



## Original article

Addressing sexual problems: General practitioners' practice patterns<sup>☆</sup>Sanna-Mari Manninen<sup>a,b,\*</sup>, Katja Kero<sup>a</sup>, Tero Vahlberg<sup>c</sup>, Päivi Polo-Kantola<sup>a</sup><sup>a</sup> Department of Obstetrics and Gynecology, Turku University Hospital and University of Turku, Turku, Finland<sup>b</sup> Department of Health Promotion, Metropolia University of Applied Sciences, Helsinki, Finland<sup>c</sup> Department of Biostatistics, University of Turku and Turku University Hospital, Turku, Finland

## ARTICLE INFO

## Keywords:

Sexual medicine  
Sexual health  
Sexual problem  
General practitioner  
Attitude  
Practice pattern

## ABSTRACT

**Objectives:** Although sexual problems are common, they are rarely inquired about or treated in appointments with general practitioners (GPs). This study aimed to evaluate GPs' attitudes and practice patterns in addressing patients' sexual problems.

**Study design:** A cross-sectional, quantitative, web-based questionnaire survey was conducted among a random sample of 1000 GPs in Finland.

**Main outcome measures:** The study covered three focus areas: (1) GPs' attitudes toward the management of sexual problems, (2) frequency of GPs' inquiries to patients about various sexual problems, and (3) GPs' practice patterns in the treatment of sexual problems.

**Results:** Altogether, 402 GPs (aged 27–65 years, 75 % female and 25 % male) responded. Diagnosing sexual problems in both male and female patients was considered difficult, but especially so in female patients. The GPs asked their patients with sexual problems most often about erectile dysfunction (87.3 %), decreased libido (70.4 %), and dyspareunia (66.4 %). When diagnosing sexual problems, 52.2 % prescribed medications, 35.3 % ordered treatments other than medications, 26.4 % ordered further tests, 19.4 % referred patients to a sexual medicine specialist, and only 6 % reported that their organization had guidelines on where to refer patients with sexual problems for continued care.

**Conclusions:** Increasing GP education in sexual medicine is essential to enhance their knowledge of sexual health and improve their recognition of sexual health problems during patient consultations. Clinical practice guidelines regarding the treatment of sexual problems are also needed to systematize GPs' practice patterns regarding patients' sexual problems in order to prevent underdiagnosis and undertreatment of such problems.

## 1. Introduction

Good sexual health is essential for overall well-being. However, sexual problems are both common and universal [1]. Therefore, healthcare professionals should be knowledgeable about sexual medicine and prepared to address the needs of patients in this field. General practitioners (GPs) are often patients' first healthcare contacts, occasionally even for sexual concerns [2]. However, patients may find it difficult to bring up such concerns on their own because sexuality is often a deeply personal matter [3]. Therefore, if the GP does not broach the subject, it may remain undiscussed [4]. Untreated sexual problems

increase consumption of health services [5] and, thus, healthcare costs. Sexual problems can also decrease a person's work productivity, thereby imposing a significant economic burden on employers [6]. Hence, it is crucial for GPs to become more familiar with sexual problems and more confident in discussing, diagnosing, and treating them.

Sexual problems can stem from a variety of factors. Their occurrence increases especially with age [1], as well as with many diseases and medications [7,8]. They are often associated with other conditions, such as mental illnesses [9–11], sleep disorders [9], and difficult life circumstances, such as in marital relationships [12] and in parenting young children [13]. Given that many of these associations are typically

**Abbreviations:** aOR, adjusted odds ratio; CI, confidence interval; FMA, Finnish Medical Association; GP, general practitioner; SexMEdu, Sexual Medicine Education Study.

<sup>☆</sup> This article is part of a Special issue entitled: 'Women's sexual health' published in Maturitas.

\* Corresponding author at: Department of Obstetrics and Gynecology, Turku University Hospital and University of Turku, Savitehtaankatu 5, 20520 Turku, Finland.

E-mail address: [sanna-mari.manninen@utu.fi](mailto:sanna-mari.manninen@utu.fi) (S.-M. Manninen).

<https://doi.org/10.1016/j.maturitas.2025.108655>

Received 30 March 2025; Received in revised form 25 May 2025; Accepted 25 June 2025

Available online 8 July 2025

0378-5122/© 2025 The Authors. Published by Elsevier B.V. This is an open access article under the CC BY license (<http://creativecommons.org/licenses/by/4.0/>).

bidirectional, diagnosing and treating sexual problems are essential not only for quality of life but also for overall health and well-being.

The aim of this study was to evaluate GPs' attitudes and self-reported practice patterns in addressing patients with sexual problems. The study was part of the Finnish Sexual Medicine Education (SexMEdu) –Study.

## 2. Methods

### 2.1. Subjects

In this cross-sectional, quantitative, web-based questionnaire survey, we invited via email a random sample of GPs, who were members of the Finnish Medical Association (FMA) and had indicated a municipal health center as their workplace. The contact information was provided by the FMA, whose general policy limits the release of contact information to a maximum of 1000 Finnish GPs. Seventy-five respondents were excluded because they were not part of the target group (e.g., they were already retired or had another specialty). Altogether, 402 out of 925 GPs accomplished the questionnaire (response rate: 43.5 %). The following background information were collected from responses to the questionnaire: sex (female [ $n = 302$ , 75 %] and male [ $n = 100$ , 25 %]), age (27–39 years [ $n = 147$ , 36 %]; 40–49 years [ $n = 111$ , 28 %]; and 50–65 years [ $n = 144$ , 36 %]), and the number of patients with whom sexual issues were dealt with per week (hereafter, “number of sexual cases weekly;” 0 [ $n = 77$ , 19 %]; 1–5 [ $n = 265$ , 66 %]; and  $\geq 6$  [ $n = 60$ , 15 %]). According to the FMA's statistics during the study period [14], 65 % of GPs in Finland were female, and the age distribution of GPs was comparable to the age distribution in this study.

### 2.2. Questionnaire

The SexMEdu study questionnaire was drawn from the Portuguese SEXOS study [15,16], modified, and used with the permission of the SEXOS study researchers. The modifications mainly consisted of changes to some response options or scales. After the modifications, the questionnaire was piloted with 11 physicians, which resulted in minor amendments. The questionnaire was structured as follows:

#### (A) GPs' attitudes toward the management of sexual problems

(Respondents were asked to indicate, for each numbered item below, one of these responses: *Totally agree*, *Agree*, *Disagree*, *Totally disagree*, or *Cannot say*.)

(1) Treating sexual problems is an important healthcare issue. (2) Diagnosing male sexual problems is difficult.” (3) Diagnosing female sexual problems is difficult. (4) Sexual problems can be treated with lifestyle changes. (5) The treatments I have prescribed for sexual problems are often effective.

#### (B) Frequency of GPs' inquiries to patients about various sexual problems

(Respondents were asked to indicate, for each numbered item below, one of these responses: *Always*, *Usually*, *Sometimes*, *Never*, or *Cannot say*.)

If you or your patient brings up sexual problems during a consultation, how often do you address the following issues? (1) Decreased libido, (2) increased libido, (3) sexual aversion, (4) erectile problems, (5) premature ejaculation, (6) delayed or absent ejaculation, (7) arousal problems, (8) female orgasmic disorder, (9) dyspareunia, (10) sexual dysfunction due to a general medical condition, (11) sexual dysfunction due to medication, (12) sexual dysfunction due to substance abuse, (13) sexual dysfunction due to relationship problems, (14) sexual violence, (15) sexual dysfunction due to disability, (16) sexual dysfunction due to aging, and (17) sexual diversity (e.g., homosexuality or bisexuality).

#### (C) GPs' practice patterns in the treatment of sexual problems

(Respondents were asked to indicate, for each numbered item below, one of these responses: *Totally agree*, *Agree*, *Disagree*, *Totally disagree*, or *Cannot say*.)

(1) I often order further tests when diagnosing sexual problems. (2) I often prescribe medications for sexual problems. (3) I often prescribe treatments other than medications for sexual problems. (4) I often refer patients with sexual problems to a sexual medicine specialist. (5) My organization has specific guidelines on where to refer patients with sexual problems for continued care.

### 2.3. Statistical analysis

The data are described using frequencies (percentages). The associations of the three focus areas (A–C) with the GPs' sexes, ages (27–39, 40–49, and 50–65 years), and numbers of sexual cases weekly (0, 1–5, and  $\geq 6$  patients) were analyzed using multivariable binary logistic regression. In the analyses, the *Cannot say* responses were omitted, and the other responses were dichotomized into *Totally agree* or *Agree* versus *Disagree* or *Totally disagree* in focus areas A and C, and into *Always* or *Usually* versus *Sometimes* or *Never* in focus area B. The results are presented using adjusted odds ratios with 95 % confidence intervals. *P*-values  $< 0.05$  were considered statistically significant. The statistical analyses were performed using the SAS System for Windows version 9.4 (SAS Institute Inc., Cary, NC, USA).

### 2.4. Ethics

The SexMEdu study respected the principles of the Helsinki Declaration in terms of maintaining the respondents' anonymity and obtaining their informed consent. The Ethics Committee of Turku University approved the study protocol (44/2017). The respondents were clearly informed on the questionnaire that their accomplishment of the questionnaire implied their consent to participate in the study.

## 3. Results

### 3.1. (A) GP's attitudes toward the management of sexual problems

A vast majority (92.8 %) of the GPs considered treating sexual problems an important healthcare issue. Less than half (41.8 %) considered diagnosing male sexual problems difficult, while 66.4 % regarded diagnosing female sexual problems as difficult. Compared to the male GPs, the female GPs were more likely to consider diagnosing male sexual problems difficult, but no sex differences emerged regarding the difficulty of diagnosing female sexual problems. Furthermore, the GPs with 1–6 sexual cases per week were more likely to report these difficulties compared to those with  $\geq 6$  cases weekly. Of all GPs, 90.3 % considered that sexual problems could be treated with lifestyle changes, with no differences according to GPs' sex, age, or number of sexual cases weekly. Only 44.3 % of the GPs reported that treatments they had prescribed for sexual problems were generally effective; even less often, female GPs and GPs with 0 weekly sexual cases (Table 1).

### 3.2. (B) Frequency of GPs' inquiries to patients about various sexual problems

Of patients with sexual problems, the GPs inquired most often about erectile dysfunction (87.3 %), decreased libido (70.4 %), and dyspareunia (66.4 %), and least often about sexual aversion (14.4 %), increased libido (16.7 %), and sexual diversity (16.7 %). Only a few sex differences emerged. Compared to the male GPs, the female GPs were more likely to inquire about dyspareunia and less likely about erectile dysfunction and increased libido. As for the different age groups, the GPs in the older age groups were more likely to inquire about increased libido. Further, the GPs in the oldest age group were more likely to inquire about several sexual problems, such as sexual aversion, premature ejaculation,

**Table 1**  
General practitioners' attitudes toward the management of sexual problems (total n = 402).

Entire group	Treating sexual problems is an important healthcare issue (n = 401)		Diagnosing male sexual problems is difficult (n = 380)		Diagnosing female sexual problems is difficult (n = 365)		Sexual problems can be treated with lifestyle changes (n = 382)		The treatments I have prescribed for sexual problems are often effective (n = 263)	
	Agree or totally agree 92.8 %		Agree or totally agree 41.8 %		Agree or totally agree 66.4 %		Agree or totally agree 90.3 %		Agree or totally agree 44.3 %	
	aOR	95%CI	aOR	95%CI	aOR	95%CI	aOR	95%CI	aOR	95%CI
Sex	<i>p</i> = 0.178		<i>p</i> = 0.001		<i>p</i> = 0.114		<i>p</i> = 0.851		<i>p</i> = 0.009	
female versus male	1.77	0.77–4.04	2.36	1.42–3.93	1.56	0.90–2.69	1.11	0.38–3.20	0.43	0.22–0.81
Age	<i>p</i> = 0.715		<i>p</i> = 0.270		<i>p</i> = 0.393		<i>p</i> = 0.862		<i>p</i> = 0.640	
40–49 versus 27–39	0.93	0.37–2.36	1.07	0.63–1.83	1.10	0.60–2.04	0.73	0.23–2.33	1.18	0.59–2.33
50–65 versus 27–39	1.38	0.53–3.56	1.46	0.90–2.38	0.75	0.43–1.30	0.82	0.27–2.33	0.85	0.46–1.59
40–49 versus 50–65	0.68	0.25–1.84	0.73	0.43–1.24	1.47	0.80–2.70	0.88	0.28–2.74	1.38	0.70–2.71
Patients dealt with sexual issues / week	<i>p</i> = 0.339		<i>p</i> = 0.049		<i>p</i> = 0.004		<i>p</i> = 0.674		<i>p</i> = 0.036	
0 versus 1–5	0.53	0.21–1.31	0.61	0.35–1.07	1.10	0.57–2.12	1.98	0.44–8.96	0.49	0.25–0.97
0 versus ≥6	0.84	0.25–2.81	1.13	0.54–2.38	3.05	1.37–6.83	1.81	0.29–11.51	0.31	0.12–0.79
1–5 versus ≥6	1.60	0.55–4.68	1.89	1.02–3.39	2.77	1.49–5.16	0.91	0.25–3.36	0.63	0.29–1.40

*p*-values are over the group values.

aOR higher than 1 indicates that the respondents in the comparison group were more likely to report 'agree' or 'totally agree' to the question compared to the reference group.

aOR lower than 1 indicates that the respondents in the comparison group were less likely to report 'agree' or 'totally agree' to the question compared to the reference group.

aOR = adjusted odds ratio; multivariable logistic regression; CI = confidence interval.

The 'cannot say' responses were omitted from the analyses. In each question the number of analyzed responses are shown in the upper column.

The multivariable binary logistic regression was carried out with adjustment of GPs' sex (female/male), age (27–39/40–49/50–65 years), and the number of patients with whom sexual issues were dealt with per week (0/1–5/≥6).

delayed or absent ejaculation, and sexual dysfunction due to general medical conditions, substance abuse, sexual violence, disability, and aging. Furthermore, the GPs in the 40–49 age group were more likely than the GPs in the youngest age group to inquire about sexual diversity but less likely to inquire about dyspareunia. The fewer the GP's sexual cases were weekly, the less likely they were to ask their patients about sexual problems (Table 2).

### 3.3. (C) GPs' practice patterns in the treatment of sexual problems

About half (52.2 %) of the GPs prescribed medications for sexual problems often, while around one-third (35.5 %) often prescribed treatments other than medications. A minority (26.4 %) ordered further tests or referred patients to a sexual medicine specialist (19.4 %). Only 6 % of the GPs indicated that their organization had specific guidelines on where to refer patients with sexual problems for continued care. Regarding sex differences, compared to the male GPs, the female GPs

were less likely to prescribe medications. By age, the GPs in the 50–56 age group referred patients to a sexual medicine specialist more frequently than those in the 27–39 age group. No other sex or age differences emerged. The GPs with 0 sexual cases weekly were less likely to order further tests, or prescribe medications, or treatments. Further, the GPs with fewer than six sexual cases weekly were less likely to prescribe other than medications (Table 3).

## 4. Discussion

Almost all the GPs in this study considered treating sexual problems an important healthcare issue. However, challenges were found in their care of patients with sexual problems. A large percentage reported difficulties in diagnosing sexual problems in both male and female patients, but especially in the latter. Additionally, although most of the GPs prescribed medications and one-third prescribed other treatments, less than half considered these treatments effective. More importantly,

**Table 2**  
The frequency of general practitioners' inquiries to patients about various sexual problems (total n = 402).

Entire group	Decreased libido (n = 392)		Increased libido (n = 382)		Sexual aversion (n = 373)		Erectile problems (n = 395)		Premature ejaculation (n = 385)		Delayed or absent ejaculation (n = 385)		Arousal problems (n = 381)		Female orgasmic disorder (n = 376)		Dyspareunia (n = 392)		Sexual dysfunction due to a general medical condition (n = 390)		Sexual dysfunction due to medication (n = 394)		Sexual dysfunction due to substance abuse (n = 378)		Sexual dysfunction due to relationship problems (n = 394)		Sexual violence (n = 378)		Sexual dysfunction due to disability (n = 366)		Sexual dysfunction due to aging (n = 388)		Sexual diversity (e.g., homosexuality or bisexuality) (n = 370)	
	Always or usually 70.4%	Always or usually 16.7%	Always or usually 14.4%	Always or usually 87.3%	Always or usually 34.8%	Always or usually 28.6%	Always or usually 34.1%	Always or usually 22.1%	Always or usually 66.4%	Always or usually 55.5%	Always or usually 69.2%	Always or usually 35.1%	Always or usually 59.2%	Always or usually 23.6%	Always or usually 25.1%	Always or usually 35.8%	Always or usually 16.7%	Always or usually 35.8%	Always or usually 35.8%	Always or usually 35.8%	Always or usually 35.8%	Always or usually 35.8%	Always or usually 35.8%	Always or usually 35.8%	Always or usually 35.8%	Always or usually 35.8%	Always or usually 35.8%	Always or usually 35.8%	Always or usually 35.8%	Always or usually 35.8%				
Sex	<i>p</i> = 0.746		<i>p</i> = 0.009		<i>p</i> = 0.123		<i>p</i> = 0.046		<i>p</i> = 0.550		<i>p</i> = 0.403		<i>p</i> = 0.338		<i>p</i> = 0.316		<i>p</i> < 0.001		<i>p</i> = 0.395		<i>p</i> = 0.072		<i>p</i> = 0.840		<i>p</i> = 0.577		<i>p</i> = 0.094		<i>p</i> = 0.239		<i>p</i> = 0.749		<i>p</i> = 0.021	
female versus male	0.92	0.55–1.54	0.46	0.26–0.83	0.61	0.33–1.14	0.40	0.16–0.98	0.86	0.53–1.41	0.81	0.49–1.34	0.79	0.48–1.29	0.75	0.43–1.31	2.55	1.57–4.15	0.81	0.50–1.31	0.61	0.36–1.05	1.05	0.64–1.73	0.87	0.54–1.41	1.67	0.92–3.06	1.40	0.80–2.45	1.08	0.66–1.77	0.97	0.51–1.82
Age	<i>p</i> = 0.548		<i>p</i> = 0.061		<i>p</i> = 0.022		<i>p</i> = 0.454		<i>p</i> = 0.005		<i>p</i> = 0.006		<i>p</i> = 0.783		<i>p</i> = 0.558		<i>p</i> = 0.081		<i>p</i> = 0.073		<i>p</i> = 0.464		<i>p</i> = 0.018		<i>p</i> = 0.420		<i>p</i> = 0.036		<i>p</i> = 0.118		<i>p</i> = 0.037		<i>p</i> = 0.121	
40–49 versus 27–39	0.90	0.50–1.60	2.07	1.02–4.21	0.88	0.39–2.00	0.60	0.26–1.37	1.35	0.77–2.34	1.40	0.78–2.54	1.03	0.61–1.77	0.97	0.52–1.81	0.53	0.30–0.93	1.02	0.61–1.71	0.70	0.40–1.23	0.87	0.50–1.51	0.76	0.45–1.27	1.57	0.84–2.93	1.18	0.64–2.17	0.87	0.50–1.49	2.02	1.01–4.05
50–65 versus 27–39	0.75	0.45–1.26	2.11	1.08–4.13	2.12	1.09–4.11	0.69	0.31–1.50	2.26	1.37–3.74	2.32	1.37–3.93	0.87	0.53–1.43	1.29	0.74–2.27	0.68	0.40–1.16	1.67	1.03–2.71	0.88	0.52–1.48	1.75	1.07–2.86	1.06	0.65–1.72	2.13	1.20–3.77	1.74	1.01–3.01	1.64	1.01–2.66	1.69	0.87–3.28
40–49 versus 50–65	1.20	0.68–2.11	0.98	0.52–1.86	0.42	0.20–0.88	0.87	0.41–1.88	0.59	0.35–1.01	0.61	0.35–1.05	1.19	0.70–2.04	0.75	0.41–1.37	0.77	0.45–1.34	0.61	0.36–1.03	0.80	0.46–1.39	0.50	0.29–0.85	0.72	0.42–1.21	0.74	0.41–1.33	0.67	0.38–1.21	0.53	0.31–0.90	1.20	0.64–2.26
Patients dealt with sexual issues / week	<i>p</i> = 0.059		<i>p</i> = 0.124		<i>p</i> = 0.088		<i>p</i> = 0.181		<i>p</i> = 0.036		<i>p</i> = 0.029		<i>p</i> = 0.011		<i>p</i> = 0.006		<i>p</i> = 0.024		<i>p</i> = 0.024		<i>p</i> = 0.836		<i>p</i> = 0.036		<i>p</i> = 0.001		<i>p</i> = 0.023		<i>p</i> = 0.430		<i>p</i> = 0.470		<i>p</i> = 0.551	
0 versus 1–5	0.51	0.30–0.89	0.72	0.36–1.53	0.97	0.46–2.02	0.46	0.23–0.95	0.60	0.34–1.07	0.86	0.48–1.54	0.71	0.40–1.26	0.57	0.28–1.16	0.79	0.46–1.37	0.61	0.36–1.04	0.71	0.41–1.22	0.95	0.55–1.64	0.50	0.30–0.84	0.37	0.13–0.79	0.95	0.51–1.75	0.85	0.49–1.47	1.01	0.50–2.06
0 versus ≥6	0.59	0.28–1.25	0.39	0.16–1.00	0.73	0.27–1.97	0.35	0.12–1.07	0.54	0.26–1.16	0.80	0.37–1.76	0.37	0.18–0.79	0.39	0.16–0.93	0.26	0.11–0.65	0.29	0.14–0.62	0.31	0.13–0.72	0.81	0.39–1.68	0.19	0.09–0.42	0.31	0.13–0.78	0.63	0.29–1.40	0.64	0.31–1.32	0.68	0.38–1.27
1–5 versus ≥6	1.14	0.60–2.19	0.55	0.27–1.12	0.76	0.33–1.72	0.76	0.28–2.12	0.90	0.49–1.66	0.93	0.49–1.78	0.53	0.30–0.95	0.68	0.36–1.31	0.33	0.15–0.75	0.47	0.25–0.90	0.44	0.21–0.92	0.85	0.46–1.56	0.38	0.19–0.76	0.85	0.45–1.62	0.67	0.35–1.27	0.75	0.41–1.36	0.67	0.33–1.39

*p*-Values are over the group values.

aOR higher than 1 indicates that the respondents in the comparison group were more likely to report 'always' or 'usually' to the question compared to the reference group.

aOR lower than 1 indicates that the respondents in the comparison group were less likely to report 'always' or 'usually' to the question compared to the reference group.

aOR = adjusted odds ratio; multivariable logistic regression; CI = confidence interval.

The 'cannot say' responses were omitted from the analyses. In each question the number of analyzed responses are shown in the upper column.

The multivariable binary logistic regression was carried out with adjustment of GPs' sex (female/male), age (27–39/40–49/50–65 years), and the number of patients with whom sexual issues were dealt with per week (0/1–5/≥6).

**Table 3**  
General practitioners' practice patterns in the treatment of sexual problems (total n = 402).

	I often order further tests when diagnosing sexual problems (n = 393)	I often prescribe medications for sexual problems (n = 396)	I often prescribe treatments other than medications for sexual problems (n = 389)	I often refer patients with sexual problems to a sexual medicine specialist (n = 393)	My organization has specific guidelines on where to refer patients with sexual problems for continued care (n = 378)					
Entire group	Agree or totally agree 26.4 %	Agree or totally agree 52.2 %	Agree or totally agree 35.3 %	Agree or totally agree 19.4 %	Agree or totally agree 6.0 %					
	aOR	95%CI	aOR	95%CI	aOR	95%CI	aOR	95%CI		
Sex	<i>p</i> = 0.969		<i>p</i> = 0.001		<i>p</i> = 0.316		<i>p</i> = 0.068		<i>p</i> = 0.879	
female versus male	1.01	0.60–1.72	0.42	0.25–0.69	1.30	0.78–2.15	1.85	0.96–3.58	0.93	0.35–2.45
Age	<i>p</i> = 0.290		<i>p</i> = 0.514		<i>p</i> = 0.857		<i>p</i> = 0.003		<i>p</i> = 0.222	
40–49 versus 27–39	1.19	0.67–2.12	1.18	0.71–1.97	1.16	0.68–1.99	1.88	0.93–3.77	2.66	0.88–8.06
50–65 versus 27–39	1.53	0.90–2.61	1.32	0.82–2.14	1.09	0.66–1.79	3.00	1.59–5.68	1.91	0.62–5.89
40–49 versus 50–65	0.78	0.44–1.37	0.89	0.53–1.51	1.07	0.62–1.83	0.62	0.34–1.15	1.39	0.54–3.59
Patients dealt with sexual issues / week	<i>p</i> = 0.018		<i>p</i> = 0.003		<i>p</i> = 0.001		<i>p</i> = 0.120		<i>p</i> = 0.753	
0 versus 1–5	0.35	0.17–0.73	0.39	0.22–0.67	0.56	0.31–1.03	0.49	0.23–1.06	1.28	0.44–3.70
0 versus ≥6	0.38	0.16–0.92	0.48	0.23–0.98	0.23	0.11–0.48	0.39	0.15–1.00	0.87	0.23–3.25
1–5 versus ≥6	1.08	0.57–2.02	1.24	0.70–2.20	0.40	0.22–0.72	0.80	0.40–1.57	0.68	0.23–2.01

p-Values are over the group values.

aOR higher than 1 indicates that the respondents in the comparison group were more likely to report 'agree' or 'totally agree' to the question compared to the reference group.

aOR lower than 1 indicates that the respondents in the comparison group were less likely to report 'agree' or 'totally agree' to the question compared to the reference group.

aOR = adjusted odds ratio; multivariable logistic regression; CI = confidence interval.

The 'cannot say' responses were omitted from the analyses. In each question the number of analyzed responses are shown in the upper column.

The multivariable binary logistic regression was carried out with adjustment of GPs' sex (female/male), age (27–39/40–49/50–65 years), and the number of patients with whom sexual issues were dealt with per week (0/1–5/≥6).

hardly any organization had specific guidelines on where to refer patients for continued care, consequently, only a few of the GPs referred patients to a sexual medicine specialist.

These results emphasize a strong need for clear clinical guidelines in sexual medicine. In Finland, there are no national guidelines for the management of sexual problems. A requirement for these guidelines was also noted in a recent Portuguese study with primary care physicians [17], as well as in surveys among patients seeking treatment for sexual problems [18,19]. Clinical guidelines also help educate healthcare professionals, as they are drafted by experts in the field. Previous studies have shown that lack of knowledge and education is one of the most important barriers to treating patients with sexual problems [15,20–22]. Education in sexual medicine is still fragmented and nonstandardized, and it varies from country to country. Furthermore, additional training is also needed in physician–patient interaction. For example, healthcare professionals can help their patients feel more at ease when discussing their sexual concerns by creating safe spaces for them and using open-ended questions to ask them about such concerns [23]. Additionally, gender-related factors may be significant. In our previous study [20], male GPs more often reported good competence in discussing and treating male patients' sexual issues, while female GPs more often reported competence in discussing such issues with female patients. However, no gender differences were found in the reported competence for treating female patients [20].

Only approximately one-fourth of the GPs in this study indicated that they ordered further tests when diagnosing sexual problems. This result contradicts that of the Portuguese SEXOS study, wherein 66 % of the GPs reported ordering laboratory tests to explore reasons for sexual problems [16]. Importantly, sexual problems can be caused by various diseases and/or the medications for them [7,8]. However, sexual problems can also signal the presence of other health conditions and may even serve as early warning signs. For example, erectile dysfunction has been shown to predict coronary artery disease [24]. Similarly, arousal and orgasmic disorders related to endothelial dysfunction are a nontraditional risk factor for cardiovascular disease in women [25]. Therefore, the minimum recommended examinations for both male and female patients presenting with sexual problems include taking of medical and

psychosocial histories, and laboratory tests for fasting glucose, lipids, and hormonal profiles [26,27]. The finding in this study that most of the GPs did not order further tests highlights the need for detailed clinical guidelines for managing sexual problems. Moreover, these guidelines would encourage healthcare professionals to pay more attention to their patients' sexual health concerns.

The results of this study further showed that the older GPs were more likely to address a wide variety of sexual problems than the young GPs. Similar outcomes have been reported with urologists and andrologists [28], and with obstetrician-gynecologists [29]. These findings suggest that not only education but also experience and practice in interacting with patients who have sexual problems, as well as in treating them, are crucial. Furthermore, experience in medicine in general is beneficial especially when treating patients with sexual problems because dealing with sexual issues is time consuming [20].

The finding in this study that male GPs more frequently inquire about erectile dysfunction supports the assumption that male GPs are more likely than female GPs to address male patients' sexual problems, which are predominantly erectile problems. Additionally, the fact that medications for erectile dysfunction are effective, moderately safe, and low cost aligns with our finding that the male GPs reported often prescribing treatments and considered them effective. However, the overall percentages of reported difficulties in diagnosing sexual problems were high, particularly in female patients. Although the present study cannot provide definitive explanations of these results, the complexity of female sexual problems, involving both physical and psychosocial factors, likely plays a significant role. Furthermore, the limited selection of effective medications for female sexual problems may be crucial, as also shown in the Portuguese SEXOS study with GPs [16] and in a U.S. study with primary care physicians and gynecologists [30]. Notably, however, many sexual health-related issues can be resolved if the physician simply brings up the topic and discusses it with the patient. This was shown in a Norwegian study [2] involving 1117 GP consultations, where the majority (77 %) of consultations concerning sexuality, involved only a discussion of the issue. A flowchart of a proposed algorithm for managing sexual problems is shown in Fig. 1.

One strength of the present study was the relatively high number of

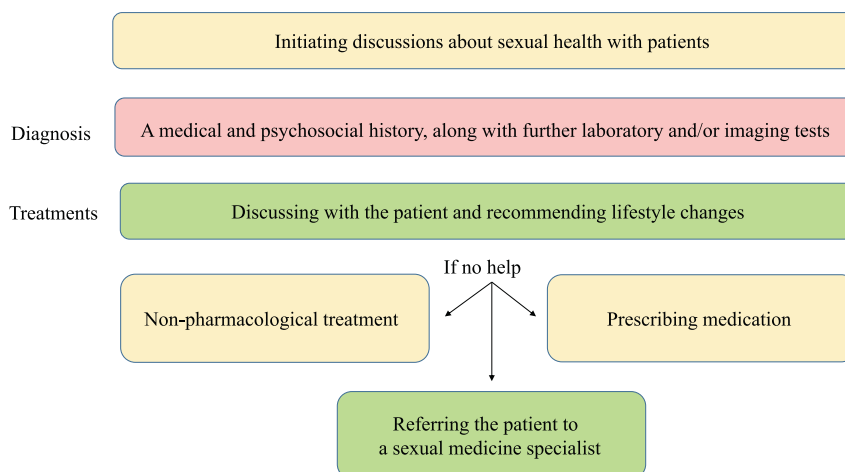


Fig. 1. A proposed algorithm for managing sexual problems.

participating GPs, even though the 43.5 % response rate can be considered only moderate. However, physician surveys have a history of low response rates [31]. As the recruitment method was enrollment, it was not possible to gain information about and analyze the reasons for dropouts. It is plausible that GPs who are more involved in managing patients with sexual problems were more likely to participate in the study. However, to address this potential bias, we assessed the number of patients with sexual issues dealt with per week, and GPs without such patients also participated in the survey. Another limitation of this study is that the results were self-reported, and the GPs' actual competence was not measured. However, the use of a web-based questionnaire that guaranteed respondent anonymity likely encouraged the participants to be forthright in their replies. Furthermore, the questionnaire was programmed to prevent progression when a question was not answered, which ensured fully accomplished questionnaires. However, this could also have increased dropouts, as some respondents could have preferred to answer only certain questions. Finally, we consider our respondents representative of Finnish GPs in terms of sex and gender [14]; but as they were limited to Finnish GPs, our results may not be directly applicable to physicians in other countries or fields of specialization.

## 5. Conclusions

This study found that GP education in sexual medicine is needed to enhance their ability to recognize and address patients' sexual problems. Additionally, clinical practice guidelines for managing sexual problems are essential to systematize GPs' approaches to the diagnosis and treatment of sexual problems, in order to prevent the underdiagnosis and undertreatment of such problems.

## Credit authorship contribution statement

Sanna-Mari Manninen was the principal investigator and the main writer of the paper.

Katja Kero was a leader of the Sexual Medicine Education (SexMEDu) Study, a co-investigator, and a co-writer.

Tero Vahlberg was the statistician.

Päivi Polo-Kantola was a leader of the Sexual Medicine Education (SexMEDu) Study, a co-investigator, and a co-writer.

All authors saw and approved the final version and no other person made a substantial contribution to the paper.

## Ethical approval

Ethical approval was obtained from the Ethics Committee of Turku University (Approval number: 44/2017; Date: 11 September 2017). The

SexMEDu study respected the principles of the Helsinki Declaration in terms of maintaining the respondents' anonymity and obtaining their informed consent. The respondents were clearly informed on the questionnaire that their accomplishment of the questionnaire implied their consent to participate in the study.

## Provenance and peer review

This article was not commissioned and was externally peer reviewed.

## Funding

The SexMEDu study was supported by the Finnish Medical Society Duodecim and Turku University Hospital (Special Government Funding).

## Declaration of competing interest

The authors declare that they have no competing interest.

## Acknowledgments

We want to thank all the GPs who responded to our survey.

## Data availability

There are no linked research data sets for this paper. Data will be made available on request.

## References

- [1] M.P. McCabe, I.D. Sharlip, R. Lewis, E. Atalla, R. Balon, A.D. Fisher, E. Laumann, S. W. Lee, R.T. Seagraves, Incidence and prevalence of sexual dysfunction in women and men: a consensus statement from the fourth international consultation on sexual medicine 2015, *J. Sex. Med.* 13 (2016) 144–152, <https://doi.org/10.1016/j.jsxm.2015.12.034>.
- [2] A. Vik, M. Brekke, Do patients consult their GP for sexual concerns? A cross sectional explorative study, *Scand. J. Prim. Health Care* 35 (2017) 373–378, <https://doi.org/10.1080/02813432.2017.1398934>.
- [3] S. Latreille, A. Collyer, M. Temple-Smith, Finding a segue into sex: young men's views on discussing sexual health with a GP, *Aust. Fam. Physician* 43 (2014) 217–221 (PMID: 24701626).
- [4] J.C. Bond, K.O. White, J.A. Abrams, A.K. Wessellink, L.A. Wise, Sexual dysfunction, distress, and care-seeking among females during the preconception period, *Am. J. Obstet. Gynecol.* 229 (43) (2023) e1–43.e12, <https://doi.org/10.1016/j.ajog.2023.03.037>.
- [5] J.I. Mäkinen, A. Perheentupa, O.T. Raitakari, M. Koskenvuo, P. Pöllänen, J. Mäkinen, I. Huhtaniemi, Sexual symptoms in aging men indicate poor life satisfaction and increased health service consumption, *Urology* 70 (2007) 1194–1199, <https://doi.org/10.1016/j.urology.2007.08.030>.

- [6] I. Goldstein, A. Goren, V.W. Li, M.C. Maculaitis, W.Y. Tang, T.A. Hassan, The association of erectile dysfunction with productivity and absenteeism in eight countries globally, *Int. J. Clin. Pract.* 73 (2019) e13384, <https://doi.org/10.1111/ijcp.13384>.
- [7] J.Z. Li, T.A. Maguire, K.H. Zou, L.J. Lee, S.S. Donde, D.G. Taylor, Prevalence, comorbidities, and risk factors of erectile dysfunction: results from a prospective real-world study in the United Kingdom, *Int. J. Clin. Pract.* 5229702 (2022), <https://doi.org/10.1155/2022/5229702>.
- [8] M.M. Peixoto, J. Lopes, A.L. Rodrigues, Quality of life, sexual functioning and chronic disease: a comparative study with Portuguese women without chronic disease, and women with diabetes type 1 and 2, and arterial hypertension, *Int. J. Sex. Health* 4 (2021) 209–220, <https://doi.org/10.1080/19317611.2021.2015038>.
- [9] R.M. Merrill, D. Song, M.K. Ashton, Comparing the strength of associations between male genital problems and mental illnesses and sleep disorders, *Am. J. Mens Health* 18 (2024), <https://doi.org/10.1177/15579883241228243>.
- [10] H.M. Tan, S.F. Tong, C.C. Ho, Men's health: sexual dysfunction, physical, and psychological health—is there a link? *J. Sex. Med.* 9 (2012) 663–671, <https://doi.org/10.1111/j.1743-6109.2011.02582.x>.
- [11] B.S. Christensen, M. Grønbaek, M. Osler, B.V. Pedersen, C. Graugaard, M. Frisch, Associations between physical and mental health problems and sexual dysfunctions in sexually active Danes, *J. Sex. Med.* 8 (2011) 1890–1902, <https://doi.org/10.1111/j.1743-6109.2010.02145.x>.
- [12] S. Hatta, L.S. Woon, N.M.N. Nik Sumayyah, S. Mohamad Nasir, Psychosocial determinants of marital satisfaction among gynecologic cancer survivors in Malaysia, *Front. Psych.* 12 (2021), <https://doi.org/10.3389/fpsy.2021.744922>.
- [13] T. Ahlborg, K. Rudeblad, S. Linnér, S. Linton, Sensual and sexual marital contentment in parents of small children—a follow-up study when the first child is four years old, *J. Sex Res.* 45 (2008) 295–304, <https://doi.org/10.1080/00224490802204423>.
- [14] The Finnish Medical Association, Physicians in Finland, Statistics on physicians and the health care system, [https://www.laakariliitto.fi/site/assets/files/5223/1116\\_tilasto2016\\_net1\\_170114.pdf](https://www.laakariliitto.fi/site/assets/files/5223/1116_tilasto2016_net1_170114.pdf), 2016. (Accessed 19 October 2024).
- [15] V. Alarcão, S. Ribeiro, F.L. Miranda, M. Carreira, T. Dias, J. Garcia e Costa, A. Galvão-Teles, General practitioners' knowledge, attitudes, beliefs, and practices in the management of sexual dysfunction – results of the Portuguese SEXOS study, *J. Sex. Med.* 9 (2012) 2508–2515, <https://doi.org/10.1111/j.1743-6109.2012.02870.x>.
- [16] S. Ribeiro, V. Alarcão, R. Simões, F.L. Miranda, M. Carreira, A. Galvão-Teles, General practitioners' procedures for sexual history taking and treating sexual dysfunction in primary care, *J. Sex. Med.* 11 (2014) 386–393, <https://doi.org/10.1111/jsm.12395>.
- [17] M.G. Rodrigues, A.A. Manão, N. Tomada, P.M. Pascoal, The role and needs of family doctors in sexual medicine: contributions of a preliminary Portuguese qualitative study for a global action, *Int. J. Impot. Res.* (2024), <https://doi.org/10.1038/s41443-024-00864-z>.
- [18] G. Gore-Gorszewska, “Why not ask the doctor?” barriers in help-seeking for sexual problems among older adults in Poland, *Int. J. Public Health* 65 (2020) 1507–1515, <https://doi.org/10.1007/s00038-020-01472-6>.
- [19] M. Gott, S. Hinchliff, Barriers to seeking treatment for sexual problems in primary care: a qualitative study with older people, *Fam. Pract.* 20 (2003) 690–695, <https://doi.org/10.1093/fampra/cm612>.
- [20] S.M. Manninen, K. Kero, K. Perkonjoja, T. Vahlberg, P. Polo-Kantola, General practitioners' self-reported competence in the management of sexual health issues - a web-based questionnaire study from Finland, *Scand. J. Prim. Health Care* 39 (2021) 279–287, <https://doi.org/10.1080/02813432.2021.1934983>.
- [21] M. Byrne, S. Doherty, H.M. McGee, A.W. Murphy, General practitioner views about discussing sexual issues with patients with coronary heart disease: a national survey in Ireland, *BMC Fam. Pract.* 11 (2010), <https://doi.org/10.1186/1471-2296-11-40>.
- [22] P.C. Barnhoorn, I.C. Prins, H.R. Zuurveen, B.L. den Ouden, M.E.M. den Ouden, M. E. Numans, H.W. Elzevier, G.F. van Ek, Let's talk about sex: exploring factors influencing the discussion of sexual health among chronically ill patients in general practice, *BMC Prim. Care.* 23 (2022), <https://doi.org/10.1186/s12875-022-01660-8>.
- [23] M. Savoy, D. O'Gurek, A. Brown-James, Sexual health history: techniques and tips, *Am. Fam. Physician* 101 (2020) 286–293 (PMID: 32109033).
- [24] W. Guo, C. Liao, Y. Zou, F. Li, T. Li, Q. Zhou, Y. Cao, X. Mao, Erectile dysfunction and risk of clinical cardiovascular events: a meta-analysis of seven cohort studies, *J. Sex. Med.* 7 (2010) 2805–2816, <https://doi.org/10.1111/j.1743-6109.2010.01792.x>.
- [25] L.A. Bailey, D. Hoffman, Female sexual dysfunction: a nontraditional risk factor for cardiovascular disease, *Curr. Sex. Health Rep.* 5 (2008) 208–212, <https://doi.org/10.1007/s11930-008-0036-3>.
- [26] D. Hatzichristou, R.C. Rosen, L.R. Derogatis, W.Y. Low, E.J. Meuleman, R. Sadovsky, T. Symonds, Recommendations for the clinical evaluation of men and women with sexual dysfunction, *J. Sex. Med.* 7 (2010) 337–348, <https://doi.org/10.1111/j.1743-6109.2009.01619.x>.
- [27] A. Avasthi, S. Grover, T.S. Sathyanarayana Rao, Clinical practice guidelines for management of sexual dysfunction, *Indian, J. Psychiatry* 59 (2017) 91–115, <https://doi.org/10.4103/0019-5545.196977>.
- [28] I. Schloegl, F.M. Köhn, A. Dinkel, H. Schulwitz, J.E. Gschwend, H.A. Bosinski, K. Herkommer, Education in sexual medicine - a nationwide study among German urologists/andrologists and urology residents, *Andrologia* 49 (2017), <https://doi.org/10.1111/and.12611>.
- [29] A. Aromaa, K. Kero, J. Grönlund, S.M. Manninen, M. Riskumäki, T. Vahlberg, P. Polo-Kantola, Let's talk about sexuality - a web-based survey of self-reported competence in sexual problems among obstetrician-gynecologists in Finland, *Acta Obstet. Gynecol. Scand.* 102 (2023) 190–199, <https://doi.org/10.1111/aogs.14492>.
- [30] M. Abdolrasulnia, R.M. Shewchuk, N. Roepke, U.S. Granstaff, J. Dean, J.A. Foster, A.T. Goldstein, L. Casebeer, Management of female sexual problems: perceived barriers, practice patterns, and confidence among primary care physicians and gynecologists, *J. Sex. Med.* 7 (2010) 2499–2508, <https://doi.org/10.1111/j.1743-6109.2010.01857.x>.
- [31] B.J. Barnhart, S.G. Reddy, G.K. Arnold, Remind me again: Physician response to web surveys: The effect of email reminders across 11 opinion survey efforts at the American Board of Internal Medicine from 2017 to 2019, *Eval. Health Prof.* 44 (2021) 245–259, <https://doi.org/10.1177/01632787211019445>.