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To Toni, Frida, and Teressa

UNIVERSITY OF TURKU
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SANNA-MARI MANNINEN: Sexual medicine education in Finland –
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ABSTRACT

Sexual problems are common, and the likelihood of experiencing them increases with age and various chronic diseases. Therefore, healthcare professionals should be able to bring up sexual issues with their patients. The present thesis aimed to evaluate the barriers experienced by Finnish general practitioners (GPs) and final-year medical students and midwifery students to bringing up sexual issues with their patients. Further, it set out to determine GPs' self-reported inquiries about sexual problems when dealing with patients with chronic diseases as well as GPs' awareness of medications inducing sexual problems. Additionally, it assesses the knowledge of and educational interest in sexual medicine of medical and midwifery students.

The study of GPs collected data from a random sample of 1,000 Finnish GPs. For the study of students, all final-year medical and midwifery students graduating between December 2018 and May 2019 in Finland were enrolled. Web-based questionnaires were utilized.

Although the GPs and both the medical and midwifery students reported a good competence in discussing sexual issues with patients, several barriers emerged that hindered them from bringing up such issues in patient encounters. In addition, the majority of the GPs considered that sexual problems are often side effects of medications prescribed for other pathologies. Nevertheless, the GPs self-reported that they seldom followed up on whether the medications, once prescribed, caused side effects in sexual functions. The majority of the GPs reported that the sexual medicine education they had received in medical school was insufficient. The midwifery and, in particular, the medical students reported a lack of knowledge in several fields of sexual medicine. Additionally, the majority of medical students and approximately half of the midwifery students reported receiving too little sexual medicine education during their studies.

The results of the present thesis highlight the importance of increasing sexual medicine education in both medical and midwifery education.

KEYWORDS: bringing up, competence, education, general practitioner, knowledge, medical student, midwifery student, sexual issue, sexual medicine, sexual problem

TURUN YLIOPISTO
Lääketieteellinen tiedekunta
Kliininen laitos, Synnytys ja naistentautioppi
SANNA-MARI MANNINEN: Seksuaalilääketieteen opetus Suomessa - Terveyskeskuslääkärien, lääketieteen opiskelijoiden ja kätilöopiskelijoiden mielipiteitä seksuaalilääketieteellisestä osaamisestaan ja opetuksesta
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TIIVISTELMÄ

Seksuaaliongelmat ovat yleisiä ja niiden esiintyvyys kasvaa ikääntyessä sekä erilaisten kroonisten sairauksien myötä. Sen vuoksi on tärkeää, että terveydenhuollon ammattilaiset osaavat ottaa seksuaaliasiat puheeksi potilastilanteissa. Tässä väitöskirjatutkimuksessa selvitettiin, mitkä tekijät estävät suomalaisia terveyskeskuslääkäreitä sekä viimeisen vuoden lääketieteen opiskelijoita ja kätilöopiskelijoita ottamasta seksuaaliasioita puheeksi potilaidensa kanssa. Lisäksi selvitettiin terveyskeskuslääkärien tietoisuutta kroonisten sairauksien ja niiden lääkitysten aiheuttamista seksuaaliongelmista ja sitä, kartoittavatko he mahdollisia seksuaaliongelmia potilailta, joilla on jokin krooninen sairaus. Edelleen selvitettiin lääketieteen opiskelijoiden ja kätilöopiskelijoiden tietämystä ja kiinnostusta seksuaalilääketiedettä kohtaan.

Aineisto kerättiin satunnaisotannalla valitulta tuhannelta suomalaiselta terveyskeskuslääkäriltä sekä kaikilta joulukuun 2018 ja toukokuun 2019 välisenä aikana Suomessa valmistuneilta lääketieteen opiskelijoilta ja kätilöopiskelijoilta. Käytössä oli sähköinen kyselylomake.

Sekä terveyskeskuslääkärit että lääketieteen opiskelijat ja kätilöopiskelijat raportoivat, että heillä on hyvä osaaminen koskien seksuaaliasioista keskustelemista. Esiin nousi kuitenkin useita seksuaaliasioiden puheeksi ottamisen esteitä. Kroonisten sairauksien ja seksuaaliongelmien yhteyksien tutkimuksessa, suurin osa terveyskeskuslääkäreistä piti seksuaaliongelmia usein muihin sairauksiin määrättyjen lääkkeiden sivuvaikutuksina. Siitä huolimatta vain harvat raportoivat kysyvänsä mahdollisia lääkitysten sivuvaikutuksina ilmenneitä seksuaaliongelmia. Suurin osa terveyskeskuslääkäreistä koki opintojensa aikana saamansa seksuaalilääketieteen opetuksen riittämättömäksi. Sekä lääketieteen opiskelijat että kätilöopiskelijat raportoivat tiedon puutetta useilla seksuaalilääketieteen osa-alueilla. Lisäksi suurin osa lääketieteen opiskelijoista ja noin puolet kätilöopiskelijoista koki saaneensa liian vähän seksuaalilääketieteen opetusta.

Tämän väitöskirjatutkimuksen tulokset korostavat seksuaalilääketieteen opetuksen lisäämisen tärkeyttä niin lääketieteen kuin kätilöopinnoissakin.

AVAINSANAT: koulutus, kätilöopiskelija, lääketieteen opiskelija, osaaminen, puheeksi ottaminen, terveyskeskuslääkäri, tietämys, seksuaaliasia, seksuaalilääketiede, seksuaaliongelma

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Abbreviations

ASD	autism spectrum disorder
CI	confidence interval
CDC	Centers for Disease Control and Prevention
CVD	cardiovascular diseases
ECTS	European Credit Transfer and Accumulation System
FGM/C	female genital mutilation/cutting
FMA	Finnish Medical Association
FINSEX	Finnish sex research
FMA	The Finnish Medical Association
GP	general practitioner
LGBTQIA+	lesbian, gay, bisexual, trans, queer/questioning, intersex, asexual, and more
OLP	online learning platform
OR	odds ratio
PCOS	polycystic ovary syndrome
PN	practice nurse
POP	pelvic organ prolapse
SAR	Sexual Attitude Reassessment
SD	standard deviation
SexMEdu	Sexual Medicine Education–Study
SEXOS	Sexual Observational Study
STI	sexually transmitted infection
UAS	university of applied sciences
UK	The United Kingdom
US	The United States (of America)
VARK	visual learners, auditory learners, reading and writing learners, kinesthetic learners
WHO	World Health Organization

List of Original Publications

This dissertation is based on the following original publications, which are referred to in the text by their Roman numerals:

I Manninen Sanna-Mari, Kero Katja, Perkonoja Katariina, Vahlberg Tero, Polo-Kantola Päivi. General practitioners' self-reported competence in the management of sexual health issues – a web-based questionnaire study from Finland. *Scandinavian Journal of Primary Health Care*, 2021; 39(3):279–287.

II Manninen Sanna-Mari, Polo-Kantola Päivi, Vahlberg Tero, Kero Katja. Patients with chronic diseases: Is sexual health brought up by general practitioners during appointments? A web-based study. *Maturitas*, 2022; 160:16–22.

III Manninen Sanna-Mari, Kero Katja, Riskumäki Markus, Vahlberg Tero, Polo-Kantola Päivi. Medical and midwifery students need increased sexual medicine education to overcome barriers hindering bringing up sexual health issues – A national study of final-year medical and midwifery students in Finland. *European Journal of Obstetrics and Gynecology and Reproductive Biology*, 2022; 279:112–117.

IV Manninen Sanna-Mari, Polo-Kantola Päivi, Riskumäki Markus, Vahlberg Tero, Kero Katja. The knowledge of and educational interest in sexual medicine among Finnish medical and midwifery students—A web-based study. *European Journal of Midwifery*. In press.

1 Introduction

"This is quite embarrassing, but not so serious that I need a doctor, but as you are a midwife and my friend, maybe I could ask your advice." These are words I have heard many times, and they have led me to think that first, sexual problems are more common than we presume, and second, as such problems are highly private, they are not easy to bring up. When I started this thesis, I taught medical students during their obstetrics and gynecology course at Turku University. I often wondered why sexual issues were missing from the curriculum. During the thesis process, I started working as a senior lecturer in midwifery at Metropolia University of Applied Sciences. I saw many more sexual health related issues on the midwifery curriculum than the medical one, but the midwifery students still frequently pondered how to start a conversation regarding a patient's sexual health.

Good sexual health is important for general health. The sexual rights of all people must be respected, protected, and fulfilled in order to achieve and maintain good sexual health (World Health Organization [WHO], 2023a). Sexual problems are common in all genders and all cultures, regardless of a person's sexual orientation (McCabe et al., 2016). The reported incidence of sexual problems varies in different studies depending on the study design. However, on average, 40% of women and 30% of men experience at least one sexual problem during their life (Rosen, 2000). Sexual problems are more likely to appear with age. In particular, the incidence of erectile dysfunction increases with age, as almost all reports show erectile dysfunction prevalence rates of 50% to 100% for men in their 70s and 80s (McCabe et al., 2016). However, sexual problems are common even among young adults, particularly among women (Ljungman et al., 2020).

As sexual problems are common, healthcare professionals will eventually encounter a patient bearing a sexual problem. However, during these encounters, healthcare professionals will not always become aware of the patient's sexual problem: the patient might lack the courage to bring up the issue, or healthcare professionals may not know how or simply not notice to inquire about it. Sexual issues are intimate; therefore, it is understandable that the patient often wants the healthcare professional to initiate the conversation regarding them (Chapman et al., 2019; Sporn et al., 2015; Stabile et al., 2017). According to previous studies,

however, healthcare professionals lack knowledge of and education on sexual medicine (Abdulghani et al., 2016; Alarcão et al., 2012; Ariffin et al., 2015; Barnhoorn et al., 2020; Bradfield et al., 2022; Byrne et al., 2010; Gerbild et al., 2021; Gott et al., 2004; Güdül Öz et al., 2022; Humphery & Nazareth, 2001; Jackson & Fraser, 2009; Komlenac et al., 2019; Kristufkova et al., 2018; Leyva-Moral et al., 2020; Mills et al., 2015; Mohseni et al., 2023; Percat & Elmerstig, 2017; Platano et al., 2007; Schloegl et al., 2017; Seid et al., 2022; Shindel et al., 2010; Tsimtsiou et al., 2006; Walker & Davis, 2014; Ören et al., 2018). Consequently, bringing up the subject may also be difficult for them.

General practitioners (GPs) are often the first contact for someone who feels sick or has a health concern. GPs give health advice, diagnose and treat a wide range of medical conditions and health issues, and make referrals to hospitals and other medical services for urgent and specialist treatments (National Health Services, 2023a). Midwives are professionals who give the necessary support, care, and advice during pregnancy, labor, and the postpartum period. In addition, midwives have an important role in health counseling and education, for example, regarding sexual and reproductive health, not only for women, but also within the family and community (International Confederation of Midwives, 2023). Finnish midwives are experts in sexual and reproductive healthcare; hence, in Finland, midwives counsel customers of various ages about matters related to sexual health and act as experts in female health and gynecology in addition to working with women who are pregnant, in labor, or have recently given birth (Suomen Kätilöliitto [The Federation of Finnish Midwives], 2023). Thus, both GPs and midwives require their education to give them adequate knowledge and skills to carry out their professional duties as experts.

In medical school, education concerning sexual issues is typically called “sexual medicine,” while in midwifery school, the term is “sexual and reproductive health” (see **Figure 1** for the key concepts used in this thesis). For consistency, the term “sexual medicine” is used throughout this thesis regarding the issue in both medical and midwifery education.

Globally, few studies have examined sexual medicine education in medical schools and even fewer that in midwifery schools; however, the little research available reports that the education is insufficient in both medical (Abdulghani et al., 2016; Ariffin et al., 2015; Komlenac et al., 2019; Shindel et al., 2010; Turner et al., 2016) and midwifery schools (Mohseni et al., 2023; Percat & Elmerstig, 2017; Walker & Davis, 2014; Ören et al., 2018). The sexual medicine education given in medical schools is scattered across various subjects, and more detailed sexual issues are missing from the curricula (Endler et al., 2022). Moreover, midwives have indicated an urgent need for further education regarding sexual medicine (Bradfield et al., 2022).

There was no information available on how Finnish students graduating from medical and midwifery schools perceive their knowledge of sexual medicine or, further, the barriers to bringing up sexual issues with their patients. To meet this need, the Sexual Medicine Education–Study group (SexMEdu) was established. Additionally, The SexMEdu–Study group aimed to explore Finnish GPs' knowledge of and educational needs regarding sexual medicine. The research undertaken for this thesis is part of the SexMEdu–Study.

The studies presented in this thesis were conducted to answer these questions and raise awareness about healthcare professionals' educational needs regarding sexual issues.

2 Review of the Literature

2.1 Sexuality

2.1.1 Definition of sexual health

The themes of sexual health and sexual and reproductive health are rather young, having been originally defined at the International Conference on Population and Development held in 1994 in Cairo, Egypt (United Nations Population Fund, 2023). The World Health Organization (WHO) began to use the themes in 2002 after a Technical Consultation on Sexual Health together with the World Association of Sexology in Geneva, Switzerland (WHO, 2006).

Sexual health is a state of physical, mental, emotional, and social well-being. Good sexual health is not merely the absence of disease, dysfunction, or infirmity but requires a positive and respectful approach to sexuality and sexual relationships as well as the possibility of having pleasurable and safe sexual experiences without coercion, discrimination, or violence. In order to attain and maintain good sexual health, the sexual rights of all persons must be respected, protected, and fulfilled (Geuens & Hendrix, 2023; WHO, 2023a; see **Figure 1**).

Furthermore, sexual health cannot be defined, understood, or made operational without a broad assessment of sexuality, which underlies important behaviors and outcomes related to sexual health. Sexuality is defined as a central aspect of being human throughout life, and it encompasses sex, gender identities and roles, sexual orientation, eroticism, pleasure, intimacy, and reproduction. Sexuality is experienced and expressed in thoughts, fantasies, desires, beliefs, attitudes, values, behaviors, practices, roles, and relationships. Even though sexuality can include each of these dimensions, not all of them are always experienced or expressed. Sexuality is influenced by the interaction of biological, psychological, social, economic, political, cultural, legal, historical, religious, and spiritual factors (Geuens & Hendrix, 2023; WHO, 2023a; see **Figure 1**).

The ability to achieve good sexual health and wellbeing depends on access to comprehensive, good-quality information about sex and sexuality as well as the chance to access sexual healthcare. Sexual health-related issues cover a wide range of issues, encompassing sexual orientation, gender identity, sexual expression,

relationships, and pleasure. They also include negative consequences or conditions, such as sexually transmitted infections (STIs), and other health conditions, such as cancer and infertility, unintended pregnancy and abortion, sexual dysfunction and sexual violence, and harmful practices, such as female genital mutilation or cutting (FGM/C) (Geuens & Hendrix, 2023; WHO, 2023a; see **Figure 1**).

Sexuality is often thought to be same as sex; however, sexuality includes sexual feelings, thoughts, attractions, and behaviors toward other people. A part of sexuality is finding other people physically, sexually, or emotionally attractive. Sexuality is diverse and personal, and it is an important part of who we are. Discovering sexuality can be very liberating, exciting, and positive. Sexual orientation does not necessarily need to be identified, and it can change over time. However, some may find that choosing a label for their sexual or romantic orientation can help them form communities with others who share similar experiences (Healthline, 2023a; see **Figure 1**).

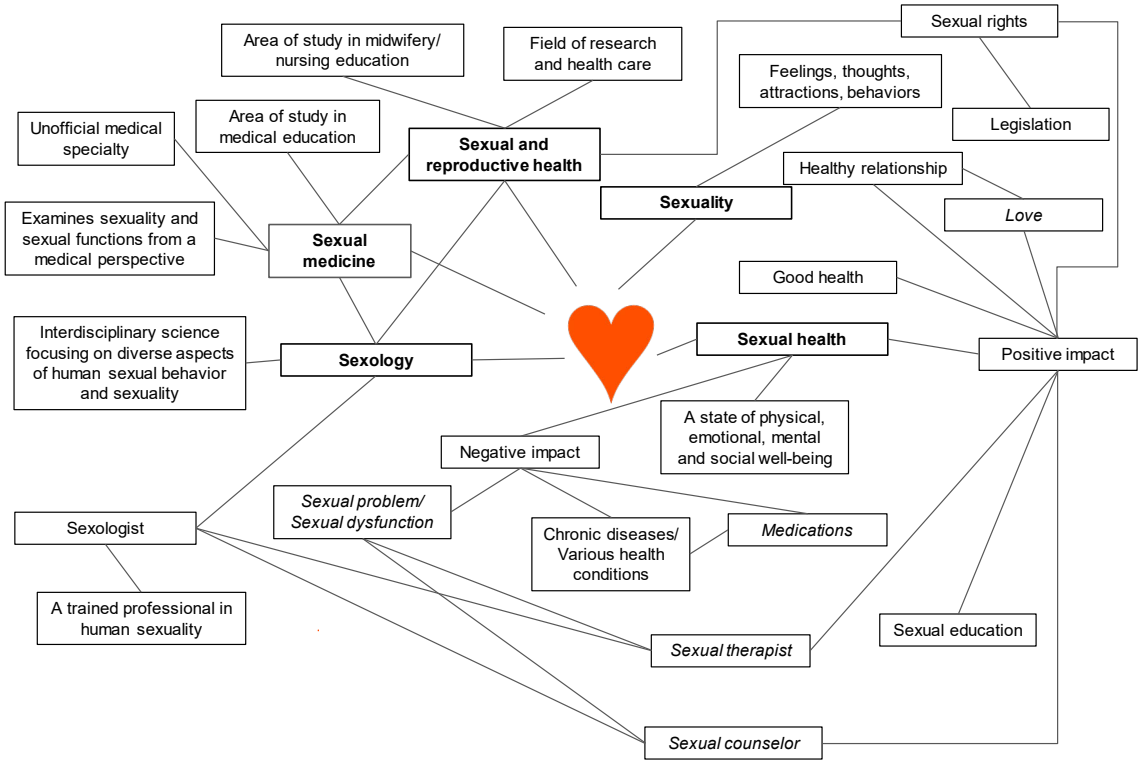

Figure 1. The key concepts presented in a mind map.

2.1.2 Gender diversity

Gender refers to the socially constructed characteristics of women, men, girls, and boys including the norms, behaviors, and roles associated with being a woman, a man, a girl, or a boy. The social construct of gender varies and can change over time. Gender is different from sex, which refers to the different biological and physiological characteristics of females, males, and intersex persons, such as chromosomes, hormones, and reproductive organs. In addition, gender and sex are different from gender identity. Gender identity refers to the felt, internal, and individual experience of gender, which may or may not correspond to the person's physiology or sex designated at birth (WHO, 2023b; see **Figure 2**).

The variation of gender and sexual orientation is illustrated in **Figure 2**.

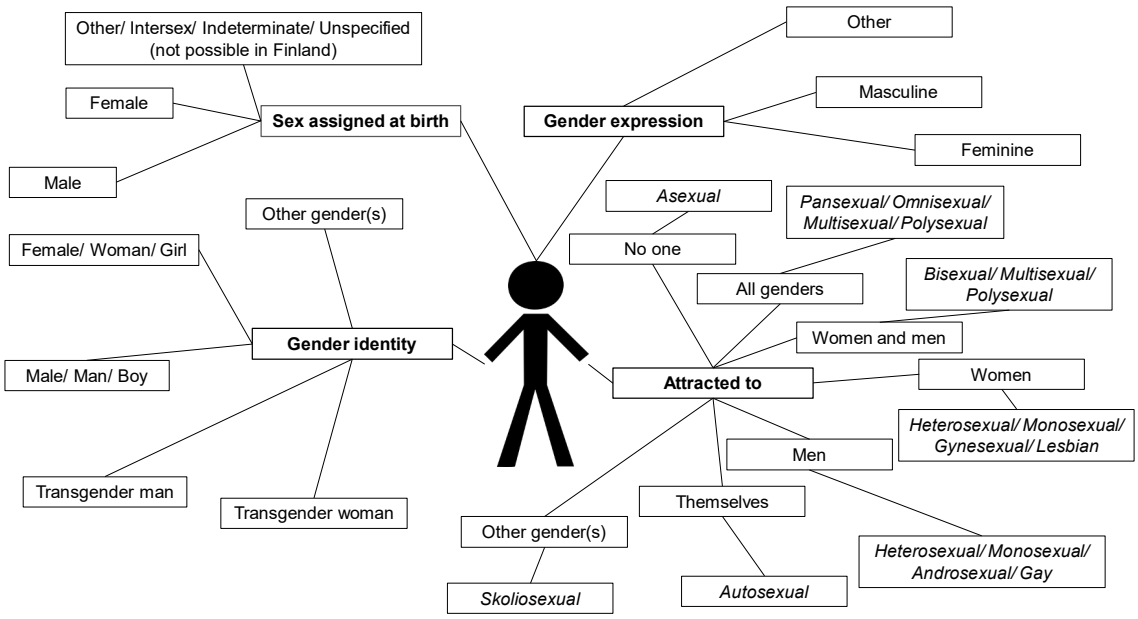

Figure 2. The variance of gender and sexuality.

2.1.3 Sexual orientation

Sexual orientation, gender identity, and gender expression span across cultures (WHO, 2023b). The Universal Declaration of Human Rights states that all humans are born free and equal in dignity and rights, without distinction of any kind. Yet in all regions of the world, acts of violence and discrimination are committed because of sexual orientation or gender identity (United Nations, 2023). The determination of a person's sexual orientation is important to guide appropriate healthcare as well as to improve health disparities and clinical care for LGBTQIA+ (lesbian, gay, bisexual, trans,

queer/questioning, intersex, asexual, and more) patients and the normalization of LGBTQIA+ individuals within the broader society. Research conducted in emergency departments (Haider et al., 2017) shows that patients are willing to be asked about sexual orientation, are not likely to take offense, and prefer nonverbal self-reporting as the method of data collection. Identifying patient-centered ways to collect this information is imperative to create a welcoming and inclusive environment for all patients (Haider et al., 2017). However, recent research (Goldberg et al., 2023) with midwives indicated that it was not important for midwives to know or ask about patients' sexual orientation and gender identity, because it is necessary to be able to provide the best care to everyone, and it is the patient's responsibility to disclose their sexual orientation and gender identity. In the study, midwives also indicated needing more training and knowledge to be able to confidently care for sexual and gender minorities (Goldberg et al., 2023). Conversely, an Irish study of GPs showed GPs to lack awareness of the unique health issues experienced by LGBTQIA+ patients (Stott, 2013).

2.1.4 Sexual behavior

There are many ways to have sex, and people are aroused by different things. Importantly, everyone has the right to decide what feels good for them and what kind of sex they want to have or not to have. Sexual habits have gradually diversified, and this diversification was especially marked in the period from the 1970s to the 1990s. The Finnish sex (FINSEX) research project has studied changes in sexual lives and sexual habits for many decades in Finland (Väestöliitto [Family Federation of Finland], 2023). The research focus of FINSEX has been mainly on the changes happening in the relationships, sexual attitudes, sexual behavior, and sexual problems of Finnish people. The FINSEX research has studied, for example, changes in the prevalence of intercourse positions, oral sex, and anal sex. In addition, it has studied sexual attitudes, the prevalence of paid sex, and the number of sexual partners. The results of the FINSEX study also provide important information about sexual desire, affairs, and pornography use in Finland (Kontula, 2009, 2021). Similar sex surveys have been carried out more widely in Europe (de Graaf et al., 2023).

In a US study (Liu et al., 2015; age range 14–59 years), median ages at sexual initiation were 17.9 and 17.1 (for women and men, respectively) for those born between 1940 and 1949. The ages decreased among those born between 1980 and 1989 to 16.2 and 16.1 (for women and men, respectively). Among those aged between 14 and 19, 39% of women and 49% of men had had at least two partners in the previous year. A higher proportion of women aged 14 to 19 reported having at least two partners in the past year than of those aged 20 to 24, but there was no difference by age for men (Liu et al., 2015).

In many Western societies, masturbation is acknowledged for its multiple benefits: among others, it is a simple and safe sexual behavior that assists pleasurable sexual practice and leads to greater body knowledge, sexual action, and sexual self-esteem and fewer sexual difficulties (Carvalheira & Leal, 2013; Coleman, 2003; Dekker & Schmidt, 2003; Hensel & Fortenberry, 2014; Kontula & Haavio-Mannila, 2003; Rye & Meaney, 2007). Even though masturbation is fairly common (Fischer & Træen, 2022), it can also be a cause of a sexual problem. According to the FINSEX study, sexual intercourse has decreased significantly in the 2000s compared to the 1990s and, in particular, compared to the 1970s. This trend is not explained by people's lower desire for intercourse or sexual desire, but by the finding that sexual intercourse has been replaced by masturbation, including in relationships (Kontula, 2009, 2021).

Pornography goes somewhat hand in hand with masturbation and is increasingly common, to the point of ubiquity, in developed countries. According to a US study (Berger et al., 2019) with 20–40-year-old men and women, men used pornography significantly more frequently than women (81% versus 39%, respectively). Importantly, association rates of erectile dysfunction have been noted to increase significantly when masturbation to pornography has been preferred over partnered sex (Berger et al., 2019; Jacobs et al., 2021). For women, however, no correlation was found between pornography use and sexual dysfunction (Berger et al., 2019).

2.1.5 Causes of sexual problems

Sexual problems prevent people from wanting or enjoying sexual activity (see **Figure 1**). Several factors can induce sexual problems, for example, stress, sexual trauma, use of substances, chronic illnesses, and certain medications. Treatment of sexual problems depends on the specific cause. Sometimes, support and education about sexual behavior are all that is needed. On occasion, an appointment with a physician is needed to resolve the problem by treating the underlying medical condition through prescribing or switching medications (Healthline, 2023b). Occasionally, psychological or sexual counseling is required. Sexual counselors and therapists can assist with the mental and emotional aspects of various forms of sexual dysfunction, such as lack of desire or arousal, dyspareunia, erectile dysfunction, and ejaculation problems. Additionally, sexual counselors and therapists can help with challenges including lack of sex education or correcting miseducation, sexual trauma, anxiety, fear or shame related to sex, issues around cultural, religious, and societal views of sex, and poor body image and its relation to sex. Furthermore, couples' counseling can help improve communication and increase intimacy. Psychotherapy may be necessary for deeply rooted sexual dysfunction (Healthline, 2023b; National Health Services, 2023b).

Sexual problems will evolve, if left unchecked for a long time (Geuens & Hendrix, 2023). People tend to postpone consulting a healthcare professional about sexual problems. According to a Belgian study (Geuens & Hendrix, 2023), the mean time between the first experience of a sexual problem and consulting a health professional was seven years. This finding emphasizes the fact that healthcare professionals should initiate conversations about sexual issues. In the medical literature, a need for routine screening for erectile dysfunction at the primary care level has been suggested because of a possibility that the actual burden of sexual dysfunctions is underreported due to cultural stigmatization (Saeed et al., 2021). Moreover, in some cultures, female sexuality and sexual dysfunction are invalidated because sexuality is considered a taboo. Thus, apathy and a lack of sexual interest related to possible sexual problems, for example, might be neglected (Shenoi & Prabhu, 2022).

2.1.5.1 Family planning

Family planning clinics are important places to give sexual and reproductive health guidance and counseling. Contraceptive information and services are fundamental to the health and human rights of all individuals (WHO, 2023c). If, on the one hand, the use of contraceptives can have some problematic negative effects on sexual function, on the other hand, it is important to acknowledge that the anxiety and fear of pregnancy and STIs can cause their own set of sexual problems. Furthermore, the use of hormonal contraceptives also relieves dysmenorrhea, menorrhagia, and endometriosis, all of which can cause sexual problems. A systematic review and meta-analysis of 12 studies involving 9,427 participants using any kind of contraceptive showed no direct association between contraceptive use and the risk of female sexual dysfunction; nevertheless, declining sexual desire was significantly associated with the use of contraceptives (Huang et al., 2020).

The European Society of Sexual Medicine has made position statements regarding the effects of hormonal contraceptives on sexual function (Both et al., 2019). A minority of women experiences a change in sexual functioning with regard to general sexual response, desire, lubrication, orgasm, and relationship satisfaction; however, the pathophysiological mechanisms leading to sexual difficulties, such as reduced desire and vulvovaginal atrophy, are still unclear. The evidence available on the connection between hormonal contraceptives and pelvic floor function and urological symptoms is insufficient (Both et al., 2019).

2.1.5.2 Relationship and family

Relationship satisfaction has been reported as the most important positive correlate of sexual satisfaction, especially among women (Byers, 2005; Fallis et al., 2016;

Kontula & Miettinen, 2016; McNulty et al., 2016). Sexual satisfaction has been observed to be significantly lower in women who have unstable affective–sexual relationships than among those with satisfying relationships (Ruiz de Viñaspre-Hernández et al., 2022). Further, sharing feelings about the relationship with a partner has been reported to bring couples closer (Ferreira et al., 2014) as well as to increase desire (Ferreira et al., 2014) and orgasm frequency in women (Kontula & Miettinen, 2016). In men, engaging in intimate communication has been reported to help with feeling sexual desire for their long-term partners (Murray et al., 2017).

Greater sexual satisfaction is consistently found to occur with greater relationship satisfaction, quality of communication, and stability (Pascoal et al., 2018). In a study of long-term committed relationships in five countries, sexual functioning was, in both genders, a strong predictor of relationship satisfaction (Heiman et al., 2011). On the other hand, sexual dysfunction has been shown to be strongly associated with the quality of a couple's relationship, which plays a mediating role between depression and marital quality, especially for women (Galati et al., 2023). Furthermore, the importance of evaluating partner problems has been highlighted when studying women with arousal dysfunction (Lett et al., 2018). According to the previously mentioned FINSEX study, the most common sexual problem in Finnish relationships is the sexual desire discrepancy of the partners, which causes difficulties in the relationship (Kontula, 2021).

2.1.5.3 Physical health

A human is more likely to be in a state of optimal sexual health if their physical, psychological, and social dimensions are in balance, both individually and mutually, a state that also enables pleasurable sexual experiences (Geuens & Hendrix, 2023). A British study (Field et al., 2013) of men and women aged 16–74 years showed that a self-reported poor general health status was independently associated with decreased sexual activity and satisfaction at all surveyed ages. Furthermore, although many people with poor general health report an effect on their sex life, only some seek clinical help. Hence, consideration of sexual life and sexual health should be a regular part of healthcare in, for instance, patients with chronic diseases (Field et al., 2013).

Lifestyle habits, such as physical activity and weight control, are important for physical health (Centers for Disease Control and Prevention [CDC], 2023); thus, they are also significant for sexual health. For instance, according to a meta-analysis of 11 population-based studies, moderate and high physical activities were associated with a lower risk of erectile dysfunction (Cheng et al., 2007). Moreover, in a study of sexually active women diagnosed with urinary incontinence and/or pelvic organ prolapse (POP), obese women had worse sexual function and quality of life than non-obese women (Bilgic et al., 2019).

2.1.5.4 Aging

Sexuality is present throughout life. Thus, good sexual health remains important as people age. In a study investigating a total of 323 men and women over 65 years, those participants with better quality of life reported less sexual dysfunctionality (Boyacıoğlu et al., 2023). Furthermore, sexual activity, quality of sexual life, and interest in sex have been positively associated with self-rated health status in middle age and later life (Lindau & Gavrilova, 2010). On the other hand, older adults (≥50 years) who experience a decline in sexuality report poorer wellbeing than those who do not (Jackson et al., 2019).

Chronic health conditions and poorer self-rated general health with decreased sexual activity and functioning have been reported more frequently in men than in women (Lee et al., 2016.). Yet, in both men and women, poorer sexual functioning and conflicting partnership factors have been associated with an increased likelihood of reporting concerns about and dissatisfaction with sex life in general (Kontula & Haavio-Mannila, 2009; Lee et al., 2016). In addition, a slower cognitive decline, as assessed by scores on tests of memory and executive function, was linked to regular sexual activity in an English study of adults aged 50–89 (Wright et al., 2019).

2.1.5.5 Menopause/andropause

Climacteric symptoms often have an impact on a woman's daily life, including work, social life, family life, and partnership. Specific and frequent climacteric symptoms are vasomotor symptoms, especially hot flushes and sweating. Other physical symptoms are also common, most often difficulty in sleeping, joint pains, weight gain, decreased libido, vaginal dryness, and recurrent urinary tract infections. Mental health symptoms, such as low mood, anxiety, mood swings, and problems with memory or concentration, also occur frequently (National Health Services, 2023c). In a Brazilian study (Dombek et al., 2016) of postmenopausal women, 70% of those studied reported sexual dysfunction. The main risk factors associated with postmenopausal sexual dysfunction were marital status (married), urogenital dysfunction, bladder surgery, and sexual abuse (Dombek et al., 2016). In addition, lower sexual function was reported in relation to low satisfaction with life, aging, and menopausal symptoms in a Spanish study (Ornat et al., 2013). Furthermore, impaired sexual functioning was found in middle-aged Finnish women (Katainen et al., 2015). In a US study (Prairie et al., 2015) of midlife women, 17% had a depressed mood, 37% had sleeping problems, and 42% had some sexual problems. All three symptoms were experienced by 5% of the women considered (Prairie et al., 2015).

Although men do not experience a similar cessation in sex hormone production to that of women, they may suffer from the male menopause, also called the andropause. The andropause is experienced by some men between their late 40s and

early 50s. The symptoms include depressive symptoms, decreased libido, erectile dysfunction, and other physical and emotional symptoms, which are quite similar to the female menopause (National Health Services, 2023d). In a Chinese study (Zhang et al., 2017) of men over 40, the prevalence of erectile dysfunction was found to increase with increasing age. Other sexual problems commonly seen in aging men included difficulty achieving ejaculation and climax during intercourse (Zhang et al., 2017). Age has been shown to be an important factor in erectile dysfunction in other populations as well (Saeed et al., 2021).

2.1.5.6 Intimate partner violence

In domestic violence, all genders can be both victims and perpetrators. However, domestic violence is still strongly gendered, with women usually being victims. Violence against women is a widespread crime and a violation of human rights. It is present in every country without exception and crosses boundaries of culture, class, education, income, and race. Worldwide, almost one third of women aged 15–49 years who have been in a relationship report that they have been subjected to some form of physical and/or sexual violence by their intimate partner (WHO, 2021). Men and boys can likewise be victims of sexual violence, stalking, and intimate partner violence. Moreover, violence can happen in childhood, adolescence, or adulthood (CDC, 2020).

In a Swedish study (Lövestad & Kranz, 2012), more men (11%) than women (8%) reported exposure to physical assault in the previous year, while more women reported exposure to sexual coercion (1% versus 3%, respectively). For men, a present relationship lasting ≤ 3 years was identified as a significant risk factor. Young age, lack of social support, and being single were risk factors for women. Many men (37%) and women (41%) also reported exposure to controlling behaviors (Lövestad & Kranz, 2012). In a systematic review of 51 studies, intimate partner violence was consistently associated with sexual risk taking, inconsistent condom use or partner nonmonogamy, having an unplanned pregnancy or induced abortion, having an STI, and sexual dysfunction (Coker, 2007). A high prevalence of sexual dysfunction with a correlation to intimate partner violence has also been found in young pregnant women (Bahrami Vazir et al., 2020).

2.1.5.7 Immigrant background

An immigrant is a person living in a country other than that of their birth. About 3.4% of the global population are international migrants, and almost three quarters of immigrants are from less developed countries (Migration Policy Institute, 2019). Immigration may give rise to several topics and concerns, including in regard to sexual health. The most striking – and of utmost importance – is FGM/C. FGM/C is a violation

of human rights, yet it remains common in some parts of the world. For instance, according to a Yemeni study (Al-Taj & Al-Hadari, 2023), the prevalence of FGM/C was 89% in the coastal areas of Yemen. A poor knowledge level about the harms of FGM/C was found among nearly two thirds of the women and half the men participating in the study; furthermore, almost two thirds of both the women and men considered wanted to continue the practice of FGM/C (Al-Taj & Al-Hadari, 2023). A systematic review and meta-analysis of 15 studies involving a total of 6,672 participants showed sexual problems in women who had been subject to FGM/C regarding sexual desire, arousal, lubrication, orgasm, satisfaction, and pain (Pérez-López et al., 2020).

Language barriers and cultural differences, especially regarding sexual issues, are also common barriers that affect whether and how sexual issues are brought up with immigrants (Agu et al., 2016). During encounters with immigrants, it is important to consider the culture, myths, and taboos surrounding reproductive health issues that they learned during childhood in their countries of origin. In a qualitative descriptive US study (Agbemenu et al., 2018), myths and taboos related to menstruation, sexual intercourse, pregnancy, and HIV/AIDS were reported by the interviewed women. Myths and taboos are widespread in Africa and are propagated to control sexual behavior, especially that of unmarried people and, in particular, women (Agbemenu et al., 2018).

2.1.5.8 Various health conditions

Cardiovascular diseases

Cardiovascular diseases (CVDs) are a group of disorders of the heart and blood vessels and include coronary heart disease, cerebrovascular disease, rheumatic heart disease, and other vascular diseases. Globally, CVDs are the leading cause of death, being estimated to cause 17.9 million deaths annually. More than four out of five CVD deaths are due to heart attacks and strokes, and one third of these deaths occur in people under 70 years of age (WHO, 2023d). Frequent sexual activity has been associated with lower all-cause mortality for CVDs in a dose-response manner; mortality was found to be lower for those who were sexually active at least once a week compared to those who were sexually active once a year or not at all (Cao et al., 2020). In addition, a longitudinal study of over 2,400 Taiwanese men and women above 65 years showed that sexually active men, women, and couples had lower mortality and less incidence of stroke over a follow-up period of over 14 years (Chen et al., 2007). Furthermore, and importantly, erectile dysfunction has been shown to predict coronary artery disease, since it can precede the appearance of other symptoms of CVDs by three to five years (Guo et al., 2010).

Neurological diseases

Neurological diseases often affect sexuality and sexual activity, resulting in sexual dysfunction; however, sexual dysfunction is rarely discussed with these patients (Almalki et al., 2023; Esteve-Ríos et al., 2022; Montalvan et al., 2021). According to a US study, both men and women with a traumatic brain injury scored significantly below a normative sample on sexual functioning one year after the injury (Sander et al., 2012).

Additionally, after a diagnosis of multiple sclerosis, sexual needs may change (Esteve-Ríos et al., 2022). Furthermore, sexual dysfunction has reportedly affected a majority of stroke survivors (Montalvan et al., 2021). Moreover, the rate of sexual dysfunction has been reported to be 64% in patients with idiopathic Parkinson's disease compared to 30% in healthy subjects (Elshamy et al., 2022).

In a Croatian study (Tudor et al., 2021) of epilepsy patients, around one third of the patients reported experiencing sexual dysfunction. Correlations to the sexual dysfunction symptoms were found with older age, female gender, lower quality of life, and depressive symptoms. However, no associations were found with the type of epilepsy or antiepileptic drugs (Tudor et al., 2021).

Autism spectrum disorder (ASD) is a neurological and developmental disorder that affects how people learn, behave, communicate, and interact with others (National Institute of Mental Health, 2023). Men with ASD, in particular, seem to have more hypersexual and paraphilic fantasies and behaviors than a matched control group (Schöttle et al., 2017).

Endocrine diseases

The endocrine system is involved in growth and development, metabolism, sexual function, and mood through glands distributed throughout the body, such as the thyroid gland, pituitary gland, adrenal gland, and pancreas. A disturbance in some part of the endocrine system may lead to an endocrine disease, either transient or permanent (National Institute of Diabetes and Digestive and Kidney Diseases, 2023a). In selected populations, the prevalence of sexual dysfunction was estimated in patients with hypothyroidism at 59–63% and 22–46% in men and women, respectively, and with hyperthyroidism at 48–77% and 44–60% in men and women, respectively (Gabrielson et al., 2019).

Sexual dysfunction is common among people with diabetes (Flotynska et al., 2019; Kouidrat et al., 2017; Pontiroli et al., 2013; Rutte et al., 2015). For type I diabetes, the prevalence is approximately 40% (Kouidrat et al., 2017), and for type II diabetes, it is around 70% (Rutte et al., 2015).

Polycystic ovary syndrome (PCOS) is a common reproductive disorder affecting young women. Irregular menstrual cycles due to ovulation failures, hyperandrogenism, and polycystic ovary ultrasound findings are typical of PCOS.

Women with PCOS have reported more sexual dysfunction in arousal, lubrication, orgasm, and sexual satisfaction, even after being controlled for body mass index (Mantzou et al., 2021).

Cushing's syndrome is a disorder characterized by the excessive production of corticosteroids by the adrenal glands (Chaudhry & Singh, 2023). In a Turkish study, female sexual dysfunction was present in 89% of the women with Cushing's syndrome and 24% of the control group (Keskin et al., 2018).

Gynecological problems

Several gynecological problems, such as POP, urinary incontinence, and gynecological cancer, may induce sexual problems (Mohamad Muhit et al., 2022; Roos et al., 2014). Obese women with menstrual irregularity reported a worsening in sexual function in a Chinese study (Lv et al., 2023). Importantly, symptoms of sexual dysfunction have been found in obese patients (both men and women) even when no other health problems are present (Esposito et al., 2008; Matovinović et al., 2021).

Sexual problems are also common among women with pelvic floor disorders. A qualitative UK study (Roos et al., 2014) of women suffering from POP and/or urinary incontinence found the symptoms to have a negative effect on body image. The most important reasons for decreased desire, arousal, and difficulty reaching an orgasm in women with POP were worries about the presence of POP during sexual activity, discomfort from POP, and reduced genital sensations (Roos et al., 2014). In women with urinary incontinence, fear of incontinence during intercourse affected desire, arousal, and orgasm and could be a cause of dyspareunia (Roos et al., 2014).

In addition, sexual problems are typically major concerns among gynecological cancer survivors. Those receiving treatment combinations of surgery and radiotherapy or surgery and chemoradiation are at the highest risk (Mohamad Muhit et al., 2022). When women are of fertile age, these treatments typically lead to ovarian failure and thus preterm menopause (Okeke et al., 2013); in postmenopausal women, they cause vaginal dryness and discomfort (National Health Services, 2023e). Further, in some cancer survivors, particularly breast cancer survivors, systemic hormone replacement therapy is contraindicated (Harper-Harrison & Shanahan, 2023).

Urological problems

Urologic diseases or conditions include urinary tract infections, kidney stones, bladder control problems, and prostate problems. Some of the conditions are short-lived, while others are long-lasting or even permanent (National Institute of Diabetes and Digestive and Kidney Diseases, 2023b).

A large US study showed that men reporting higher ejaculatory frequency in adulthood were less likely to be subsequently diagnosed with prostate cancer (Rider et al., 2016). In a UK study of patients 10 years after a diagnosis of bladder cancer, in women, vaginal dryness was common (66%), and in men, erectile and ejaculatory dysfunction (80% and 58%, respectively) was frequent (Jubber et al., 2022). In another UK study (Watson et al., 2016), sexual functioning was reported as a moderate or severe problem during the previous month for 37% of the patients who had been diagnosed with prostate cancer between 9 and 24 months previously.

Mental health

All psychiatric diseases, including depression, anxiety disorders, bipolar disorder, and psychosis, involve symptoms affecting the sexual life, such as impaired desire, arousal, or sexual satisfaction (Montejo, 2019). For women, the impairment of mental health is the most important risk factor for sexual dysfunction (Basson & Gilks, 2018). According to a British study with over 15,000 participants, depressive symptoms were associated with reduced sexual activity and sexual satisfaction (Field et al., 2013). Furthermore, a Canadian study showed that anxiety sensitivity, maladaptive emotion regulation, and psychological distress were related to decrement in sexual functioning, sexual quality of life, and frequency of partnered sexual activity in young women (Tutino et al., 2017).

The medication used for mental illnesses may also cause sexual problems. Enduring sexual difficulties have been studied after treatment with antidepressants. In men, the most common symptoms have been shown to be erectile dysfunction (86%), loss of libido (79%), and genital anesthesia (49%), while in women, loss of libido (72%), genital anesthesia (60%), and difficulty achieving orgasm (60%) have been reported most frequently (Healy et al., 2018). People with a mental illness have sexual needs (Yang et al., 2023), and they consider sexuality to be a relevant parameter of their quality of life (Gombert et al., 2021); therefore, sexual issues should also be addressed with patients with mental health concerns.

Substance abuse

Substance use disorder refers to the use of illegal substances, such as marijuana, heroin, cocaine, or methamphetamine, or the misuse of legal substances, such as alcohol, nicotine, or prescription medicines. The most common legal drug associated with substance use disorder is alcohol (Johns Hopkins Medicine, 2023).

According to a systematic review and meta-analysis of seven studies involving a total sample size of 50,225 women, alcohol consumption was shown to increase the likelihood of sexual dysfunction by 74% (Salari et al., 2023). Similarly, sexual

dysfunction has been found in 62% of male patients with alcohol dependence. The main sexual problems included premature ejaculation (37%), difficulty achieving an erection (36%), and hypoactive sexual desire (35%) (Acharya et al., 2022).

In the literature, there is emerging evidence of the potential therapeutic benefits of cannabis (Fraguas-Sánchez & Torres-Suárez, 2018); however, it is important to recognize that cannabis has several health risks that are not clearly defined. In a systematic review and meta-analysis of five case–control studies with data from 3,395 healthy men, the overall prevalence of erectile dysfunction in cannabis smokers was 69% versus 35% in the controls (Pizzol et al., 2019).

2.2 Sexual medicine

Kolodny et al. (1979) coined the term "sexual medicine" in their Textbook of Sexual Medicine. Sexual medicine is a branch of medicine that focuses on the evaluation and treatment of sexual disorders (see also **Figure 1**). However, the field of sexual medicine is continuing to evolve, expand, and advance due to the strides taken in pharmacology, psychology, and sexual counseling. Nonetheless, the evaluation of sexual dysfunction begins with the understanding that the causes may be multifactorial (Furman et al., 2017). In addition, it is important that the subject of sexual health is addressed in patient encounters.

Education in human sexuality is necessary for all healthcare professionals, because sexual health has a profound connection not only with health in general and with various health problems and diseases, but also with personal quality of life. Sexual medicine permeates various medical specialties but lacks its own defined borders (Resnick, 2005). Nevertheless, education in sexual medicine might be more efficient if sexual medicine constituted a standalone medical specialty.

2.2.1 In patient work

With the aim of addressing sexual health, healthcare professionals need appropriate skills to ask their patients sensitive questions that are non-judgmental and empathetic. Additionally, these questions need to be posed regardless of the patient's age, gender, ethnicity, or sexual orientation (Virgolino et al., 2017).

According to a Norwegian study (Vik & Brekke, 2017) of 22 GPs, 4.2% of GPs' consultations dealt with sexual concerns, varying from 1.6 to 10.9% of consultations. The most frequently mentioned concerns were erectile dysfunction in males and pain related to sexual activity in females. In addition, concerns regarding sexual orientation, preferences, or behaviors were dealt with, as were problems due to sexual assaults or rape. In most (77%) of the consultations, the only intervention was discussion of the problem and/or advice (Vik & Brekke, 2017).

Even though sexuality is present at every patient encounter, it is not necessarily addressed. According to a Korean study in which the topic was evaluated from the perspectives of the patients, 75% of respondents had never been asked about sexual issues by physicians (Kim et al., 2008). Similar results were found in a South African study (Pretorius et al., 2022), where 21 physicians participated in video-recorded routine consultations with 151 adult hypertension and diabetes patients during which no history-taking for sexual dysfunction occurred (Pretorius et al., 2022). In a Portuguese study, the prevalence of GPs routinely asking their patients about sexual dysfunction was 15.5% (Ribeiro et al., 2014). Nevertheless, patients prefer healthcare professionals to be proactive about addressing the issue (Stabile et al., 2017). In addition, patients have reported acceptance of being routinely asked about sexual function during appointments (Lonnée-Hoffmann et al., 2022).

Several studies have addressed healthcare professionals' barriers to addressing patients' sexual issues, and various methods have been adopted and findings indicated (**Table 1**). Physicians have reported many barriers to addressing patients' sexual issues. Lack of time (Abdolrasulnia et al., 2010; Alarcão et al., 2012; Byrne et al., 2010; Gott et al., 2004; Schloegl et al., 2017; Zannoni et al., 2021), lack of education (Gott et al., 2004; Humphery & Nazareth, 2001; Mills et al., 2015), and a lack of knowledge of and experience with sexual medicine (Alarcão et al., 2012; Byrne et al., 2010; Humphery & Nazareth, 2001; Mills et al., 2015) are the most commonly mentioned reasons. Personal attitudes and beliefs, as well as a lack of effective treatment, have also been found to be important barriers (Alarcão et al., 2012). Gender (where the patient is of the opposite gender) may produce a barrier; however, the findings in the literature are not unanimous (Alarcão et al., 2012; Burd et al., 2006; Byrne et al., 2010; Gott et al., 2004; Kristufkova et al., 2018; Schloegl et al., 2017; Zannoni et al., 2021). Moreover, younger doctors seem to be more insecure about dealing with patients with sexual problems (Ariffin et al., 2015; Schloegl et al., 2017).

Nurses have also reported time constraints (Bradfield et al., 2022; Leyva-Moral et al., 2020; Magnan & Reynolds, 2006; Mohseni et al., 2023; Walker & Davis, 2014) as a barrier as well as nurses' perceptions that patients do not expect nurses to ask about sexual concerns (Güdül Öz et al., 2022; Güven & Çelik, 2021; Magnan & Reynolds, 2006; Seid et al., 2022). Like physicians, nurses have reported that insufficient training in managing sexual problems is a hindrance (Barnhoorn et al., 2020; Güdül Öz et al., 2022; Leyva-Moral et al., 2020; Seid et al., 2022). Gender (where the patient is of the opposite gender) has been reported to be a hindrance by healthcare students (Abdulghani et al., 2016; Güdül Öz et al., 2022), which is similar to reports from physicians. Training in communication skills has been found to promote the discussion of sexual issues (Tsimtsiou et al., 2006). In addition, importantly, the need for continuing education in sexual medicine has been reported (Abdolrasulnia et al., 2010; Alarcão et al., 2012; Kristufkova et al., 2018).

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Table 1. Previous studies assessing barriers to addressing patients' sexual issues.

Year(s)	Target group (n)	Response rate %	Participants' age	Method(s)	Barriers	Country	Reference
1999	GPs (133)	61%	44.0 mean age	A postal questionnaire was sent to the GPs on the Camden and Islington Health Authority List	Lack of training/education/knowledge, GP embarrassment/attitude/lack of sensitivity, lack of experience, fear of opening flood gates, sensitive subject, different genders, different cultures, different ages, embarrassed patient/ doctor, lack of time, lack of treatments, lack of freedom to prescribe, stigma	United Kingdom	Humphery & Nazareth, 2001
2001–2002	GPs (22), PNs (35)	N/A	GPs 34–57 years, PNs 32–60 years	Semi-structured interview	Time constraints, lack of knowledge, offending the patient, gender issues, ethnicity issues, age issues (especially the patient being older), non-heterosexual patients	England	Gott et al., 2004
2001–2004	Internists (96), GPs (28), Cardiologists (36), Urologists (62)	70.3%	27–67 years, 44.9 mean age	Questionnaire study administered to health professionals who attended a 7-hour workshop	Lack of experience, physician's attitude, physician's gender (female ↑), specialty (urologist ↓)	Greece	Tsimtsiou et al., 2006
N/A, article published in 2006	OB/Gyns, Family practitioners, Internists, Pediatricians, Surgeons (78 questionnaires)	59%	25–65 years, 38.7 mean age	Study questionnaire administered to physicians involved in multispecialty practice associated with a major teaching hospital	Gender discordance, patient's age (<18 or >60), educational level (below college level), marital status (divorced or single), sexual orientation (homosexual patients)	United States	Burd et al., 2006
N/A, article published in 2006	Nurses (302)	N/A	N/A	A convenience sample of nurses recruited from a large Midwestern medical center	Nurses' perceptions that patients do not expect nurses to address their sexuality concerns, a lack of comfort and confidence in addressing sexuality, failure to make time to discuss patients' sexuality concerns	United States	Magnan & Reynolds, 2006

Year(s)	Target group (n)	Response rate %	Participants' age	Method(s)	Barriers	Country	Reference
N/A, article published in 2007	GPs (25), Urologists (25)	11% for the GPs, 36% for the urologists	51.8 mean age for the GPs, 50.2 mean age for the urologists	A semi-structured interview used in face-to-face encounters	Patients' immigrant backgrounds, patients who might regard being asked about sexual problems as an offense to their self-image, lack of knowledge (especially GPs)	Switzerland	Platano et al., 2007
2008	PCPs (257), OB/GYNs (248)	8.8%	N/A	A random sample of OB/GYNs and PCPs from the American Medical Association 2007 Masterfile database were invited to complete the 15-minute survey by e-mail	Lack of effective therapies, time constraints, personal beliefs and attitudes, gender differences	United States	Abdolrasulnia et al., 2010
2008	Medical students (2,261)	N/A	For men. mean age 25.7 [± 4.2] years; for women, mean age 25.4 [± 3.4] years; and for individuals who self-identified as "other," gendered mean age 27 ±2.8 years	An Internet-based survey via postings on the American Medical Student Association list-service, through postings on the Student-Doctor Network, and in a news story posted on Medscape.com	Lack of training and student's personal factors: limited sexual experience, risk for sexual problems	United States and Canada	Shindel et al., 2010
N/A, article published in 2009	Midwives (372)	76.0%	N/A	A self-administered postal questionnaire sent to a sample group from different trusts within the East and West Midlands	Lack of knowledge, skills, or experience, avoidance of harm	United Kingdom	Jackson & Fraser, 2009

Year(s)	Target group (n)	Response rate %	Participants' age	Method(s)	Barriers	Country	Reference
2008–2009	GPs (61)	27%	50.0 mean age	Cross-sectional questionnaire survey administered to all GPs listed in the Irish Medical Directory	Not enough time, patients' lack of readiness, lack of training, concerns about increasing patients' anxiety and discomfort, patients perceived as too ill to address sexual issues, sexuality not seen as a problem by patient, elderly age of patient, presence of a third party, fear of offending the patient, lack of knowledge, issues relating to language and ethnicity, patient of opposite sex to GP, issues relating to culture and religion, embarrassment, GP's own negative attitudes toward and beliefs about sexuality, perception that it is someone else's job, a large age difference between GP and patient, lack of awareness, not knowing when is the "right time" to raise sexual issues, a difficulty raising sexual issues in a sensitive way	Ireland	Byrne et al., 2010
N/A, article published in 2011	Mental health nurses (14)	N/A	24-60 years, mean age 44.4 years	Individual, semistructured interviews with mental health nurses recruited from three sites within a Queensland mental health service	Sexuality is not an important priority, talking about sexuality is not "my" job, talking about sexuality is difficult for the patient and for nurses	Australia	Quinn et al., 2011
2011	GPs (50)	73.5%	51.9 mean age	Paper-based structured questionnaires administered to one Lisbon Region Health Cluster	Personal attitudes and beliefs, lack of time, fear of failing to respond, lack of experience, lack of academic training, lack of effective therapies, lack of knowledge, gender differences, not being a priority issue, discomfort in addressing the issue	Portugal	Alarcão et al., 2012

Year(s)	Target group (n)	Response rate %	Participants' age	Method(s)	Barriers	Country	Reference
2011–2012	Final-year midwifery students (86)	83.0%	N/A	A questionnaire and factual quiz were distributed within a larger mixed-methods study, which included the use of focus groups	A negative response from the women to whom they were giving advice, a perceived lack of time, a general feeling of lacking appropriate knowledge	England	Walker & Davis, 2014
2012	Final-year medical students (379)	70.0%	23.6 mean age	A cross-sectional questionnaire study at three medical schools	Feelings of discomfort, cultural or religious differences, gender differences, lack of knowledge, lack of experience	Malaysia	Ariffin et al., 2015
2014–2015	Final-year medical students (234)	50.5%	23.0 mean age	A quantitative and observational cross-sectional survey-based study of the final-year medical students at the College of Medicine, KSU and the College of Medicine, QU, Saudi Arabia	Lack of supervision, patient being of the opposite sex, patient's refusal, negative emotions, lack of knowledge, lack of training, patient's cultural background, doctor's obstruction, nurse's obstruction, ethical issues, patient's age, terminology problems, lack of evaluation, fear of being misunderstood as too sexual, fear of being misunderstood as having little experience	Saudi Arabia	Abdulghani et al., 2016
N/A, article published in 2015	GPs (8)	N/A	30-47 years	A qualitative study using free attitude technique interviews	Feels that patients are reluctant to discuss sexual problems, personally feels that sex is a taboo subject, never exposed to training for sexual problems, gender discordance	South Africa	Mills et al., 2015
2015	Urologists, Urology residents, Andrologists (905 questionnaires)	16.0%	47.7 mean age	A questionnaire study of members of the German Society of Urology/ Andrology, the Federation of German Urologists, and the German Society of Residents in Urology	Lack of time, inadequate financial compensation, lack of necessity, insufficient training, assumption that patients feel uncomfortable, gender discordance, doctor feels uncomfortable	Germany	Schloegl et al., 2017

Year(s)	Target group (n)	Response rate %	Participants' age	Method(s)	Barriers	Country	Reference
2015–2016	Psychiatry (102), OB-GYN (58), Urology (149), Endocrinology (57)	N/A	22–55 years	An online cross-sectional questionnaire conducted in collaboration with European societies of trainees in four specialties	Different sexual problems (OB-GYNs did not feel confident with patients needing sexual therapy or had a paraphilic disorder, urologists were less confident with patients with a history of sexual abuse and gender dysphoria, psychiatrists were less secure with patients with sexual dysfunction and STI), lack of experience	40 countries	Kristufkova et al., 2018
2016	Midwifery students (650)	59.1%	19–34 years, 21.6 mean age	Data collection forms were mailed to third- and fourth-year students of eight universities located in different regions of Turkey	Seeing sexuality as too private to talk about, assuming that sexuality is not essential to patients' health outcomes, not understanding how patients' diseases and treatments might affect their sexuality, uncomfortable talking about sexual issues, patients are too sick to be interested in sexuality, lack of time, lack of knowledge, not a midwife's responsibility, only if initiated by patients, patients don't expect midwives to ask about their sexual concerns	Turkey	Ören et al., 2018
N/A, article published in 2017	Midwives (9)	N/A	44–66 years	Qualitative interviews were carried out with midwives employed at antenatal care clinics	Inadequate training in sexology, lack of skills on how to start a conversation, fear of offending the patient, fear of overstepping the boundary of what is considered the professional midwife–patient relationship, lack of knowledge, sexological competence not valued by management, the need for time to develop the midwife–patient relationship and trust before raising issues of sexuality, the right timing, the fear of making mistakes (especially with people who deviate from the norm), the use of interpreters was a barrier to addressing the issue	Sweden	Percat & Elmerstig, 2017

Year(s)	Target group (n)	Response rate %	Participants' age	Method(s)	Barriers	Country	Reference
2017	GPNs (407)	63.9%	23–66 years, 47.0 mean age	GPNs across the Netherlands received a questionnaire by post	Insufficient training, reasons related to language, ethnicity, culture, and religion, not able to find a suitable moment to discuss SD, insufficient knowledge, the age of the patient, presence of a third party, patient does not bring up the subject spontaneously, GPN feels uncomfortable talking about SD, SD is not a problem for the patient, patient is too ill to talk about SD, insufficient time, patient is not ready to discuss SD, afraid to insult the patient, no connection with the patient, sense of shame, age difference between GPN and the patient, sex is private, patient is of the opposite sex, responsibility of someone else	The Netherlands	Barnhoorn et al., 2020
2017–2018	Nurses (85), physicians (93)	N/A	38–53 years	A questionnaire-based, cross-sectional multi-center study performed in 15 primary care centers in Barcelona	Patient's age, gender discordance, LGBTIQ patients, does not like when patients ask about their sexual health, not professionally interested in sexual health topics, personal discomfort, not confident discussing sexual health topics with patients, lack of training, sexual health not being a priority, lack of time, believing patients are not comfortable discussing sexual health topics, does not consider self the most appropriate health professional to discuss sexual health topics	Spain	Leyva-Moral et al., 2020
2018	Medical students (391)	12.3%	24.0 mean age	Questionnaires were distributed in paper–pencil mode after lectures	Lack of knowledge	Austria	Komlenac et al., 2019

Year(s)	Target group (n)	Response rate %	Participants' age	Method(s)	Barriers	Country	Reference
2018	Nursing students (356)	N/A	The average age of participants was 21.00±2.00	Voluntary nursing students from a nursing school of a university in Turkey's Central Anatolia region	Sexuality is too private a subject to discuss with patients, uncomfortable talking about sexual issues, most hospitalized patients are too sick to be interested in sexuality, not nurse's responsibility to discuss the matter with a patient, sexuality should be discussed only if initiated by the patient	Turkey	Güven & Çelik, 2021
2018–2019	Midwives (16), key informants (faculty members of a university of medical sciences, reproductive and sexual health specialists, the health department deputy, and health department experts) (7), stakeholders (women referring to health centers) (6)	N/A	29–52 years	The participants were selected through purposive sampling; in-depth and semi-structured interviews were conducted using open-ended questions	Lack of knowledge, no attention to sexual health from policymakers, lack of time, large number of patients, the inadequate environment for providing sexual counseling, the inefficiency of the referral system, cultural issues	Iran	Mohseni et al., 2023
2019	Nursing (322), occupational therapy (143), and physiotherapy (119) students	48%	21–57 years, 26.8 mean age	A cross-sectional survey of bachelor students enrolled in their final semester in health professional programs in all Danish university colleges	Gender differences, patient's age, patient's cultural background, patient's sexual orientation, discussing specific sexual activities, feeling unprepared to talk about sexual health, feeling embarrassed, patient feels embarrassed, patient feels uneasy, conversation regarding sexual health might create a distance between the professional and the patient, lack of time, fear that colleagues feel uneasy, lack of education, lack of competence, lack of training	Denmark	Gerbild et al., 2021

Year(s)	Target group (n)	Response rate %	Participants' age	Method(s)	Barriers	Country	Reference
2020	Midwives (164)	N/A	20–60+ years	A cross-sectional exploratory study design. Midwives working in a tertiary maternity hospital in Western Australia were invited to participate through recruitment flyers and staff newsletters	Time, language barrier, lack of knowledge, presence of family, lack of privacy, presence of visitors, ethno-cultural or religious background, lack of resources for culturally and linguistically diverse people, presence of partner, personal discomfort, sexual orientation/gender diversity	Australia	Bradfield et al., 2022
N/A, article published in 2021	GPs (16)	59%	42–65 years; the average age was 53.8 years	The data were collected using in-depth, semi-structured interviews from practicing GPs from two areas of Germany	Limited resources such as workload, time constraints, lack of payment for long patient talks, lack of privacy, gender differences between GP and patient, suspected embarrassment on both sides, fear of offending patients, and the fear of not being able to meet patient expectations	Germany	Zannoni et al., 2021
2019	Nursing students (475)	54.3%	18–25 years, mean age 21.7 ±1.6	Descriptive study including nursing students from the Nursing Faculty of Akdeniz University	Lack of education, feeling shy about providing sexual healthcare, thinking that the patient will not take it seriously, the patient is old, the patient is of the opposite sex, the patient is single, thinking that it is not my responsibility, most hospitalized patients are too sick to be interested in sexuality, lack of time, not nurse's responsibility to discuss the matter with a patient, sexuality is too private a subject to discuss with patients, sexuality should be discussed only if initiated by the patient	Turkey	Güdül Öz et al., 2022

Year(s)	Target group (n)	Response rate %	Participants' age	Method(s)	Barriers	Country	Reference
2022	Nursing students (134)	N/A	20–45 years, 28.5 ± 5.2 mean age	A cross-sectional online survey of students enrolled in Mizan-Tepi University baccalaureate nursing program and with one clinical area attachment experience	Lack of education, feeling shy about providing sexual healthcare, thinking that it is not my responsibility, thinking that the patient will not take it seriously, the patient is old, the patient is single, lack of time, not understanding how patients' diseases and treatments might affect their sexuality	Ethiopia	Seid et al., 2022

N/A=not available
GP=general practitioner
GPN=general practice nurse
LGBTIQ=lesbian, gay, bisexual, transgender/transsexual, intersex and queer/questioning
OB-GYN=obstetrician-gynecologist
PCP=primary care physician
PN=practice nurse
SD=sexual dysfunction
STI=sexually transmitted infection

2.2.2 In medical school

In Finland, medical studies last six years and are worth 360 points in the European Credit Transfer and Accumulation System (ECTS). Medical education is offered in five faculties of medicine: in Eastern Finland (Kuopio), Helsinki, Oulu, Tampere, and Turku. In Helsinki, it is possible to study medicine in Finnish and Swedish. The content of the education is shown in **Figure 3** with an example from the University of Turku in 2023.

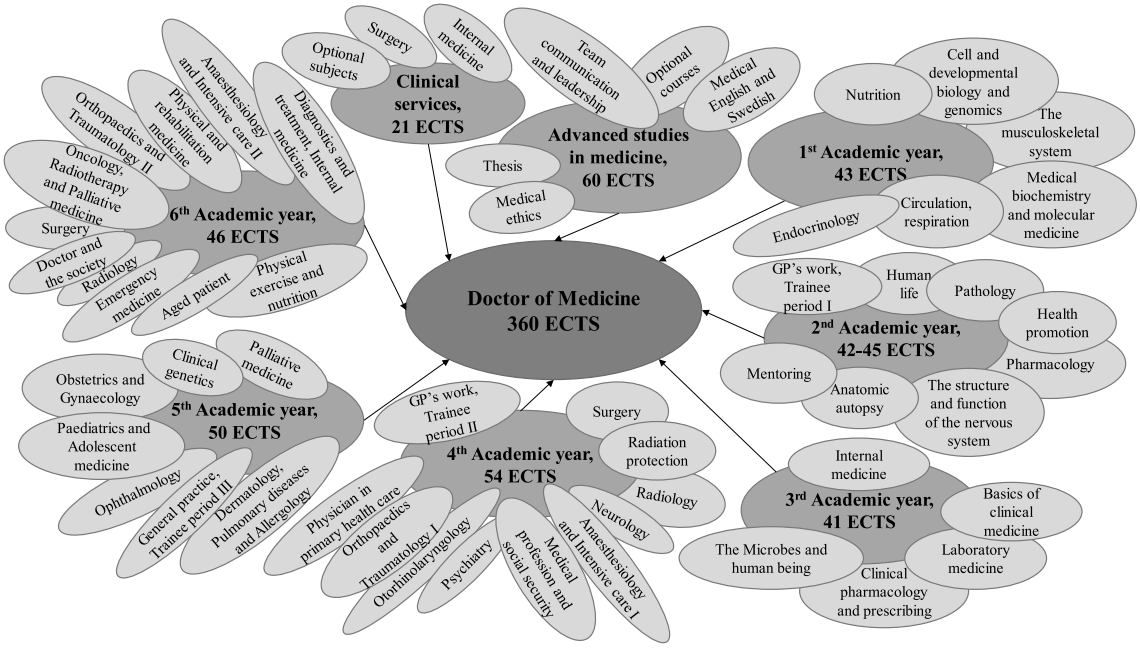


Figure 3. The structure and content of medical studies in Finland. Example from the University of Turku in 2023.

According to a multinational study, issues concerning sexual and reproductive health are currently taught in various subjects in medical schools; however, more detailed sexual issues are often overlooked in the curricula (Endler et al., 2022). In Finnish medical schools, Kevo et al. (2022) showed that education regarding sexual medicine was mainly received during obstetrics and gynecology courses, although dermatology, psychiatry, surgery, and general medicine courses were also mentioned multiple times as sources of sexual medicine education during medical studies. A Brazilian study of professors from medical schools reported that sexuality-related topics were mainly taught during gynecology (52%), followed by urology (18%) and psychiatry (15%), courses (Rufino et al., 2014). According to a US study of medical students, the following percentages of participants stated that certain specialties

should include sexual health, namely, family medicine (91%), obstetrics and gynecology (88%), internal medicine (88%), psychiatry (84%), pediatrics (81%), urology (77%), emergency medicine (76%), dermatology (55%), physical medicine and rehabilitation (48%), neurology (46%), plastic surgery (43%), otolaryngology (37%), pathology (28%), neurosurgery (26%), orthopedic surgery (25%), ophthalmology (23%), anesthesiology (20%), and radiology 18% (Warner et al., 2018).

As sexual problems are rather common and occur both independently and in connection with various diseases (Dekker et al., 2020), sexual medicine should be implemented across the curriculum in every medical field and be taught hand in hand with various subjects. **Figure 4** depicts the subjects in which sexual medicine is currently taught according to Finnish (Kevo et al., 2022) and Brazilian (Rufino et al., 2014) studies.

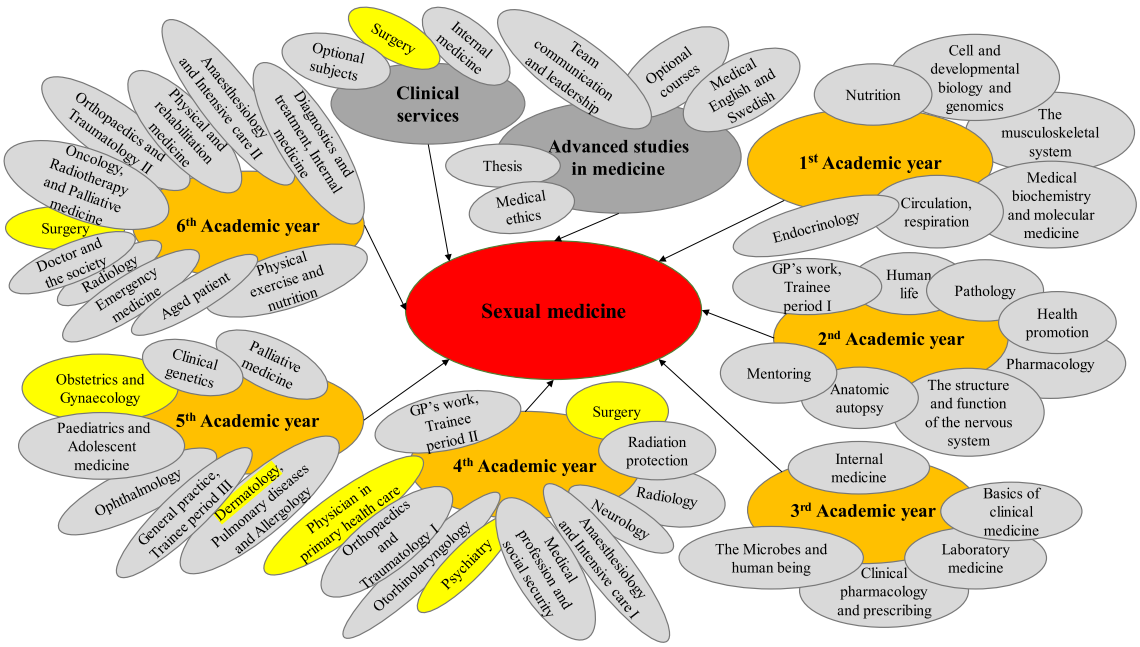


Figure 4. The subjects in which sexual medicine in medical education is taught according to Finnish (Kevo et al., 2022) and Brazilian (Rufino et al., 2014) studies.

2.2.3 In midwifery school

In Finland, midwifery studies last 4.5 years and are worth 270 ECTS. Midwifery education is offered in eight universities of applied sciences (UAS): in Jyväskylä, Kuopio, Oulu, Tampere, Turku, Vaasa, and Helsinki. In Helsinki there are two UAS educating midwifery students of which one offers education in Finnish and the other

in Swedish. Additionally, the UAS in Vaasa offers midwifery education in Swedish. The content and structure of midwifery education are shown in **Figure 5**.

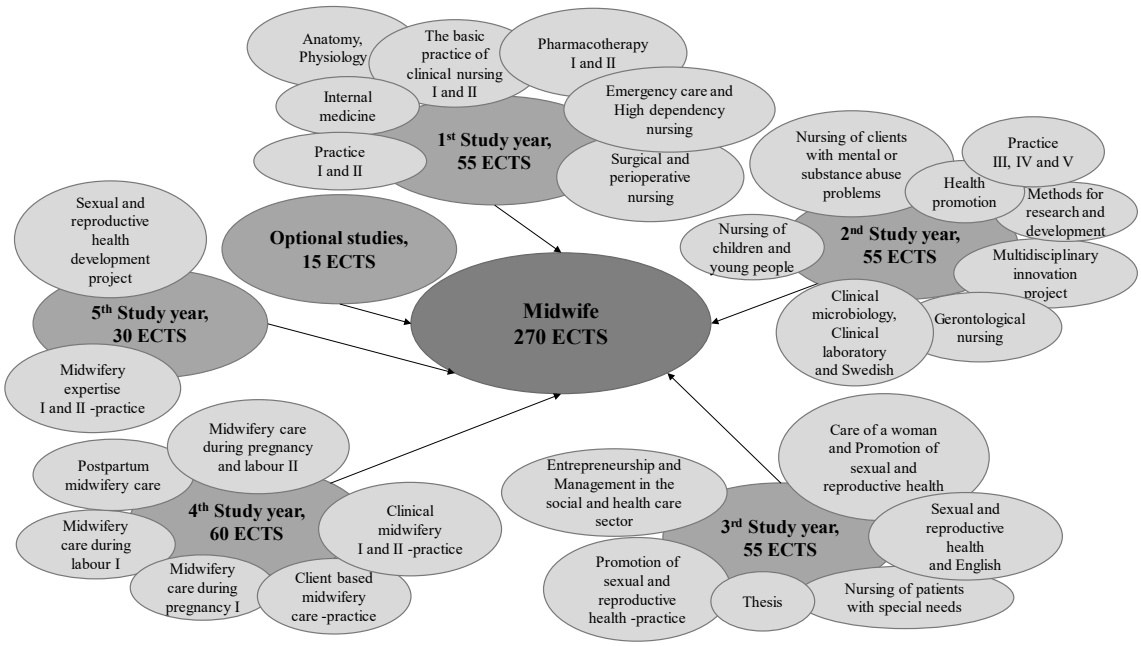


Figure 5. The structure and content of midwifery studies in Finland. Example from Metropolia UAS from 2023.

In previous studies, midwifery students have reported a lack of knowledge of and inadequate training in sexology as barriers to addressing patients' sexual issues (Walker & Davis, 2014; Percat & Elmerstig, 2017), which could imply that sexual medicine is not adequately covered in midwifery studies. The teaching of sexual medicine should be included with various subjects during midwifery studies, as it should during medical studies. **Figure 6** highlights the subjects in which sexual medicine is currently covered in midwifery studies.

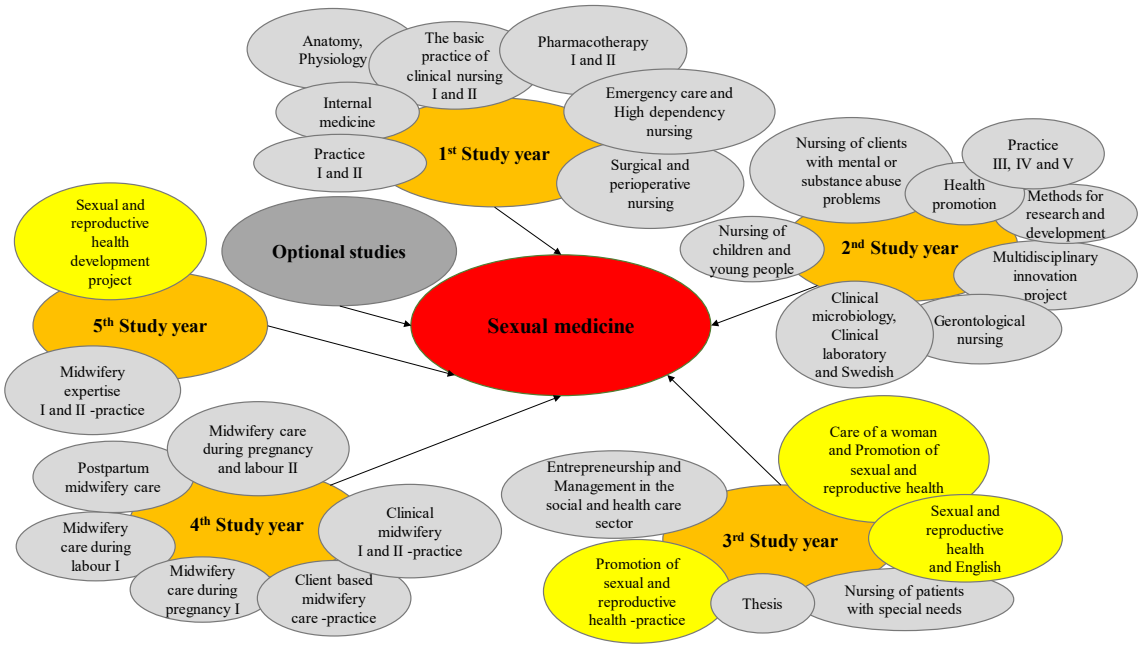


Figure 6. The subjects in which sexual medicine is currently taught in midwifery education.

2.2.4 Educational methods

In Finland, the vast majority of children, particularly those aged 3 years old or over, participate in the early childhood education provided in day-care centers (Tilastokeskus [Statistics Finland], 2023). Typically, children begin pre-school the year they turn six and school the year they turn seven. In Finland, it is mandatory for every child to attend primary school for nine years, after which most continue education in a high school (54%) or vocational college (39%) (Tilastokeskus [Statistics Finland], 2021). Graduates from a high school and vocational college are eligible to apply to study in either a university or a UAS. Therefore, in Finland, the students entering medical or midwifery schools come from quite similar educational backgrounds.

Nonetheless, different abilities in learning bring challenges in teaching. Learning styles can be categorized in many different ways, of which Neil Fleming's VARK model from 1987 is one of the most popular. According to the VARK model, learners can be divided into four subcategories identified by their preference for learning: Visual learners (pictures, movies, diagrams), Auditory learners (music, discussion, lectures), Reading and writing learners (making lists, reading textbooks, taking notes), and Kinesthetic learners (movement, experiments, hands-on activities) (Cherry, 2023).

In an Australian study (Meehan-Andrews, 2008) of 86 first-year health science students, the majority (54%) preferred a single mode of information presentation. Two modes of presentation were preferred by 20% of students, 10% preferred three modes, and 16% preferred to receive information using all four sensory modes (Meehan-Andrews, 2008). A study of 100 students studying in one Australian metropolitan university school of nursing and midwifery (McKenna et al., 2018) found that the majority (34%) of the participants preferred the kinesthetic learning style, followed by 27% who preferred read/write. Preferences were almost equal for the visual and auditory learning styles (20% and 19%, respectively) (McKenna et al., 2018).

In a US study of medical students, the most popular method of receiving sexual health education was large-group lectures (Zamboni & Bezek, 2017). Similarly, a German study found that medical students preferred lectures (78%) and seminars without patient contact (49%) (Turner et al., 2016). The above-mentioned Australian study of first-year nursing students identified that the majority of students found lectures, tutorials, and practical sessions to be beneficial to their learning (Meehan-Andrews, 2008). A meta-analysis of 16 randomized controlled trials with a sample size of 1,122 medical students showed that the seminar teaching method was more effective in improving scores than lecture-based learning for medical students (Zeng et al., 2020). GPs have reported that better medical training using a variety of methods should be given to overcome the barriers to discussing sexual health (Stott, 2013).

2.2.4.1 Books and scientific journals

One of the most common resources used in education is textbooks, which collect knowledge, concepts, and principles of selected topics or courses. Textbooks are usually written by one or more teachers, college professors, or authorities who are experts in a specific field. Good textbooks are excellent teaching sources. However, importantly, textbooks represent only one kind of tool in the teaching arsenal (TeacherVision, 2023). Furthermore, the wide-ranging information presented in textbooks might make students feel as though they must memorize everything in order to perform.

In a modern research society characterized by the profuse production of new science, textbooks may easily become out-of-date (Chapman, 2022). Therefore, scientific journals, which present up-to-date information and are widely used as educative methods in universities and UAS, may be more practical, especially as students are taught to learn how to read and look up evidence-based information. However, information is typically more scattered in scientific journals, and thus this method demands more from students (Gaylo et al., 2020).

2.2.4.2 Lectures

Lectures are one of the oldest forms of teaching, but they remain a popular teaching method in which the teacher conveys information orally. Lectures are flexible, and as a teaching method, they are suitable for use with both small and large groups (McKeachie & Svinicki, 2014).

Lectures may match the expectations of teacher and student roles. Students might have a resistance to "active" learning; in a lecture hall, a student is typically part of the "mass," without individualism, a situation that can be considered safe and comfortable. Lecturing is also very effective in introducing new topics, especially to large groups; hence, it is a cost-effective way of teaching. However, there are also limitations to the lecture method: unchanged visual, physical, and auditory stimuli have a negative effect on attention, as does placing too many demands on participants' memories. The lecture format has evolved to be more interactive and engaging, as various web-based learning platforms are now used during or before lectures (Baylor University, 2023; Pathak, 2023).

The use of pre-recorded lectures has also become rather popular, giving the students the possibility to choose the time and place at which they attend lectures. However, students cannot ask the lecturer for clarification if they are dependent on a recording (see also **2.2.4.6 Online learning platforms**).

2.2.4.3 Workshops

Workshops are generally designed for small groups of students. In workshops, the content is practical and specific to the needs and interests of the group. This method also enables cooperation and mutual support among participants. Workshops usually consist of tailored activities represented in the form of an intensive interactive educational program or training that varies in length and content. Adequate time for analysis and reflection in a workshop is crucial. Workshops can vary widely in their goals as well as the strategies, methods, and techniques employed. The workshop format is ideal to engage students, emphasize interaction, and promote active participation and motivation to gain a deeper understanding of a topic (Radić-Bojanić & Pop-Jovanov, 2018). A combination of interactive workshops and other teaching methods can enhance communication skills, critical-thinking skills, and decision-making skills (Mukurunge et al., 2021).

2.2.4.4 Seminars

A seminar is defined as a small-group, discussion-based teaching method. Typically, students prepare assignments before the seminar, which enables discussion of the major themes or topics during the seminar itself. Efficient and rich discussions

during seminars better enable students to build upon their existing knowledge frameworks to develop and achieve better learning objectives (Yale, 2023.) It is of the utmost importance that teachers using seminars as a teaching method are trained to do so, as this method requires different skills than transmissive lecturing (Bates, 2019).

2.2.4.5 Simulations

Simulation is widely used as a pedagogical method in both medical and midwifery education. Simulation as a term refers to artificial representations of real-world situations to achieve educational goals through experiential learning, and simulation-based education aims to replicate clinical scenarios. Medical simulation allows students to gain clinical skills through designed practice. It serves as an alternative to treating real patients: a student can make mistakes and learn from them without fear of harming the patient. There are different types of simulators, and their cost varies according to their degree of resemblance to reality. Simulation-based learning is expensive if high-tech simulators and facilities are used but is cost-effective when utilized properly (Al-Elq, 2010).

Medical simulation has been found to enhance clinical competence at both the undergraduate and postgraduate levels. It has also been found to have many advantages that can improve patient safety and reduce healthcare costs by improving the competencies of healthcare personnel (Al-Elq, 2010; Bøje et al., 2023).

2.2.4.6 Online learning platforms

Worldwide, the most widely known and used online learning platform (OLP) is Moodle, with more than 213 million users (Moodle, 2023). However, many other OLPs are available for teaching purposes. OLPs can be used, for example, to make recorded lectures available for repeat viewings online at any time or as flipped classrooms, in which lectures are pre-recorded for students to watch on their own followed by discussion in class. The use of an OLP enables instructors and a small or large class of students to log in and work within a password-protected online learning environment. OLPs can include weekly units or modules, and the material can be presented to all students at the same time. There are opportunities for online discussion, students can work through the materials at roughly the same pace, and assessment can be carried out by end-of-course tests (Bates, 2019).

It is noteworthy that certain facilities are essential for the use of an OLP, such as electricity, electronic devices, and the required skills among both students and teachers (Sofi-Karim et al., 2023).

2.2.4.7 Movies

Emotions are an essential part of learning attitudes and changing behaviors. Using movies in teaching is an effective way to stimulate feelings, promote reflective attitudes, and link learning to experiences. A movie is an audiovisual version of storytelling. Movie experiences act like emotional memories in terms of developing attitudes and keeping them as reflective references in daily activities and events. Specific scenes within the movie learning scenario facilitate the integration of emotions in the viewing experience and help learners to understand and recognize immediately the main messages delivered by the movie characters regarding attitudes and human values. Fostering reflection stimulates discussion about the breadth of human experience and elicits the profound conflicts and concerns students have about their future professional roles and personal lives. Used also in medical teaching, the movie experience can bring new perspectives on teaching for teachers (Blasco et al., 2015).

The movies used for educational purposes should be picked carefully so that any possible prejudice or stigma around the topic is prevented (Niemelä, 2023). In addition, some movies can upset students or cause them to feel oppressed; therefore, it is important for students to discuss the movie together with the teacher after they watch it.

2.2.4.8 With real patients

In healthcare education, patient contacts may involve real patients or simulated patients. In many countries, including Finland, real patient contacts have always been an essential part of healthcare education throughout the curriculum. Real patient contacts enhance students' feelings of empathy and responsibility toward patients and foster their professional identity. Patient contacts also help students to build skills for clinical reasoning, communication, history-taking, and physical examination. The role of patients may be passive, that is, limited to the presentation of complaints and symptoms, or it may be active, where the patient actually takes on the role of the teacher, the so-called patient–instructor technique. The use of real patients in bedside teaching is often considered more valuable and effective than other teaching methods, such as structured clinical teaching. Furthermore, real patients often report enjoying bedside teaching; however, there are not always suitable patients available (Bokken et al., 2008).

It is suggested that using patient–instructors is as effective as using physicians in the teaching of specific physical examination skills (Bokken et al., 2008; Krautter et al., 2017). However, students have reported that the quality of the feedback given by physicians is better than that of patient–instructors (Krautter et al., 2017). Nevertheless, students have valued being taught by patient–instructors, as skills can

be practiced and physical abnormalities can be found in a low-anxiety setting. In addition to the teaching of skills, patient–instructors are trained to give constructive feedback to the student, which is a further advantage of the method. A limitation is the extensive training time needed. Furthermore, only a selected group of patients, for example, those with stable physical findings and who are not too ill, can be trained to teach (Bokken et al., 2008).

3 Aims

This study was designed to evaluate the self-reported competence of Finnish GPs, medical students, and midwifery students in encountering and treating patients with sexual issues. In addition, the need for education and educational interest in sexual medicine were assessed.

Specific aims:

1. To investigate GPs' self-reported competence and barriers to bringing up patients' sexual issues. **(Study I)**
2. To assess and compare medical students' and midwifery students' self-reported competence and barriers to bringing up patients' sexual issues. **(Study III)**
3. To evaluate whether GPs bring up sexual issues with patients with chronic diseases or health conditions and, further, to assess GPs' awareness of chronic diseases and their medications that induce sexual problems as side effects. **(Study II)**
4. To assess and compare medical students' and midwifery students' self-reported knowledge of factors associated with sexuality. **(Study IV)**
5. To evaluate GPs', medical students', and midwifery students' need for and interest in education in sexual medicine. **(Studies I, III,** and **IV)**

4 Materials and Methods

4.1 Participants

The study population consisted of three different samples (**Figure 7**). The characteristics of the participants are shown in **Tables 2**, **3,** and **4**.

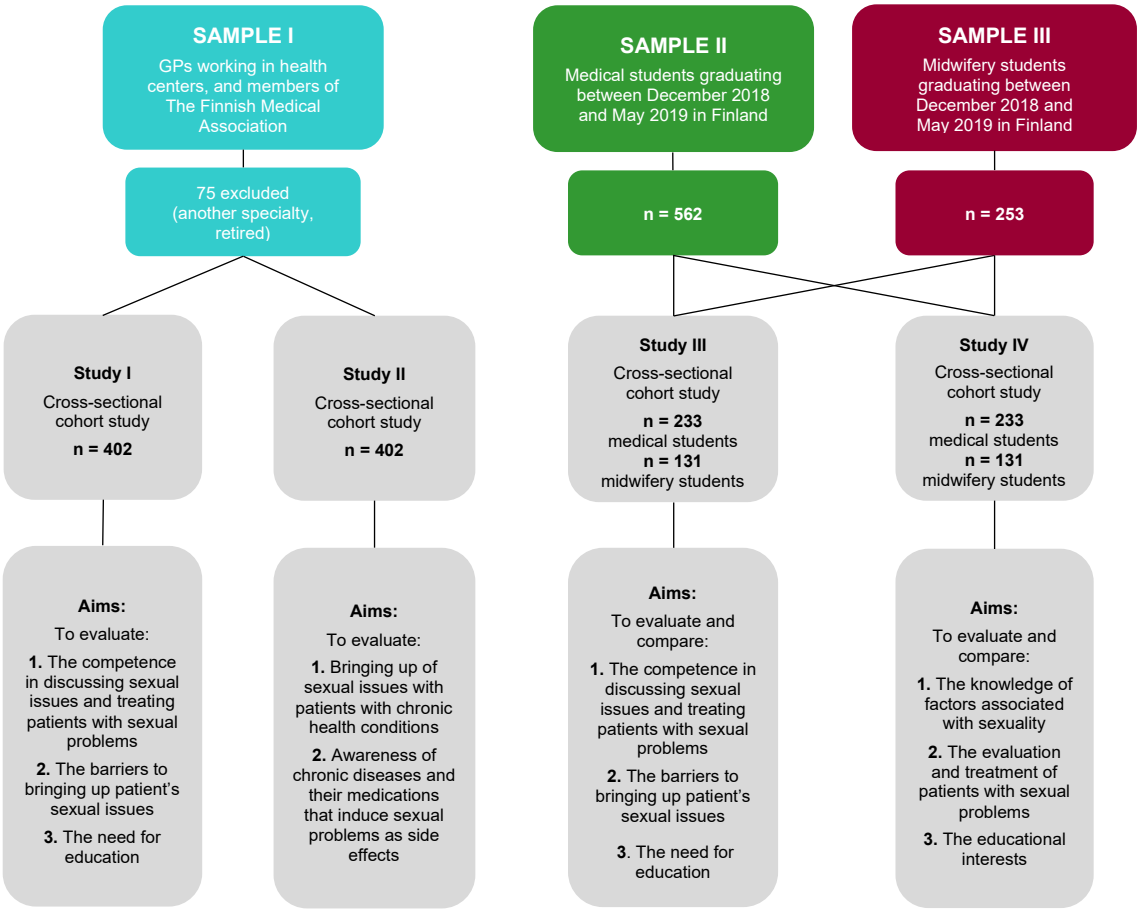


Figure 7. Study samples and aims; flowchart of the study.

Table 2. Characteristics of the general practitioners.

	Sample I
N	402
	Median (SD, range)
Age (years)	44.0 (10.7, 27–65)
	%
Gender	
Male	24.9
Female	75.1
Graduated from the university of	
Eastern Finland	17.7
Helsinki	17.9
Oulu	21.4
Tampere	15.2
Turku	18.9
Foreign university abroad	8.9
Working in the hospital district of	
Etelä-Karjala (South Karelia)	1.5
Etelä-Pohjanmaa (South Ostrobothnia)	4.5
Etelä-Savo (Southern Savonia)	0.7
Helsinki ja Uusimaa (Helsinki and the capital region)	27.4
Itä-Savo (Eastern Savonia)	0.7
Kainuu (Cajania)	1.5
Kanta-Häme (Kanta-Häme region)	3.2
Keski-Pohjanmaa (Central Ostrobothnia)	1.5
Keski-Suomi (Central Finland)	5.2
Kymenlaakso (Kymenlaakso region)	1.5
Lappi (Lapland)	1.2
Länsi-Pohja (Länsi-Pohja region)	1.0
Pirkanmaa (Tampere region)	9.9
Pohjois-Karjala (North Karelia)	2.0
Pohjois-Pohjanmaa (North Ostrobothnia)	9.5
Pohjois-Savo (Northern Savonia)	7.5
Päijät-Häme (Päijät-Häme region)	2.0
Satakunta (Satakunta region)	4.0
Vaasa (Vaasa region)	2.5
Varsinais-Suomi (Southwest Finland)	12.7
Ålands hälso- och sjukvård (Åland region)	0
Patients with sexual issues per week	
0	19.2
1–5	65.9
≥6	14.9

Table 3. Characteristics of the medical students.

	Sample II
N	233
	Median (SD, range)
Age (years)	28.5 (4.0, 24–48)
	%
Gender	
Male	39.5
Female	60.5
Studying at the university of	
Eastern Finland	20.2 [a] / 37.9 [b]
Helsinki	14.2 [a] / 32.4 [b]
Oulu	18.0 [a] / 48.8 [b]
Tampere	9.9 [a] / 21.1 [b]
Turku	37.8 [a] / 62.4 [b]
Patients seen with sexual problems while substituting	
Not at all / One	39.5
A few / Many	59.2
Cannot say	1.3

[a] Percentage of the participating students

[b] Percentage of the participants among all those graduating from the university during the study period

Table 4. Characteristics of the midwifery students.

	Sample III
N	131
	Median (SD, range)
Age (years)	28.1 (5.0, 23–50)
	%
Gender	
Male	0
Female	100
Studying at the university of applied sciences of	
Arcada or Novia [c] (teaching in Swedish)	6.9 [a] / 52.9 [b]
Jyväskylä	13.0 [a] / 77.3 [b]
Metropolia	31.3 [a] / 56.9 [b]
Oulu	8.4 [a] / 47.8 [b]
Savonia	14.5 [a] / 27.9 [b]
Tampere	9.2 [a] / 63.2 [b]
Turku	16.8 [a] / 68.8 [b]
Patients seen with sexual problems while substituting	
Not at all / One	52.7
A few / Many	30.5
Cannot say	16.8

[a] Percentage of the participating students

[b] Percentage of the participants among all those graduating from the UAS during the study period

[c] Due to the low number of graduates in the two UAS teaching in Swedish, the students from these UAS have been combined into a single group.

4.1.1 Recruitment

The inclusion and exclusion criteria for all the studies are shown in **Figure 6**.

4.1.1.1 General practitioners

In Finland, the vast majority of physicians are members of The Finnish Medical Association (FMA). The FMA's register includes data relating to the members' workplaces and contact information. In this cross-sectional study, all physicians who had announced their primary workplace as a health center were eligible for the survey. According to the FMA's general policy, contact information was restricted to 1,000 Finnish GPs. The link to the questionnaire was sent to the sample with several reminders. Seventy-five physicians stated that they were not part of the target group as they had retired or practiced another specialty, and thus they were excluded. A total of 925 remaining GPs was included, 402 of whom (43.5%) replied to the questionnaire. At the time of the study, Finland was divided into 20 hospital districts. The sample represented all 20 hospital districts, and replies were received from all except Åland region. The characteristics of the GPs are described in **Table 2**.

4.1.1.2 Medical students

In Finland, there are five faculties of medicine. All final-year medical students graduating between December 2018 and May 2019 from these five faculties were recruited to participate in the cross-sectional study. For the students studying at the Universities of Eastern Finland, Helsinki, Tampere, and Turku, the link to the questionnaire was distributed by university teaching coordinators with several reminders. For the students at the University of Oulu, the link to the questionnaire was distributed by the university's service desk with several reminders. During the survey period, a total of 562 medical students graduated, of whom 233 (41.5%) replied to the questionnaire. The characteristics of the medical students are described in **Table 3**.

4.1.1.3 Midwifery students

In Finland, eight UAS offer education in midwifery. All final-year midwifery students graduating between December 2018 and May 2019 from these eight UAS were recruited to the study. The link to the questionnaire was distributed to the students by their teachers with several reminders. During the survey period, a total of 253 midwifery students graduated, of whom 131 (51.8%) replied to the questionnaire. The characteristics of the midwifery students are described in **Table 4**.

4.1.2 Ethical considerations

The return of the questionnaire implied consent, which was explained to the participants in the introduction of the questionnaire. The Ethics Committee of the University of Turku (44/2017) approved the study.

4.2 Methods

4.2.1 Questionnaires

4.2.1.1 The general practitioners' questionnaire

The questionnaire (**Tables 5**–**7, Appendices 1**–**3**) used for GPs (**Studies I** and **II**) was a modification of the questionnaire developed by the Portuguese Sexual Observational Study in Portugal (SEXOS-study) (Alarcão et al., 2012) for use with GPs. Permission to use the questionnaire was obtained from the Portuguese researchers. The Portuguese questionnaire was chosen as it was developed and used in a GP target group. The modifications made to the original questionnaire were mainly changes to some response options or scales. The modified questionnaire was piloted with 11 Finnish physicians, and their feedback was utilized to make amendments to the content. The questionnaire was in Finnish. The questions regarding the background information of the participants for **Studies I** and **II** are shown in **Table 5** and **Appendix 1**. The specific questions of **Study I** are shown in **Table 6** and **Appendix 2** and those of **Study II** in **Table 7** and in **Appendix 3**.

Table 5. Questions eliciting background information on the participants in **Studies I** and **II**.

GP QUESTIONNAIRE

BACKGROUND INFORMATION

1. **Year of birth**
   _____

2. **Gender**
   Male/ Female

3. **From which university did you graduate as a doctor of medicine?**
   Eastern Finland (Kuopio)/ Helsinki/ Oulu/ Tampere/ Turku/ Abroad

4. **In which hospital district are you currently working?**
   Etelä-Karjala (South Karelia)/ Etelä-Pohjanmaa (South Ostrobothnia)/ Etelä-Savo (Southern Savonia)/ Helsinki ja Uusimaa (Helsinki and the capital region)/ Itä-Savo (Eastern Savonia)/ Kainuu (Cajania)/ Kanta-Häme (Kanta-Häme region)/ Keski-Pohjanmaa (Central Ostrobothnia)/ Keski-Suomi (Central Finland)/ Kymenlaakso (Kymenlaakso region)/ Lappi (Lapland)/ Länsi-Pohja (Länsi-Pohja region)/ Pirkanmaa (Tampere region)/ Pohjois-Karjala (North Karelia)/ Pohjois-Pohjanmaa (North Ostrobothnia)/ Pohjois-Savo (Northern Savonia)/ Päijät-Häme (Päijät-Häme region)/ Satakunta (Satakunta region)/ Vaasa (Vaasa region)/ Varsinais-Suomi (Southwest Finland)/ Ålands hälso- och sjukvård (Åland region)

5. **With how many patients do you handle sexual issues weekly?**
   0 patients/ 1–5 patients/ 6–10 patients/ 11–15 patients/ 16–20 patients

In **Study I**, the questionnaire (**Table 6**) was used to assess the GPs'

A) competence in discussing sexual issues and treating patients (seven questions)
B) barriers to bringing up sexual problems during appointments (ten items)
C) source of education on sexual medicine (two questions)
D) need for education on sexual medicine (two questions).

Table 6. The specific questions raised in **Study I**.

STUDY I

A) Self-reported competence in discussing sexual health and treating patients with sexual issues

1. **How easy is it for you to discuss sexual issues if your patient addresses the subject?**
   Not a problem/ A minor problem/ A moderate problem/ A major problem/ Cannot say
2. **How do you classify your competence in discussing sexual problems with male patients?**
   Good/ Quite good/ Quite poor/ Poor
3. **How do you classify your competence in discussing sexual problems with female patients?**
   Good/ Moderate/ Quite poor/ Poor
4. **How do you classify your competence in treating male patients' sexual problems?**
   Good/ Quite good/ Quite poor/ Poor
5. **How do you classify your competence in treating female patients' sexual problems?**
   Good/ Moderate/ Quite poor/ Poor
6. **When you take a sexual history, do you explore how satisfied the patient is with his/her sexual life?**
   Always/ Usually/ Seldom/ Never
7. **How do you usually conduct sexual history-taking (you can choose more than one option)?**
   Open conversation/ Questionnaire/ Structured interview/ I don't take a sexual history

B) Barriers to bringing up sexual problems during GPs' appointments

Each item rated on a 5-point scale where:
1 = Not at all, 2 = …, 3 = …, 4 = Very much, and 5 = Cannot say

Bringing up sexual issues with patients is hindered by:

1. Shortness of the appointment time
2. Sexual issues not being a priority in the appointment
3. Personal attitudes and beliefs
4. Personal discomfort when addressing sexual issues
5. Lack of knowledge about sexual medicine
6. Lack of experience with sexual medicine
7. Lack of effective treatment
8. Fear of failing to respond to patients' sexual issues

9. Gender differences (where the patient is of the opposite gender)
10. Disability of the patient

C) Sources of education on sexual medicine

1. **From which sources have you gained the knowledge about sexual medicine that you use in your patient work? (You can choose more than one option.)**
   Medical books/ Medical journals/ Continuing education/ Congresses/ Consultation of guidelines/ Education given in medical school/ Consultations and discussions with colleagues/ Other (please specify): _____

2. **In your opinion, how adequate was medical school as a source of education when considering your sexual medicine competence?**
   The question rated on a 4-point scale where:
   1 = Insufficient, 2 = …, 3 = …, 4 = Sufficient

D) Need for sexual medicine education

1. **Do you feel a need for continuing sexual medicine education?**
   Yes/ No

2. **If you answered yes, in what form would you prefer to receive continuing education? (You may choose more than one option.)**
   Lectures/ Workshops/ Simulations/ Online learning platforms/ Other (please specify): _____

In **Study II**, the questionnaire shown in **Table 7** was used to assess the GPs'

A) frequency of inquiring about patients' sexual problems (one question)
B) frequency of inquiring about sexual problems from various patient groups (ten items)
C) knowledge of medications inducing sexual problems (eleven items)
D) awareness of sexual problems as side effects of medications and the frequency of inquiring about such issues (three questions).

Table 7. The specific questions raised in **Study II**.

STUDY II

A) Frequency of inquiring about patients' sexual problems

The question rated on a 5-point scale where:
1 = Totally agree, 2 = …, 3 = …, 4 = Totally disagree, and 5 = Cannot say

1. **I frequently inquire about sexual problems in general history-taking**

B) Frequency of inquiring sexual problems from various patient groups

Each item rated on a 5-point scale where:
1 = Never, 2 = Sometimes, 3 = Usually, 4 = Always, and 5 = Cannot say

How often do you inquire about sexual problems from the following patient groups?

1. Patients with cardiovascular diseases
2. Patients with neurological diseases
3. Patients with endocrine diseases
4. Gynecologic patients
5. Urologic patients
6. Menopause/Andropause patients
7. Family planning patients
8. Patients with mental illnesses
9. Patients with substance abuse issues
10. Patients with an immigrant background

C) Knowledge of medications inducing sexual problems

1. Which of the following medications do you consider to induce sexual problems? (You can choose more than one option.)
Hypertension/ Arrhythmia/ Hypercholesterolemia/ Diabetes/ Systemic cortisone/ Prostate/ Antiandrogens/ Hormonal contraception/ Menopausal hormone treatment/ Antidepressants/ I do not know of any medication that induces sexual problems

D) Awareness of possible sexual problems and frequency of inquiring about such problems in relation to medications

Questions 1 and 2 rated on a 5-point scale where:
1 = Totally agree, 2 = …, 3 = …, 4 = Totally disagree, and 5 = Cannot say

1. Sexual problems are often side effects of medications for other pathologies

2. I change patients' medication if it causes sexual problems as a side effect

3. After prescribing a medication, do you ask the patient about possible side effects in sexual function during the next appointments?
Always/ Usually/ Seldom/ Never

4.2.1.2 The students' questionnaire

The questionnaire (**Tables 8-10, Appendices 4-6**) used for medical students and midwifery students (**Studies III** and **IV**) was a modification of two questionnaires: the questionnaire used in the Portuguese SEXOS-study (Alarcão et al., 2012) with GPs and the questionnaire used in a German study (Turner et al., 2016) with medical students. Permissions to use these questionnaires were obtained from the researchers. The German questionnaire was chosen as it was developed and used with medical

students. The modified questionnaire was piloted with 27 Finnish medical students, and their feedback was utilized to make amendments to the content. The questionnaire was in Finnish. The questions eliciting participants' background information in **Studies III** and **IV** are shown in **Table 8** and **Appendix 4**. The specific questions raised in **Study III** are shown in **Table 9** and **Appendix 5** and those raised in **Study IV** in **Table 10** and in **Appendix 6**.

Table 8. Questions eliciting participants' background information in **Studies III** and **IV**.

STUDENTS' QUESTIONNAIRE

BACKGROUND INFORMATION

For the medical students:

1. **Year of birth**
   _____
2. **Gender**
   Male/ Female
3. **In which university are you studying?**
   Eastern Finland (Kuopio)/ Helsinki/ Oulu/ Tampere/ Turku
4. **Have you met patients with sexual problems during your studies?**
   Not at all/ Once/ A few times/ Many times/ Cannot say

For the midwifery students:

1. **Year of birth**
   _____
2. **Gender**
   Male/ Female
3. **In which university of applied sciences are you studying?**
   Arcada/ Jyväskylä/ Metropolia/ Novia/ Oulu/ Savonia/ Tampere/ Turku
4. **Have you met patients with sexual problems during your studies?**
   Not at all/ Once/ A few times/ Many times/ Cannot say

In **Study III**, the replies to the questionnaire shown in **Table 9** were used to compare the medical students' and midwifery students'

A) competence in discussing sexual issues and treating patients (four questions/statements)
B) barriers to bringing up sexual problems with a patient (nine items)
C) need for education in sexual medicine (four questions).

Table 9. The specific questions raised in **Study III**.

STUDY III

A) Self-reported competence in discussing sexual issues and treating patients

1a. Have you met patients with sexual problems while working as a substitute midwife/doctor?
Not at all/ Once/ A few times/ Many times/ Cannot say

1b. If yes, what was the result?
The patient got the help they needed/ My skills weren't good enough, and thus the patient did not get the help they needed/ I consulted a senior/referred the patient to a specialist (for the medical students)/ I consulted a colleague (a midwife/a doctor) (for the midwifery students)/ I disregarded the patient's problem/ Cannot say

2. How easy is it for you to discuss sexual issues if your patient addresses the subject?
Not a problem/ A minor problem/ A moderate problem/ A major problem/ Cannot say

Questions 3 and 4 rated on a 5-point scale where:
1 = Totally agree, 2 = …, 3 = …, 4 = Totally disagree, and 5 = Cannot say

3. I can easily bring up sexual issues with my patient

4. I can evaluate a patient's sexual problems, and I know when to refer the patient to a specialist

B) Barriers to bringing up sexual problems with a patient

Each item rated on a 5-point scale where:
1 = Not at all, 2 = …, 3 = …, 4 = Very much, and 5 = Cannot say

Bringing up sexual issues with a patient is hindered by:

1. Lack of time
2. Sexual issues not being a priority in the patient's treatment at the moment
3. Personal provider's attitudes and beliefs
4. Personal provider's personal discomfort when addressing sexual issues
5. Lack of knowledge of sexual medicine
6. Lack of experience with sexual medicine
7. Fear of failing to respond to the patients' sexual issues
8. Gender differences (where the patient is of the opposite gender)
9. Disability of the patient

C) Need for education in sexual medicine

1. Are you interested in sexual medicine education?
Not at all/ A little/ Fairly/ Very

2. How much education do you think you received in sexual medicine during your studies?
Too little/ An adequate amount/ Too much/ Cannot say

3a. Should sexual medicine education be mandatory or voluntary during medical/midwifery studies?
Mandatory/ Voluntary

3b. If mandatory, how would the teaching be best implemented?
A separate course on sexual medicine/ Integrated into other subjects

4. In which form should the teaching of sexual medicine be given? (You can choose more than one option.)
Lectures/ Seminars/ With real patients/ Simulations/ Workshops/ Movies/ Online learning platforms/ Other; please specify: _____

In **Study IV**, the questionnaire shown in **Table 10** was used to assess and compare the medical students' and midwifery students'

A) knowledge of factors associated with sexuality (eight items)
B) knowledge of evaluating and treating patients with sexual problems (eight items)
C) fields of educational interests in sexual medicine (25 options).

Table 10. The specific questions raised in **Study IV**.

STUDY IV

A) Competence and knowledge in encountering and assessing patients with sexual issues

Each item rated on a 5-point scale where:
1 = Totally agree, 2 = …, 3 = …, 4 = Totally disagree, and 5 = Cannot say

In my opinion:

1. I know the basics of human sexual development
2. I know the basics of sexual evolution and expression of sexuality across the lifespan
3. I know the basics of aging and sexuality
4. I know how to consider sexuality when taking care of patients with mental illnesses
5. I know the basics of how multiculturalism affects sexuality
6. I know how to encounter victims of domestic violence/sexual abuse

7. My knowledge of sexual orientation (e.g., hetero- and homosexuality) is adequate
8. My knowledge of gender diversity (e.g., transgender people) is adequate

B) Competence in taking care of patients with sexual problems

Each item rated on a 5-point scale where:
1 = Totally agree, 2 = …, 3 = …, 4 = Totally disagree, and 5 = Cannot say

In my opinion:

1. I know the basics of sexual pleasure and treating lack of it
2. I know the basics of decreased libido and the basics of its treatment
3. I know the diagnostics and treatment of arousal problems
4. I know the diagnostics and treatment of orgasm disorders
5. I know the diagnostics and treatment of dyspareunia
6. I know the basics of erectile dysfunction and the basics of its treatment
7. I know how to treat sexual problems due to relationship problems
8. I know how to treat sexual problems due to chronic diseases

C) Need for sexual medicine education

Mark 1–5 the most interesting fields in which you consider more education is needed (Please note! If you mark more than 5 fields, you won't be able to proceed with the questionnaire):

Sexual development during childhood and adolescence/ Sexual history-taking/ Hormones affecting sexuality/ Arousal problems/ Reasons for and treatment of erectile dysfunction/ Reasons for and treatment of premature ejaculation/ Reasons for and treatment of priapism/ Sexual orientation/ Development of gender and gender identity/ Surgery of sex organs/ Reasons for and treatment of orgasm disorders/ Reasons for and treatment of dyspareunia/ Medications affecting sexuality/ Lack of sexual desire and its treatments/ Sexual abuse of a child/ Sexual violence/sexual abuse of an adult/ Effects of infertility and its treatment on sexuality / Effects of abortion on sexuality/ Effects of relationship problems on sexuality / Sociological and cultural factors affecting sexuality/ Different methods of sexual interaction/sexual habits/ Disability and sexuality/ Aging and sexuality/ Social media and sexuality/ Other; please specify: _____

In terms of background information (**Tables 5** and **8**), both the GPs and the students were asked their age and gender. In addition, the GPs were asked about the number of patients with whom they dealt with sexual issues per week, and the students were asked whether they had met patients with sexual problems during their studies. The GPs were divided into groups by age (27–39 years / 40–49 years / 50–65 years) and the number of patients with whom they dealt with sexual issues per week (0 / 1–5 / ≥6). All results were self-reported by the respondents.

4.2.2 Statistical analyses

The statistical analyses in the sub-studies are summarized in **Table 11**. In the analyses, all questions with a 4-point scale (numeral or verbal) were dichotomized, and the "cannot say" responses were omitted.

Table 11. Summary of statistical analyses in **Studies I–IV**.

STUDY I
Outcome measurements: A) Self-reported competence in discussing sexual issues and treating patients B) Barriers to bringing up sexual problems during GPs' appointments C) Sources of education on sexual medicine D) Need for education on sexual medicine Adjusted for: gender, age, patients with sexual issues per week Chi-square to compare the frequencies between the following groups 1) women versus men 2) age comparisons: 40–49 versus 27–39, 50–65 versus 27–39, 40–49 versus 50–65 3) patients with sexual issues per week comparisons: 0 versus 1–5, 0 versus ≥6, 1–5 versus ≥6 Multivariate logistic regression analysis The associations between the GPs' gender, age (27–39, 40–49, and 50–65 years), the number of patients with sexual issues per week (0, 1–5, and ≥6 patients), and the four fields of interests (A–D) 9.4 version of SAS Institute Inc. (Cary, NC, USA) for Windows
STUDY II
Outcome measurements: A) Frequency of inquiring about patients' sexual problems B) Frequency of inquiring about sexual problems from various patient groups C) Knowledge of medications inducing sexual problems D) Awareness of sexual problems being side effects of medications and the frequency of inquiring about such issues Adjusted for: gender, age, patients with sexual issues per week Multivariate logistic regression analysis The associations of the GPs' genders, ages (27–39, 40–49, and 50–65 years), the number of patients with sexual issues per week (0, 1–5, and ≥6 patients) with the four fields of interests (A–D) 9.4 version of SAS Institute Inc. (Cary, NC, USA) for Windows

STUDY III
Outcome measurements: A) Self-reported competence in discussing sexual issues and treating patients B) Barriers to bringing up sexual problems with patients C) Need for education in sexual medicine Adjusted for: gender (only in the medical student sub-analysis), age Multivariate logistic regression analysis Associations between the students' ages and genders and the three fields of interests (A–C). The gender associations were carried out only in the sub-analysis for the medical students, as all the midwifery students were women. 9.4 version of SAS Institute Inc. (Cary, NC, USA) for Windows
STUDY IV
Outcome measurements: A) Self-reported knowledge of factors associated with sexuality B) Self-reported knowledge of evaluating and treating patients with sexual problems C) Fields of educational interests in sexual medicine Adjusted for: gender (only in the medical student sub-analysis), age Multivariate logistic regression analysis Associations of the students' age and gender and the A and B fields of interest (A–B). The gender associations only in the age-adjusted sub-analysis of the medical students, as all the midwifery students were women. 9.4 version of SAS Institute Inc. (Cary, NC, USA) for Windows

GP = General practitioner

In **Studies I** and **II**, the GPs were divided into age groups of 27–39 years (n=147), 40–49 years (n=111), and 50–65 years (n=144). In addition, they were divided into groups by the number of patients with whom they dealt with sexual issues per week (0, n=77 /1–5, n=265 /≥6, n=60).

In **Study II** field C, not selecting one or more medication or responding "I do not know of any medication that induces sexual problems" was interpreted as "not inducing sexual problems."

In **Studies III** and **IV**, which included all the students, gender associations were carried out only in the sub-analysis for the medical students, as all the midwifery students were women. (Erratum: in the original **Study III**, the gender associations were carried out with all the students. This has been corrected in this thesis.)

The results of the comparisons were presented as odds ratios (ORs) with 95% confidence intervals (CIs). Statistical analyses were performed with SAS System for Windows, version 9.4 (SAS Institute Inc., Cary, NC). In reporting the results, statistical significance was set at $p<0.05$.

5 Results

All the results are self-reported by the participants. Thus, it is noteworthy that the measured competence is self-reported, not the actual competence.

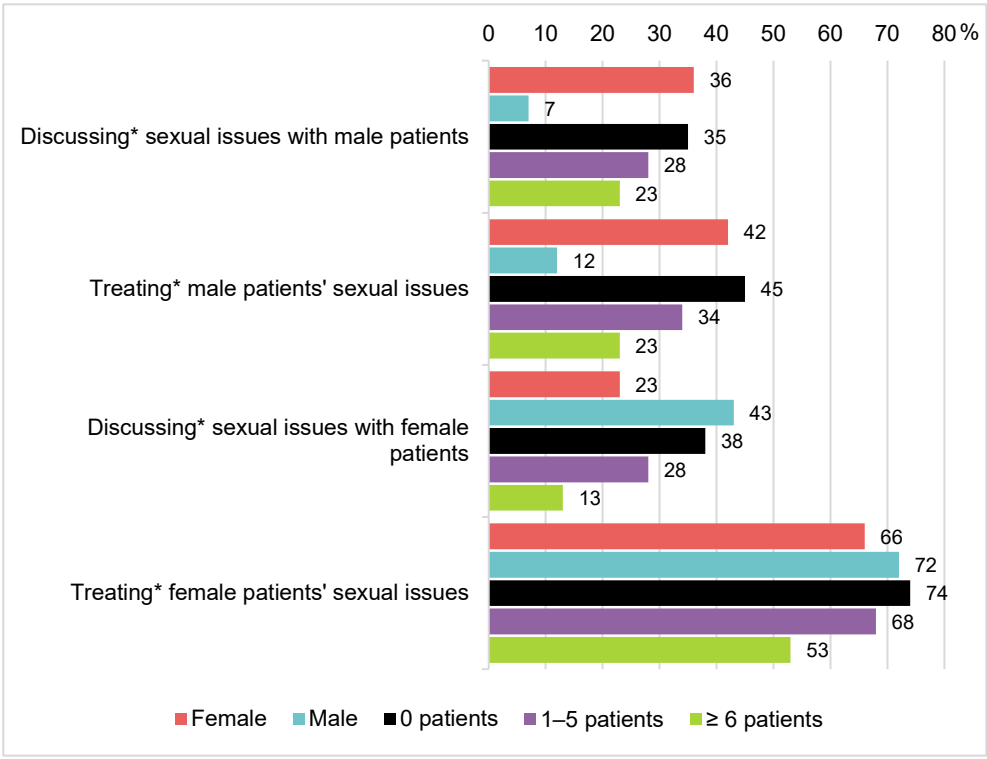
5.1 Competence in sexual issues among general practitioners, medical students, and midwifery students

5.1.1 Competence in discussing sexual issues and treating patients

Of all the GPs, 37% reported asking about their patients' satisfaction with their sexual lives, but no differences were found in terms of the GPs' gender and age. The majority of the GPs (80.8%) dealt with at least one patient per week with sexual issues. The more patients with sexual issues the GP dealt with per week, the more frequently the GPs reported asking about satisfaction with sexual lives ($p<0.001$, 1–5 versus 0 aOR 2.29, 95% CI 1.38–3.79, ≥6 versus 0 aOR 3.93, 95% CI 2.00–7.73, ≥6 versus 1–5 aOR 1.72, 95% CI 1.00–2.97). As regards the method of taking a patient's sexual history, a majority (n=349) of the GPs reported using open conversation. Structured interviews were indicated 11 times, questionnaires 17 times, and the option "I don't take a sexual history" 47 times.

The majority of the GPs (95.8%) had no or only minor problems in discussing sexual issues with patients if the patient brought up the topic. Similar results were found with the students, as only 6.9% of the medical students and 2.3% of the midwifery students reported having moderate or major problems with discussing the topic (aOR 3.33, 95% CI 0.89–12.41, $p=0.073$). The GPs' self-reported competence in discussing sexual issues and treating patients with sexual problems by gender and the number of patients with sexual issues dealt per week are shown in **Figure 8** and **Table 12**. The male GPs more often reported good or quite good competence in both discussing sexual issues and treating male patients' sexual problems than the female GPs. Similarly, the female GPs more often reported good or quite good competence in discussing sexual issues with female patients than the male GPs. However, there

were no gender differences in terms of competence in treating female patients. No differences emerged among the GPs' age groups. Regarding the number of patients with sexual issues per week, the more the GPs dealt with patients with sexual issues, the more competent they reported being in discussing such issues with and treating both male and female patients.



*Self-reported poor or quite poor competence

Figure 8. General practitioners' self-reported poor or quite poor (%) competence in discussing sexual issues and treating patients with sexual problems by gender and the number of patients with sexual issues per week.

Table 12. General practitioners' self-reported competence in discussing sexual issues and treating male and female patients' sexual issues (comparisons with gender, age, and number of patients with sexual issues per week).

	Discussing sexual issues with male patients		Treating male patients' sexual issues		Discussing sexual issues with female patients		Treating female patients' sexual issues	
Entire group	**Poor or quite poor 28.9% (n=116/402)**		**Poor or quite poor 34.8% (n=140/402)**		**Poor or quite poor 27.9% (n=112/402)**		**Poor or quite poor 67.2% (n=270/402)**	
	aOR	95%CI	aOR	95%CI	aOR	95%CI	aOR	95%CI
Gender	p < 0.0001		p < 0.0001		p < 0.001		p = 0.394	
women versus men	8.34	3.70–18.79	6.32	3.27–12.23	0.42	0.26–0.68	0.80	0.49–1.33
Age	p = 0.458		p = 0.373		p = 0.175		p = 0.479	
40–49 versus 27–39	1.28	0.72–2.25	1.47	0.85–2.55	1.57	0.88–2.80	0.72	0.43–1.22
50–65 versus 27–39	0.89	0.52–1.53	1.11	0.67–1.87	1.60	0.94–2.74	0.87	0.53–1.44
40–49 versus 50–65	1.44	0.81–2.56	1.32	0.76–2.29	0.98	0.56–1.71	0.83	0.49–1.41
Patients with sexual issues per week	p = 0.056		p = 0.002		p = 0.030		p = 0.057	
0 versus 1–5	1.57	0.88–2.80	1.83	1.05–3.20	1.46	0.85–2.52	1.32	0.74–2.35
0 versus ≥ 6	2.66	1.19–5.94	4.12	1.86–9.12	3.35	1.37–8.18	2.36	1.14–4.90
1–5 versus ≥ 6	1.70	0.86–3.35	2.25	1.15–4.41	2.29	1.02–5.13	1.79	1.00–3.19

In all questions the response was mandatory.
aOR higher than 1 indicates worse self-reported competence (two categories: poor or quite poor versus good or quite good) in discussing sexual health or treating patients.
aOR less than 1 indicates better self-reported competence in discussing sexual health or treating patients.
aOR = adjusted odds ratio; multivariable logistic regression.
CI = confidence interval.

As regards the students, 51.1% of the medical students and 80.9% of the midwifery students reported having met patients with sexual problems during their studies a few or many times. While working as substitute doctors or midwives, 60.0% of the medical students and 36.7% of the midwifery students reported having met patients with sexual problems a few or many times (aOR 2.22, 95% CI 1.33–3.71, p=.002). Compared to the midwifery students, the medical students were more likely to report not being able to bring up sexual issues easily with their patients (36.5% versus 16.0%; aOR 3.41, 95% CI 1.91–6.08, p<0.001). A majority of both the medical and midwifery students considered themselves to be unable to evaluate patients' sexual problems or determine the need to refer patients to specialists (67.8% versus 51.2%); however, the percentage of medical students was higher (aOR 2.02, 95% CI 1.23–3.33, p=0.006). Furthermore, 59.3% of the medical students and 48.2% of the midwifery students reported being able to help their patients with sexual issues. In the sub-analysis for medical students, the male students were more likely to report being able to help the patient (aOR 2.55, 95% CI 1.27–5.12, p=0.009).

5.1.2 Barriers to bringing up sexual problems

For the GPs, the four most important barriers to bringing up sexual issues were the shortness of the appointment, lack of knowledge about sexual medicine, lack of experience with sexual medicine, and sexual issues not being a priority in the appointment (**Figure 9**). Compared to the male GPs, the female GPs were more likely to consider the lack of effective treatment and fear of failing to respond to patients' sexual issues as barriers to bringing up the subject (**Figure 10**, **Table 13**). In contrast, among the male GPs, gender differences (where the patient was of the opposite gender) was a higher barrier (**Figure 10**, **Table 13**). The variance between the GPs' age groups is illustrated in **Figure 11**. Only a few differences emerged (**Table 13**). As regards the GPs' weekly number of patients, the more the GPs dealt with patients with sexual issues, the fewer barriers there were to bringing up sexual issues (**Figure 12**, **Table 13**).

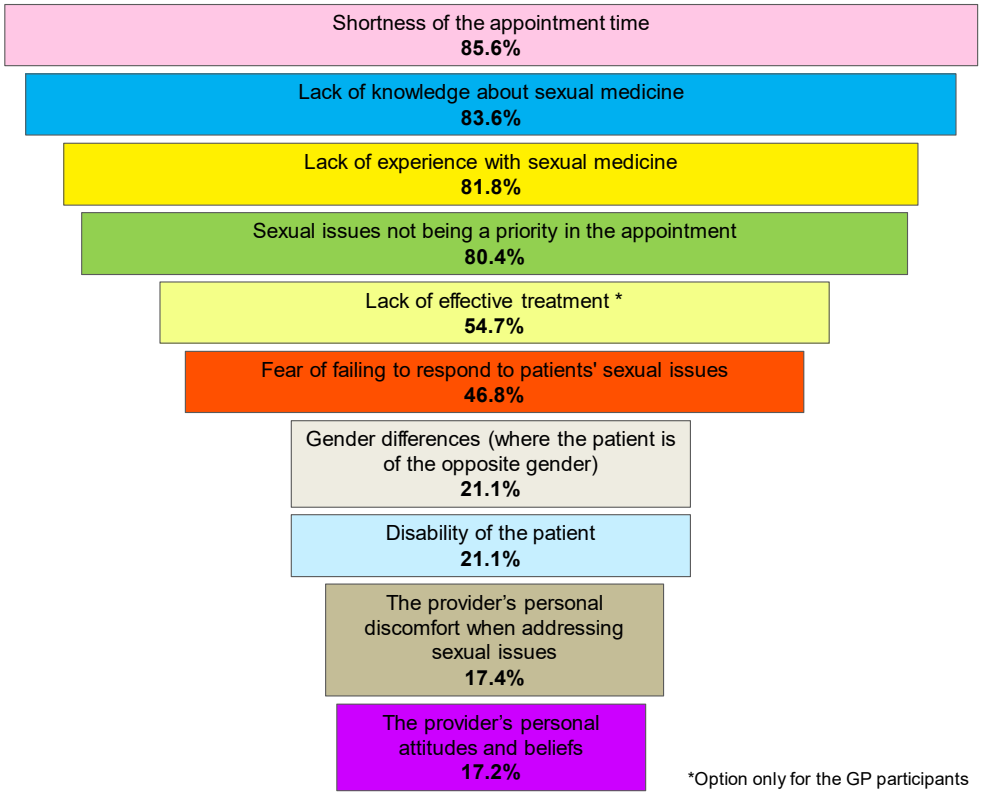


Figure 9. General practitioners' self-reported barriers to bringing up sexual issues with their patients.

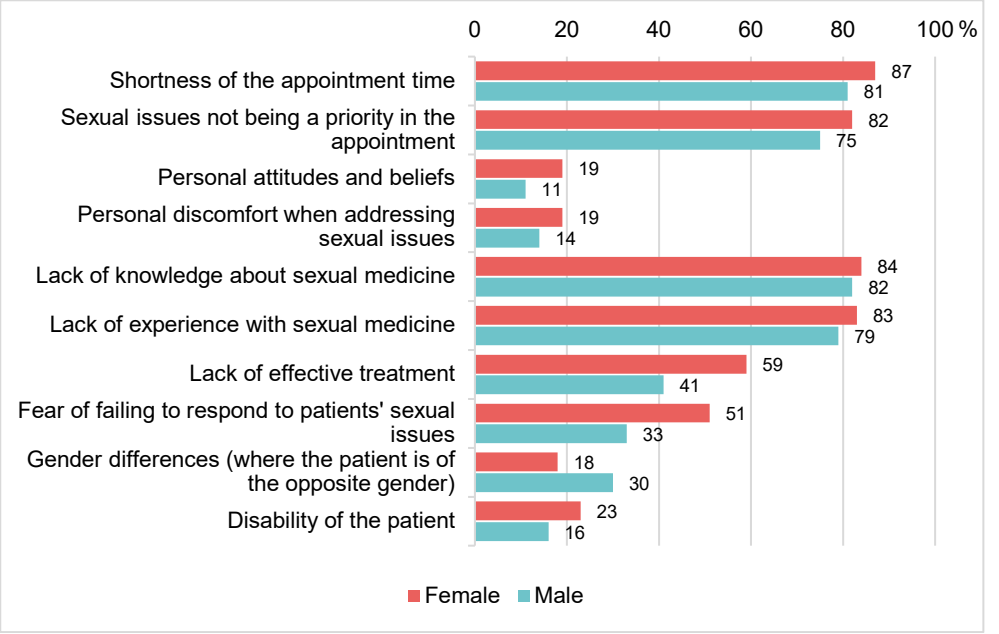


Figure 10. General practitioners' self-reported barriers by gender to bringing up sexual issues with their patients.

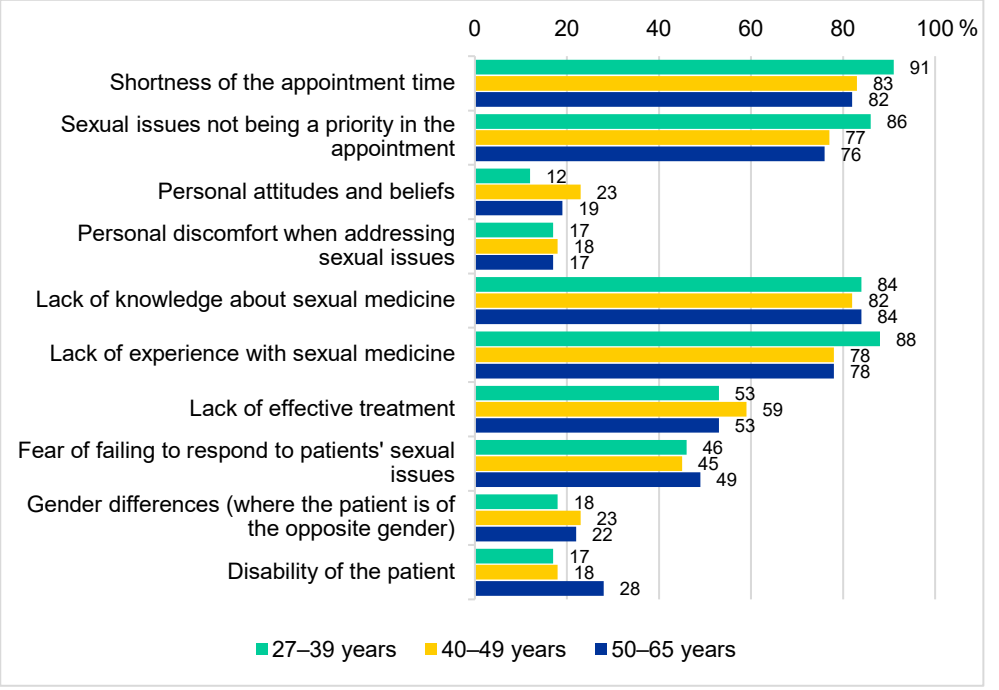


Figure 11. General practitioners' self-reported barriers by age to bringing up sexual issues with their patients.

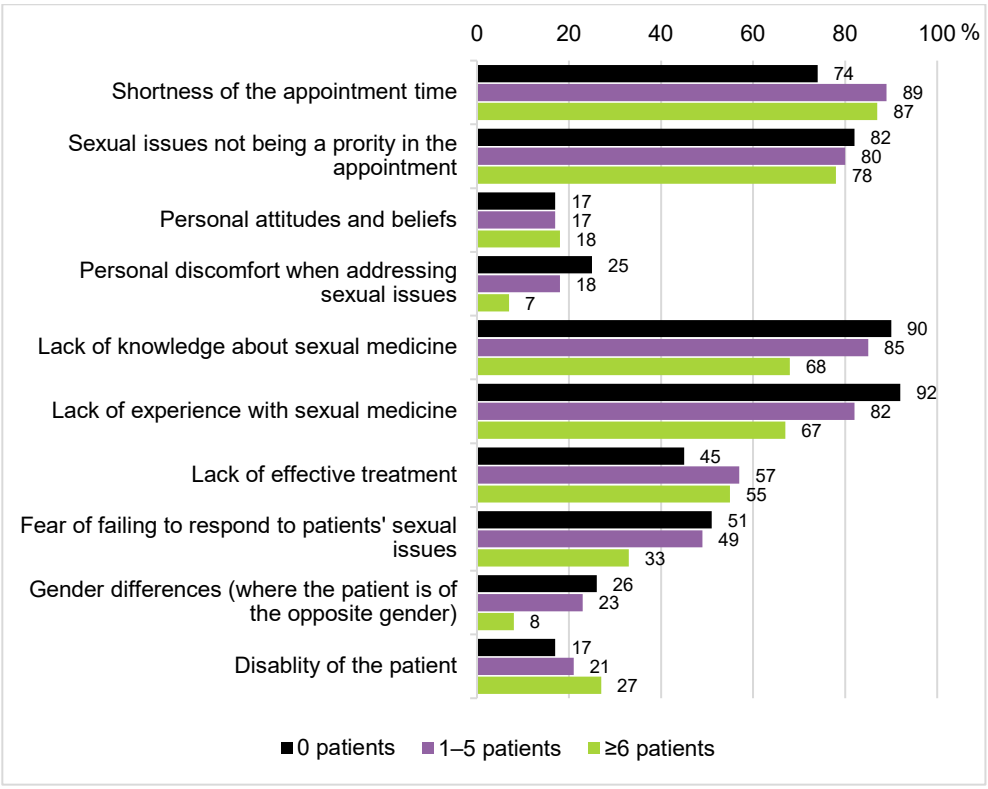


Figure 12. General practitioners' self-reported barriers by number of patients with sexual issues per week to bringing up sexual issues with their patients.

Table 13. General practitioners' self-reported barriers to bringing up sexual issues during appointments (comparisons with gender, age, and number of patients with sexual issues per week).

	Shortness of the appointment time		Sexual issues not being a priority in the appointment		Personal attitudes and beliefs		Personal discomfort when addressing sexual issues		Lack of knowledge about sexual medicine		Lack of experience with sexual medicine		Lack of effective treatment		Fear of failing to respond to patients' sexual issues		Gender differences (where the patient is of the opposite gender)		Disability of the patient	
Entire group	**Much or very much 85.6% (n=344/397)**		**Much or very much 80.4% (n=323/389)**		**Much or very much 17.2% (n=69/387)**		**Much or very much 17.4% (n=70/396)**		**Much or very much 83.6% (n=336/391)**		**Much or very much 81.8% (n=329/396)**		**Much or very much 54.7% (n=220/374)**		**Much or very much 46.8% (n=188/389)**		**Much or very much 21.1% (n=85/383)**		**Much or very much 21.1% (n=85/375)**	
	aOR	95%CI	aOR	95%CI	aOR	95%CI	aOR	95%CI	aOR	95%CI	aOR	95%CI	aOR	95%CI	aOR	95%CI	aOR	95%CI	OR	95%CI
Gender	p = 0.110		p= 0.091		p= 0.059		p = 0.150		p = 0.167		p = 0.068		p < 0.001		p < 0.001		p = 0.034		p = 0.161	
women versus men	1.68	0.89–3.19	1.67	0.92–3.01	1.96	0.97–3.95	1.61	0.84–3.06	1.60	0.82–3.09	1.76	0.96–3.23	2.32	1.43–3.76	2.36	1.45–3.85	0.56	0.33–0.96	1.55	0.84–2.86
Age	p = 0.139		p = 0.095		p = 0.044		p = 0.823		p = 0.986		p = 0.043		p = 0.428		p = 0.917		p = 0.457		p = 0.041	
40–49 versus 27–39	0.52	0.24–1.14	0.58	0.29–1.18	2.33	1.18–4.60	1.18	0.61–2.29	0.95	0.46–1.96	0.51	0.25–1.04	1.42	0.83–2.42	0.99	0.59–1.65	1.48	0.80–2.77	1.04	0.54–2.00
50–65 versus 27–39	0.50	0.24–1.03	0.49	0.25–0.94	1.87	0.96–3.63	0.97	0.52–1.80	1.02	0.50–2.05	0.43	0.22–0.85	1.08	0.66–1.77	1.09	0.67–1.76	1.26	0.70–2.26	1.93	1.09–3.43
40–49 versus 50–65	1.06	0.53–2.12	1.19	0.63–2.28	1.25	0.67–2.32	1.22	0.63–2.37	0.94	0.45–1.97	1.19	0.62–2.28	1.31	0.76–2.26	0.91	0.54–1.53	1.18	0.64–2.16	0.54	0.29–0.99
Patients with sexual issues per week	p = 0.035		p = 0.375		p = 1.000		p = 0.018		p < 0.001		p < 0.001		p = 0.768		p = 0.026		p = 0.047		p = 0.520	
0 versus 1–5	0.41	0.21–0.80	1.18	0.57–2.45	1.01	0.51–2.02	1.56	0.84–2.87	2.01	0.75–5.36	3.01	1.14–7.96	0.86	0.49–1.52	1.21	0.71–2.07	1.20	0.66–2.19	0.80	0.40–1.58
0 versus ≥ 6	0.58	0.23–1.48	1.84	0.74–4.57	1.01	0.41–2.52	5.27	1.66–16.72	6.69	2.26–19.77	8.21	2.77–24.33	1.04	0.49–2.19	2.58	1.24–5.36	3.73	1.29–10.80	0.61	0.26–1.43
1–5 versus ≥ 6	1.41	0.60–3.34	1.55	0.76–3.19	1.00	0.47–2.12	3.39	1.16–9.89	3.33	1.68–6.63	2.73	1.40–5.31	1.20	0.66–2.20	2.13	1.16–3.91	3.10	1.17–8.18	0.76	0.39–1.48

The responses "cannot say" omitted from the analyses.
aOR higher than 1 indicates higher barriers (two categories: much or very much versus some or not at all) to bringing up sexual issues during appointments.
aOR less than 1 indicates lower barriers to bringing up sexual issues during appointments.
aOR = adjusted odds ratio; multivariable logistic regression.
CI = confidence interval.

For the medical students, the four most important barriers were practically the same as those of the GPs (**Figure 13**). For the midwifery students, lack of time was not in the top four, which were lack of experience with sexual medicine, fear of failing to respond to a patient's sexual issues, lack of knowledge of sexual medicine, and sexual issues not being a priority in the patient's treatment at the moment (**Figure 14**). The comparisons between the medical and midwifery students' barriers are illustrated in **Table 14**. The age of the student was statistically significant only concerning the lack of experience; the older the student, the less the lack of experience was a barrier (aOR 0.92, 95% CI 0.87–0.98, p=0.006). The sub-analysis of medical students showed that the female students were more likely to report the fear of failing to respond to patients' sexual issues as a barrier (aOR 3.03, 95% CI 1.71–5.38, p<0.001), whereas the male students were more likely to report sexual issues not being a priority at the moment as a barrier (aOR 2.63, 95% CI 1.23–5.63, p=0.013). The comparisons between the medical students' genders in the medical students' sub-analysis are illustrated in **Figure 15**.

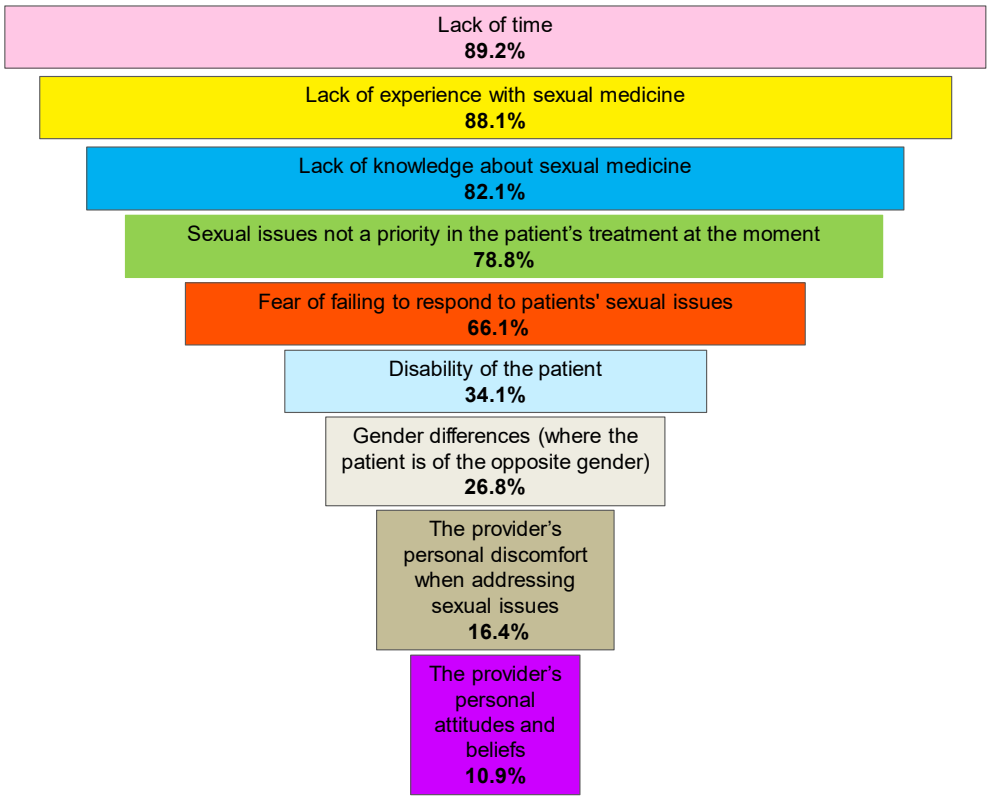


Figure 13. Medical students' self-reported barriers to bringing up sexual issues with their patients.

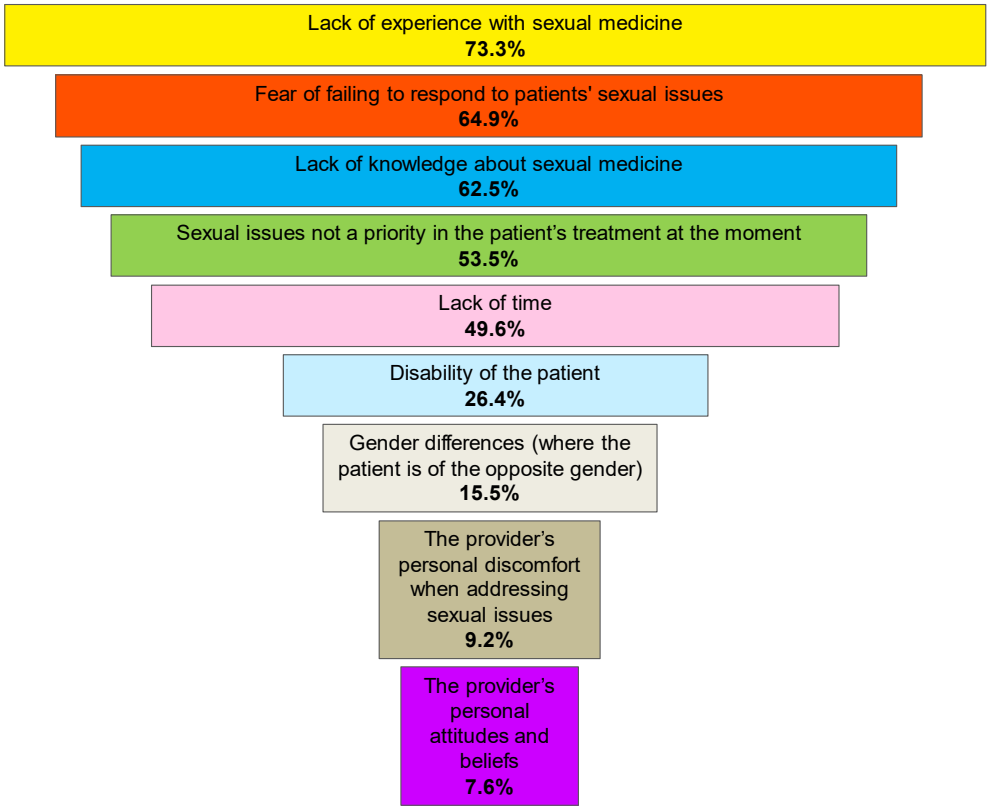


Figure 14. Midwifery students' self-reported barriers to bringing up sexual issues with their patients.

Table 14. The comparisons between the medical and midwifery students' self-reported barriers to bringing up sexual issues with their patients.

	Medical student N=233	Midwifery student N=131			
	Much or very much	Much or very much	aOR	95%CI	*P*
Lack of time	89.2% (n=207/232)	49.6% (n=61/123)	8.42	4.88–14.52	< 0.001
Sexual issues not a priority in the patient's treatment at the moment	78.8% (n=178/226)	53.5% (n=68/127)	3.28	2.04–5.28	< 0.001
The provider's personal attitudes and beliefs	10.9% (n=25/229)	7.6% (n=10/131)	1.47	0.68–3.18	0.321
The provider's personal discomfort when addressing sexual issues	16.4% (n=38/232)	9.2% (n=12/131)	1.93	0.97–3.84	0.061
Lack of knowledge of sexual medicine	82.1% (n=184/224)	62.5% (n=80/128)	2.81	1.71–4.62	< 0.001
Lack of experience with sexual medicine	88.1% (n=200/227)	73.3% (n=96/131)	2.81	1.59–4.94	< 0.001
Fear of failing to respond to the patient's sexual issues	66.1% (n=148/224)	64.9% (n=85/131)	1.07	0.68–1.68	0.787
Gender differences (where the patient is of the opposite gender)	26.8% (n=62/231)	15.5% (n=20/129)	1.99	1.13–3.48	0.016
Disability of the patient	34.1% (n=71/208)	26.4% (n=33/125)	1.44	0.88–2.35	0.145

aOR (age adjusted logistic regression) higher than 1 indicates higher barriers for medical students (two categories: much or very much versus some or not at all; the responses "cannot say" omitted from the analyses) to bringing up sexual issues with patients.
aOR = adjusted odds ratio
CI = confidence interval

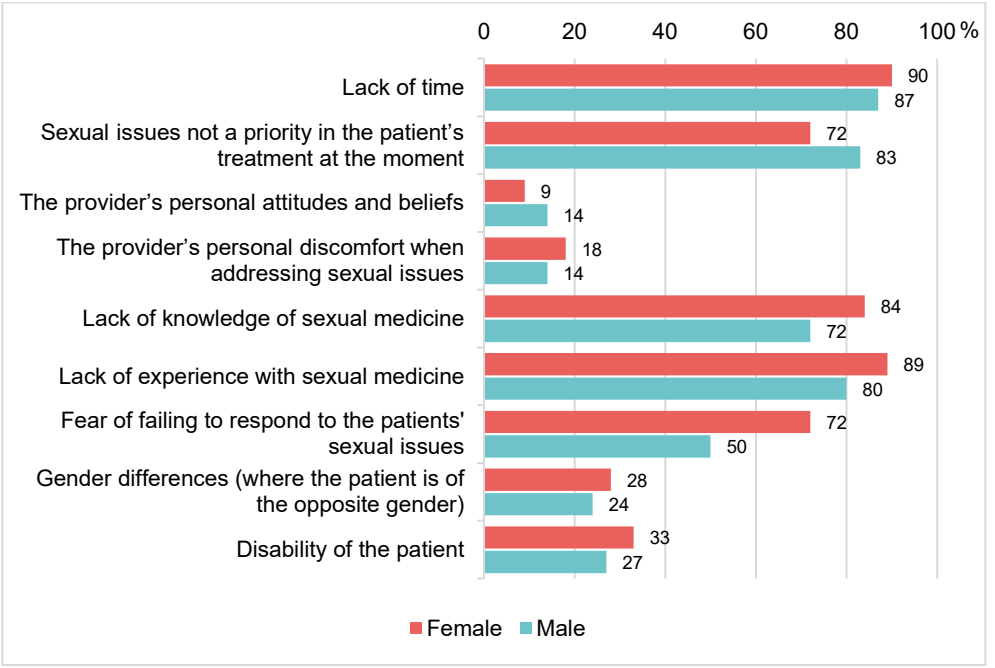


Figure 15. Comparisons between the medical students' gender, in the medical students' sub-analysis, in regard to barriers to bringing up sexual issues with patients.

5.2 General practitioners' competence in sexual issues regarding patients with chronic diseases or other health conditions

5.2.1 Frequency of inquiring about sexual problems from various patient groups

In general, when taking a general history, 16.2% of the GPs asked about sexual problems during appointments. Compared to the GPs in the 27–39 age group, the GPs in the 40–49 (aOR 2.23, 95% CI 1.04–4.77, p=0.039) and 50–65 (aOR 3.29, 95% CI 1.62–6.68, p=0.001) age groups were more likely to inquire about sexual problems. No differences between the GPs' genders emerged. Regarding patients with chronic diseases or other conditions, the GPs most often inquired about sexual problems from urologic, family planning, gynecologic, and menopause/andropause patients, whereas they were unlikely to inquire about these problems from patients with an immigrant background or a substance abuse history (**Table 15**). The female GPs inquired about sexual problems more frequently from gynecologic patients and less frequently from urologic and neurologic patients (**Figure 16**, **Table 15**) than the male GPs.

Table 15. General practitioners' self-reported frequency of inquiring about sexual problems among various patient groups.

	Patients with cardiovascular diseases		Patients with neurological diseases		Patients with endocrine diseases		Gynecologic patients		Urologic patients		Menopause/ Andropause patients		Family planning patients		Patients with mental illnesses		Patients with substance abuse issues		Patients with an immigrant background	
	Always or usually 10.1%		Always or usually 9.7%		Always or usually 13.2%		Always or usually 48.3%		Always or usually 50.0%		Always or usually 45.7%		Always or usually 55.9%		Always or usually 21.0%		Always or usually 3.8%		Always or usually 1.9%	
Entire group	(n=387/402)		(n=381/402)		(n=371/402)		(n=379/402)		(n=384/402)		(n=383/402)		(n=338/402)		(n=381/402)		(n=369/402)		(n=319/402)	
	aOR	95% CI	aOR	95% CI	aOR	95% CI	aOR	95% CI	aOR	95% CI	aOR	95% CI	aOR	95%CI	aOR	95%CI	aOR	95%CI	aOR	95%CI
Gender	p = 0.078		p = 0.005		p = 0.053		p = 0.033		p = 0.020		p = 0.699		p = 0.951		p = 0.236		p = 0.144		p = 0.525	
women versus men	0.52	0.26–1.08	0.35	0.17–0.72	0.52	0.27–1.01	1.77	1.05–2.99	0.56	0.35–0.91	1.10	0.67–1.81	0.98	0.57–1.70	0.71	0.40–1.25	0.44	0.15–1.32	0.56	0.09–3.35
Age	p = 0.051		p = 0.009		p = 0.089		p = 0.626		p = 0.245		p = 0.166		p = 0.900		p = 0.086		p = 0.092		p = 0.274	
40-49 versus 27-39	2.87	1.11–7.44	4.63	1.45–14.82	1.94	0.84–4.47	0.76	0.43–1.33	0.68	0.40–1.16	0.59	0.34–1.02	0.90	0.50–1.61	1.17	0.65–2.13	5.23	0.57–47.73	1.17	0.07–19.33
50–65 versus 27–39	2.89	1.16–7.19	5.68	1.87–17.23	2.36	1.09–5.11	0.92	0.55–1.52	1.05	0.65–1.70	0.82	0.50–1.35	0.90	0.53–1.51	0.58	0.31–1.08	9.43	1.17–75.73	4.53	0.48–42.56
40–49 versus 50–65	1.00	0.46–2.13	0.82	0.38–1.77	0.82	0.40–1.70	0.83	0.47–1.45	0.65	0.38–1.11	0.72	0.41–1.24	1.00	0.56–1.79	2.02	1.06–3.87	0.56	0.16–1.88	0.26	0.03–2.43
Patients with sexual issues per week	p = 0.367		p = 0.237		p = 0.045		p < 0.001		p < 0.001		p < 0.001		p < 0.001		p = 0.089		p = 0.950		p = 0.467	
0 versus 1–5	0.78	0.30–1.99	0.81	0.38–1.77	0.46	0.17–1.23	0.35	0.19–0.64	0.57	0.33–1.00	0.42	0.23–0.76	0.40	0.21–0.74	0.56	0.26–1.21	1.14	0.30–4.41	N/A	N/A
0 versus ≥ 6	0.45	0.14–1.45	0.40	0.31–2.12	0.23	0.07–0.74	0.07	0.03–0.16	0.18	0.08–0.39	0.09	0.04–0.20	0.10	0.40–0.24	0.36	0.14–0.89	0.90	0.14–5.81	N/A	N/A
1–5 versus ≥ 6	0.59	0.24–1.42	0.49	0.20–1.23	0.51	0.23–1.13	0.19	0.09–0.39	0.31	0.16–0.59	0.21	0.11–0.42	0.25	0.12–0.51	0.64	0.33–1.23	0.79	0.16–3.92	0.32	0.05–1.95

P-values are over the groups.
aOR higher than 1 indicates higher frequency of inquiring sexual problems (two categories: "always" or "usually" versus "sometimes" or "never").
aOR less than 1 indicates lower frequency of inquiring sexual problems.
N-values indicate replies to response options "always, usually, sometimes, never" (in the analyses responses "cannot say" were omitted).
aOR = adjusted odds ratio; multivariable logistic regression
CI = confidence interval.
N/A=non available, due to zero frequency in category "always" or "usually" in 0-group.

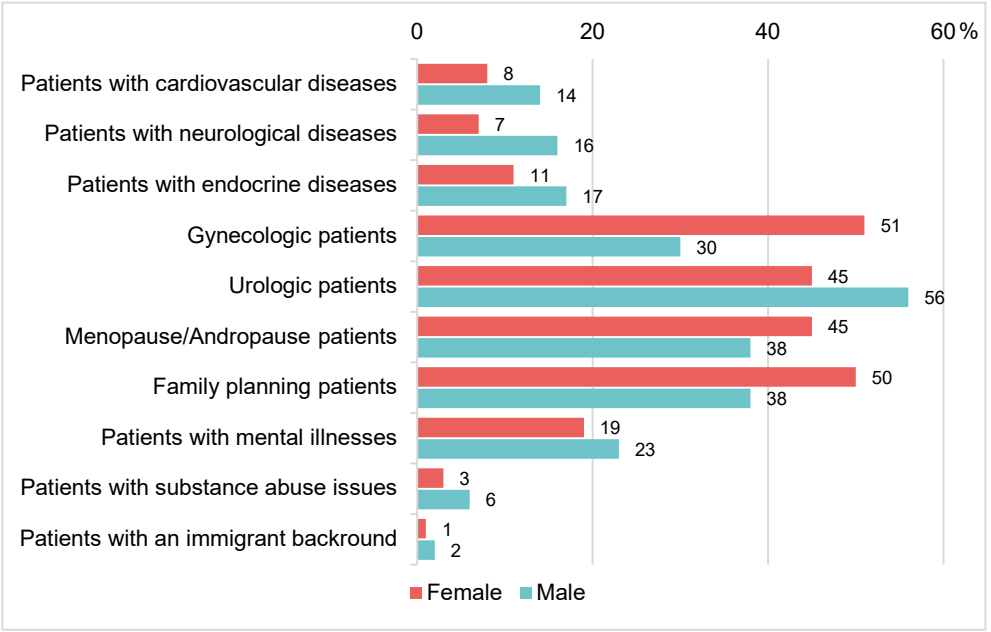


Figure 16. General practitioners' frequency of inquiring about sexual problems among various patient groups by gender.

As regards the different age groups, compared to the 27–39 age group, GPs in the 40–49 and 50–65 age groups were more likely to inquire about sexual problems from cardiovascular and neurologic patients. In addition, compared to the 27–39 age group, GPs in the 50–65 age group were more likely to inquire about problems from patients with endocrine diseases and patients with substance abuse histories. Furthermore, compared to the 50–65 age group, GPs in the 40–49 age group were more likely to inquire about problems from patients with mental illnesses (**Figure 17**, **Table 15**).

Regarding the number of patients with sexual issues per week, the variation is illustrated in **Figure 18**. The more often the GPs discussed sexual issues in general, the more likely they were to inquire about sexual problems from gynecologic (p=0.001), menopause/andropause (p<0.001), and family planning (p<0.001) patients. Other subgroup differences are described in **Table 15**.

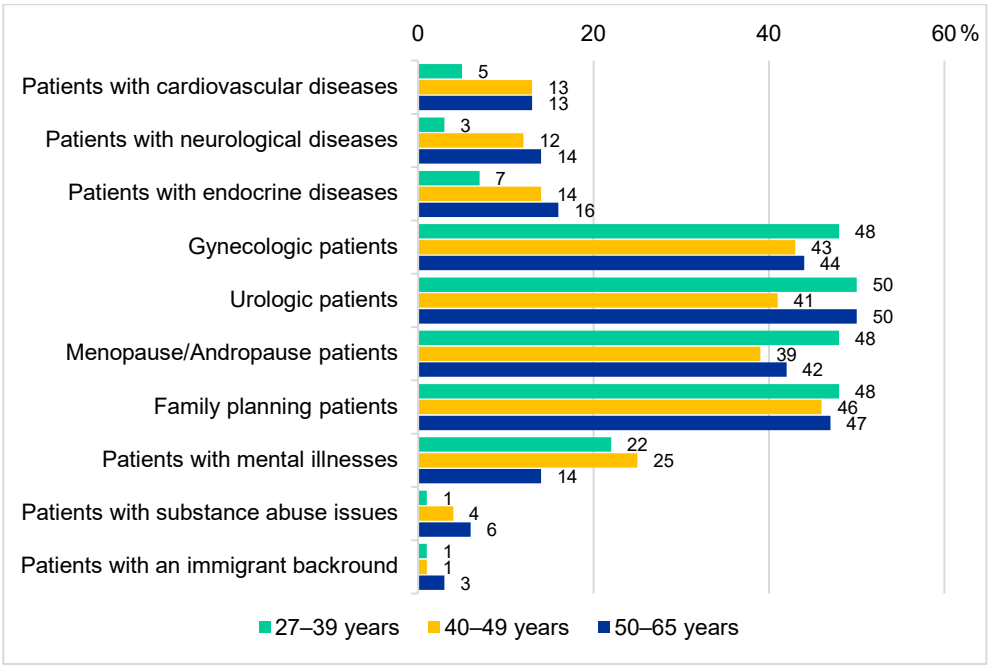


Figure 17. General practitioners' frequency of inquiring about sexual problems among various patient groups by age.

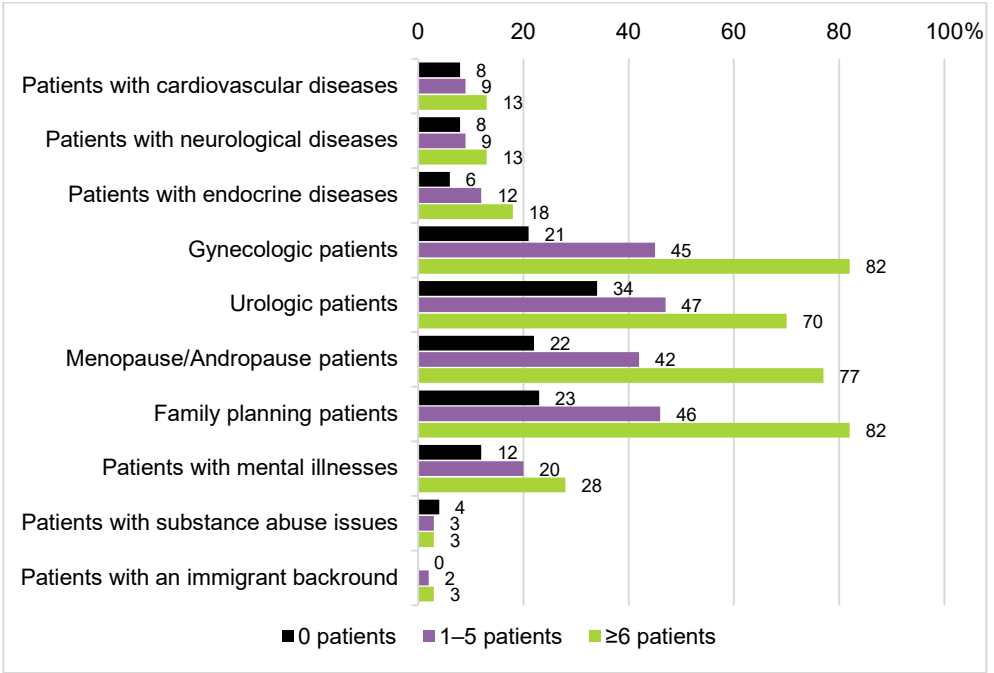


Figure 18. General practitioners' frequency of inquiring about sexual problems among various patient groups by number of patients with sexual issues per week.

5.2.2 Knowledge of medications inducing sexual problems

The medications GPs most often reported to induce sexual problems were antidepressants, antiandrogens, and hormonal contraception. In contrast, medications for hypercholesterolemia and diabetes were rarely considered to induce sexual problems (**Table 16**). The differences between the GPs' genders are illustrated in **Figure 19**. The female GPs were more likely than the male GPs to consider hormonal contraception and less likely to consider prostate medication as inducing sexual problems (**Table 16**). The differences between the age groups are illustrated in **Figure 20**. Compared to the 27–39 age group, the older age groups were more likely to consider medications for hypertension and less likely to consider antiandrogens to induce sexual problems. In addition, compared to the 27–39 age group, the GPs in the 40–49 age group were more likely to report medications for diabetes inducing sexual problems and the GPs in the 50–65 age group to report medications for arrhythmia inducing sexual problems. Furthermore, the GPs in the 50–65 age group were less likely to consider systemic cortisone and menopausal hormone treatment to induce sexual problems than either the 27–39 or 40–49 age groups (**Table 16**). Regarding discussions of sexual issues, the differences between the groups are illustrated in **Figure 21**. No differences emerged between the GPs in regard to various numbers of patients with sexual issues (**Table 16**).

Table 16. General practitioners' opinions on whether medication induces sexual problems.

	Medication:																					
	Hypertension		Arrhythmia		Hyper-cholesterolemia		Diabetes		Systemic cortisone		Prostate		Antiandrogens		Hormonal contraception		Menopausal hormone treatment		Antidepressants	
Amount of replies in each option	n=299		n=183		n=22		n=92		n=108		n=268		n=316		n=314		n=102		n=393	
	aOR	95%CI	aOR	95%CI	aOR	95%CI	aOR	95%CI	aOR	95%CI	aOR	95%CI	aOR	95%CI	aOR	95%CI	aOR	95%CI	aOR	95%CI
Gender	p = 0.302		p = 0.382		p = 0.051		p = 0.426		p = 0.881		p = 0.017		p = 0.623		p < 0.001		p = 0.296		p = 0.356	
women versus men	1.31	0.78–2.21	0.81	0.51–1.29	0.40	0.16–1.00	0.80	0.47–1.38	1.04	0.62–1.75	0.53	0.32–0.90	0.87	0.49–1.54	3.04	1.81–5.08	0.76	0.45–1.26	0.37	0.05–3.06
Age	p = 0.001		p = 0.095		p = 0.397		p = 0.046		p = 0.059		p = 0.765		p = 0.010		p = 0.137		p = 0.009		p = 0.109	
40–49 versus 27–39	2.05	1.16–3.61	1.46	0.88–2.40	2.03	0.69–5.93	2.07	1.13–3.79	1.01	0.59–1.73	0.82	0.49–1.40	0.42	0.22–0.79	0.54	0.29–1.01	0.77	0.44–1.32	N/A	N/A
50–65 versus 27–39	2.62	1.52–4.52	1.65	1.03–2.64	1.24	0.40–3.80	1.78	0.99–3.18	0.55	0.32–0.95	0.90	0.55–1.47	0.42	0.23–0.78	0.65	0.36–1.18	0.42	0.24–0.73	0.10	0.01–0.85
40–49 versus 50–65	0.78	0.42–1.46	0.88	0.54–1.46	1.64	0.58–4.62	1.16	0.66–2.05	1.82	1.02–3.25	0.92	0.54–1.56	0.98	0.56–1.74	0.83	0.46–1.50	1.84	1.00–3.39	N/A	N/A
Patients with sexual issues per week	p = 0.564		p = 0.480		p = 0.413		p = 0.151		p = 0.316		p = 0.463		p = 0.396		p = 0.292		p = 0.636		p = 0.504	
0 versus 1–5	0.75	0.42–1.33	0.73	0.43–1.22	0.69	0.19–2.48	0.57	0.29–1.12	1.42	0.81–2.47	1.08	0.63–1.87	0.70	0.39–1.27	1.32	0.70–2.50	0.74	0.40–1.39	2.03	0.24–17.54
0 versus ≥ 6	0.70	0.32–1.56	0.76	0.38–1.53	0.38	0.08–1.72	0.44	0.19–1.04	1.76	0.81–3.86	0.73	0.34–1.54	0.60	0.26–1.39	0.73	0.28–1.89	0.75	0.33–1.69	4.19	0.35–50.07
1–5 versus ≥ 6	0.94	0.45–1.85	1.05	0.59–1.86	0.55	0.18–1.66	0.78	0.41–1.49	1.25	0.64–2.43	0.67	0.36–1.26	0.85	0.41–1.77	0.55	0.24–1.25	1.00	0.53–1.92	2.06	0.38–11.14

Instructions on questionnaire: "choose of multiple options possible".
The higher amount of replies indicated the medication to induce more side effects.
P-values are over the groups.
aOR higher than 1 indicates that medicine induces more sexual problems.
aOR less than 1 indicates that medicine induces less sexual problems.
aOR = adjusted odds ratio; multivariable logistic regression.
CI = confidence interval.
N/A=non available, due to zero frequency in category "no reply" in age group 40-49 years.

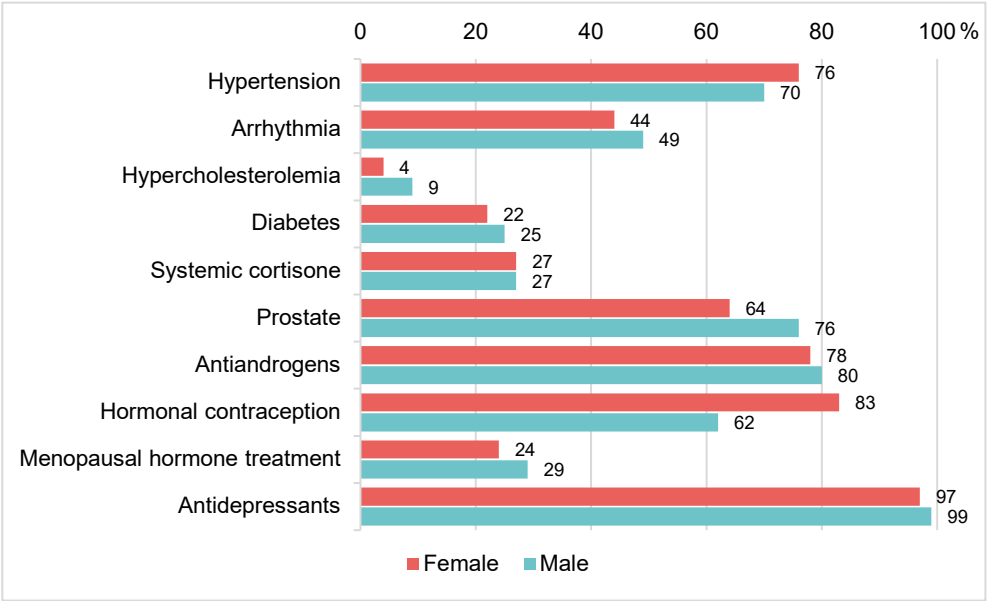


Figure 19. General practitioners' opinions by gender on whether medication induces sexual problems.

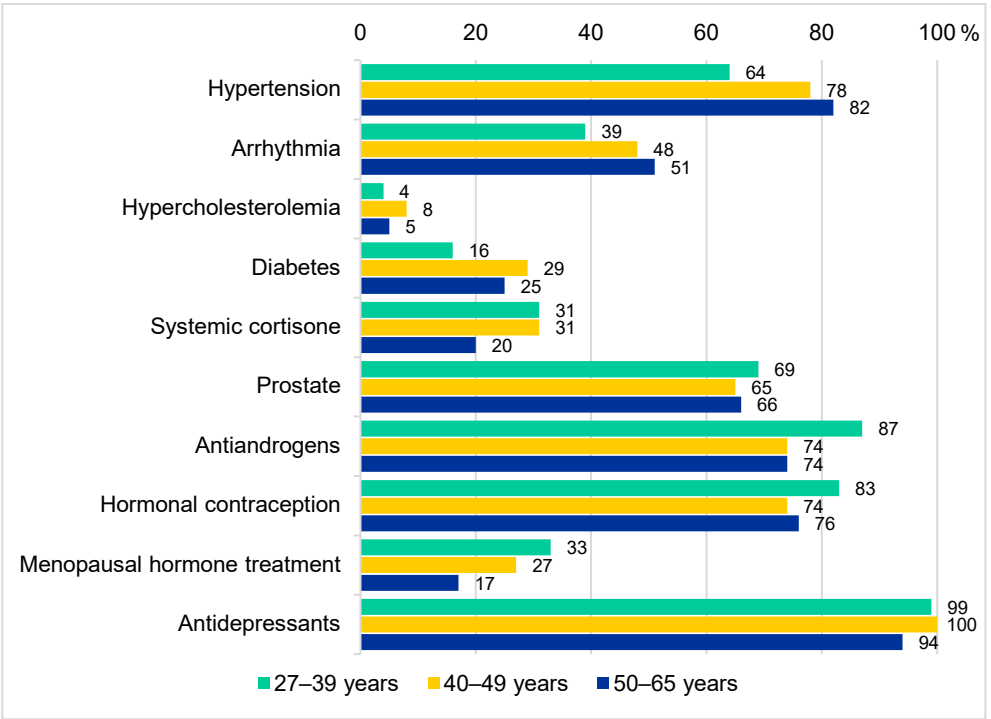


Figure 20. General practitioners' opinions by age on whether medication induces sexual problems.

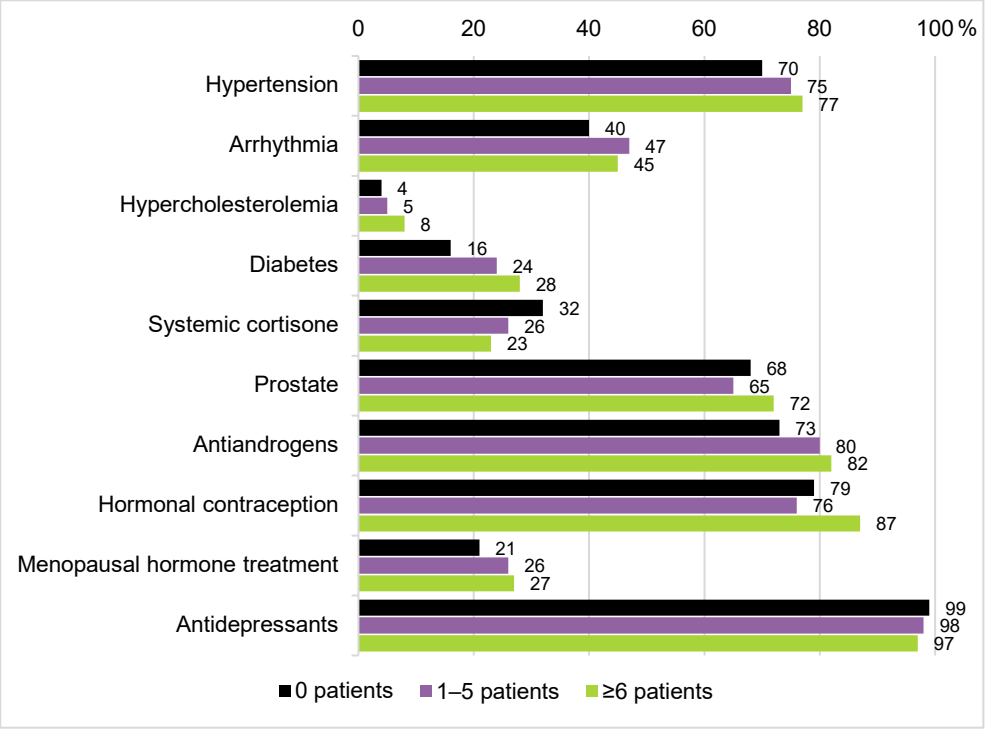


Figure 21. General practitioners' opinions by number of patients with sexual issues per week on whether medication induces sexual problems.

5.2.3 Awareness of sexual problems being side effects of medications and the frequency of inquiring about such issues

Of the GPs, 66.9% considered sexual problems to often be side effects of medications prescribed for other conditions. No differences between the GPs' genders or age groups emerged. The GPs dealing sexual issues with 1–5 patients per week were more likely to consider sexual problems to be side effects of medications prescribed for other pathologies than those dealing these issues with ≥6 patients per week (aOR 1.97, 95% CI 1.06–3.69, p=0.033).

After prescribing medications for chronic diseases, of all the GPs, 1.0% (n=4) always, 16.9% (n=68) usually, 68.7% (n=276) seldom, and 13.4% (n=54) never followed up on whether the medications caused side effects in sexual functions. The fewer the patients with whom the GPs dealt sexual issues per week, the less frequently the GPs inquired in follow-up appointments about possible side effects impacting sexual function after prescribing medications (0 versus 1–5 aOR 0.42, 95% CI 0.24–0.72, p=0.002; 0 versus ≥6 aOR 0.20, 95% CI 0.10–0.42, p<0.0001; 1–5 versus ≥6 aOR 0.48, 95% CI 0.27–0.88, p=0.017). There were no differences

between the genders or age groups. When medications were found to induce sexual problems as a side effect, 88.1% of the GPs reported changing the medications; there were no differences between genders, age groups, or the numbers of patients with sexual issues dealt per week.

5.3 Knowledge of sexual medicine among medical students and midwifery students

5.3.1 Knowledge of factors associated with sexuality

The data concerning students' knowledge of factors associated with sexuality are shown in **Table 17**. Both the medical and midwifery students most often reported having insufficient knowledge of how to consider sexuality when attending patients with mental illnesses, how to encounter victims of domestic violence/sexual abuse, and how multiculturalism affects sexuality. Compared to the midwifery students, the medical students were more likely to report insufficient knowledge of the basics of human sexual development, the basics of sexual evolution and expressions of sexuality across the lifespan, the basics of aging and sexuality, the basics of how multiculturalism affects sexuality, and gender diversity (e.g., transgender people). Neither the students' age nor the medical students' gender showed an association.

Table 17. Medical and midwifery students' self-reported knowledge of factors associated with sexuality.

	Medical student N=233	Midwifery student N=131			
	Disagree or totally disagree	Disagree or totally disagree	aOR	95%CI	P
I know the basics of human sexual development	32.8% (n=75/229)	9.2% (n=12/131)	4.90	2.54–9.46	p < 0.001
I know the basics of sexual evolution and expression of sexuality across the lifespan	42.3% (n=96/227)	14.0% (n=18/129)	4.52	2.57–7.94	p < 0.001
I know the basics of aging and sexuality	41.2% (n=94/228)	12.2% (n=16/131)	5.03	2.80–9.04	p < 0.001
I know how to consider sexuality when taking care of patients with mental illnesses	69.3% (n=158/228)	62.9% (n=78/124)	1.34	0.84–2.12	p = 0.216
I know the basics of how multiculturalism affects sexuality	85.6% (n=190/222)	53.9% (n=70/130)	5.09	3.06–8.47	p < 0.001
I know how to encounter victims of domestic violence/sexual abuse	57.9% (n=124/214)	56.3% (n=67/119)	1.08	0.69–1.70	p = 0.740
My knowledge of sexual orientation (e.g., hetero- and homosexuality) is adequate	21.2% (n=48/226)	14.8% (n=19/128)	1.55	0.86–2.77	p = 0.142
My knowledge of gender diversity (e.g., transgender people) is adequate	45.1% (n=102/226)	25.0% (n=32/128)	2.48	1.54–4.01	p < 0.001

In all comparisons, the medical students were compared to the midwifery students.
aOR higher than 1 indicates higher insufficiency of knowledge (two categories: agree or totally agree versus disagree or totally disagree) for the medical students.
aORs were adjusted for age
aOR = adjusted odds ratio; multivariable logistic regression ("cannot say" responses were omitted from analyses)
CI = confidence interval

5.3.2 Knowledge of evaluating and treating patients with sexual problems

As regards knowledge of evaluating and treating various sexual problems, the medical students self-reported insufficient knowledge in all the areas assessed except the basics of erectile dysfunction and its treatment (**Table 18**). The self-reported knowledge among the midwifery students was also insufficient, except concerning the basics of sexual pleasure and treating lack of it. The medical students were more likely than the midwifery students to report insufficient knowledge of the basics of sexual pleasure and treating lack of it, the basics of decreased libido and the basics of its treatment, how to treat sexual problems due to relationship problems, and how to treat sexual problems due to chronic diseases. In contrast, compared to the midwifery students, the medical students reported less often insufficient knowledge of the basics of erectile dysfunction and its treatment. The students' age showed no association.

The sub-analysis concerning the medical students found that the female students were more likely to report insufficient knowledge of the basics of erectile dysfunction and its treatment (aOR 1.97, 95% CI; 1.04–3.75, p=0.038) and how to treat sexual problems due to chronic diseases (aOR 2.24, 95% CI 1.12–4.48, p=0.022) than the male students. Conversely, the male students were more likely to report insufficient knowledge of how to treat sexual problems due to relationship problems (aOR 2.24, 95% CI 1.06–4.73, p=0.035).

Table 18. Medical and midwifery students' self-reported knowledge of evaluating and treating patients with sexual problems.

	Medical student N=233	Midwifery student N=131			
	Disagree or totally disagree	Disagree or totally disagree	aOR	95%CI	P
I know the basics of sexual pleasure and treating lack of it	65.8% (n=148/225)	34.4% (n=45/131)	3.66	2.32–5.76	p < 0.001
I know the basics of decreased libido and the basics of its treatment	75.8% (n=175/231)	58.9% (n=76/129)	2.18	1.37–3.46	p = 0.001
I know the diagnostics and treatment of arousal problems	93.4% (n=212/227)	92.9% (n=118/127)	1.08	0.46–2.56	p = 0.859
I know the diagnostics and treatment of orgasm disorders	92.1% (n=210/228)	91.4% (n=117/128)	1.10	0.50–2.41	p = 0.812
I know the diagnostics and treatment of dyspareunia	67.5% (n=156/231)	66.9% (n=87/130)	1.02	0.64–1.61	p = 0.946
I know the basics of erectile dysfunction and the basics of its treatment	26.8% (n=61/228)	72.3% (n=94/130)	0.14	0.08–0.22	p < 0.001
I know how to treat sexual problems due to relationship problems	80.7% (n=180/223)	58.9% (n=76/129)	2.96	1.82–4.81	p < 0.001
I know how to treat sexual problems due to chronic diseases	82.2% (n=185/225)	71.1% (n=91/128)	1.89	1.13–3.17	p = 0.015

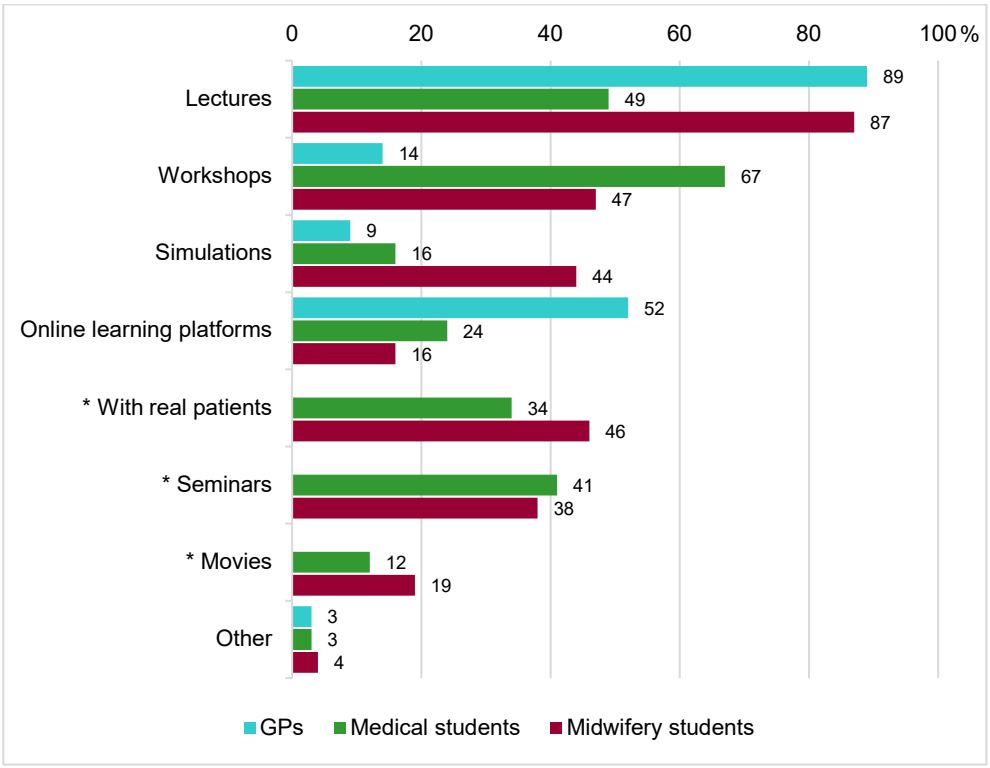
In all comparisons, the medical students were compared to the midwifery students.
aOR (age adjusted logistic regression) higher than 1 indicates higher insufficiency of knowledge (two categories: agree or totally agree versus disagree or totally disagree) for the medical students.
aOR less than 1 indicates higher insufficiency of knowledge for the midwifery students.
aORs were adjusted for age
aOR = adjusted odds ratio; multivariable logistic regression ("cannot say" responses were omitted from analyses)
CI = confidence interval

5.4 Need for education on sexual medicine

Of the GPs, 87.8% reported needing more education on sexual medicine. The female GPs were more likely to report a need for continuing education than the male GPs (p=0.009, aOR 2.34, 95% CI 1.24–4.42). In addition, the GPs dealing with 1–5 patients with sexual issues per week were more likely to report a need for education than those dealing with 0 patients with sexual issues per week (p=0.023, aOR 2.22, 95% CI 1.12–4.43). The responses regarding the various forms of education are illustrated in **Figure 22**. The most preferred form of education was lectures (n=316), followed by online learning platforms (n=183).

As regards the students, a higher percentage of the midwifery students (96.2%) reported an interest in sexual medicine education than of the medical students (55.4%) (aOR 13.89, 95% CI 5.32–35.71, p<0.001). Overall, 76.5% of the medical students and 45.0% of the midwifery students reported receiving too little sexual medicine education (aOR 7.30, 95% CI 4.00–13.33, p<0.001). Among the medical students, a higher percentage of female than male students reported receiving too little education (85.5% versus 62.8%; aOR 3.43, 95% CI 1.78–6.61, p<0.001). The medical students (20.6%) were more likely than the midwifery students (6.1%) to suggest that the education should be voluntary (aOR 3.97, 95% CI 1.81–8.68, p<0.001). The medical students preferred sexual medicine education to be integrated into other subjects (58.1%) more often than the midwifery students (27.2%) (aOR 3.47, 95% CI 2.05–5.85, p<0.001). The responses as concerns forms of education are illustrated in **Figure 22**. The most frequently selected form of education for the medical students was workshops (n=155), followed by lectures (n=115). The midwifery students also preferred these forms, but in the opposite order (lectures n=114 and workshops n=62).

The students' educational fields of interest, with detailed results, are illustrated in **Figure 23**. All the fields drew at least some level of interest from both student groups. The top three fields of interest among the medical students (n=233) were the reasons for and treatment of dyspareunia (n=117, 50.2%), the reasons for and treatment of erectile dysfunction (n=106, 45.5%), and lack of sexual desire and its treatments (n=100, 42.9%). Among the midwifery students (n=131), the top three fields were the effects of infertility and its treatments on sexuality (n=63, 48.1%), the reasons for and treatment of dyspareunia (n=60, 45.8%), and the lack of sexual desire and its treatment (n=55, 42.0%).



* Option only for the students

Figure 22. Responses stating preferences for forms of sexual medicine education from general practitioners, medical students, and midwifery students.

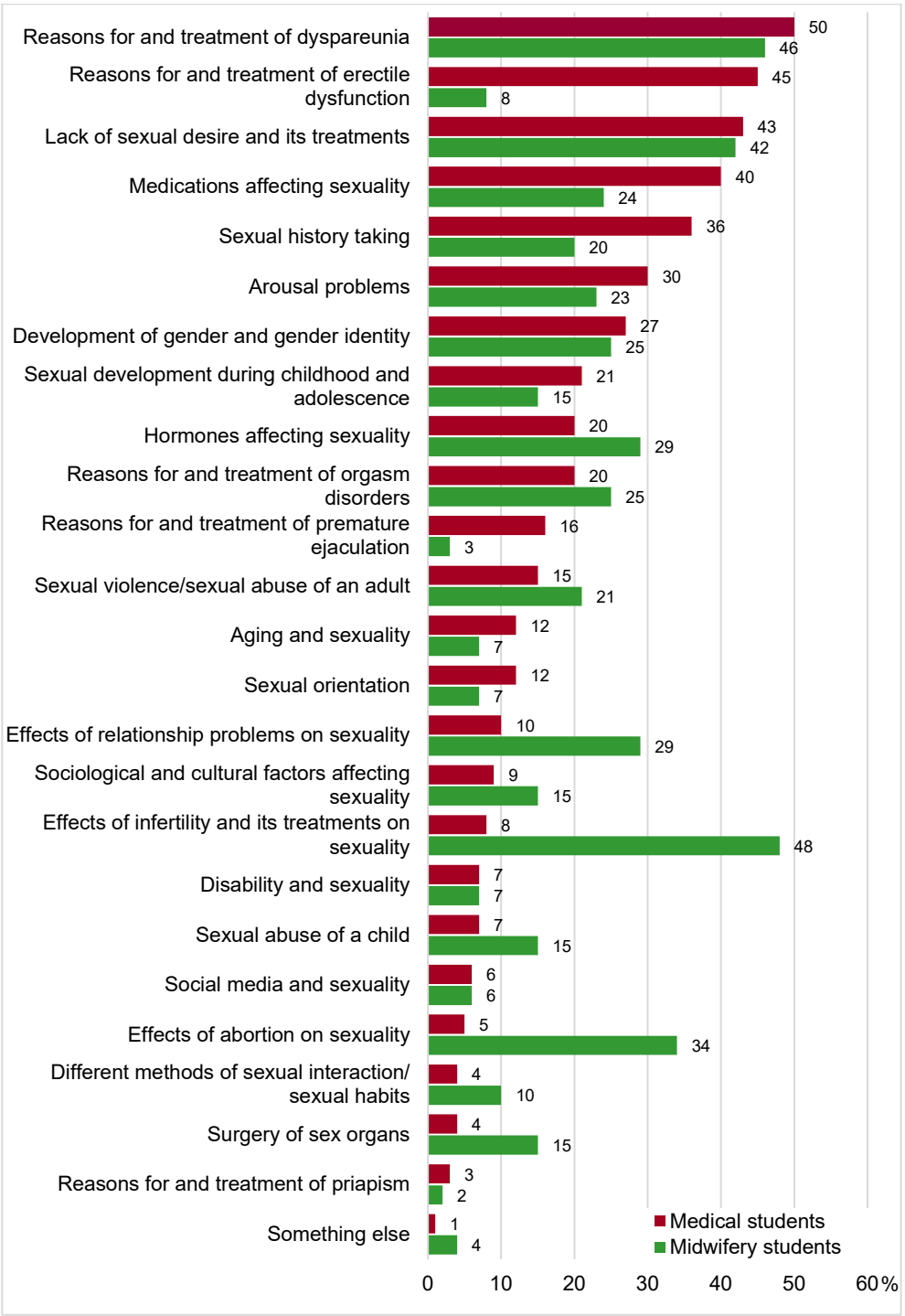


Figure 23. Medical and midwifery students' educational fields of interest regarding sexual medicine education.

6 Discussion

The present study is the first to examine the self-reported competence of Finnish GPs, medical students, and midwifery students in discussing and treating sexual issues, barriers related to bringing up the topic, and the need for education in sexual medicine. Sexual problems are relatively common, and therefore healthcare personnel regularly encounter patients whose sexual health should be considered. Additionally, unmet sexual problems often result in increased public health expenses, as patients utilize several appointments to have various symptoms treated. According to the present study, both the GPs and the medical and midwifery students reported a high competence in discussing patients' sexual issues. However, several barriers to bringing up sexual issues in appointments and patient encounters emerged among the GPs and students. Regarding the GPs' habit of inquiring about sexual problems during appointments, the younger GPs were less likely to do so. Even though GPs considered sexual problems to be common side effects of medications, they rarely asked about these side effects during follow-up appointments. The need for more sexual medicine education was also observed: a majority of the GPs expressed a need for continuing education about sexual medicine. Similarly, the medical students, in particular, as well as the midwifery students indicated a need for increased sexual medicine education. Several educational fields of interest were raised in both student groups.

6.1 Methodological considerations and study limitations

As described in the Introduction, this thesis was a part of the SexMEdu–Study involving three data sources. The inclusion and exclusion criteria of the study participants are described in **Figure 7**, the flowchart of the study. Importantly, the results in this thesis are self-reported by the participants. The participants' actual competence was not objectively evaluated and measured. As concerns the student participants in this thesis, only final-year students were included to ensure they had knowledge of the entire curriculum. Some previous studies have used the same inclusion criteria (Abdulghani et al., 2016; Ariffin et al., 2015; Walker & Davis, 2014), while others have included students from lower grades (Komlenac et al.,

2019; Shindel et al., 2010; Turner et al., 2016; Ören et al., 2018). As regards the sample size, it was considered that the most practical and modern way to gather data from a large sample like that considered in this thesis was to use a web-based questionnaire (Bryman, 2012; Caetano & Noel, 2018; Wyatt, 2000). Unlike in interviews, it is not possible to help participants fill out a self-completion questionnaire if they experience challenges in answering or understanding the questions, which can be seen as a limitation of this method (Bryman, 2012). People currently frequently receive web-based questionnaires, which makes it challenging to attract enough attention from the target groups for them to participate. As can be seen from the web-program used in this thesis, more people began to answer the questions than those who actually returned the questionnaire. As the questionnaires used in this thesis were programmed not to proceed if answers were missing, all returned questionnaires were fully completed. This programming choice could, however, also be a limitation, as some of the target group might have desired to choose which questions they wanted to answer, potentially explaining why some started to answer the questions on the questionnaire but did not fully finish it and, therefore, did not return it.

As a limitation, it should also be noted that the question about the participants' gender on the questionnaire was limited to male/female options, whereas it has become the custom to include the "other" option in surveys. However, the questionnaire used in this thesis was originally utilized in Portugal in 2011 with GPs and in Germany in 2014–2015 with medical students, and the fact that both studies only included only the male/female gender options dictated the options in the questionnaires used in this thesis. Furthermore, the questionnaires used in this thesis were available only in Finnish, and as Swedish is also an official language in Finland, this language restriction could have affected Swedish-speaking GPs' and students' eagerness to participate.

The questionnaire used in **Studies I** and **II** was the same as that used with GPs in the Portuguese SEXOS study (Alarcão et al., 2012; Ribeiro et al., 2014) with only a few modifications. Furthermore, the questionnaire was piloted with 11 Finnish physicians, and their feedback was utilized to make amendments to the content. The questionnaire used in **Studies III** and **IV** was a modification of the questionnaire from the Portuguese SEXOS study (Alarcão et al., 2012; Ribeiro et al., 2014) and the questionnaire used in a German study (Turner et al., 2016) with medical students. This questionnaire was piloted with 27 Finnish medical students and in this case, too, their feedback was utilized to make amendments to the content. The strengths and limitations of the studies are shown in more detail in **Figure 24**.

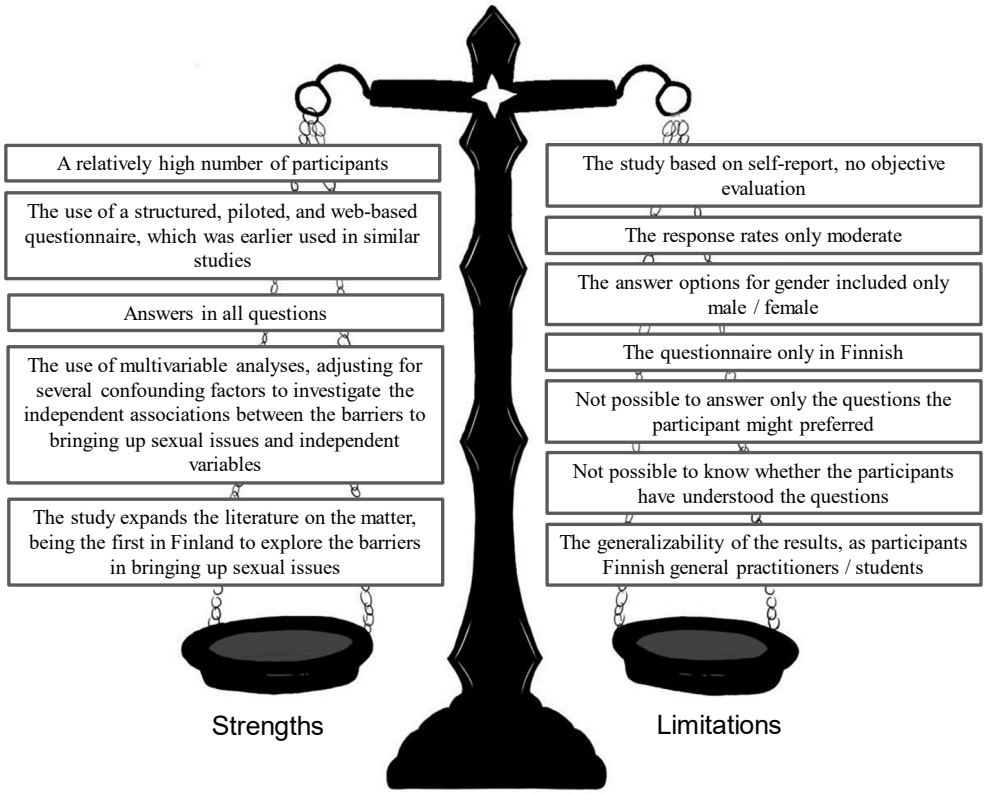


Figure 24. Strengths and limitations of the studies.

6.2 Implications of the results

6.2.1 The barriers to bringing up sexual problems

In this thesis, the frequency of GPs asking about sexual problems during appointments in general was 16.2%, which can be considered low. Few previous studies with GPs have evaluated the frequency with which they ask about sexual problems in general, and the results have been similar (Alarcão et al., 2012; Byrne et al., 2010). Most often, the GPs in this thesis asked urologic, family planning, gynecologic, and menopause/andropause patients about sexual problems. Additionally, in part of the present thesis, GPs' awareness of chronic diseases and their medications inducing sexual problems as side effects was assessed. The medications considered by the GPs to most often induce sexual problems were antidepressants, antiandrogens, and hormonal contraception. Although more than half of the GPs considered sexual problems to be side effects of medications,

surprisingly, these side effects were rarely evaluated during follow-up visits. There could be several barriers to bringing up such issues.

The most important barrier to bringing up sexual issues was cited as lack of time in both the GP and medical student groups. Lack of time was also found to be a barrier in previous studies with GPs (Abdolrasulnia et al., 2010; Alarcão et al., 2012; Byrne et al., 2010; Gott et al., 2004; Humphery & Nazareth, 2001; Zannoni et al., 2021), physicians of other specialties (Abdolrasulnia et al., 2010; Leyva-Moral et al., 2020; Schloegl et al., 2017), midwives (Bradfield et al., 2022; Mohseni et al., 2023; Percat & Elmerstig, 2017), midwifery students (Walker & Davis, 2014; Ören et al., 2018), nurses (Barnhoorn et al., 2020; Leyva-Moral et al., 2020; Magnan & Reynolds, 2006), and nursing students (Gerbild et al., 2021; Güdül Öz et al., 2022; Seid et al., 2022). This finding confirmed that dealing with sexual issues is time-consuming and, further, that sufficient time should be allocated to patient encounters. Looking at the issue from the perspective of patients, this group, too, has reported not discussing sexual issues with healthcare professionals due to lack of time in healthcare consultations (de Pierrepont et al., 2022). Lack of time was not named among the top three barriers by the midwifery students; nonetheless, half of the midwifery student participants recognized time as a barrier. In a Swedish qualitative study (Percat & Elmerstig, 2017), midwives described time as a very important factor, as a good relationship with trust must be developed between patient and midwife before issues related to sexuality are raised.

Lack of knowledge about and experience with sexual medicine were in the top three barriers cited by all the study groups. These have also found to be barriers in previous studies with GPs (Alarcão et al., 2012; Byrne et al., 2010; Gott et al., 2004; Humphery & Nazareth, 2001; Mills et al., 2015; Platano et al., 2007; Tsimtsiou et al., 2006), physicians of other specialties (Kristufkova et al., 2018; Leyva-Moral et al., 2020; Schloegl et al., 2017), medical students (Abdulghani et al., 2016; Ariffin et al., 2015; Komlenac et al., 2019; Shindel et al., 2010), midwifery students (Walker & Davis, 2014; Ören et al., 2018), midwives (Bradfield et al., 2022; Jackson & Fraser, 2009; Mohseni et al., 2023; Percat & Elmerstig, 2017), nursing students (Gerbild et al., 2021; Güdül Öz et al., 2022; Seid et al., 2022), and nurses (Barnhoorn et al., 2020; Leyva-Moral et al., 2020). Similarly, patients have reported the perception that a professional's lack of knowledge of or training in sexual health is a barrier to bringing up the topic (de Pierrepont et al., 2022). This is an important finding that emphasizes the fact that sexual medicine education should be increased in medical and midwifery education and, probably, in all healthcare education. Additionally important in improving the quality of education throughout the curricula is the finding that the majority of both the medical and midwifery students considered themselves unable to evaluate patients' sexual problems or determine the need to refer patients to specialists. For the sake of providing high-quality care to

patients, it is important to be able to evaluate patient satisfaction with the care provided. Therefore, this finding should be considered when developing the education offered in both medical and midwifery schools.

In this thesis, all groups reported as the fourth most important barrier that the sexual issue was not considered to be the priority in the patient's treatment at the moment. Similar results have been found in previous studies with GPs (Alarcão et al., 2012; Leyva-Moral et al., 2020), midwifery students (Ören et al., 2018), and nurses (Quinn et al., 2011). This barrier has also been identified from the patient perspective (de Pierrepont et al., 2022), further illustrating and promoting the importance of allocating sufficient time to patients.

In addition, fear of failing to respond to patients' sexual issues was named as an important barrier, particularly in the student groups. This could be interpreted as a lack of experience; however, this result was also prominent among female GPs, as slightly more than half of them considered fear of failing to respond to patients' sexual issues to be a barrier. Similar results have been found in previous studies. In a German study with 16 GPs, the fear of not being able to meet patient expectations was mentioned as a barrier to bringing up sexual issues with patients (Zannoni et al., 2021). In a UK study with 372 midwives, avoidance of harm was identified as a barrier, as some participants were worried about giving an inappropriate response to the patient and therefore making the patient's situation even worse (Jackson & Fraser, 2009). In addition, in a Swedish qualitative study with nine midwives, the participants reported fear of offending the patient and fear of making mistakes as barriers, especially when dealing with people who deviate from the norm (Percat & Elmerstig, 2017). Fear of failing to respond was also found in a Portuguese study with 50 GPs (Alarcão et al., 2012). Furthermore, concerns about increasing patients' anxiety and discomfort and fear of offending the patient were reported in an Irish study with 61 GPs (Byrne et al., 2010). It is noteworthy that patients have also reported the perception that healthcare professionals are uncomfortable discussing the subject as a barrier to bringing up the topic (de Pierrepont et al., 2022). Suspected embarrassment on both sides was also mentioned in the previously mentioned German study with GPs (Zannoni et al., 2021).

It is a matter of concern that one barrier to bringing up sexual issues has been reported as the perception that talking about sexuality is someone else's job or responsibility in previous studies with GPs (Byrne et al., 2010), nurses (Barnhoorn et al., 2020; Quinn et al., 2011), midwifery students (Ören et al., 2018), and nursing students (Güdül Öz et al., 2022; Güven & Çelik, 2021). In healthcare, some duties are considered the responsibilities of nurses or midwives. By law, moreover, only trained physicians are allowed to perform many tasks. However, talking about sexual health is the responsibility of every healthcare professional, just as it is also the responsibility of every parent, guardian, teacher, counselor, and therapist. Special

attention should be paid to the realization of sexual and reproductive health and rights, as these are, in many ways, the most vulnerable human rights.

This thesis found that providers' personal discomfort or personal attitudes and beliefs were not high barriers; nonetheless, these barriers have been reported in several previous studies (Abdolrasulnia et al., 2010; Abdulghani et al., 2016; Alarcão et al., 2012; Ariffin et al., 2015; Barnhoorn et al., 2020; Bradfield et al., 2022; Byrne et al., 2010; Gerbild et al., 2021; Güdül Öz et al., 2022; Güven & Çelik, 2021; Humphery & Nazareth, 2001; Leyva-Moral et al., 2020; Magnan & Reynolds, 2006; Mills et al., 2015; Quinn et al., 2011; Schloegl et al., 2017; Seid et al., 2022; Tsimtsiou et al., 2006; Zannoni et al., 2021; Ören et al., 2018). An important part of providing sexual education is the provider's sexual attitude reassessment (SAR) process. The objective of a SAR is to give sexuality educators or sexual health promoters an opportunity to explore their own attitudes, values, feelings, and beliefs regarding human sexuality and sexual behavior and how these impact their professional interactions (Areskoug-Josefsson & Lindroth, 2022; Zar, 2022). In many countries, including Finland, SAR is a requirement for certification as a sexuality educator or sexual health promoter (Areskoug-Josefsson & Lindroth, 2022).

6.2.2 Sexual medicine education

Sexual problems are fairly common, and therefore healthcare personnel meet patients with these issues regularly. In a Norwegian study, approximately 4.2% of the problems presented to GPs dealt with sexual issues, with the percentage of consultations varying between 1.6% and 10.9% (Vik & Brekke, 2017). However, not all patients with sexual problems contact their GP. In a Danish study (Paulsen et al., 2020) of 22,198 men, the overall prevalence of erectile dysfunction was 19.3%, of whom 31.8% had contacted a GP regarding the problem (Paulsen et al., 2020). Regarding women, a British study (Roos et al., 2012) showed that 37% of 1,194 patients of (uro)gynecological clinics had a sexual complaint; however, only 17% volunteered this information, while the remainder admitted it only on questioning.

A gender discordance was noted in the GP group considered in this thesis. The male GPs more often reported good or quite good competence in discussing sexual issues and treating male patients' sexual issues than the female GPs. Similarly, the female GPs more often reported good or quite good competence in discussing sexual issues with female patients than the male GPs; however, there were no gender differences in terms of their self-reported competence in treating female patients. Gender has been found to be a barrier in previous studies with GP participants (Abdolrasulnia et al., 2010; Alarcão et al., 2012; Burd et al., 2006; Byrne et al., 2010; Gott et al., 2004; Mills et al., 2015; Tsimtsiou et al., 2006), physicians of other

specialties (Leyva-Moral et al., 2020; Schloegl et al., 2017), medical students (Abdulghani et al., 2016), nurses (Barnhoorn et al., 2020; Leyva-Moral et al., 2020), and nursing students (Gerbild et al., 2021; Güdül Öz et al., 2022). A lack of knowledge of women's sexual problems was also found in the student groups, as the vast majority of the participants reported insufficient knowledge of the diagnostics and treatment of arousal problems and orgasm disorders, which are mainly associated with women. Competence in treating female sexual problems has also been reported as poor by obstetrician–gynecologists (Abdolrasulnia et al., 2010; Aromaa et al., 2023), whom one could assume would have better competence in the issue. One explanation for this finding could be that there are fewer effective treatments available for women than for men. Thus, there is a need not only to improve education in sexual medicine, but to conduct more research on women's sexual problems.

Although in this thesis, medical school was reported as an important source of sexual medicine education by the GPs, the majority of the participants found it insufficient or quite insufficient. Likewise, the majority of the medical students and almost half of the midwifery students reported receiving too little sexual medicine education during their studies. Similar results have been found in previous studies with physicians (Alarcão et al., 2012; Byrne et al., 2010; Gott et al., 2004; Humphery & Nazareth, 2001; Platano et al., 2007), midwives (Bradfield et al., 2022; Jackson & Fraser, 2009; Percat & Elmerstig, 2017), medical students (Abdulghani et al., 2016; Ariffin et al., 2015; Komlenac et al., 2019), and midwifery students (Walker & Davis, 2014; Ören et al., 2018).

The risk of sexual problems increases particularly with many chronic diseases and health conditions and/or their medications (Basson et al., 2010; Flotynska et al., 2019; Kouidrat et al., 2017; Rutte et al., 2015), emphasizing the importance of sexual medicine education in both medical and midwifery schools. In this thesis, the majority of both student groups reported having insufficient knowledge of how to treat sexual problems due to chronic diseases. Similar results have been found previously with midwifery (Ören et al., 2018) and nursing students (Seid et al., 2022). Integrating sexual medicine education into education in other subjects in both medical and midwifery schools can enable students to better understand how various diseases and their medications can affect sexual health. In addition, if sexual medicine education is integrated, bringing up sexual issues could become part of routine practice, similar to inquiring about a patient's eating, sleeping, and exercising habits. Indeed, in this thesis, the majority of the medical students preferred sexual medicine education to be integrated into other subjects. This kind of integration could be beneficial for both student groups.

Furthermore, discussing sexual issues with patients is often regarded as embarrassing (Alarcão et al., 2012; Ariffin et al., 2015; Barnhoorn et al., 2020;

Bradfield et al., 2022; Byrne et al., 2010; Gerbild et al., 2021; Güdül Öz et al., 2022; Güven & Çelik, 2021; Humphery & Nazareth, 2001; Leyva-Moral et al., 2020; Magnan & Reynolds, 2006; Seid et al., 2022; Schloegl et al., 2017; Zannoni et al., 2021; Ören et al., 2018); hence, students should be supported during their education by teaching them methods that make them feel comfortable while taking care of their patients' sexual health (Güven & Çelik, 2021). Integrated sexual medicine education could help to decrease the embarrassment and lower the threshold to bringing up the issue. Furthermore, undergoing a SAR should also be implemented in sexual medicine education to reduce embarrassment.

As regards patients with various health conditions, both student groups reported having insufficient knowledge of how to evaluate sexuality in mentally ill patients. Inquiring into mentally ill patients' sexual issues has been previously reported to be difficult even by mental health nurses (Quinn et al., 2011). Insufficient knowledge of how to encounter victims of domestic violence/sexual abuse was also reported by both student groups. Similar results have been previously reported by midwives (Jackson & Fraser, 2009). In this thesis, both student groups reported their knowledge of sexual orientation (e.g., hetero- and homosexuality) to be adequate; however, a Canadian study with midwives reported contradictory results, as midwives indicated that they needed more training and knowledge to be able to confidently care for sexual and gender minorities (Goldberg et al., 2023). Similarly, an Australian study with midwives (Bradfield et al., 2022), a US study with physicians (Burd et al., 2006), and a Spanish study with nurses and physicians (Leyva-Moral et al., 2020) showed that the patient's sexual orientation/gender diversity is a barrier to bringing up sexual issues.

In this thesis, a higher percentage of the midwifery students (96.2%) reported an interest in sexual medicine education than the medical students (55.4%). It is not surprising that midwifery students have an interest in sexual medicine education, as midwives receive a substantial amount of education regarding the female genital and reproductive systems and are experts on the sexual and reproductive health of women of all ages (Suomen Kätilöliitto [The Federation of Finnish midwives], 2023). In contrast, medical students graduate as licensed physicians, of whom only approximately 4.5% specialize in obstetrics and gynecology and approximately 1.0% in urology (Lääkäriliitto [The Finnish Medical Association], 2019), specialties with a presumed special interest in reproductive and sexual medicine. In this thesis, 76.5% of the medical students and 45.0% of the midwifery students reported receiving too little sexual medicine education. These were quite predictable results, as in Finland, the last two years of midwifery studies focus on gynecology and obstetrics, which are appropriate areas for the consideration of sexual issues. In contrast, medical studies consist of a large range of subjects; the gynecology and obstetrics course lasts only two months, and the urology course is even shorter.

In this thesis, the GPs wanted sexual medicine education to be delivered via lectures and OLPs, while the students preferred workshops and lectures. Lectures, in particular, are a practical way to teach a large group. A US study (Zamboni & Bezek, 2017) of 193 medical students found that the most popular method of receiving sexual education was lectures. The next most popular were a panel of patients and a panel of experts making presentations or hosting discussions and role-plays performed by experts in sexual health (Zamboni & Bezek, 2017). Sexual medicine education should not solely focus on increasing knowledge of sexual medicine, but also on improving the communication skills needed in conversations regarding sexual issues. This suggestion, among others, was also made by the European Sexual Medicine Network in 2021 as a means to improve sexual medicine education at undergraduate level (European Sexual Medicine Network, 2024). In the UK, a mix of techniques is used in the course on human sexuality, for example, desensitization, problem-solving, and reflection, enabling the students to achieve the learning outcomes (Dixon-Woods et al., 2002). Additionally, a variety of teaching and learning strategies is used: peer learning is combined with self-directed learning and small-group learning with whole class learning (Dixon-Woods et al., 2002). The students assessed the course as successful in reducing their anxieties about human sexuality and improving their confidence in developing appropriate skills (Dixon-Woods et al., 2002). According to a German study, medical students preferred multiple teaching methods for sexual education: lectures (78%), seminars without patient contact (49%), seminars with patient contact (48%), seminars with patient actors (48%), small-group work (36%), movies (24%), clinical internships (22%), and OLPs (16%) (Turner et al., 2016). All in all, there is no single right way to provide education, but providing several different approaches can enable the differing learning styles of students to be accommodated.

6.3 Future aspects

Sexual problems have a negative impact on quality of life. Such problems can be isolated for different physical, anatomical, and hormonal reasons as well as a consequence of different chronic diseases and their medications. Therefore, healthcare professionals daily meet patients who may be experiencing sexual problems. However, healthcare professionals infrequently bring up sexual issues with their patients. Sexual problems are mainly intimate issues, which is one factor hindering professionals from bringing up the subject. Knowledge of the common nature of sexual problems and permission to talk about the topic may motivate patients to bring up the issue with their medical professionals.

Currently, sexual medicine education is a small part of medical studies. Midwifery studies include more, but still an insufficient amount of, sexual medicine

education. As sexuality encompasses practically the whole healthcare field, sexual medicine education should be implemented throughout the curricula of healthcare students. **Figure 25** depicts the subjects in which sexual medicine should be taught during medical studies according to the results of a US study of 1,014 medical students (Warner et al., 2018). As regards midwifery education, **Figure 26** shows the subjects in which sexual medicine should be taught during midwifery studies according to the results of same study (Warner et al., 2018). The results of this thesis align with Warner et al.'s (2018) findings about the subjects in which sexual medicine should be taught. Additionally, in medical studies, the Pharmacology, Health promotion, Aged patients, and Oncology courses would benefit from including sexual medicine in the course and unit planning. Accordingly, in midwifery studies, the courses that would benefit from including sexual medicine in the course and unit planning are Pharmacotherapy I and II, Health promotion, Gerontological nursing, and Nursing of patients with special needs.

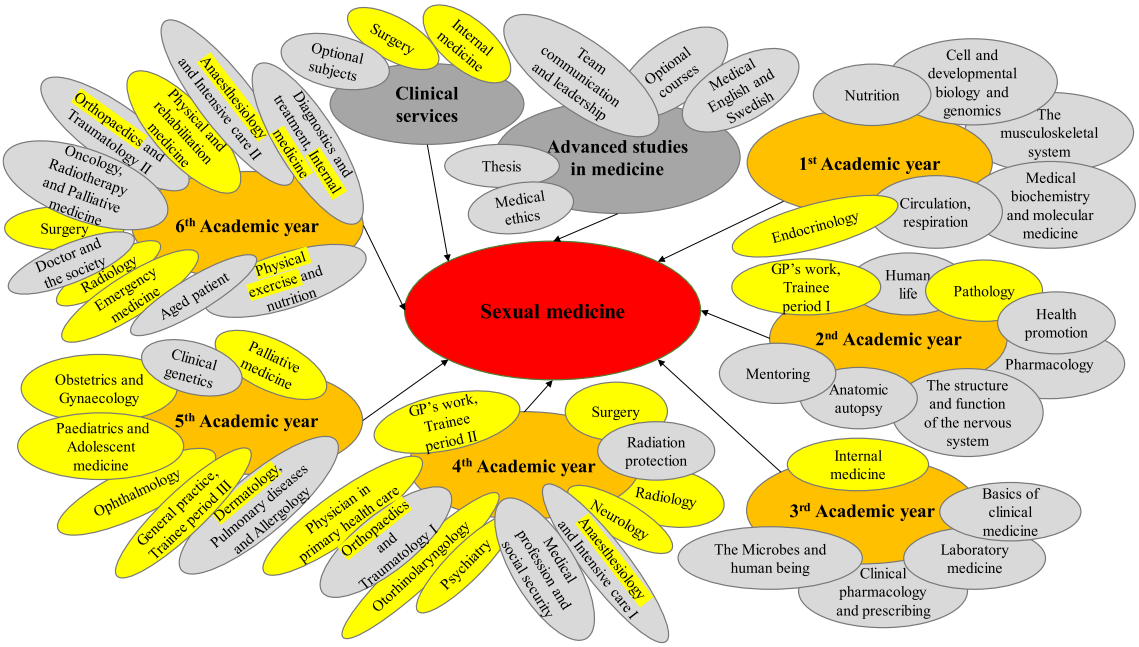


Figure 25. The subjects in which sexual medicine should be taught during medical studies.

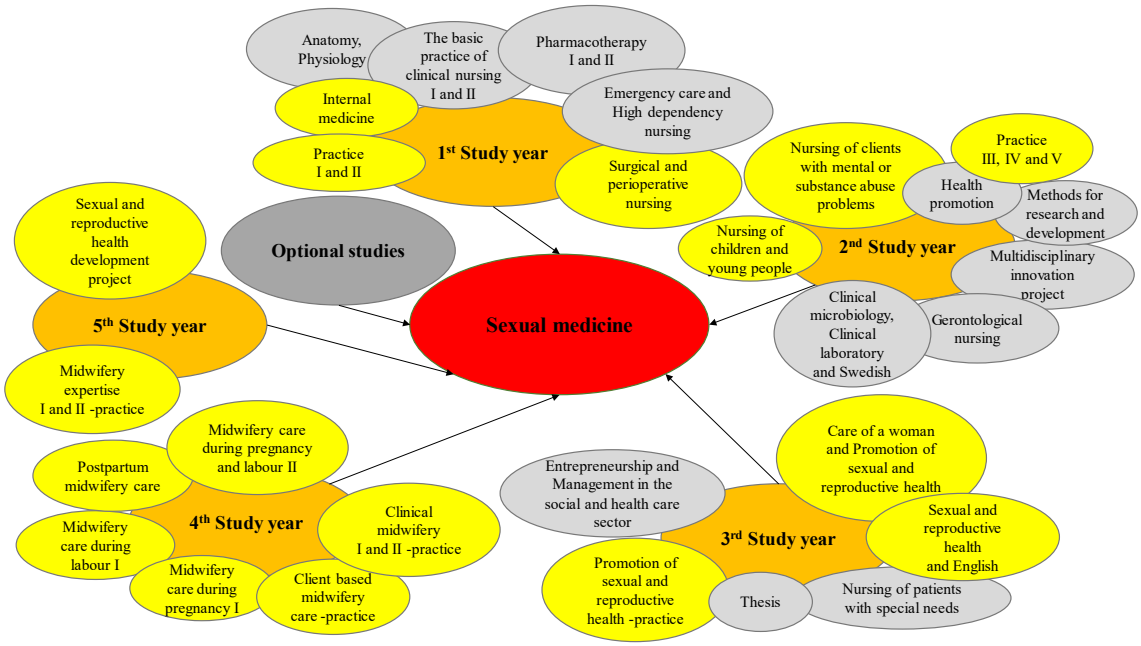


Figure 26. The subjects in which sexual medicine should be taught during midwifery studies.

By increasing the amount of sexual medicine education and implementing it throughout the curricula, healthcare professionals' awareness of the need to consider overall health of their patients would expand, and healthcare professionals would therefore be more capable of asking their patients about possible sexual issues. Future studies are mandatory to gain information about the level of knowledge in sexual medicine among physicians in other specialties, too. In addition, information about the level of knowledge in sexual medicine among other healthcare professionals, for example, nurses and physiotherapists, is needed.

Questions regarding the patient's sexual health should be a mandatory and routine part of general history-taking, especially in regard to patients with chronic diseases. One way to ensure this occurs could be to add a few questions regarding sexual issues to the patient's general history-taking procedure so they are routinely asked of every patient. When these questions are a part of routine screening, the healthcare professional would not need to ponder from whom or how to ask them. As has been shown (Leyva-Moral et al., 2020; Percat & Elmerstig, 2017), it can be difficult to start a conversation regarding sexual issues, particularly with people who deviate from the norm. Routine questions could include "Are you satisfied with your sexual health?" and "Is there anything you would like to discuss regarding this issue?"

It is also important to remember the SAR process, which all professionals providing sexuality education or promoting sexual health should undergo in order to ease the process of bringing up sexual issues.

The educational methods used in the teaching of sexual medicine should also be pondered. According to the present thesis, the students preferred workshops and lectures as educational methods, but other methods also resonated, as previous studies have also found. These findings should be contemplated when organizing sexual medicine education. Additionally, many countries lack sexual medicine textbooks in their own languages. In Finland, the first textbook in Finnish about sexuality was published in 2006, and the first textbook in Finnish about sexual medicine was published in 2020, with a second edition to be released in 2024. The 2020 book can be used and combined in the teaching of sexual medicine in medical schools, midwifery schools, and other social and healthcare schools. Additionally, it is widely used in the education of sexual counselors and therapists.

The results of the present thesis indicate that sexual medicine education is insufficient in both medical and midwifery education. However, the results are self-reported by final-year students; thus, it would be beneficial to consider looking more thoroughly into the curricula of both educational institutions. Similarly, as regards GPs' competence in meeting and treating patients with sexual issues, the results of the present thesis could be confirmed by other methods, such as observing GPs' actual competence during their appointments or presenting various patient cases with sexual issues to GPs and asking them to describe how they would handle such cases.

Additionally, it is important to evaluate teachers' ability to teach sexual medicine. In medical schools, the vast majority of teachers lack specialist pedagogical skills for sexual medicine; hence, the responsibility for teaching sexual medicine rests on the shoulders of the few teachers dedicated to the subject. In midwifery schools, many of the teachers are certified sexual counselors, which makes it easier for them to teach issues related to sexuality. However, the basic nursing education is typically given by teachers who, like medical school teachers, lack special training in teaching sexual medicine. One way to enhance sexual medicine education could be to train teachers without the specialist skills to teach sexual medicine as part of their teaching in various subjects. Furthermore, the coordination of sexual medicine education should be well-structured, particularly in medical schools. However, another potential option to make the teaching of sexual medicine more efficient is that sexual medicine is recognized as its own medical specialty. Hence, there would be nominated professors and teachers, and sufficient financial resources would be allocated to sexual medicine education.

It is important that patients are also made aware of the adverse effects of chronic diseases and related medications on sexual health so they can make informed decisions regarding their treatments. It is also crucial to implement targeted research

among patients to assess the forms and situations in which they would like to be asked about sexual issues. Such research would also generate important information on how to train future healthcare professionals on communication skills.

In Finland, there are no national clinical practice guidelines with recommendations intended to optimize patient care as regards the management and treatment of various sexual problems. In addition, the national strategy for sexual and reproductive health of the Finnish National Institute for Health and Welfare (Klemetti & Raussi-Lehto, 2016) expired in 2020, and presumably no update process has begun. The clinical practice guidelines and an update to the national strategy for sexual and reproductive health would obligate healthcare professionals to pay attention to the sexual issues of their patients, which would ensure that the fulfillment of sexual rights as part of human rights is respected nationally.

7 Conclusions

In the present thesis, all the results were self-reported by the participants. Competence in discussing sexual issues, barriers to bringing up sexual issues, and knowledge of and educational needs in sexual medicine were studied among Finnish GPs, medical students, and midwifery students.

The main conclusions were:

1. The GPs self-reported a good competence in discussing sexual issues with both male and female patients. However, their self-reported competence in treating male patients was higher than that in treating female patients. The four most important barriers to bringing up sexual issues were the shortness of the appointment, lack of knowledge of sexual medicine, lack of experience with sexual medicine, and sexual issues not being a priority in the appointment. The female GPs were more likely to consider the lack of effective treatment and fear of failing to respond to the patient's sexual issues as barriers to bringing up the subject, whereas the male GPs were more likely to consider gender differences (where the patient was of the opposite gender) to be a barrier.
2. The medical students and midwifery students self-reported a good competence in discussing sexual issues with patients. Nevertheless, the medical students were more likely to report an inability to bring up sexual issues easily with their patients. As regards the barriers, the most important for the medical students were lack of time, lack of experience with sexual medicine, lack of knowledge of sexual medicine, and sexual issues not being a priority. For the midwifery students, the most important barriers were lack of experience with sexual medicine, fear of failing to respond to patients' sexual issues, lack of knowledge of sexual medicine, and sexual issues not being a priority. In addition, the medical students were more likely than the midwifery students to report barriers in almost all the assessed factors.
3. The GPs most often inquired about sexual problems from urologic, family planning, gynecologic, and menopause/andropause patients, whereas they

were unlikely to inquire about these problems from patients with an immigrant background or substance abuse history. The medications most often reported by GPs to induce sexual problems were antidepressants, antiandrogens, and hormonal contraception, whereas medications for hypercholesterolemia and diabetes were rarely considered to induce such problems. Of all the GPs, more than half considered that sexual problems are often side effects of medications prescribed for other pathologies. Nevertheless, after prescribing medications for chronic diseases, the majority of the GPs self-reported that they seldom followed up on whether the medications had caused side effects in sexual functions. However, if medications showed that they induced sexual problems as a side effect, the majority of the GPs self-reported changing the medications.

4. The medical students and midwifery students most often reported insufficient knowledge of how to consider sexuality when caring for patients with mental illnesses, how to encounter victims of domestic violence/sexual abuse, and how multiculturalism affects sexuality. Furthermore, the medical students were more likely than the midwifery students to report having insufficient knowledge of the majority of the assessed factors. Concerning the evaluations and treatment of patients with sexual problems, the medical students self-reported insufficient knowledge in all the assessed areas except the basics of erectile dysfunction and its treatment. The self-reported knowledge of the midwifery students was also insufficient, except concerning the basics of sexual pleasure and treating lack of it.

5. The GPs perceived medical school to be an important source of education; however, the majority found it insufficient. Overall, the majority of the GPs reported the need for continuing sexual medicine education. Likewise, the majority of the medical students and approximately half the midwifery students reported receiving too little sexual medicine education.

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References

Abdolrasulnia, M., Shewchuk, R. M., Roepke, N., Granstaff, U. S., Dean, J., Foster, J. A., Goldstein, A. T., & Casebeer, L. (2010). Management of female sexual problems: perceived barriers, practice patterns, and confidence among primary care physicians and gynecologists. *The journal of sexual medicine*, 7(7), 2499–2508. https://doi.org/10.1111/j.1743-6109.2010.01857.x

Abdulghani, H. M., Haque, S., Irshad, M., Al-Zahrani, N., Al-Bedaie, E., Al-Fahad, L., Al-Eid, M., & Al-Mohaimeed, A. (2016). Students' perception and experience of intimate area examination and sexual history taking during undergraduate clinical skills training: A study from two Saudi medical colleges. *Medicine*, 95(30), e4400. https://doi.org/10.1097

Acharya, R. K., Panigrahi, S., Samani, M. J., & Choudhary, A. K. (2022). Prevalence and pattern of sexual dysfunction in male patients with alcohol dependence. *Addiction & health*, 14(3), 192–197. https://doi.org/10.34172/ahj.2022.1335

Agbemenu, K., Hannan, M., Kitutu, J., Terry, M. A., & Doswell, W. (2018). "Sex will make your fingers grow thin and then you die": The interplay of culture, myths, and taboos on African immigrant mothers' perceptions of reproductive health education with their daughters aged 10-14 years. *Journal of immigrant and minority health*, *20*(3), 697–704. https://doi.org/10.1007/s10903-017-0675-4

Agu, J., Lobo, R., Crawford, G., & Chigwada, B. (2016). Migrant sexual health help-seeking and experiences of stigmatization and discrimination in Perth, Western Australia: Exploring barriers and enablers. *International journal of environmental research and public health*, 13(5), 485. https://doi.org/10.3390/ijerph13050485

Alarcão, V., Ribeiro, S., Miranda, F. L., Carreira, M., Dias, T., Garcia e Costa, J., & Galvão-Teles, A. (2012). General practitioners' knowledge, attitudes, beliefs, and practices in the management of sexual dysfunction-results of the Portuguese SEXOS study. *The journal of sexual medicine*, 9(10), 2508–2515. https://doi.org/10.1111/j.1743-6109.2012.02870.x

Al-Elq A. H. (2010). Simulation-based medical teaching and learning. *Journal of family & community medicine*, 17(1), 35–40. https://doi.org/10.4103/1319-1683.68787

Almalki, D. M., Kotb, M. A., & Albarrak, A. M. (2023). Discussing sexuality with patients with neurological diseases: A survey among neurologists working in Saudi Arabia. *Frontiers in neurology*, 14, 1083864. https://doi.org/10.3389/fneur.2023.1083864

Al-Taj, M. A. & Al-Hadari, M. H. (2023). Prevalence and drivers of female genital mutilation/cutting in three coastal governorates in Yemen. *BMC public health*, 23(1), 1363. https://doi.org/10.1186/s12889-023-16299-y

Areskoug-Josefsson, K. & Lindroth, M. (2022). Exploring the role of sexual attitude reassessment and restructuring (SAR) in current sexology education: for whom, how and why?. *Sex Education*, 22(6), 723-740. https://doi.org/10.1080/14681811.2021.2011188

Ariffin, F., Chin, K. L., Ng, C., Miskan, M., Lee, V. K., & Isa, M. R. (2015). Are medical students confident in taking a sexual history? An assessment on attitude and skills from an upper middle income country. *BMC research notes*, 8, 248. https://doi.org/10.1186/s13104-015-1220-y

Aromaa, A., Kero, K., Grönlund, J., Manninen, S. M., Riskumäki, M., Vahlberg, T., & Polo-Kantola, P. (2023). Let's talk about sexuality - A web-based survey of self-reported competence in sexual

problems among obstetrician-gynecologists in Finland. *Acta obstetricia et gynecologica Scandinavica*, 102(2), 190–199. https://doi.org/10.1111/aogs.14492

Bahrami Vazir, E., Mohammad-Alizadeh-Charandabi, S., Kamalifard, M., Ghelichkhani, F., Mohammadi, A., & Mirghafourvand, M. (2020). The correlation between sexual dysfunction and intimate partner violence in young women during pregnancy. *BMC international health and human rights*, 20(1), 24. https://doi.org/10.1186/s12914-020-00245-9

Barnhoorn, P. C., Zuurveen, H. R., Prins, I. C., van Ek, G. F., den Oudsten, B. L., den Ouden, M. E. M., Putter, H., Numans, M. E., & Elzevier, H. W. (2020). Unravelling sexual care in chronically ill patients: the perspective of GP practice nurses; Health Service Research. *Family practice*, 37(6), 766–771. https://doi.org/10.1093/fampra/cmaa071

Basson, R., & Gilks, T. (2018). Women's sexual dysfunction associated with psychiatric disorders and their treatment. *Women's health (London, England)*, 14, 1745506518762664. https://doi.org/10.1177/1745506518762664

Basson, R., Rees, P., Wang, R., Montejo, A. L., & Incrocci, L. (2010). Sexual function in chronic illness. *The journal of sexual medicine*, 7(1 Pt 2), 374–388. https://doi.org/10.1111/j.1743-6109.2009.01621.x

Bates, A.W. (2019). *Teaching in a digital age*. Tony Bates Associates LTD. Vancouver BC.

Paulsen, L. H., Sørensen Bakke, L., Jarbøl, D. E., Balasubramaniam, K., & Hansen, D. G. (2020). Associations between lifestyle, erectile dysfunction and healthcare seeking: a population-based study. *Scandinavian journal of primary health care*, 38(2), 176–183. https://doi.org/10.1080/02813432.2020.1753347

Baylor University. (2023). *Effective lectures*. https://www.baylor.edu/atl/index.php?id=965135 Date of access: July 12, 2023.

Berger, J. H., Kehoe, J. E., Doan, A. P., Crain, D. S., Klam, W. P., Marshall, M. T., & Christman, M. S. (2019). Survey of sexual function and pornography. *Military medicine*, 184(11-12), 731–737. https://doi.org/10.1093/milmed/usz079

Bilgic, D., Gokyildiz, S., Kizilkaya Beji, N., Yalcin, O., & Gungor Ugurlucan, F. (2019). Quality of life and sexual function in obese women with pelvic floor dysfunction. *Women & health*, 59(1), 101–113. https://doi.org/10.1080/03630242.2018.1492497

Blasco, P.G., Moreto, G., Blasco, M.G., Levites, M.R., & Janaudis, M.A. (2015). Education through Movies: Improving teaching skills and fostering reflection among students and teachers. *Journal for Learning through the Arts*, 11(1). https://doi.org/10.21977/D911122357

Bokken, L., Rethans, J. J., Scherpbier, A. J., & van der Vleuten, C. P. (2008). Strengths and weaknesses of simulated and real patients in the teaching of skills to medical students: a review. *Simulation in healthcare: journal of the Society for Simulation in Healthcare*, 3(3), 161–169. https://doi.org/10.1097/SIH.0b013e318182fc56

Both, S., Lew-Starowicz, M., Luria, M., Sartorius, G., Maseroli, E., Tripodi, F., Lowenstein, L., Nappi, R. E., Corona, G., Reisman, Y., & Vignozzi, L. (2019). Hormonal contraception and female sexuality: Position statements from the European Society of Sexual Medicine (ESSM). *The journal of sexual medicine*, 16(11), 1681–1695. https://doi.org/10.1016/j.jsxm.2019.08.005

Boyacıoğlu, N. E., Oflaz, F., Karaahmet, A. Y., Hodaeı, B. K., Afşin, Y., & Taşabat, S. E. (2023). Sexuality, quality of life and psychological well-being in older adults: A correlational study. *European journal of obstetrics & gynecology and reproductive biology*: X, 17, 100177. https://doi.org/10.1016/j.eurox.2023.100177

Bradfield, Z., Officer, K., Barnes, C., Mignacca, E., Butt, J., & Hauck, Y. (2022). Sexual and reproductive health education: Midwives' confidence and practices. *Women and birth: journal of the Australian College of Midwives*, 35(4), 360–366. https://doi.org/10.1016/j.wombi.2021.09.005

Bryman, A. (2012). *Social Research Methods*. 4th edition. New York: Oxford University Press.

Burd, I. D., Nevadunsky, N., & Bachmann, G. (2006). Impact of physician gender on sexual history taking in a multispecialty practice. *The journal of sexual medicine*, 3(2), 194–200. https://doi.org/10.1111/j.1743-6109.2005.00168.x

Byers E. S. (2005). Relationship satisfaction and sexual satisfaction: a longitudinal study of individuals in long-term relationships. *Journal of sex research*, 42(2), 113–118. https://doi.org/10.1080/00224490509552264

Byrne, M., Doherty, S., McGee, H. M., & Murphy, A. W. (2010). General practitioner views about discussing sexual issues with patients with coronary heart disease: a national survey in Ireland. *BMC family practice*, 11, 40. https://doi.org/10.1186/1471-2296-11-40

Bøje, R. B., Bland, A., Prescott, S., Hannula, L., Smith, C. M., Stirling, K. (2023). The utilisation of a standardised educational framework to develop and deliver impactful programmes of simulation-based learning. *Journal of Applied Learning & Teaching*, Vol. 6 No. Sp. Iss. 1, 1-11. https://doi.org/10.37074/jalt.2023.6.S1.8

Cao, C., Yang, L., Xu, T., Cavazos-Rehg, P. A., Liu, Q., McDermott, D., Veronese, N., Waldhoer, T., Ilie, P. C., Shariat, S. F., & Smith, L. (2020). Trends in sexual activity and associations with all-cause and cause-specific mortality among US adults. *The journal of sexual medicine*, 17(10), 1903–1913. https://doi.org/10.1016/j.jsxm.2020.05.028

Carvalheira, A., & Leal, I. (2013). Masturbation among women: Associated factors and sexual response in a Portuguese community sample. *Journal of Sex & Marital Therapy*, 39(4), 347–367. https://doi.org/10.1080/0092623X.2011.628440

Centers for Disease Control and Prevention (CDC). (2020). *Intimate partner violence, sexual violence, and stalking among men*. https://www.cdc.gov/violenceprevention/intimatepartnerviolence/men-ipvsvandstalking.html Date of access: April 18, 2023.

Centers for Disease Control and Prevention (CDC). (2023). *Benefits of physical activity*. https://www.cdc.gov/physicalactivity/basics/pa-health/index.htm Date of access: December 28, 2023.

Chapman, C. H., Heath, G., Fairchild, P., Berger, M. B., Wittmann, D., Uppal, S., Tolpadi, A., Maturen, K., & Jolly, S. (2019). Gynecologic radiation oncology patients report unmet needs regarding sexual health communication with providers. *Journal of cancer research and clinical oncology*, 145(2), 495–502. https://doi.org/10.1007/s00432-018-2813-3

Chapman, K. (2022). *Why it's time to abandon the textbook*. Royal Society of Chemistry. https://edu.rsc.org/endpoint/why-its-time-to-abandon-the-textbook/4015066.article Date of access: January 2, 2024.

Chaudhry, H.S. & Singh, G. (2023). *Cushing Syndrome*. StatPearls Publishing. https://www.ncbi.nlm.nih.gov/books/NBK470218/

Chen, H. K., Tseng, C. D., Wu, S. C., Lee, T. K., & Chen, T. H. (2007). A prospective cohort study on the effect of sexual activity, libido and widowhood on mortality among the elderly people: 14-year follow-up of 2,453 elderly Taiwanese. *International journal of epidemiology*, 36(5), 1136–1142. https://doi.org/10.1093/ije/dym109

Cheng, J. Y., Ng, E. M., Ko, J. S., & Chen, R. Y. (2007). Physical activity and erectile dysfunction: meta-analysis of population-based studies. *International journal of impotence research*, 19(3), 245–252. https://doi.org/10.1038/sj.ijir.3901521

Cherry, K. (2023). *Overview of VARK learning styles*. https://www.verywellmind.com/vark-learning-styles-2795156 Date of access: July 10, 2023.

Coker A. L. (2007). Does physical intimate partner violence affect sexual health? A systematic review. *Trauma, violence & abuse*, 8(2), 149–177. https://doi.org/10.1177/1524838007301162

Coleman, E. (2003). Masturbation as a means of achieving sexual health. *Journal of Psychology & Human Sexuality*, 14(2–3), 5–16. https://doi.org/10.1300/J056v14n02_02

Dekker, A., Matthiesen, S., Cerwenka, S., Otten, M., & Briken, P. (2020). Health, sexual activity, and sexual satisfaction. *Deutsches Arzteblatt international*, 117(39), 645–652. https://doi.org/10.3238/arztebl.2020.0645

Dekker, A., & Schmidt, G. (2003). Patterns of masturbatory behaviour: Changes between the sixties and the nineties. *Journal of Psychology and Human Sexuality*, 14(2–3), 35–48. https://doi.org/10.1300/J056v14n02_04

Dixon-Woods, M., Regan, J., Robertson, N., Young, B., Cordle, C., & Tobin, M. (2002). Teaching and learning about human sexuality in undergraduate medical education. *Medical education*, 36(5), 432–440. https://doi.org/10.1046/j.1365-2923.2002.01198.x

Dombek, K., Capistrano, E. J., Costa, A. C., & Marinheiro, L. P. (2016). Risk factors associated with sexual dysfunction in Brazilian postmenopausal women. *International journal of impotence research*, 28(2), 62–67. https://doi.org/10.1038/ijir.2016.4

Elshamy, A. M., Mohamed, E. S., Al-Malt, A. M., & Ragab, O. A. (2022). Sexual dysfunction among Egyptian idiopathic Parkinson's disease patients. *Journal of geriatric psychiatry and neurology*, 35(6), 816–822. https://doi.org/10.1177/08919887211063810

Endler, M., Al-Haidari, T., Benedetto, C., Chowdhury, S., Christilaw, J., El Kak, F., Galimberti, D., Gutierrez, M., Ibrahim, S., Kumari, S., McNicholas, C., Flores, D. M., Muganda, J., Ramirez-Negrin, A., Senanayake, H., Sohail, R., Temmerman, M., & Gemzell Danielsson, K. (2022). Are sexual and reproductive health and rights taught in medical school? Results from a global survey. *International journal of gynaecology and obstetrics: the official organ of the International Federation of Gynaecology and Obstetrics*, 159(3), 735–742. https://doi.org/10.1002/ijgo.14339

Esposito, K., Giugliano, F., Ciotola, M., De Sio, M., D'Armiento, M., & Giugliano, D. (2008). Obesity and sexual dysfunction, male and female. *International journal of impotence research*, 20(4), 358–365. https://doi.org/10.1038/ijir.2008.9

Esteve-Ríos, A., García-Sanjuán, S., Escribano, S., Monasor-Ortolá, D., & Cabañero-Martínez, M. J. (2022). Experience of women with multiple sclerosis about their sexuality. *Disability and rehabilitation*, 44(18), 5117–5123. https://doi.org/10.1080/09638288.2021.1925750

European Sexual Medicine Network. (2024). *Towards a basic curriculum for university education on sexual medicine*. https://www.esmn-cost.eu/working-groups/working-group-3/ Date of access: February 9, 2024.

Fallis, E. E., Rehman, U. S., Woody, E. Z., & Purdon, C. (2016). The longitudinal association of relationship satisfaction and sexual satisfaction in long-term relationships. *Journal of family psychology : JFP : journal of the Division of Family Psychology of the American Psychological Association* (Division 43), 30(7), 822–831. https://doi.org/10.1037/fam0000205

Ferreira, L. C., Narciso, I., Novo, R. F., & Pereira, C. R. (2014). Predicting couple satisfaction: The role of differentiation of self, sexual desire, and intimacy in heterosexual individuals. *Sexual and Relationship Therapy*, 29, 390–404. https://doi.org/10.1080/14681994.2014.957498

Field, N., Mercer, C. H., Sonnenberg, P., Tanton, C., Clifton, S., Mitchell, K. R., Erens, B., Macdowall, W., Wu, F., Datta, J., Jones, K. G., Stevens, A., Prah, P., Copas, A. J., Phelps, A., Wellings, K., & Johnson, A. M. (2013). Associations between health and sexual lifestyles in Britain: Findings from the third National Survey of Sexual Attitudes and Lifestyles (NATSAL-3). *The Lancet*, 382(9907), 1830–1844. https://doi.org/10.1016/S0140-6736(13)62222-9

Fischer, N., & Træen, B. (2022). A seemingly paradoxical relationship between masturbation frequency and sexual satisfaction. *Archives of sexual behavior*, 51(6), 3151–3167. https://doi.org/10.1007/s10508-022-02305-8

Flotynska, J., Uruska, A., Michalska, A., Araszkiewicz, A., & Zozulinska-Ziolkiewicz, D. (2019). Sexual dysfunction is a more common problem in young women with type 1 diabetes than in healthy women. *Journal of sex & marital therapy*, 45(7), 643–651. https://doi.org/10.1080/0092623X.2019.1610121

Fraguas-Sánchez, A. I., & Torres-Suárez, A. I. (2018). Medical use of cannabinoids. *Drugs*, 78(16), 1665–1703. https://doi.org/10.1007/s40265-018-0996-1

Furman, K. A., Becker, B. & IsHak, W.W. (2017). "*Introduction to Sexual Medicine*," in IsHak, W. W. (Ed.) The Textbook of Clinical Sexual Medicine. Springer, pp. 3–16.

Gabrielson, A. T., Sartor, R. A., & Hellstrom, W. J. G. (2019). The impact of thyroid disease on sexual dysfunction in men and women. *Sexual medicine reviews*, 7(1), 57–70. https://doi.org/10.1016/j.sxmr.2018.05.002

Galati, M. C. R., Hollist, C. S., do Egito, J. H. T., Osório, A. A. C., Parra, G. R., Neu, C., & de Moraes Horta, A. L. (2023). Sexual dysfunction, depression, and marital dissatisfaction among Brazilian couples. *The journal of sexual medicine*, 20(3), 260–268. https://doi.org/10.1093/jsxmed/qdac004

Gaylo, D. N., Caingcoy, M. E., Mugot, D. C. (2020). Utilization of scholarly journal articles in the teaching and learning of teacher education courses. *Balkan and Near Eastern Journal of Social Sciences*, 6(3), 59-66.

Gerbild, H., Larsen, C. M., Junge, T., Laursen, B. S., & Areskoug-Josefsson, K. (2021). Danish Health Professional Students' Attitudes Toward Addressing Sexual Health: A Cross-Sectional Survey. *Sexual medicine*, 9(2), 100323. https://doi.org/10.1016/j.esxm.2021.100323

Geuens, S., and Hendrix, E. (2023). "*Sexuality redefined*," in Geuens, S., Mivšek, P. A., and Gianotten, W. L. (Eds.) Midwifery and sexuality. Springer, pp. 7–14.

Goldberg, J. M., Gong, J., Blennerhassett, C. J., & Ross, L. E. (2023). A secondary mixed methods analysis examining midwives' responses regarding patient sexual orientation and gender identity (SOGI) disclosure. *Midwifery*, 120, 103648. https://doi.org/10.1016/j.midw.2023.103648

Gombert, M., Ballester, P., Segura, A., & Peiró, A. M. (2021). Introducing sexual dysfunction in mental care. *Expert opinion on drug safety*, 20(1), 69–79. https://doi.org/10.1080/14740338.2020.1849135

Gott, M., Galena, E., Hinchliff, S., & Elford, H. (2004). "Opening a can of worms": GP and practice nurse barriers to talking about sexual health in primary care. *Family practice*, 21(5), 528–536. https://doi.org/10.1093/fampra/cmh509

de Graaf, H., Mitchell, K., Clifton, S., Lara, M. F., Dewaele, A., Dupont, J., Klapilova, K., Lazdāne, G., Briken, P., Træen, B., Bajos, N., Ljungcrantz, D., & Kontula, O. (2023). Sex Surveys in Europe: Reflections on over Four Decades of Sexual Behavior and Sexual Health Surveillance. *Journal of sex research*, *60*(7), 1020–1033. https://doi.org/10.1080/00224499.2023.2222403

Guo, W., Liao, C., Zou, Y., Li, F., Li, T., Zhou, Q., Cao, Y., & Mao, X. (2010). Erectile dysfunction and risk of clinical cardiovascular events: a meta-analysis of seven cohort studies. *The journal of sexual medicine*, 7(8), 2805–2816. https://doi.org/10.1111/j.1743-6109.2010.01792.x

Güdül Öz, H., Balcı Yangın, H., & Ak Sözer, G. (2022). Attitudes and beliefs of nursing students toward sexual healthcare: A descriptive study. *Perspectives in psychiatric care*, 58(1), 266–272. https://doi.org/10.1111/ppc.12780

Güven, Ş. D., & Çelik, G. K. (2021). Evaluation of nursing students' attitudes and beliefs regarding sexual care. *Androloji Bülten*, 23, 7-12. https://doi.org/10.24898/tandro.2021.0270

Haider, A. H., Schneider, E. B., Kodadek, L. M., Adler, R. R., Ranjit, A., Torain, M., Shields, R. Y., Snyder, C., Schuur, J. D., Vail, L., German, D., Peterson, S., & Lau, B. D. (2017). Emergency department query for patient-centered approaches to sexual orientation and gender identity: The EQUALITY study. *JAMA internal medicine*, 177(6), 819–828. https://doi.org/10.1001/jamainternmed.2017.0906

Harper-Harrison, G., Shanahan, M. M. (2023). *Hormone replacement therapy*. StatPearls Publishing. https://www.ncbi.nlm.nih.gov/books/NBK493191/

Healthline. (2023a). *What are the different types of sexualities?*. https://www.medicalnewstoday.com/articles/types-of-sexuality Date of access: April 12, 2023.

Healthline. (2023b). *What Is Sexual Dysfunction?*. https://www.healthline.com/health/what-sexual-dysfunction Date of access: November 20, 2023.

Healy, D., Le Noury, J., & Mangin, D. (2018). Enduring sexual dysfunction after treatment with antidepressants, 5α-reductase inhibitors and isotretinoin: 300 cases. *The International journal of risk & safety in medicine*, 29(3-4), 125–134. https://doi.org/10.3233/JRS-180744

Heiman, J. R., Long, J. S., Smith, S. N., Fisher, W. A., Sand, M. S., & Rosen, R. C. (2011). Sexual satisfaction and relationship happiness in midlife and older couples in five countries. *Archives of sexual behavior*, 40(4), 741–753. https://doi.org/10.1007/s10508-010-9703-3

Hensel, D. J., & Fortenberry, D. (2014). Life-span sexuality through a sexual health perspective. In Tolman, D. L., Diamond, L. M., Bauermeister, J. A., George, W. H., Pfaus, J. G. & Ward, L. M.

(Eds.), APA handbook of sexuality and psychology, person-based approaches (Vol. 1, pp. 385–413). *American Psychological Association*. https://doi.org/10.1037/14193-013

Huang, M., Li, G., Liu, J., Li, Y., & Du, P. (2020). Is there an association between contraception and sexual dysfunction in women? A systematic review and meta-analysis based on Female Sexual Function Index. *The journal of sexual medicine*, 17(10), 1942–1955. https://doi.org/10.1016/j.jsxm.2020.06.008

Humphery, S., & Nazareth, I. (2001). GPs' views on their management of sexual dysfunction. *Family practice*, 18(5), 516–518. https://doi.org/10.1093/fampra/18.5.516

International Confederation of Midwives. (2023). *Definition of the Midwife*. https://www.internationalmidwives.org/our-work/policy-and-practice/icm-definitions.html Date of access: November 21, 2023.

Jackson, K. B., & Fraser, D. (2009). A study exploring UK midwives' knowledge and attitudes towards caring for women who have been sexually abused. *Midwifery*, 25(3), 253–263. https://doi.org/10.1016/j.midw.2007.05.006

Jackson, S. E., Firth, J., Veronese, N., Stubbs, B., Koyanagi, A., Yang, L., & Smith, L. (2019). Decline in sexuality and wellbeing in older adults: A population-based study. *Journal of affective disorders*, 245, 912–917. https://doi.org/10.1016/j.jad.2018.11.091

Jacobs, T., Geysemans, B., Van Hal, G., Glazemakers, I., Fog-Poulsen, K., Vermandel, A., De Wachter, S., & De Win, G. (2021). Associations between online pornography consumption and sexual dysfunction in young men: Multivariate Analysis Based on an International Web-Based Survey. *JMIR public health and surveillance*, 7(10), e32542. https://doi.org/10.2196/32542

Johns Hopkins Medicine. (2023). *Substance Use Disorder*. https://www.hopkinsmedicine.org/health/conditions-and-diseases/substance-abuse-chemical-dependency Date of access: November 19, 2023.

Jubber, I., Rogers, Z., Catto, J. W., Bottomley, S., Glaser, A., Downing, A., & Absolom, K. (2022). Sexual activity, function and dysfunction after a diagnosis of bladder cancer. *The journal of sexual medicine*, 19(9), 1431–1441. https://doi.org/10.1016/j.jsxm.2022.06.016

Katainen, R. E., Siirtola, T. J., Engblom, J. R., Erkkola, R. U., & Polo-Kantola, P. (2015). A population-based survey of quality of life in middle-aged Finnish women. *Menopause* (New York, N.Y.), 22(4), 402–413. https://doi.org/10.1097/GME.0000000000000335

Keskin, F. E., Özkaya, H. M., Ortaç, M., Salabaş, E., Kadıoğlu, A., & Kadıoğlu, P. (2018). Sexual function in women with Cushing's Syndrome: A controlled study. *Turkish journal of urology*, 44(4), 287–293. https://doi.org/10.5152/tud.2018.74240

Kevo, L., Manninen, SM., Kero, K. & Polo, P. (2022). Lääketieteen opiskelijat tarvitsevat seksuaalilääketieteen opetusta - kyselytutkimus Suomen lääketieteellisissä tiedekunnissa. *Suomalainen Lääkärilehti*, 77: e31879 www.laakarilehti.fi/e31879

Kim, S. H., Lee, Y. M., & Park, J. T. (2008). Patients' perspectives on sexual history taking in Korea. *Patient education and counseling*, 70(3), 370–375. https://doi.org/10.1016/j.pec.2007.11.008

Klemetti, S. & Raussi-Lehto, E. (Eds.) (2016). *Edistä, ehkäise, vaikuta - Seksuaali- ja lisääntymisterveyden toimintaohjelma 2014-2020*. Juvenes Print – Suomen Yliopistopaino Oy, Tapere. https://urn.fi/URN:ISBN:978-952-302-174-7

Kolodny, R. C., Masters, W. H. & Johnson, V. E. (1979). *Textbook of sexual medicine*. Boston, MA: Little Brown.

Komlenac, N., Siller, H., & Hochleitner, M. (2019). Medical students indicate the need for increased sexuality education at an Austrian medical university. *Sexual medicine*, 7(3), 318–325. https://doi.org/10.1016/j.esxm.2019.04.002

Kontula, O. (2009). Between Sexual Desire and Reality: The Evolution of Sex in Finland. The Family Federation of Finland: *The Population Research Institute* D49/2009. Helsinki.

Kontula, O. (2021). Suomalaisten seksitavat. *Lääketieteellinen Aikakauskirja Duodecim*, 137(20),2163–4. https://www.duodecimlehti.fi/duo16487

Kontula, O., & Haavio-Mannila, E. (2003). Masturbation in a generational perspective. *Journal of Psychology and Human Sexuality*, 14(2–3), 49–83. https://doi.org/10.1300/J056v14n02_05

Kontula, O., & Haavio-Mannila, E. (2009). The impact of aging on human sexual activity and sexual desire. *Journal of sex research*, 46(1), 46–56. https://doi.org/10.1080/00224490802624414

Kontula, O., & Miettinen, A. (2016). Determinants of female sexual orgasms. *Socioaffective neuroscience & psychology*, 6, 31624. https://doi.org/10.3402/snp.v6.31624

Kouidrat, Y., Pizzol, D., Cosco, T., Thompson, T., Carnaghi, M., Bertoldo, A., Solmi, M., Stubbs, B., & Veronese, N. (2017). High prevalence of erectile dysfunction in diabetes: a systematic review and meta-analysis of 145 studies. *Diabetic medicine: a journal of the British Diabetic Association*, 34(9), 1185–1192. https://doi.org/10.1111/dme.13403

Krautter, M., Diefenbacher, K., Schultz, J. H., Maatouk, I., Herrmann-Werner, A., Koehl-Hackert, N., Herzog, W., & Nikendei, C. (2017). Physical examination skills training: Faculty staff vs. patient instructor feedback-A controlled trial. *PloS one*, 12(7), e0180308. https://doi.org/10.1371/journal.pone.0180308

Kristufkova, A., Pinto Da Costa, M., Mintziori, G., Vásquez, J. L., Aabakke, A. J. M., & Fode, M. (2018). Sexual health during postgraduate training - European survey across medical specialties. *Sexual medicine*, 6(3), 255–262. https://doi.org/10.1016/j.esxm.2018.04.001

Lee, D. M., Nazroo, J., O'Connor, D. B., Blake, M., & Pendleton, N. (2016). Sexual health and well-being among older men and women in England: Findings from the English longitudinal study of ageing. *Archives of sexual behavior*, 45(1), 133–144. https://doi.org/10.1007/s10508-014-0465-1

Lett, C., Valadares, A. L. R., Baccaro, L. F., Pedro, A. O., Filho, J. L., Lima, M., & Costa-Paiva, L. (2018). Is the age at menopause a cause of sexual dysfunction? A Brazilian population-based study. *Menopause* (New York, N.Y.), 25(1), 70–76. https://doi.org/10.1097/GME.0000000000000952

Leyva-Moral, J. M., Aguayo-Gonzalez, M., Palmieri, P. A., Guevara-Vasquez, G., Granel-Grimenez, N., & Dalfó-Pibernat, A. (2020). Attitudes and beliefs of nurses and physicians about managing sexual health in primary care: A multi-site cross-sectional comparative study. *Nursing open*, 8(1), 404–414. https://doi.org/10.1002/nop2.641

Lindau, S. T., & Gavrilova, N. (2010). Sex, health, and years of sexually active life gained due to good health: evidence from two US population based cross sectional surveys of ageing. *BMJ (Clinical research ed.)*, 340, c810. https://doi.org/10.1136/bmj.c810

Liu, G., Hariri, S., Bradley, H., Gottlieb, S. L., Leichliter, J. S., & Markowitz, L. E. (2015). Trends and patterns of sexual behaviors among adolescents and adults aged 14 to 59 years, United States. *Sexually transmitted diseases*, 42(1), 20–26. https://doi.org/10.1097/OLQ.0000000000000231

Ljungman, L., Lampic, C., & Wettergren, L. (2020). Sexual dysfunction among young adults in Sweden-A population-based observational study. *Sexual medicine*, 8(4), 631–642. https://doi.org/10.1016/j.esxm.2020.08.010

Lonnée-Hoffmann, R. A. M., Christensen, S. S. & Hagemann, C. T. (2022). How do women want their gynaecologist to address sexual function? A cross-sectional survey among outpatients. *Reproductive, Female and Child Health*, 1, 11–17. https://doi:10.1002/rfc2.5

Lv, X., Yang, H., Yan, M., Jin, X., Shen, X., Li, S., Zhang, M., Su, S., Liu, X., & Chen, J. (2023). The mediating role of menstrual irregularity on obesity and sexual function in Chinese women with pelvic floor disorders: a cross-sectional study. *BMC women's health*, 23(1), 462. https://doi.org/10.1186/s12905-023-02594-8

Lääkäriliitto [The Finnish Medical Association]. (2019). *Lääkärit 2019*. https://www.laakariliitto.fi/site/assets/files/5223/sll_taskutilasto_fi_220620.pdf Date of access: August 11, 2023.

Lövestad, S., & Krantz, G. (2012). Men's and women's exposure and perpetration of partner violence: an epidemiological study from Sweden. *BMC public health*, 12, 945. https://doi.org/10.1186/1471-2458-12-945

Magnan, M. A., & Reynolds, K. (2006). Barriers to addressing patient sexuality concerns across five areas of specialization. *Clinical nurse specialist CNS*, 20(6), 285–292. https://doi.org/10.1097/00002800-200611000-00009

Mantzou, D., Stamou, M. I., Armeni, A. K., Roupas, N. D., Assimakopoulos, K., Adonakis, G., Georgopoulos, N. A., & Markantes, G. K. (2021). Impaired sexual function in young women with PCOS: The detrimental effect of anovulation. *The journal of sexual medicine*, 18(11), 1872–1879. https://doi.org/10.1016/j.jsxm.2021.09.004

Matovinović, M., Tudor, K. I., Mustač, F., Tudor, D. M., Kovačević, A., & Bilić, E. (2021). Sexual dysfunction in Croatian patients with obesity. *Psychiatria Danubina*, 33(Suppl 4), 1298–1302.

McCabe, M. P., Sharlip, I. D., Lewis, R., Atalla, E., Balon, R., Fisher, A. D., Laumann, E., Lee, S. W., & Segraves, R. T. (2016). Incidence and prevalence of sexual dysfunction in women and men: A consensus statement from the Fourth International Consultation on Sexual Medicine 2015. *The journal of sexual medicine*, 13(2), 144–152. https://doi.org/10.1016/j.jsxm.2015.12.034

McKeachie, W. J. & Svinicki, M. (2014). *Teaching tips: Strategies, research, and theory for college and university teachers*. Boston: Houghton Mifflin.

McKenna, L., Copnell, B., Butler, A. E., & Lau, R. (2018). Learning style preferences of Australian accelerated postgraduate pre-registration nursing students: A cross-sectional survey. *Nurse education in practice*, 28, 280–284. https://doi.org/10.1016/j.nepr.2017.10.011

McNulty, J. K., Wenner, C. A., & Fisher, T. D. (2016). Longitudinal associations among relationship satisfaction, sexual satisfaction, and frequency of sex in early marriage. *Archives of sexual behavior*, 45(1), 85–97. https://doi.org/10.1007/s10508-014-0444-6

Migration Policy Institute. (2019). *Explainer: Who Is An Immigrant?*. https://www.migrationpolicy.org/content/explainer-who-immigrant Date of access: November 20, 2023.

Mills, B., Govender, I., & Hugo, J. (2015). Experiences of general practitioners in the Ga-Rankuwa and Mabopane areas in dealing with patients who have sexual problems. *African journal of primary health care & family medicine*, 7(1), 878. https://doi.org/10.4102/phcfm.v7i1.878

Mohamad Muhit, A. M., Sy-Cherng Woon, L., Nik Mhd Nor, N. S., Sidi, H., Mohd Kalok, A. H., Kampan, N. C., & Shafiee, M. N. (2022). Sexual dysfunction among gynaecological cancer survivors: A descriptive cross-sectional study in Malaysia. *International journal of environmental research and public health*, 19(23), 15545. https://doi.org/10.3390/ijerph192315545

Mohseni, M., Riazi, H., Karimian, Z., Kariman, N., & Nasiri, M. (2023). Factors affecting the providing of sexual health services by midwives: A qualitative research in Iran. *Iranian journal of nursing and midwifery research*, 28(1), 47–52. https://doi.org/10.4103/ijnmr.ijnmr_157_21

Montalvan, V., Ulrich, A. K., Tirschwell, D. L., & Zunt, J. R. (2021). Assessing sexual dysfunction among stroke survivors and barriers to address this issue by physicians at a Latin American reference hospital. *Clinical neurology and neurosurgery*, 205, 106642. Advance online publication. https://doi.org/10.1016/j.clineuro.2021.106642

Montejo A. L. (2019). Sexuality and mental health: The need for mutual development and research. *Journal of clinical medicine*, 8(11), 1794. https://doi.org/10.3390/jcm8111794

Moodle. (2023). *About Moodle*. https://docs.moodle.org/402/en/About_Moodle Date of access: July 15, 2023.

Mukurunge, E., Reid, M., Fichardt, A., & Nel, M. (2021). Interactive workshops as a learning and teaching method for primary healthcare nurses. *Health SA = SA Gesondheid*, 26, 1643. https://doi.org/10.4102/hsag.v26i0.1643

Murray, S. H., Milhausen, R. R., Graham, C. A., & Kuczynski, L. (2017). A qualitative exploration of factors that affect sexual desire among men aged 30 to 65 in long-term relationships. *Journal of sex research*, 54(3), 319–330. https://doi.org/10.1080/00224499.2016.1168352

National Health Services. (2023a). *General practitioner*. https://www.healthcareers.nhs.uk/explore-roles/doctors/roles-doctors/general-practitioner Date of access: November 21, 2023.

National Health Services. (2023b). *What does a sex therapist do?*. https://www.nhs.uk/common-health-questions/sexual-health/what-does-a-sex-therapist-do/ Date of access: February 17, 2024.

National Health Services. (2023c). *Symptoms - Menopause*. https://www.nhs.uk/conditions/menopause/symptoms/ Date of access: November 18, 2023.

National Health Services. (2023d). *The 'male menopause'*. https://www.nhs.uk/conditions/male-menopause/ Date of access: November 18, 2023.

National Health Services. (2023e). *Side effects - Chemotherapy*. https://www.nhs.uk/conditions/chemotherapy/side-effects/ Date of access: January 2, 2024.

National Institute of Diabetes and Digestive and Kidney Diseases. (2023a). *Endocrine Diseases*. https://www.niddk.nih.gov/health-information/endocrine-diseases Date of access: November 11, 2023.

National Institute of Diabetes and Digestive and Kidney Diseases. (2023b). *Urologic Diseases*. https://www.niddk.nih.gov/health-information/urologic-diseases Date of access: November 19, 2023.

National Institute of Mental Health. (2023). *Autism Spectrum Disorder*. https://www.nimh.nih.gov/health/topics/autism-spectrum-disorders-asd Date of access: December 29, 2023.

Niemelä, S. (2023). Elokuva lääkärin työkaluna. *Lääketieteellinen Aikakauskirja Duodecim*, 139(24):2038–42. https://www.duodecimlehti.fi/duo18024

Okeke, T., Anyaehie, U., & Ezenyeaku, C. (2013). Premature menopause. *Annals of medical and health sciences research*, 3(1), 90–95. https://doi.org/10.4103/2141-9248.109458

Ornat, L., Martínez-Dearth, R., Muñoz, A., Franco, P., Alonso, B., Tajada, M., & Pérez-López, F. R. (2013). Sexual function, satisfaction with life and menopausal symptoms in middle-aged women. *Maturitas*, 75(3), 261–269. https://doi.org/10.1016/j.maturitas.2013.04.007

Pascoal, P. M., Byers, E. S., Alvarez, M. J., Santos-Iglesias, P., Nobre, P. J., Pereira, C. R., & Laan, E. (2018). A dyadic approach to understanding the link between sexual functioning and sexual satisfaction in heterosexual couples. *Journal of Sex Research*, 55(9), 1155–1166. https://doi.org/10.1080/00224499.2017.1373267

Pathak, S. (2023). *What is the Lecture Method of Teaching?*. https://classplusapp.com/growth/lecture-method-of-teaching/?session=ondemand Date of access: January 2, 2024.

Paulsen, L. H., Sørensen Bakke, L., Jarbøl, D. E., Balasubramaniam, K., & Hansen, D. G. (2020). Associations between lifestyle, erectile dysfunction and healthcare seeking: a population-based study. *Scandinavian journal of primary health care*, 38(2), 176–183. https://doi.org/10.1080/02813432.2020.1753347

Percat, A., & Elmerstig, E. (2017). "We should be experts, but we're not": Sexual counselling at the antenatal care clinic. *Sexual & reproductive healthcare*, 14, 85–90. https://doi.org/10.1016/j.srhc.2017.10.001

Pérez-López, F. R., Ornat, L., López-Baena, M. T., Pérez-Roncero, G. R., Tajada-Duaso, M. C., & Chedrau, P. (2020). Association of female genital mutilation and female sexual dysfunction: A systematic review and meta-analysis. *European journal of obstetrics, gynecology, and reproductive biology*, 254, 236–244. https://doi.org/10.1016/j.ejogrb.2020.09.031

de Pierrepont, C., Brassard, A., Lessard, I., Gingras, A. S., & Péloquin, K. (2022). How to deal with sexual changes during and after pregnancy: Results of a brief psycho-educational workshop with future and new parenting couples. *The Journal of perinatal education*, 31(1), 38–48. https://doi.org/10.1891/J-PE-D-20-00026

Pizzol, D., Demurtas, J., Stubbs, B., Soysal, P., Mason, C., Isik, A. T., Solmi, M., Smith, L., & Veronese, N. (2019). Relationship between cannabis use and erectile dysfunction: A systematic review and meta-analysis. *American journal of men's health*, 13(6), 1557988319892464. https://doi.org/10.1177/1557988319892464

Platano, G., Margraf, J., Alder, J., & Bitzer, J. (2008). Frequency and focus of sexual history taking in male patients--a pilot study conducted among Swiss general practitioners and urologists. *The journal of sexual medicine*, 5(1), 47–59. https://doi.org/10.1111/j.1743-6109.2007.00628.x

Pontiroli, A. E., Cortelazzi, D., & Morabito, A. (2013). Female sexual dysfunction and diabetes: a systematic review and meta-analysis. *The journal of sexual medicine*, 10(4), 1044–1051. https://doi.org/10.1111/jsm.12065

Prairie, B. A., Wisniewski, S. R., Luther, J., Hess, R., Thurston, R. C., Wisner, K. L., & Bromberger, J. T. (2015). Symptoms of depressed mood, disturbed sleep, and sexual problems in midlife women: cross-sectional data from the Study of Women's Health Across the Nation. *Journal of women's health* (2002), 24(2), 119–126. https://doi.org/10.1089

Pretorius, D., Couper, I. D., & Mlambo, M. G. (2022). Sexual history taking by doctors in primary care in North West province, South Africa: Patients at risk of sexual dysfunction overlooked. *African journal of primary health care & family medicine*, 14(1), e1–e9. https://doi.org/10.4102/phcfm.v14i1.3238

Quinn, C., Happell, B., & Browne, G. (2011). Talking or avoiding? Mental health nurses' views about discussing sexual health with consumers. *International journal of mental health nursing*, 20(1), 21–28. https://doi.org/10.1111/j.1447-0349.2010.00705.x

Radić-Bojanić, B., & Pop-Jovanov, D. (2018). Workshops in education: theoretical and practical issues. *Metodički vidici*, 9(9), 223-234. https://doi.org/10.19090/mv.2018.9.223-234

Resnick M. I. (2005). What is sexual medicine?. *International journal of impotence research*, 17(5), 464. https://doi.org/10.1038/sj.ijir.3901355

Ribeiro, S., Alarcão, V., Simões, R., Miranda, F. L., Carreira, M., & Galvão-Teles, A. (2014). General practitioners' procedures for sexual history taking and treating sexual dysfunction in primary care. *The journal of sexual medicine*, 11(2), 386–393. https://doi.org/10.1111/jsm.12395

Rider, J. R., Wilson, K. M., Sinnott, J. A., Kelly, R. S., Mucci, L. A., & Giovannucci, E. L. (2016). Ejaculation Frequency and Risk of Prostate Cancer: Updated Results with an Additional Decade of Follow-up. *European urology*, 70(6), 974–982. https://doi.org/10.1016/j.eururo.2016.03.027

Roos, A. M., Sultan, A. H., & Thakar, R. (2012). Sexual problems in the gynecology clinic: are we making a mountain out of a molehill?. *International urogynecology journal*, 23(2), 145–152. https://doi.org/10.1007/s00192-011-1516-y

Roos, A. M., Thakar, R., Sultan, A. H., Burger, C. W., & Paulus, A. T. (2014). Pelvic floor dysfunction: women's sexual concerns unraveled. *The journal of sexual medicine*, 11(3), 743–752. https://doi.org/10.1111/jsm.12070

Rosen, R. C. (2000). Prevalence and risk factors of sexual dysfunction in men and women. *Current Psychiatry Reports*, 2(3), 189–95. https://doi.org/10.1007/s11920-996-0006-2

Rufino, A. C., Madeiro, A., & Girão, M. J. (2014). Sexuality education in Brazilian medical schools. *The journal of sexual medicine*, 11(5), 1110–1117. https://doi.org/10.1111/jsm.12476

Ruiz de Viñaspre-Hernández, R., Santolalla-Arnedo, I., Garrido-Santamaría, R., Czapla, M., Tejada-Garrido, C. I., Sánchez-González, J. L., Sapiña-Beltrán, E., Iriarte-Moreda, V., Colado-Tello, M. E., Gea-Caballero, V., & Juárez-Vela, R. (2022). Impact of social determinants of health on women's satisfaction with their sexual life and its relationship with the use of psychotropic drugs: A cross-sectional study. *Journal of clinical medicine*, 11(9), 2320. https://doi.org/10.3390/jcm11092320

Rutte, A., van Splunter, M. M., van der Heijden, A. A., Welschen, L. M., Elders, P. J., Dekker, J. M., Snoek, F. J., Enzlin, P., & Nijpels, G. (2015). Prevalence and correlates of sexual dysfunction in men and women with type 2 diabetes. *Journal of sex & marital therapy*, 41(6), 680–690. https://doi.org/10.1080/0092623X.2014.966399

Rye, B. J., & Meaney, G. J. (2007). The pursuit of sexual pleasure. *Sexuality & Culture*, 11, 28–51. https://doi.org/10.1007/BF02853934

Saeed, R., Amin, F., Durrani, N., Saif, S. M. A., & Zafar, M. T. (2021). Prevalence of erectile dysfunction and associated factors among males visiting family medicine clinics in a Tertiary Care

Hospital in Karachi, Pakistan. *Journal of family medicine and primary care*, 10(3), 1294–1300. https://doi.org/10.4103/jfmpc.jfmpc_1871_20

Salari, N., Hasheminezhad, R., Almasi, A., Hemmati, M., Shohaimi, S., Akbari, H., & Mohammadi, M. (2023). The risk of sexual dysfunction associated with alcohol consumption in women: a systematic review and meta-analysis. *BMC women's health*, 23(1), 213. https://doi.org/10.1186/s12905-023-02400-5

Sander, A. M., Maestas, K. L., Pappadis, M. R., Sherer, M., Hammond, F. M., Hanks, R., & NIDRR Traumatic Brain Injury Model Systems Module Project on Sexuality After TBI (2012). Sexual functioning 1 year after traumatic brain injury: findings from a prospective traumatic brain injury model systems collaborative study. *Archives of physical medicine and rehabilitation*, 93(8), 1331–1337. https://doi.org/10.1016/j.apmr.2012.03.037

Schloegl, I., Köhn, F. M., Dinkel, A., Schulwitz, H., Gschwend, J. E., Bosinski, H. A., & Herkommer, K. (2017). Education in sexual medicine - a nationwide study among German urologists/andrologists and urology residents. *Andrologia*, 49(2), 10.1111/and.12611. https://doi.org/10.1111/and.12611

Schöttle, D., Briken, P., Tüscher, O., & Turner, D. (2017). Sexuality in autism: hypersexual and paraphilic behavior in women and men with high-functioning autism spectrum disorder. *Dialogues in clinical neuroscience*, 19(4), 381–393. https://doi.org/10.31887/DCNS.2017.19.4/dschoettle

Seid, K., Kebede, T., Dessalegn, N., Ejara, Y., Moga, F., Daniel, M., Mohammed, N., & Hassen, S. (2022). Nursing students' attitudes and beliefs regarding sexual healthcare in Ethiopia: An online cross-sectional study. *PloS one*, 17(12), e0278760. https://doi.org/10.1371/journal.pone.0278760

Shenoi, S. D., & Prabhu, S. S. (2022). Female sexual dysfunction: A clinical case series. *Indian journal of sexually transmitted diseases and AIDS*, 43(2), 208–210. https://doi.org/10.4103/ijstd.IJSTD_67_20

Shindel, A. W., Ando, K. A., Nelson, C. J., Breyer, B. N., Lue, T. F., & Smith, J. F. (2010). Medical student sexuality: how sexual experience and sexuality training impact U.S. and Canadian medical students' comfort in dealing with patients' sexuality in clinical practice. *Academic medicine: journal of the Association of American Medical Colleges*, 85(8), 1321–1330. https://doi.org/10.1097/ACM.0b013e3181e6c4a0

Sofi-Karim, M., Bali, A.O. & Rached, K. (2023). Online education via media platforms and applications as an innovative teaching method. *Education and Information Technologies*, 28, 507–523. https://doi.org/10.1007/s10639-022-11188-0

Sporn, N. J., Smith, K. B., Pirl, W. F., Lennes, I. T., Hyland, K. A., & Park, E. R. (2015). Sexual health communication between cancer survivors and providers: how frequently does it occur and which providers are preferred?. *Psycho-oncology*, 24(9), 1167–1173. https://doi.org/10.1002/pon.3736

Stabile, C., Goldfarb, S., Baser, R. E., Goldfrank, D. J., Abu-Rustum, N. R., Barakat, R. R., Dickler, M. N., & Carter, J. (2017). Sexual health needs and educational intervention preferences for women with cancer. *Breast cancer research and treatment*, 165(1), 77–84. https://doi.org/10.1007/s10549-017-4305-6

Stott D. B. (2013). The training needs of general practitioners in the exploration of sexual health matters and providing sexual healthcare to lesbian, gay and bisexual patients. *Medical teacher*, 35(9), 752–759. https://doi.org/10.3109/0142159X.2013.801943

Suomen Kätilöliitto [The Federation of Finnish Midwives]. (2023). *Working as a midwife in Finland*. https://suomenkatiloliitto.fi/en/the-federation-of-finnish-midwives/ Date of access: August 11, 2023.

TeacherVision. (2023). *Textbooks: Advantages and Disadvantages*. https://www.teachervision.com/curriculum-planning/textbooks-advantages-disadvantages Date of access: December 23, 2023.

Tilastokeskus [Statistics Finland]. (2021). *Tilastokeskuksen maksuttomat tilastotietokannat*. https://www.stat.fi/til/khak/2020/khak_2020_2021-12-09_tie_001_fi.html Date of access: May 18, 2023.

Tilastokeskus [Statistics Finland]. (2023). *Varhaiskasvatukseen osallistuneiden lasten osuus kasvoi vuonna 2022*. https://www.stat.fi/julkaisu/cl8l48a1oj27m0dukvmlyq0wd Date of access: February 17, 2024.

Tsimtsiou, Z., Hatzimouratidis, K., Nakopoulou, E., Kyrana, E., Salpigidis, G., & Hatzichristou, D. (2006). Predictors of physicians' involvement in addressing sexual health issues. *The journal of sexual medicine*, 3(4), 583–588. https://doi.org/10.1111/j.1743-6109.2006.00271.x

Tudor, K. I., Petelin Gadže, Ž., Bujan Kovač, A., Bilić, E., Nađ Škegro, S., Bakula, M., Hauptman, D., Mudrovčić, M., Sitaš, B., Orešković, S., & Hajnšek, S. (2021). Sexual dysfunction in patients with epilepsy. *Psychiatria Danubina*, 33(Suppl 4), 490–495.

Turner, D., Nieder, T. O., Dekker, A., Martyniuk, U., Herrmann, L., & Briken, P. (2016). Are medical students interested in sexual health education? A nationwide survey. *International journal of impotence research*, 28(5), 172–175. https://doi.org/10.1038/ijir.2016.25

Tutino, J. S., Ouimet, A. J., & Shaughnessy, K. (2017). How do psychological risk factors predict sexual outcomes? A comparison of four models of young women's sexual outcomes. *The journal of sexual medicine*, 14(10), 1232–1240. https://doi.org/10.1016/j.jsxm.2017.07.011

United Nations. (2023). *Independent expert on sexual orientation and gender identity*. https://www.ohchr.org/en/special-procedures/ie-sexual-orientation-and-gender-identity Date of access: April 13, 2023.

United Nations Population Fund. (2023). *International Conference on Population and Development*. https://www.unfpa.org/events/international-conference-population-and-development-icpd Date of access: February 16, 2024.

Vik, A., & Brekke, M. (2017). Do patients consult their GP for sexual concerns? A cross sectional explorative study. *Scandinavian journal of primary health care*, 35(4), 373–378. https://doi.org/10.1080/02813432.2017.1398934

Virgolino, A., Roxo, L. & Alarcão, V. (2017). "*Facilitators and Barriers in Sexual History Taking*," in IsHak, W. W. (Ed.) The Textbook of Clinical Sexual Medicine. Springer, pp. 53–78.

Väestöliitto [Family Federation of Finland]. (2023). *FINSEX*. https://www.vaestoliitto.fi/en/research/family-well-being/finsex/ Date of access: December 28, 2023.

Walker, S. H., & Davis, G. (2014). Knowledge and reported confidence of final year midwifery students regarding giving advice on contraception and sexual health. *Midwifery*, 30(5), e169–e176. https://doi.org/10.1016/j.midw.2014.02.002

Warner, C., Carlson, S., Crichlow, R., & Ross, M. W. (2018). Sexual health knowledge of U.S. medical students: A national survey. *The journal of sexual medicine*, 15(8), 1093–1102. https://doi.org/10.1016/j.jsxm.2018.05.019

Watson, E., Shinkins, B., Frith, E., Neal, D., Hamdy, F., Walter, F., Weller, D., Wilkinson, C., Faithfull, S., Wolstenholme, J., Sooriakumaran, P., Kastner, C., Campbell, C., Neal, R., Butcher, H., Matthews, M., Perera, R., & Rose, P. (2016). Symptoms, unmet needs, psychological well-being and health status in survivors of prostate cancer: implications for redesigning follow-up. *BJU international*, 117(6B), E10–E19. https://doi.org/10.1111/bju.13122

World Health Organization (WHO). (2006). *Defining sexual health: report of a technical consultation on sexual health, 28–31 January 2002, Geneva*. https://www.cesas.lu/perch/resources/whodefiningsexualhealth.pdf Date of access: February 16, 2024.

World Health Organization (WHO). (2021). *Violence against women*. https://www.who.int/news-room/fact-sheets/detail/violence-against-women Date of access: April 18, 2023.

World Health Organization (WHO). (2023a). *Sexual health*. https://www.who.int/teams/sexual-and-reproductive-health-and-research/key-areas-of-work/sexual-health/defining-sexual-health Date of access: April 12, 2023.

World Health Organization (WHO). (2023b). *Gender and health*. https://www.who.int/health-topics/gender#tab=tab_1 Date of access: April 13, 2023.

World Health Organization (WHO). (2023c). *Contraception*. https://www.who.int/health-topics/contraception#tab=tab_1 Date of access: December 28, 2023.

World Health Organization (WHO). (2023d). *Cardiovascular diseases*. https://www.who.int/health-topics/cardiovascular-diseases#tab=tab_1 Date of access: November 19, 2023.

Wright, H., Jenks, R. A., & Demeyere, N. (2019). Frequent sexual activity predicts specific cognitive abilities in older adults. *The journals of gerontology*. Series B, Psychological sciences and social sciences, 74(1), 47–51. https://doi.org/10.1093/geronb/gbx065

Yale. (2023). *Seminar courses & discussions*. https://academiccontinuity.yale.edu/faculty/recommendations-remote-teaching/seminar-courses-discussions Date of access: July 12, 2023.

Yang, J. W., Yu, K., Wang, X. Q., Wang, Y., Zhang, C. C., Ma, R., Yu, H., & Zhou, Y. Q. (2023). Sexual needs of people with schizophrenia: a descriptive phenomenological study. *BMC psychiatry*, 23(1), 147. https://doi.org/10.1186/s12888-023-04640-z

Zamboni, B. & Bezek, K. (2017). Medical students' perceptions and preferences for sexual health education. *Sex Education*, 17(4), 371-385. https://doi.org/10.1080/14681811.2017.1299703

Zannoni, R., Dobberkau, E., Kaduszkiewicz, H., & Stirn, A. V. (2021). Addressing sexual problems in German primary care: A qualitative study. *Journal of primary care & community health*, 12, 21501327211046437. https://doi.org/10.1177/21501327211046437

Zar, F. (2022). Inspiring Sexual Attitude Reassessment (SAR). *The journal of sexual medicine*, 19(8), Supplement_3, S30–S31. https://doi.org/10.1016/j.jsxm.2022.05.111

Zeng, H. L., Chen, D. X., Li, Q., & Wang, X. Y. (2020). Effects of seminar teaching method versus lecture-based learning in medical education: A meta-analysis of randomized controlled trials. *Medical teacher*, 42(12), 1343–1349. https://doi.org/10.1080/0142159X.2020.1805100

Zhang, X., Yang, B., Li, N., & Li, H. (2017). Prevalence and risk factors for erectile dysfunction in Chinese adult males. *The journal of sexual medicine*, 14(10), 1201–1208. https://doi.org/10.1016/j.jsxm.2017.08.009

Ören, B., Zengin, N., Yazıcı, S., & Akıncı, A. Ç. (2018). Attitudes, beliefs and comfort levels of midwifery students regarding sexual counselling in Turkey. *Midwifery*, 56, 152–157. https://doi.org/10.1016/j.midw.2017.10.014

Appendices

Appendix 1.

GENERAL PRACTITIONERS' QUESTIONNAIRE

BACKGROUND INFORMATION

1. Year of birth

_____

2. Gender

[ ] Female
[ ] Male

3. From which university did you graduate as a doctor of medicine?

[ ] Helsinki
[ ] Kuopio
[ ] Oulu
[ ] Tampere
[ ] Turku
[ ] Abroad

4. In which hospital district are you currently working?

[ ] Etelä-Karjalan sairaanhoitopiiri (South Carelia region)
[ ] Etelä-Pohjanmaan sairaanhoitopiiri (South Ostrobothnia region)
[ ] Etelä-Savon sairaanhoitopiiri (Southern Savonia region)
[ ] Helsingin ja Uudenmaan sairaanhoitopiiri (Helsinki and the capital region)
[ ] Itä-Savon sairaanhoitopiiri (Eastern Savonia region)
[ ] Kainuun sairaanhoitopiiri (Cajania region)
[ ] Kanta-Hämeen sairaanhoitopiiri (Kanta-Häme region)
[ ] Keski-Pohjanmaan sairaanhoitopiiri (Central Ostrobothnia region)
[ ] Keski-Suomen sairaanhoitopiiri (Central Finland region)

[ ] Kymenlaakson sairaanhoitopiiri (Kymenlaakso region)
[ ] Lapin sairaanhoitopiiri (Lapland region)
[ ] Länsi-Pohjan sairaanhoitopiiri (Länsi-Pohja region)
[ ] Pirkanmaan sairaanhoitopiiri (Tampere region)
[ ] Pohjois-Karjalan sairaanhoitopiiri (North Karelia region)
[ ] Pohjois-Pohjanmaan sairaanhoitopiiri (North Ostrobothnia region)
[ ] Pohjois-Savon sairaanhoitopiiri (Northern Savonia region)
[ ] Päijät-Hämeen sairaanhoitopiiri (Päijät-Häme region)
[ ] Satakunnan sairaanhoitopiiri (Satakunta region)
[ ] Vaasan sairaanhoitopiiri (Vaasa region)
[ ] Varsinais-Suomen sairaanhoitopiiri (Southwest Finland region)
[ ] Ålands hälso- och sjukvård (Åland region)

With how many patients do you handle sexual issues per week?
[ ] 0
[ ] 1–5
[ ] 6–10
[ ] 11–15
[ ] 16–20

Appendix 2.

STUDY I QUESTIONNAIRE

A) Self-reported competence in discussing sexual health and treating patients with sexual issues (seven questions)

1. How easy is it for you to discuss sexual issues if your patient addresses the subject?
[ ] Not a problem
[ ] A minor problem
[ ] A moderate problem
[ ] A major problem
[ ] Cannot say

2. How do you classify your competence in discussing sexual problems with male patients?
[ ] Good
[ ] Quite good
[ ] Quite poor
[ ] Poor

3. How do you classify your competence in discussing sexual problems with female patients?
[ ] Good
[ ] Moderate
[ ] Quite poor
[ ] Poor

4. How do you classify your competence in treating male patients' sexual problems?
[ ] Good
[ ] Quite good
[ ] Quite poor
[ ] Poor

5. How do you classify your competence in treating female patients' sexual problems?
[ ] Good
[ ] Moderate
[ ] Quite poor
[ ] Poor

6. When you take a sexual history, do you explore how satisfied the patient is with his/her sexual life?
[ ] Always
[ ] Usually
[ ] Seldom
[ ] Never

7. How do you usually conduct sexual history-taking? (Y*ou can choose more than one option.)*
[ ] Open conversation

[ ] Questionnaire
[ ] Structured interview
[ ] I don't take a sexual history

B) Barriers to bringing up sexual problems during GPs' appointments (ten questions)

Bringing up sexual issues with patients is hindered by:

	Not at all			**Very much**	**Cannot say**
1. Shortness of the appointment time	**1. [ ]**	**2. [ ]**	**3. [ ]**	**4. [ ]**	**5. [ ]**
2. Sexual issues not being a priority in the appointment	**1. [ ]**	**2. [ ]**	**3. [ ]**	**4. [ ]**	**5. [ ]**
3. Personal attitudes and beliefs	**1. [ ]**	**2. [ ]**	**3. [ ]**	**4. [ ]**	**5. [ ]**
4. Personal discomfort when addressing sexual issues	**1. [ ]**	**2. [ ]**	**3. [ ]**	**4. [ ]**	**5. [ ]**
5. Lack of knowledge about sexual medicine	**1. [ ]**	**2. [ ]**	**3 . [ ]**	**4. [ ]**	**5. [ ]**
6. Lack of experience with sexual medicine	**1. [ ]**	**2. [ ]**	**3. [ ]**	**4. [ ]**	**5. [ ]**
7. Lack of effective treatment	**1. [ ]**	**2. [ ]**	**3. [ ]**	**4. [ ]**	**5. [ ]**
8. Fear of failing to respond to patients' sexual issues	**1. [ ]**	**2. [ ]**	**3. [ ]**	**4. [ ]**	**5. [ ]**
9. Gender differences (where the patient is of the opposite gender)	**1. [ ]**	**2. [ ]**	**3. [ ]**	**4. [ ]**	**5. [ ]**
10. Disability of the patient	**1. [ ]**	**2. [ ]**	**3. [ ]**	**4. [ ]**	**5. [ ]**

C) Sources of education on sexual medicine (two questions)

1. From which sources have you gained the knowledge of sexual medicine that you use in your patient work? ***(You can choose more than one option.)***
[ ] Medical books
[ ] Medical journals
[ ] Continuing education
[ ] Congresses
[ ] Consultation of guidelines
[ ] Education given in medical school
[ ] Consultations and discussions with colleagues
[ ] Other (please specify): _____

2. In your opinion, how adequate was medical school as a source of education when considering your sexual medicine competence?

	Insufficient			**Sufficient**
Medical school	1. [ ]	2. [ ]	3. [ ]	4. [ ]

D) Need for sexual medicine education (two questions)

1. Do you feel a need for continuing sexual medicine education?
[ ] Yes
[ ] No

2. If you answered yes, in what form would you prefer to receive continuing education? (You may choose more than one option.)
[ ] Lectures
[ ] Workshops
[ ] Simulations
[ ] Online learning platforms
[ ] Other (please specify)

Appendix 3.

STUDY II QUESTIONNAIRE

A) Frequency of inquiring about patients' sexual problems (one question)

	Totally agree 1	2	3	Totally disagree 4	Cannot say
1. I frequently inquire about sexual problems in general history-taking	[ ]	[ ]	[ ]	[ ]	[ ]

B) Frequency of inquiring sexual problems from various patient groups (ten questions)

How often do you inquire about sexual problems from the following patient groups?

	Never 1	Sometimes 2	Usually 3	Always 4	Cannot say
1. Patients with cardiovascular diseases	[ ]	[ ]	[ ]	[ ]	[ ]
2. Patients with neurological diseases	[ ]	[ ]	[ ]	[ ]	[ ]
3. Patients with endocrine diseases	[ ]	[ ]	[ ]	[ ]	[ ]
4. Gynecologic patients	[ ]	[ ]	[ ]	[ ]	[ ]
5. Urologic patients	[ ]	[ ]	[ ]	[ ]	[ ]
6. Menopause/Andropause patients	[ ]	[ ]	[ ]	[ ]	[ ]
7. Family planning patients	[ ]	[ ]	[ ]	[ ]	[ ]
8. Patients with mental illnesses	[ ]	[ ]	[ ]	[ ]	[ ]
9. Patients with substance abuse issues	[ ]	[ ]	[ ]	[ ]	[ ]
10. Patients with an immigrant background	[ ]	[ ]	[ ]	[ ]	[ ]

C) Knowledge of medications inducing sexual problems (eleven items)

1. Which of the following medications do you consider to induce sexual problems (you can choose more than one option)?

[ ] Hypertension
[ ] Arrhythmia
[ ] Hypercholesterolemia
[ ] Diabetes
[ ] Systemic cortisone
[ ] Prostate
[ ] Antiandrogens
[ ] Hormonal contraception
[ ] Menopausal hormone treatment
[ ] Antidepressants
[ ] I do not know of any medication that induces sexual problems

D) Awareness of possible sexual problems and frequency of inquiring about them in relation to medications (three question)

	Totally agree 1	2	3	Totally disagree 4	Cannot say
1. Sexual problems are often side effects of medications for other pathologies	[ ]	[ ]	[ ]	[ ]	[ ]
2. I change patients' medication if it causes sexual problems as a side effect	[ ]	[ ]	[ ]	[ ]	[ ]

3. After prescribing a medication, do you ask the patient about possible side effects in sexual function at the next appointments?

[ ] Always
[ ] Usually
[ ] Seldom
[ ] Never

Appendix 4.

STUDENTS' QUESTIONNAIRE

BACKGROUND INFORMATION

For the medical students:

1. Year of birth?

_____

2. Gender

[ ] Female
[ ] Male

3. In which university are you studying?

[ ] Helsinki
[ ] Kuopio
[ ] Oulu
[ ] Tampere
[ ] Turku

4. Have you met patients with sexual problems during your studies?

[ ] Not at all
[ ] Once
[ ] A few times
[ ] Many times
[ ] Cannot say

For the midwifery students:

1. Year of birth?

_____

2. Gender

[ ] Female
[ ] Male

3. In which university of applied sciences are you studying?

[ ] Arcada
[ ] JAMK
[ ] Metropolia
[ ] Novia
[ ] OAMK
[ ] Savonia
[ ] TAMK
[ ] Turun AMK

4. Have you met patients with sexual problems during your studies?

[ ] Not at all
[ ] Once
[ ] A few times
[ ] Many times
[ ] Cannot say

Appendix 5.

STUDY III QUESTIONNAIRE

A) Self-reported competence in discussing sexual issues and treating patients (four questions/statements)

1a. Have you met patients with sexual problems while working as a substitute midwife/doctor?
[ ] Not at all
[ ] Once
[ ] A few times
[ ] Many times
[ ] Cannot say

1b. If yes, what was the result?
[ ] The patient got the help they needed
[ ] My skills weren't good enough, and thus the patient did not get the help they needed
[ ] I consulted a senior/referred the patient to a specialist (for the medical students)/ I consulted a colleague (a midwife/a doctor) (for the midwifery students)
[ ] I disregarded the patient's problem
[ ] Cannot say

2. How easy is it for you to discuss sexual issues if the patient addresses the subject?
[ ] No problem
[ ] Minor problem
[ ] Moderate problem
[ ] Major problem
[ ] Cannot say

	Totally agree 1	2	3	Totally disagree 4	Cannot say
3. I can easily bring up sexual issues with my patient	[ ]	[ ]	[ ]	[ ]	[ ]
4. I can evaluate a patient's sexual problems, and I know when to refer the patient to a specialist	[ ]	[ ]	[ ]	[ ]	[ ]

B) Barriers to bringing up sexual problems with a patient (nine issues)

Bringing up sexual problems with a patient is hindered by:

	Not at all		Very much		Cannot say
1. Lack of time	1. [ ]	2. [ ]	3. [ ]	4. [ ]	5. [ ]
2. Sexual issues not being a priority in the patient's treatment at the moment	1. [ ]	2. [ ]	3. [ ]	4. [ ]	5. [ ]
3. The provider's personal attitudes and beliefs	1. [ ]	2. [ ]	3. [ ]	4. [ ]	5. [ ]
4. The provider's personal discomfort when addressing sexual issues	1. [ ]	2. [ ]	3. [ ]	4. [ ]	5. [ ]
5. Lack of knowledge of sexual medicine	1. [ ]	2. [ ]	3. [ ]	4. [ ]	5. [ ]
6. Lack of experience with sexual medicine	1. [ ]	2. [ ]	3. [ ]	4. [ ]	5. [ ]
7. Fear of failing to respond to the patient's sexual issues	1. [ ]	2. [ ]	3. [ ]	4. [ ]	5. [ ]
8. Gender differences (where the patient is of the opposite gender)	1. [ ]	2. [ ]	3. [ ]	4. [ ]	5. [ ]
9. Disability of the patient	1. [ ]	2. [ ]	3. [ ]	4. [ ]	5. [ ]

C) Need for sexual medicine education (four questions):

1. Are you interested in sexual medicine education?
[ ] Not at all
[ ] A little
[ ] Fairly
[ ] Very

2. How much education do you think you received in sexual medicine during your studies?
[ ] Too little
[ ] An adequate amount
[ ] Too much
[ ] Cannot say

3a. Should sexual medicine education be mandatory or voluntary during medical/midwifery studies?
[ ] Mandatory
[ ] Voluntary

3b. If mandatory, how would the teaching be best implemented?
[ ] A separate course on sexual medicine
[ ] Integrated into other subjects

4. In which form should the teaching of sexual medicine be given? (Y*ou can choose more than one option.)*
[ ] Lectures
[ ] Seminars
[ ] With real patients
[ ] Simulations
[ ] Workshops
[ ] Movies
[ ] Online learning platforms
[ ] Other (please specify)

Appendix 6.

STUDY IV QUESTIONNAIRE

A) Competence and knowledge in encountering and assessing patients with sexual issues (eight questions)

In my opinion:

	Totally agree 1	2	3	Totally disagree 4	Cannot say
1. I know the basics of human sexual development	[ ]	[ ]	[ ]	[ ]	[ ]
2. I know the basics of sexual evolution and expression of sexuality across the lifespan	[ ]	[ ]	[ ]	[ ]	[ ]
3. I know the basics of aging and sexuality	[ ]	[ ]	[ ]	[ ]	[ ]
4. I know how to consider sexuality when taking care of patients with mental illnesses	[ ]	[ ]	[ ]	[ ]	[ ]
5. I know the basics of how multiculturalism affects sexuality	[ ]	[ ]	[ ]	[ ]	[ ]
6. I know how to encounter victims of domestic violence/sexual abuse	[ ]	[ ]	[ ]	[ ]	[ ]
7. My knowledge of sexual orientation (e.g., hetero- and homosexuality) is adequate	[ ]	[ ]	[ ]	[ ]	[ ]
8. My knowledge of gender diversity (e.g., transgender people) is adequate	[ ]	[ ]	[ ]	[ ]	[ ]

B) Competence in taking care of patients with sexual problems (eight questions)

In my opinion:

	Totally agree 1	2	3	Totally disagree 4	Cannot say
1. I know the basics of sexual pleasure and treating lack of it	[ ]	[ ]	[ ]	[ ]	[ ]
2. I know the basics of decreased libido and the basics of its treatment	[ ]	[ ]	[ ]	[ ]	[ ]
3. I know the diagnostics and treatment of arousal problems	[ ]	[ ]	[ ]	[ ]	[ ]
4. I know the diagnostics and treatment of orgasm disorders	[ ]	[ ]	[ ]	[ ]	[ ]
5. I know the diagnostics and treatment of dyspareunia	[ ]	[ ]	[ ]	[ ]	[ ]
6. I know the basics of erectile dysfunction and the basics of its treatment	[ ]	[ ]	[ ]	[ ]	[ ]
7. I know how to treat sexual problems due to relationship problems	[ ]	[ ]	[ ]	[ ]	[ ]
8. I know how to treat sexual problems due to chronic diseases	[ ]	[ ]	[ ]	[ ]	[ ]

C) Need for sexual medicine education (four questions)

Mark 1–5 the most interesting fields in which you consider more education is needed (Please note! If you mark more than 5 fields, you won't be able to proceed with the questionnaire):

[ ] Sexual development during childhood and adolescence
[ ] Sexual history-taking
[ ] Hormones affecting sexuality
[ ] Arousal problems
[ ] Reasons for and treatment of erectile dysfunction
[ ] Reasons for and treatment of premature ejaculation
[ ] Reasons for and treatment of priapism
[ ] Sexual orientation

[ ] Development of gender and gender identity
[ ] Surgery of sex organs
[ ] Reasons for and treatment of orgasm disorders
[ ] Reasons for and treatment of dyspareunia
[ ] Medications affecting sexuality
[ ] Lack of sexual desire and its treatment
[ ] Sexual abuse of a child
[ ] Sexual violence/ sexual abuse of an adult
[ ] Effects of infertility and its treatment on sexuality
[ ] Effects of abortion on sexuality
[ ] Effects of relationship problems on sexuality
[ ] Sociological and cultural factors affecting sexuality
[ ] Different methods of sexual interaction/ sexual habits
[ ] Disability and sexuality
[ ] Aging and sexuality
[ ] Social media and sexuality
[ ] Other; please specify

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