupation?</td>
<td></td>
</tr>
<tr>
<td>7. How many years schooling and professional education have you completed?</td>
<td></td>
</tr>
<tr>
<td>8. What is your approximate income per year? A. &gt; 65'000 Euro, B: 40'000-64'999 Euro, C: &lt; 40'000 Euro</td>
<td></td>
</tr>
<tr>
<td>9. Are you currently in a sexual relationship?</td>
<td></td>
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</tbody>
</table>
Table 1

Patient characteristics

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Median (range)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>47 (21/75)</td>
</tr>
<tr>
<td>ED-Duration (months)</td>
<td>24 (2/240)</td>
</tr>
<tr>
<td>Duration Relationship (years)</td>
<td>12 (0.5/40)</td>
</tr>
<tr>
<td>IIEF-5 score</td>
<td>6 (3/21)</td>
</tr>
<tr>
<td>Years of Education</td>
<td>12 (0/22)</td>
</tr>
<tr>
<td>Income*</td>
<td></td>
</tr>
<tr>
<td>&gt; 65'000 Euro/year</td>
<td>22 (27%)</td>
</tr>
<tr>
<td>40'000 – 64'999 Euro/year</td>
<td>26 (32%)</td>
</tr>
<tr>
<td>&lt; 40'000 Euro/year</td>
<td>33 (41%)</td>
</tr>
</tbody>
</table>

* number of patients (%)
Figure 1

Number of risk factors for ED quoted by the patients
Figure 2
Mentioned risk factors for ED

![Bar chart showing the number of patients affected by various risk factors. The risk factors are psychiatric disorder/depression, diabetes mellitus, smoking, medication, cardiovascular disorder, and neurological disorders. The number of patients varies, with psychiatric disorder/depression having the highest and neurological disorders having the lowest.](image-url)
Figure 3

Information sources used by patients to gather information about ED

![Bar chart showing information sources used by patients. The sources are ranked as follows: General practitioner (30 patients), Internet (15 patients), TV (10 patients), Newspaper (5 patients), and Friend (1 patient).]
Figure 4

Influence of patient’s education on knowledge about risk factors for ED

Compulsory: Patients only having had a compulsory school education
Vocational: Patients with a compulsory school education followed by a vocational training
Academic: Patients with an academic education
Figure 5

Influence of the internet on knowledge of patients about risk factors for ED