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Multidisciplinary approach in health: New strategies from the perspective of education, management, culture and gender

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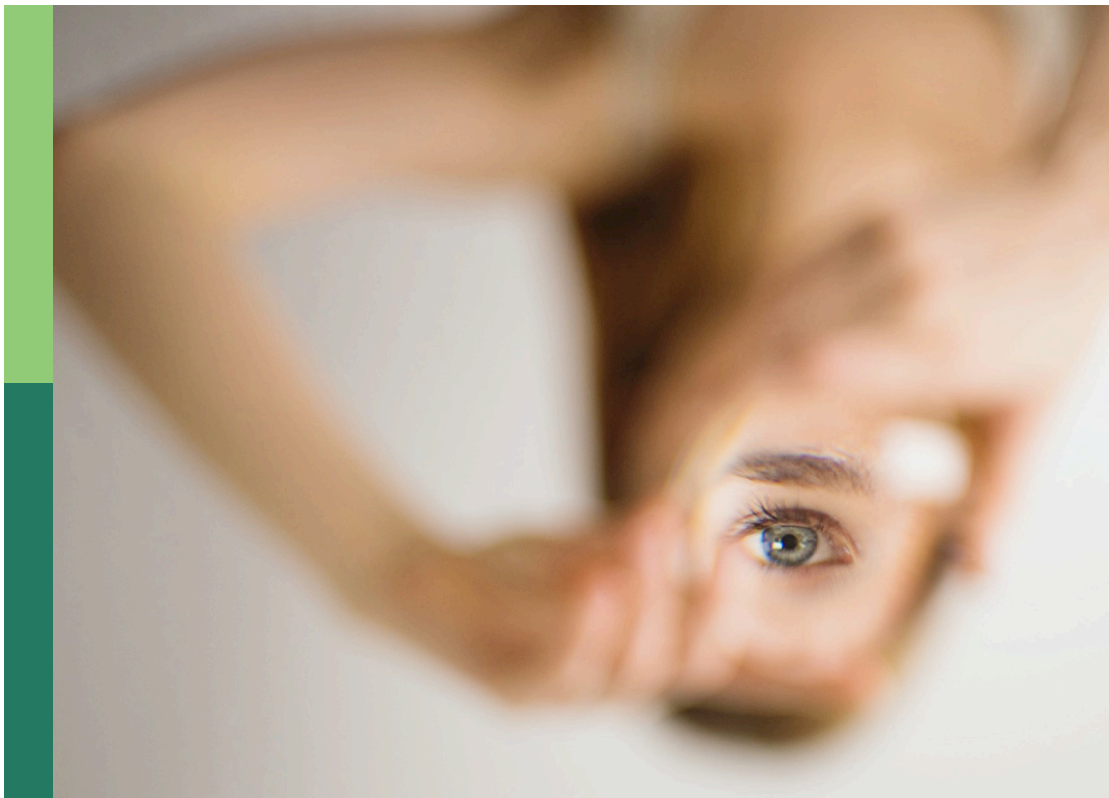

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Multidisciplinary approach in health: New strategies from the perspective of education, management, culture and gender

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Editorial: Multidisciplinary approach in health: new strategies from the perspective of education, management, culture and gender

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Editorial on the Research Topic
Multidisciplinary approach in health: new strategies from the perspective of education, management, culture and gender

The training within the European Higher Education Area must promote equality and inclusion in both academic and social spheres, fostering respect toward cultural diversity and sexual orientation, and ensuring non-discriminatory access to education, while integrating a gender perspective across all university areas.

From this standpoint, within the field of Health Sciences, there is a need for training in both knowledge and skills that facilitate the development of cultural competence (Berenguel Chacón et al., 2023) and education in affective-sexual matters (Cantarino et al., 2016).

However, do educational programs include comprehensive sexual education? Scientific literature paints a rather discouraging picture in this regard, revealing significant deficiencies that need to be addressed (Cunha-Oliveira et al., 2021). There is also evidence of inadequate training in providing healthcare in culturally diverse contexts (Sharifi et al., 2019).

It is necessary to enhance new educational approaches different from conventional ones, where the focus is not only on conceptual competencies related to the discipline but also on the development of attitudes free from biases and prejudices, and behaviors that do not discriminate against people based on their cultural background or sexual orientation (Acosta-Leal et al., 2020).

Undoubtedly, the educational project will be enriched through interdisciplinary collaboration among healthcare professionals (social workers, psychologists, educators, and public health experts). In this regard, there is a proposal that examines the interaction of sex and gender psychological roles on symptoms of stress, scatter, and anxiety: Sex and gender role differences in stress, depression, and anxiety symptoms in response to the COVID-19 pandemic over time (Arcand et al.), which states that sexual and psychological gender differences contribute to heterogeneous patterns of stress and anxiety symptoms over time in response to the COVID-19 pandemic. However, training in health sciences

a should include experiential learning opportunities in diverse rotations and fieldwork, allowing students to apply theoretical knowledge in real-life situations and develop empathy and teamwork skills. Therefore, mental health and healthcare are fundamental aspects that must be addressed comprehensively in the context of gender and healthcare.

The discrimination, stigma, and lack of access to culturally competent health services, including mental health, can exacerbate the challenges faced by LGBTQ+ individuals in terms of emotional and psychological wellbeing. Thus, to address these disparities, both students and healthcare professionals must recognize and address the specific mental health needs of LGBTQ+ individuals, creating safe and prejudice-free environments where they can express their concerns and receive support. This situation is addressed in: Gender and sexuality in mental health: perspectives on the rights and mental health of lesbians, gays, bisexuals, and transgender people (LGBT) in the ASEAN region (Alibudbud). Training in cultural competence and gender sensitivity is emphasized to ensure inclusive and respectful care. It is also important to promote policies that protect LGBTQ+ rights, such as laws that promote anti-discrimination and equal access to healthcare (Ugarte-Gurrutxaga, 2020).

It is important to foster critical thinking, ethical reflection, and a commitment to continuous improvement in higher education within the health sciences. Indeed, self-esteem and professional identity are crucial elements for healthcare professionals and students. In the literature, a study reveals that perceived prejudice and psychological distress can influence these aspects (Wu et al.). Stereotypes and perceived discrimination in the workplace that can undermine self-esteem and professional confidence, negatively impacting the quality of care provided, are shown. It is essential to address these challenges to promote an inclusive and healthy work environment where healthcare professionals develop a strong identity and maintain optimal mental health to provide quality care. It is also worth noting that historically, as documented by Espina-Jerez et al., early female predecessors of modern nursing faced socio-cultural difficulties solely because of their gender due to their scientific activities such as herbalism and healing, among others, being condemned and even imprisoned for these practices. Another issue related to training in health sciences is observed in the study presented by Shiningayamwe, which addresses the implementation of educational policies in Namibia and student pregnancies in rural schools. In fact, these authors propose essential ideas to reduce pregnancies and school dropout rates, reinforcing formal education. It is recognized that sex education leads to changes in behaviors and norms, as expressed by Gradellini et al., where perspectives such as students' educational level, prior knowledge, and possible reactions to sexual topics are analyzed, without forgetting religious and cultural influences. This issue is raised and continued in the literature with a question: Purity or perversion? From taboo to fact: reflections of kindergarten teachers on age-appropriate sexuality (Lehn et al.). It is concluded that sexuality constitutes a crucial educational issue requiring further exploration to overcome barriers to its addressing, with the aim of improving the preparation and competence of future healthcare professionals.

Alzain et al. recognize the value of volunteering in personal and professional development. Thus, it is evaluated how this experience fosters competencies such as intercultural communication, teamwork, and problem-solving, as well as specific technical skills in healthcare specialties.

The authors Santiago et al. present a multicenter study investigating nursing students' knowledge about sexuality, sex, and gender diversity. It is imperative that nursing curricula integrate a deep understanding of sexuality and its diversity. This will ensure adequate preparation to comprehensively and sensitively address sexual health needs.

Author contributions

SG-C: Conceptualization, Formal analysis, Investigation, Project administration, Validation, Visualization, Writing – original draft. MU-G: Conceptualization, Formal analysis, Investigation, Project administration, Visualization, Writing – review & editing. CS-R: Data curation, Methodology, Supervision, Writing – original draft. BO: Resources, Visualization, Writing – review & editing.

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Gender and sexuality in mental health: perspectives on lesbians, gays, bisexuals, and transgender (LGBT) rights and mental health in the ASEAN region

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This perspective piece focuses on and analyzes several lesbians, gays, bisexuals, and transgender (LGBT) individuals' rights and their limitations in the Association of Southeast Asian Nations (ASEAN) region, including the limited recognition of self-determined gender identity, limited legal provisions for LGBT marriage, inadequate anti-discrimination policies, and the criminalization of homosexuality. These inadequacies in LGBT rights may stem from colonial, religious, and cultural factors. Moreover, these limited LGBT rights and their societal repercussions may contribute to the minority stress of LGBT individuals, leading to their higher rates of mental health problems. Thus, there may be a need to uphold, recognize, and protect LGBT rights as the region pursue equitable mental health. Toward this pursuit, the region may possibly benefit from culturally adapting gender-affirming practices, increasing their social support, opposing the practice of conversion therapy, and decriminalizing homosexuality. It may also be necessary to explore, analyze, and study the intersection of LGBT identity and mental health, especially longitudinal and interventional studies.

KEYWORDS

sexual and gender minorities, mental health, Southeast Asia, gender identity, marriage equality, discrimination, LGBT rights, homosexuality

1. Introduction

The Association of Southeast Asian Nations (ASEAN) comprises ten member states, including Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Singapore, Thailand, and Vietnam. The ASEAN is also a region with diverse cultures, traditions, and policies (Global Health Action, 2015). Notably, at least a quarter of the population of several ASEAN member states, including Indonesia, Malaysia, the Philippines, Singapore, Thailand, and Vietnam, may have negative attitudes toward lesbians and gay men (Manalastas et al., 2017). Similarly, bisexual and transgender individuals have also reported multiple instances of discrimination in the region (UNDP and USAID, 2014; Kwatra, 2017; Langlois et al., 2017; Weiss, 2021). These attitudes may stem from colonial, religious, and cultural factors (Manalastas et al., 2017; Alibudbud, 2021; Tan and Saw, 2022). Unfortunately, legislation protecting them from these attitudes and discrimination remains sparse in the region (Kwatra, 2017; Langlois et al., 2017; Weiss, 2021).

2. Minority stress and sexual citizenship

Meyer's minority stress model identifies these negative attitudes and discrimination against lesbians, gays, bisexuals, and transgender (LGBT) individuals as distal stressors, which are the "external, objective stressful events and conditions (Meyer, 2003)". As contributors to minority stress, these adverse behaviors and limited protective policies for LGBT individuals may contribute to their higher rates of mental disorders than the general population (Meyer, 2003; UNDP and USAID, 2014; Alibudbud, 2021; Tan and Saw, 2022). These mental health disparities are already evident among LGBT individuals in the ASEAN region. For example, Tan and Saw (2022) noted in their review that there is an increased prevalence of depression, non-suicidal self-injury, suicidal ideation, and suicide attempt among LGBT individuals compared to their cisgender and heterosexual counterparts in the region. Thus, it is necessary to analyze the existing rights of LGBT individuals and their possible influence on LGBT mental health.

This perspective piece reviews the legislation for several LGBT rights, their limitations, and their possible implications for mental health in the ASEAN region. While LGBT rights have been examined using various theoretical and methodological approaches and frameworks (e.g., gay and lesbian studies, queer studies) (Kuriakose and Iyer, 2020), this perspectives piece positions LGBT rights using the sexual citizenship framework of Richardson (2000). This framework is among the predominant frameworks for analyzing the right claims for LGBT people (Richardson, 2015). Its use has prompted legislative and social changes (e.g., the right to equal marriage) for LGBT people in many regions of the world (Richardson, 2015). Therefore, in the hopes of achieving similar social changes for LGBT people in the ASEAN region (Richardson, 2000), this perspective piece followed the sexual citizenship framework. In doing so, it situates LGBT rights based on discourses about conduct-based, identity-based, and relationship-based rights claims. Conduct-based discourses center on the right to sexual practice, including the participation and enjoyment of sexual acts and those concerned with "bodily self-control (Richardson, 2000)." This right concerns discriminatory legislation penalizing certain sexual practices, such as criminalizing homosexuality (Richardson, 2000). Identity-based discourses focus on the right to self-definition, self-expression, and self-realization, including the recognition of self-determined gender identity and freedom from sexual orientation, gender identity, and expression (SOGIE) based discrimination (Richardson, 2000). Lastly, relationship-based discourses emphasize the right to the public validation of diverse forms of sexual interactions, including the recognition of marriage among LGBT individuals (Richardson, 2000).

Given this framework for LGBT rights, this perspective piece focuses on, analyzes, and critiques the state of gender identity recognition and affirmation, LGBT marriage, discrimination, and the criminalization of homosexuality among ASEAN countries. Likewise, their possible roots and implications for the mental health of LGBT individuals were also explored in light of the minority stress model.

3. Discussion

3.1. Gender identity recognition and affirmation

Gender identity signifies a "person's deeply felt, internal and individual experience of gender, which may or may not correspond to the person's physiology or designated sex at birth (World Health Organization, n.d.)." Richardson (2000) identifies that the right to self-definition may entail validating and recognizing self-determined gender identity. However, the region's recognition of diverse gender identities, such as transgender and non-binary identities, is limited. For instance, Thailand does not legally recognize self-determined gender identity despite performing the highest number of sex reassignment surgeries worldwide (Kwatra, 2017). This limited recognition can be partly attributed to terms in the Marriage Condition and Family Sections of Thailand's Civil and Commercial Code, which limits recognition to an individual's sex at birth (Kwatra, 2017; Newman et al., 2021). Only Vietnam and Singapore recognize self-determined gender identity in the ASEAN region. However, gender identity is only recognized after individuals have undergone sex reassignment surgery (Kwatra, 2017).

This limited gender identity recognition may contribute to minority stress, leading to heightened rates of mental disorders among LGBT individuals in the region (Tan and Saw, 2022). A systematic review by Tan and Saw (2022) found that LGBT mental health may benefit from affirming one's gender identity. However, they also highlighted that further studies, including longitudinal and interventional research, are necessary to establish the mental health outcomes of gender affirmation Tan and Saw (2022). Nonetheless, evidence suggests that legal gender recognition without impediments, such as removing the requirement of sex reassignment surgery or hormonal therapy, may be provided to possibly improve mental health outcomes among LGBT individuals (Newman et al., 2021; Tan and Saw, 2022).

In general, LGBT individuals in the region may benefit from gender identity affirmation. In addition, the region can also culturally adapt other countries' gender-affirming guidance to fit their context. For instance, US gender-affirming practices such as gender-specific group therapy can be adapted to the Philippines by implementing this therapy among its closely-bonded peer groups called "bakadahan" (Alibudbud, 2021; American Psychiatric Association, n.d.). Nonetheless, further research, especially longitudinal studies, is needed to ascertain the benefits of gender affirmation and surgery on mental health in the region.

3.2. LGBT marriage and unions

Like gender affirmation, marriage may also offer protection against poor mental health (Wight et al., 2013). In addition, evidence suggests that married individuals have higher social support, intimacy, and self-worth, contributing to higher mental well-being (Wight et al., 2013). This protective effect has also been found among LGBT couples (Wight et al., 2013). Likewise, marriage may be vital in Asian cultures, where their closely-knitted

communities offer readily available social support (Manalastas et al., 2017; Alibudbud, 2021; Tan and Saw, 2022). Thus, as an LGBT right, the public recognition of LGBT marriage may be important for the mental health of LGBT individuals in the ASEAN region. However, the region has limited legal provisions for LGBT marriage or unions. As a result, the additional protection afforded by marriage and romantic relationships may not extend to LGBT individuals (Kwatra, 2017; Weiss, 2021).

This limited marriage equality may be attributed to social and legal impediments. For instance, the Philippines' Family Code, similar to Thailand, states that marriage is between a "man" and a "woman" (UNDP and USAID, 2014). Without repealing this code, it may limit the eventual recognition of LGBT marriage. Often in the region, arguments against marriage equality legislation to recognize LGBT marriages centered on its "religious immorality (e.g., Islam in Indonesia and Roman Catholicism in the Philippines) (UNDP and USAID, 2014; Manalastas et al., 2017; Alibudbud, 2021, 2022a; Weiss, 2021)." A popular Philippine example of this religion-based argument was a lawmaker's claim that people who engage in same-sex intercourse are "worse than animals (Alibudbud, 2021)." Thus, LGBT couples may be deprived of higher social support afforded to married heterosexual individuals. Moreover, relationships between LGBT individuals may be distressing since they may conceal their relationships because they may be discriminated against and penalized (UNDP and USAID, 2014; Pachankis et al., 2020; Alibudbud, 2021). Hence, limited marriage equality may also contribute to minority stress since it may entail arguments surfacing public prejudice toward LGBT individuals. Since marriage may possibly benefit mental health, efforts toward marriage equality and legal unions in the region can be replicated and started. For instance, Vietnam's LGBT community celebrated the removal of their government's ban on LGBT marriage (Kwatra, 2017). This ban removal can also be reiterated and replicated among the region's nations. While awaiting marriage equality legislation, social support can also be strengthened by supporting LGBT organizations, incentivizing companies with LGBT-friendly policies, and expanding gender mainstreaming activities that include LGBT identities.

3.3. LGBT discrimination and anti-discrimination laws

Freedom from discrimination is an inherent right accorded to individuals. The sexual citizenship framework identifies protection from SOGIE-based discrimination as a possibly fundamental sexual right of LGBT individuals (Richardson, 2000). However, evidence suggests that negative attitudes and discrimination against LGBT individuals may be higher in several ASEAN countries than in some of their western counterparts (Manalastas et al., 2017; Tan and Saw, 2022). LGBT individuals have also reported that discrimination can occur in various settings, including homes, schools, and workplaces (UNDP and USAID, 2014; Kwatra, 2017). Likewise, they also noted that discrimination could be committed by their peers, family members, and government officials (UNDP and USAID, 2014; Kwatra, 2017; Weiss, 2021; Alibudbud, 2022a). For instance, young LGBT individuals in the Philippines have been mocked and bullied due to their gender identities by their classmates at school (UNDP and USAID, 2014). Likewise, those from Muslim families have also reported being disowned by their families due to their sexual orientation (UNDP and USAID, 2014). Outright physical and sexual abuses have also been reported in the region (UNDP and USAID, 2014). Among 25 reviewed studies in the region, it was found that these distal minority stressors consistently associate with adverse mental health outcomes, including heightened rates of depression and suicide attempts among LGBT individuals (Tan and Saw, 2022).

These negative societal attitudes and norms toward LGBT individuals are influenced by traditional religious values, especially in Malaysia, Indonesia, the Philippines, and Brunei (Manalastas et al., 2017; Tan and Saw, 2022; UNDP and USAID). For instance, Catholic values in the Philippines may promote cis-heterosexism, a view that cisgenderism and heterosexuality are society's "normal" configuration (Meyer, 2003; Alibudbud, 2021, 2022a; Tan and Saw, 2022; UNDP and USAID). This view may lead to a binary perception of gender and sexual orientation that is limited to the social classification of individuals as "men" and "women," thereby marginalizing LGBT individuals (Meyer, 2003; Alibudbud, 2021, 2022a; Tan and Saw, 2022; UNDP and USAID).

In recent years, there have been steps toward decreasing these stressors. Thailand and some Philippine localities have policies that protect from sexuality and gender-based discrimination (Kwatra, 2017; Weiss, 2021). However, their policy implementation may be poor, largely symbolic, and limitedly applied (Kwatra, 2017; Weiss, 2021). For instance, the national law in Thailand has several exemptions, which may decrease its effectiveness in mitigating discrimination (Kwatra, 2017). Hence, LGBT individuals may remain oppressed and abused. To cope with adversities, they conceal their gender identities and sexual orientation. Identity concealment may also be detrimental to mental health (Meyer, 2003; Pachankis et al., 2020; Alibudbud, 2021; Tan and Saw, 2022; UNDP and USAID). Thus, LGBT individuals may remain highly distressed whether they hide or live their sexual and gender identities.

Since discrimination may be detrimental to LGBT mental health, anti-discrimination policies may need to be strengthened (Meyer, 2003; Alibudbud, 2021; Tan and Saw, 2022; UNDP and USAID). Toward these policies, dialogues about gender inclusivity between lawmakers and the LGBT community, as seen in Thailand and Vietnam, may be increased and replicated in the region (UNDP and USAID, 2014; Kwatra, 2017; Tan and Saw, 2022). Furthermore, since psychiatry has a role in promulgating the pervasive LGBT stigma, psychiatrists may join the societal call and movement for LGBT rights in the region (The Lancet Psychiatry, 2022). For instance, similar to the Indian Psychiatric Association and Taiwan Society of Psychiatry, psychiatric associations in the ASEAN region may denounce the use of Conversion therapy and the medicalization of homosexuality (Focus Taiwan, 2017; Indian Psychiatric Association, 2020)). Principles for supporting LGBT individuals from other countries may also be adapted. For instance, the guidance of the Australian Capital Territory and the US' best practices for gender-affirming mental healthcare, such as using preferred names and pronouns, can be easily adapted in the

region (Australian Capital Territory, 2021; American Psychiatric Association, n.d.).

3.4. Criminalization of homosexuality

The participation and enjoyment of sexual acts and autonomy over one's body were important aspects of sexual rights based on conduct-based discourses (Richardson, 2000). Among others, these rights emphasize the freedom from discriminatory policies that penalize particular sexual behaviors (Richardson, 2000). The oppression of this right is arguably epitomized in state policies that criminalize homosexuality in the ASEAN region. For example, some countries in the region, such as Malaysia and Myanmar have, penal sanctions that outlaw "unnatural offenses" and criminalize sexual activities against the "natural order (Kwatra, 2017; Human Rights Watch, 2022)." These penalties are also performed in Aceh, Indonesia, where a 2009 law penalizes homosexuality with lashes of cane and imprisonment (Kwatra, 2017; Weiss, 2021). In Brunei, the penalty is more severe, where homosexuality is punished with death penalty (Kwatra, 2017). Many of these laws reflect their "British colonial past," where they have iterations of the Indian Penal Code, which criminalize "sexual activities against the order of nature (Kwatra, 2017; Langlois et al., 2017; Weiss, 2021)". Likewise, these laws reflect their religious values, such as in the predominantly Muslim country of Brunei and the region of Aceh, Indonesia (UNDP and USAID, 2014; Kwatra, 2017; Weiss, 2021; Tan and Saw, 2022).

While these penalties are rarely enforced, they may perpetuate the societal stigma against LGBT individuals in the region (Kwatra, 2017). In addition, these laws may also be sources of minority stress, where LGBT individuals are exposed to substantial fears of penalties and even death for their gender and sexual identities. As a result, they may hide their identities to cope with fear and penalties (UNDP and USAID, 2014; Kwatra, 2017; Tan and Saw, 2022). Fear and concealment of identity are both highly distressing experiences, furthering minority stress among LGBT individuals. Thus, decriminalizing homosexuality may be necessary to decrease minority stress (Meyer, 2003; UNDP and USAID, 2014; Kwatra, 2017; Pachankis et al., 2020; Alibudbud, 2021; Tan and Saw, 2022).

Recently, there has been a movement in the region toward ending the criminalization of homosexuality. For example, in 2022, LGBT individuals in Singapore celebrated their government's move to abolish the colonial-era 377A law, which criminalizes sex between men (Alibudbud, 2022b; Wong, 2022). The Singapore government's reason for the move was the friendlier and more accepting public attitudes toward LGBT individuals (Alibudbud, 2022b; Wong, 2022). Thus, other countries in the region may also reassess their citizens' attitudes to guide them toward gender-inclusive policies.

4. Conclusion

This perspective piece identified several LGBT rights in the ASEAN region following the sexual citizenship framework of Richardson (2000), including limited recognition of self-determined gender identity, limited legal provisions for LGBT marriage, inadequate anti-discrimination policies, and the criminalization of homosexuality. It described the possible repercussions of these rights and their limitations to mental health. Using the minority stress model of Meyer (2003), the continued inadequacies in LGBT rights and their repercussions in the region may contribute to the higher rates of mental health problems among LGBT individuals in the region. Thus, it may be necessary to uphold, recognize, and protect LGBT rights as the region pursue equitable mental health. As a start, these may be addressed by culturally adapting gender-affirming practices, increasing their social support, opposing the practice of Conversion therapy, and decriminalizing homosexuality. Another challenge facing the region is the dearth of research about the intersection of gender, sexuality, and mental health, especially longitudinal and interventional studies (Tan and Saw, 2022). Thus, research on LGBT-specific mental health needs may also be strengthened, including gender affirmation, gender dysphoria, and sex reassignment surgery. Moreover, LGBT rights and mental health can be further analyzed using other conceptual and methodological frameworks and approaches (e.g., intersectionality as an analytical framework) to understand, critique, and advance sexuality, gender, and mental health discourse and scholarship in the region, especially as regional policies develop.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Author contributions

RA had substantial contributions to the design, drafting, revision, acquisition, interpretation, and final approval of the data and work.

Conflict of interest

The author declares that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Sex and gender role differences on stress, depression, and anxiety symptoms in response to the COVID-19 pandemic over time

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Introduction: Stress, depression, and anxiety symptoms have been reported during the pandemic, with important inter-individual differences. Past cross-sectional studies have found that sex and gender roles may contribute to the modulation of one's vulnerability to develop such symptoms. This longitudinal study aimed to examine the interaction of sex and psychological gender roles on stress, depression, and anxiety symptoms in adults during the COVID-19 pandemic.

Methods: Following the confinement measures in March 2020 in Montreal, stress, depression, and anxiety symptoms were assessed every 3 months (from June 2020 to March 2021) with the Depression, Anxiety and Stress Scale among 103 females and 50 males. Femininity and masculinity scores were assessed with the Bem Sex Role Inventory before the pandemic and were added as predictors along with time, sex, and the interactions between these variables using linear mixed models.

Results: We observed similar levels of depressive symptoms between males and females, but higher levels of stress and anxious symptoms in females. No effects of sex and gender roles on depressive symptoms were found. For stress and anxiety, an interaction between time, femininity, and sex was found. At the beginning of the pandemic, females with high femininity had more stress symptoms than males with high femininity, whereas females with low femininity had more anxiety symptoms 1 year after the confinement measures compared to males with low femininity.

Discussion: These findings suggest that sex differences and psychological gender roles contribute to heterogeneous patterns of stress and anxiety symptoms over time in response to the COVID-19 pandemic.

KEYWORDS

stress, anxiety, depression, gender role, sex differences, long-term stressful event

1. Introduction

The health crisis provoked by the COVID-19 pandemic has had significant repercussions on the mental health of individuals worldwide. Indeed, several studies have shown a high prevalence of stress, anxiety, and depressive symptoms in the general population (Luo et al., 2020; Salari et al., 2020; Xiong et al., 2020). These findings have been especially present among females (Findlay et al., 2020; Newby et al., 2020; Özdin and Bayrak Özdin, 2020; Xiong et al., 2020). Meta-analyses of cross-sectional studies reported prevalence rates in these samples of up to 29.6% for stress symptoms, between 14.6% and 48.3% for depressive symptoms,

and between 6.3% and 50.9% for anxiety symptoms for people living mainly in Asia, as well as those living in Europe, the Middle East, United States, and Latin America (Luo et al., 2020; Salari et al., 2020; Xiong et al., 2020). In Canada, one study reported a deterioration of mental health in the general population during the first wave of the pandemic, characterized by an increase in anxiety and depressive symptoms (Robillard et al., 2021). The results of the latter study also showed that an increase in perceived stress during the pandemic was associated with an exacerbation of anxiety and depressive symptoms.

Given that most studies have used cross-sectional designs and the heterogeneity of the epidemiological evolution across the globe, the long-term mental health impact of the COVID-19 pandemic and confinement measures have been difficult to pinpoint. While several studies have reported an increase in anxiety and depressive symptoms at the onset of the health crisis relative to pre-pandemic symptoms, one study reported a decrease in symptoms mid-pandemic (Robinson et al., 2021), while another reported maintenance of symptoms (Daly et al., 2020). Although acute stress responses are adaptive and healthy (McEwen, 1998), chronic stress can lead to the dysregulation of the stress system and contribute to the development of psychopathologies such as anxiety and depressive disorders (McGonagle and Kessler, 1990; Staufenbiel et al., 2013). This highlights the need to better understand individual differences in resilience and vulnerability associated with the evolution of psychiatric symptoms over time.

Anxiety and depression are the most common psychopathologies in society and are highly comorbid. Indeed, a global study conducted by Kessler et al. (2015) showed that 45.7% of people who suffered from a depressive disorder in their lifetime had also suffered from one or more anxiety disorders. Sex differences for anxiety and depression are also observed starting from puberty onwards, with a higher vulnerability among females than males (Altemus et al., 2014; Baxter et al., 2014; Remes et al., 2016; Lim et al., 2018). Beyond these sex differences, studies have shown that including psychosocial variables in research (e.g., psychological gender roles) allows for a more profound understanding of these symptoms in individuals (Lengua and Stormshak, 2000; Palapattu et al., 2006).

As a concept distinct from birth-assigned sex, psychological gender roles are defined by the adherence of males and females to socially transmitted stereotypical characteristics associated with femininity and masculinity (Bem, 1981). Indeed, humans are socialized to incorporate personality traits, roles, characteristics, and attitudes that correspond to one's birth-assigned sex (Bem, 1981). Some argue that mental health is strongly modulated by psychological gender roles, as studies have demonstrated the influence of these roles on self-esteem, emotional regulation, psychological adjustment, and coping strategies (Bem, 1981; Jones et al., 2016). Despite criticisms regarding the year in which the instrument was created (Donnelly and Twenge, 2017), the Bem Sex-Role Inventory (Bem, 1974) is one of the most widely used questionnaires to assess psychological feminine and masculine traits (Beere, 1990; Hoffman and Borders, 2001). This instrument was developed to measure typically masculine desirable or instrumental traits, which refers to self-oriented characteristics and the achievement of personal goals (i.e., strong, assertive personality, willingness to take risks, defending one's beliefs). In addition, the instrument was developed to measure typically feminine desirable or expressive traits, which refers to characteristics oriented around connecting with others (i.e., understanding, gentle, warm, sensitive to the needs of others; Bem, 1974).

Rather than being conceptualized as two extremes on one continuum, Bem argued that femininity and masculinity are two independent continuums (Bem, 1974; Spence et al., 1975). In the literature, gender roles have been studied using either categorical or continuous methods. Originally proposed by Bem, the categorical method allows for the creation of groups by considering the level of endorsement of feminine and masculine traits. These groups are defined as follows: feminine (high in femininity), masculine (high in masculinity), androgynous (both high in femininity and high in masculinity), and undifferentiated (both low in femininity and low in masculinity; Bem, 1974). A large body of literature based on this method has shown that an androgynous gender role is associated with better psychological adjustment (Bem, 1974), fewer stress symptoms (Littlefield, 2004), social anxiety (Goodman and Kantor, 1983), and depressive symptoms (Cheng, 2005; Juster et al., 2016; Vafaei et al., 2016). In contrast, undifferentiated gender roles have been associated with poorer mental health (Bem, 1977), higher levels of social anxiety (Goodman and Kantor, 1983), and depression (Flett et al., 2009; Szpitalak and Prochwicz, 2013).

However, as the creation of groups using the categorical method is based on the median of masculinity and femininity of the sample, an individual's gender role is dependent on the study's sample and could easily vary across studies. Consequently, this method significantly impacts the external validity of the research being conducted (Sedney, 1981). Moreover, by classifying individuals as feminine or masculine gender-typed, the use of this method may lead to an under and overestimation of the contribution of the non-dominant and dominant gender roles, respectively (Johnson et al., 2006). Alternatively, the continuous method measures the distinct contributions of femininity and masculinity along continuums without impacting the generalization of the results.

To date, few studies have investigated the impact of categorical gender roles on stress symptoms and no research has explored the impact of gender roles (conceptualized as a continuous method) on stress symptoms specifically. Moreover, past studies exploring this research question were conducted using female-only samples. The latter presents an important limitation for our understanding of the interaction between gender roles and sex differences.

Regarding depressive symptoms, studies have shown that greater identification with masculine traits is associated with lower levels of depression (Feather, 1985; Whitley, 1985; Nezu and Nezu, 1987; Stoppard and Paisley, 1987; Grimmell and Stern, 1992; Thornton and Leo, 1992; Waelde et al., 1994; Bromberger and Matthews, 1996; Lengua and Stormshak, 2000; Gibson et al., 2016; Arcand et al., 2020). For the association between depression and feminine traits, mixed and null results have been reported in the literature (Tinsley et al., 1984; Feather, 1985; Whitley, 1985; Stoppard and Paisley, 1987; Grimmell and Stern, 1992; Waelde et al., 1994; Cheng, 1999; Lengua and Stormshak, 2000; Stoyanova and Hope, 2012; Gibson et al., 2016; Arcand et al., 2020). For anxiety symptoms, studies have reported that masculinity is

negatively associated with both anxiety (Nezu and Nezu, 1987; Eisler et al., 1988; Grimmell and Stern, 1992; Kleinplatz et al., 1992; Thornton and Leo, 1992; Stoyanova and Hope, 2012) and social anxiety (Moscovitch et al., 2005; Johnson et al., 2006). On the other hand, femininity has been positively correlated with anxiety symptoms (Palapattu et al., 2006; Blashill and Hughes, 2009; Arcand et al., 2020), social anxiety (Johnson et al., 2006), and phobic reactions (Blashill and Hughes, 2009).

The aforementioned studies have largely examined the global impact of gender roles on symptoms irrespective of birth-assigned sex. However, some studies have investigated whether sex moderates the contribution of psychological gender roles. For depressive symptoms, mixed results have been reported for both femininity and masculinity, with some studies finding associations in females (Lengua and Stormshak, 2000) and males (Szpitalak and Prochwicz, 2013; Gibson et al., 2016), while others found no sex differences at all (Feather, 1985; Waelde et al., 1994; Gibson et al., 2016; Vafaei et al., 2016). For stress and anxiety symptoms, an interaction between sex and gender roles has yet to be found (Nezu and Nezu, 1987; Moscovitch et al., 2005).

Of note, past studies have largely used cross-sectional designs. Indeed, only a few longitudinal studies have examined the effect of gender roles on depressive symptoms. A study by Cheng (1999) conducted on healthy young adults across two time points (with a 6-month interval) found that masculinity was negatively associated with depressive symptoms. These findings suggest that masculinity stably predicts fewer stress symptoms over time (Cheng, 1999). Inversely, in a sample of postmenopausal females, few masculine traits were associated with an increase in depressive symptoms measured 3 years later (Bromberger and Matthews, 1996). As measured across four time points over a 15-year period, only one study has reported no effect of gender roles on depressive symptoms in healthy adults (Wilhlem et al., 1998). To the best of our knowledge, no longitudinal study has explored the effects of gender roles on stress and anxiety symptoms. In addition, studies that have measured the impact of gender roles on symptoms of stress, depression, and anxiety have focused on general symptoms without considering a specific stressor and its temporality. Symptoms of stress, anxiety, and depression have been exacerbated and maintained over time as a result of the COVID-19 pandemic. Furthermore, the entirety of the general population was exposed to the same prolonged stressor (i.e., the pandemic). For this reason, it is important to better understand the effect of gender roles and sex differences to identify the risk factors associated with the development and maintenance of these symptoms.

The goal of our study was to examine the effects of sex and gender roles, as well as the joint effect of sex and gender roles, on stress, depression, and anxiety symptoms during the COVID-19 pandemic. Based on the literature, we formulated the following hypotheses: (1) females will exhibit more symptoms of stress, depression, and anxiety than males at the four time points; (2) higher masculinity will be associated with lower symptoms of stress, anxiety, and depression over the course of a year; (3) femininity will be associated with more anxiety symptoms. Considering the lack of data regarding the effect of gender roles on stress symptoms and mixed results regarding the impact of femininity on depression, we did not formulate a directional hypothesis for the association between gender roles and stress symptoms, nor for the association between femininity and depression. In addition, given the lack of data on sex differences concerning gender roles, no directional hypothesis was formed for the interactions between sex and gender roles.

2. Method and measure

2.1. Sample and study design

Across three different studies conducted in our laboratory, 160 participants between the ages of 19 and 54 years old were recruited via social media and bulletin boards in the Montreal area between July 2017 and March 2020. Upon recruitment, a telephone screening interview was conducted to ensure that participants were physically and mentally healthy and were not taking any medications for mental illnesses. All participants provided their written consent and took part in a laboratory-based experiment involving self-report questionnaires, as well as cognitive and emotional tasks. As a part of their participation in one of these three studies, gender roles were measured in all participants (T0).

The first case of COVID-19 was reported in Quebec in February 2020. In March 2020, all non-essential facilities and services were disrupted (i.e., closure of schools, daycare centers, workplaces, restaurants, and entertainment venues) and a provincial confinement was declared to limit the spread of the virus. Thereafter, the evolution of the confinement measures varied as a function of the epidemiological situation, see Figure 1 for a timeline overview. All participants recruited before the start of the pandemic (n = 160; T0) were re-contacted. In total,159 individuals agreed to take part in the study in May 2020. Gender role data was not available for six participants and thus, they were removed from the current analyses. Therefore, the final sample for the current study included data from 103 females and 50 males. After obtaining consent, sociodemographic data were collected, including measures of self-reported sex (female/male or prefer not to answer). Afterwards, symptoms of stress, depression, and anxiety were measured online at four post-confinement time points: T1 in June 2020 (+3 months), T2 in September 2020 (+6 months), T3 in December 2020 (+9 months), and T4 in March 2021 (+12 months). All self-report data were collected via Qualtrics, a highly secured online platform. For each time point, a personalized URL was sent to each participant by email. From T0, the attrition rate for each time point was as follows: T1 = 2.0 %, T2 = 7.2 %, T3 = 13.7 %, and T4 = 9.8 %. At the end of the study, participants received financial compensation that was proportional to their involvement in the study (ranging from $10 to $50). Ethics approval was obtained from the institutional review board of the *CIUSSS-de-l'Est-de-l'Île-de-Montréal*. This study was conducted in conformity with the Declaration of Helsinki.

2.2. Measures

2.2.1. Gender roles

The 30-item short form of the Bem Sex-Role Inventory (Bem, 1974) was used to assess psychological gender roles. This

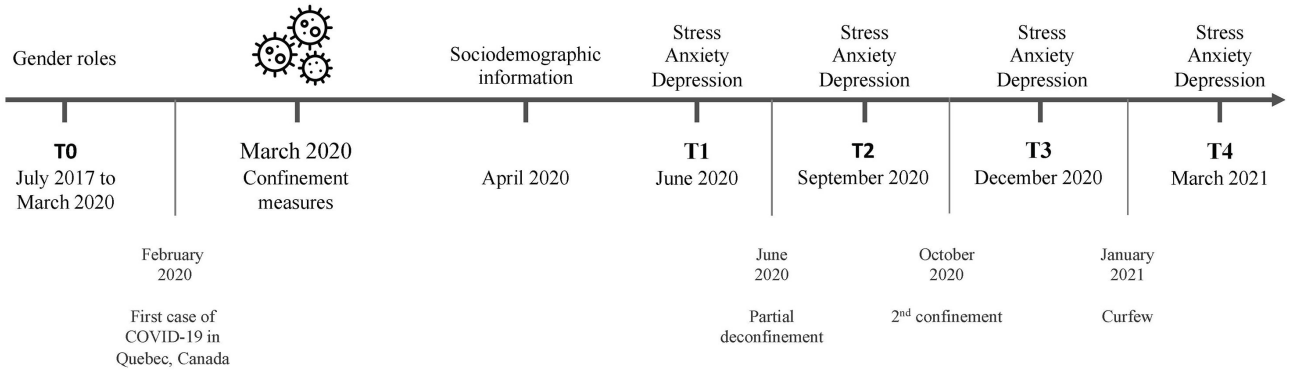

FIGURE 1
Timeline overview. Symptoms of stress, depression, and anxiety were measured at T1 in June 2020 (+3 months), T2 in September 2020 (+6 months), T3 in December 2020 (+9 months), and T4 in March 2021 (+12 months).

questionnaire is composed of subscales focusing on feminine (e.g., "sensitive to the needs of others") and masculine (e.g., "independent") stereotyped traits. The questionnaire had 10 items for each of the following traits: feminine, masculine, and neutral traits (the 10 neutral items were not used for the current manuscript). Participants were asked to rate each item using a Likert scale from 1 (never or almost never true) to 7 (always or almost always true), yielding a score between 10 and 70 for each subscale (i.e., femininity and masculinity). In this study, Cronbach's alphas for the masculine and feminine subscales of the French version of the questionnaire are 0.79 and 0.74, respectively.

2.2.2. Depression, anxiety, and stress symptoms

The 21-item Depression, Anxiety, and Stress Scale (DASS-21; Lovibond and Lovibond, 1995) is composed of three subscales which feature seven items evaluating each of the following: depression, anxiety, and stress. Participants had to rate each item using a Likert scale from 0 (does not apply to me at all) to 3 (applies to me entirely or the vast majority of the time). The items evaluating each subscale were summed and multiplied by two, yielding a score between 0 and 42. We used the French version of the questionnaire that was developed by Donald Martin's team from the University of Ottawa (available on the Internet at: French translation of the Donald, 2012). In our sample, we found good internal consistency such that Cronbach's alpha coefficients ranged from 0.8 to 0.83 depending on the subscale.

2.3. Statistical analyses

2.3.1. Preliminary analyses

To determine whether feminine traits, masculine traits, and age differed between males and females, we conducted independent samples *t*-tests with sex as the between-group variable. Then, we tested if symptoms of stress, depression, and anxiety at the four time points were correlated with potential covariates identified in the literature. Examples of these covariates include status (worker, student), level of education, income, having children, residence type (apartment, house), demographic location (urban, rural), and the number of people living in the household during the COVID-19 pandemic (Arcand et al., 2020; Özdin and Bayrak Özdin, 2020; Vindegaard and Benros, 2020).

2.3.2. Principal analyses

To assess the impact of sex and gender roles, as well as the joint effect of these variables on symptoms of stress, depression, and anxiety, we conducted linear mixed-effects models. Given the longitudinal nature of this study, these analyses allowed us to control for the dependency of the data that may occur when collecting repeated measures. Statistical analyses were performed using RStudio software, version 1.4.1106 for macOS. Distinct models were conducted for stress, depression, and anxiety symptoms. First, to examine the main effects, we entered time, sex, femininity, and masculinity as fixed effects into the model. As symptoms were nested within participants, random intercepts were included. Second, to assess the interaction between sex and gender roles, as well as the interaction between sex and femininity scores/masculinity scores, these interaction terms were added to the model as fixed effects. Residual plots were visually inspected for normality and homoscedasticity and did not reveal any obvious deviations for both statistical assumptions. We used the maximum likelihood estimate with random assumptions for all linear mixed-effects models. This estimate provided unbiased estimates and valid inferences in the case of missing data. Significant interactions were further decomposed using *post hoc* contrast comparison tests.

3. Results

3.1. Preliminary analyses

Table 1 features sample characteristics according to sex. The independent *t*-tests revealed no difference between males and females for age [$t_{(151)} = 0.423$, $p = 0.673$] and feminine traits [$t_{(139)} = -1.202$, $p = 0.231$]. A trend effect was found for masculine traits [$t_{(139)} = 1.878$, $p = 0.062$], where males (M = 4.68, SE = 0.11) tended to have more masculine traits than females (M = 4.41, SE

TABLE 1 Characteristics of the sample.

	Full sample	Females	Males
	N		
	153	103	50
T1	150	102	48
T2	142	96	46
T3	132	92	40
T4	138	95	43
Mean (SEM)			
Age	34.00 (0.80)	32.21 (0.93)	37.65 (1.40)
Femininity	5.73 (0.06)	5.78 (0.07)	5.64 (0.10)
Masculinity	4.50 (0.07)	4.41 (0.09)	4.68 (0.10)
Anxiety			
T1	4.75 (0.45)	5.29 (0.55)	3.65 (0.74)
T2	4.09 (0.44)	5.16 (0.59)	1.96 (0.46)
T3	4.26 (0.43)	5.48 (0.58)	1.76 (0.35)
T4	4.91 (0.46)	5.35 (0.57)	3.95 (0.74)
Stress			
T1	10.79 (0.61)	11.73 (0.77)	8.86 (0.94)
T2	10.78 (0.66)	12.22 (0.86)	7.92 (0.83)
T3	11.08 (0.70)	12.81 (0.87)	7.57 (0.98)
T4	11.94 (0.75)	13.03 (0.93)	9.53 (1.15)
Depression			
T1	6.37 (0.57)	6.69 (0.76)	5.73 (0.80)
T2	5.46 (0.51)	6.14 (0.70)	4.12 (0.57)
T3	5.85 (0.53)	6.67 (0.70)	4.16 (0.69)
T4	7.14 (0.62)	7.43 (0.79)	6.51 (0.97)

Standard errors of the mean (SEM) are presented in parentheses.

= 0.09). The correlation matrix showed no effect of status (worker, student), education level, income, having children, residence type (apartment, house), demographic location (urban, rural), and the number of people living in the household on stress, depression, and anxiety symptoms at all four time points. Therefore, none of these variables were used as covariates in the main analyses.

3.2. Main analyses for stress

For stress symptoms, the analysis yielded a main effect of sex [$F_{(1, 140)} = 12.09$, $CI_{95\%} = 1.67$ to 6.23, $p = 0.001$] and a trend for time [$F_{(1, 386)} = 2.99$, $CI_{95\%} = -0.05$ to 0.80, $p = 0.085$]. No main effect of femininity [$F_{(1, 142)} = 0.01$, $CI_{95\%} = -1.57$ to 1.48, $p = 0.95$] or masculinity [$F_{(1, 138)} = -0.46$, $CI_{95\%} = -1.78$ to 0.86, $p = 0.48$] were found. The time*masculinity interaction reached significance [$F_{(1, 387)} = 3.86$, $CI_{95\%} = -1.93$ to 0.12, $p = 0.050$] but *post-hoc* analyses revealed no significant effect. We also found a time*sex*femininity interaction [$F_{(1, 389)} = 3.58$, $CI_{95\%} = -2.54$ to 0.06, $p = 0.059$], see Table 2. To decompose this three-way interaction as a function of femininity, comparisons of means were made with the scores of 3 (low) and 7 (high) on the Bem Sex Role Inventory scale as a function of time (T1 to T4) and sex on femininity scores. These scores were chosen based on the range of scores obtained in our sample (lowest score was 3 and highest score was 7). *Post-hoc* tests showed that females with high levels of femininity (7) had significantly ($p \leq 0.05$) higher stress symptoms than males with high levels of femininity at T1, see Figure 2A.

3.3. Main analyses for depression

For depressive symptoms, the analysis revealed a trend effect of time [$F_{(1, 384)} = 3.11$, $CI_{95\%} = -0.04$ to 0.69, $p = 0.079$] but no effect of sex [$F_{(1, 139)} = 1.61$, $CI_{95\%} = -0.75$ to 3.33, $p = 0.213$], femininity [$F_{(1, 141)} = 0.21$, $CI_{95\%} = -1.68$ to 1.06, $p = 0.655$], or masculinity [$F_{(1, 137)} = 2.61$, $CI_{95\%} = -2.13$ to 0.23, $p = 0.113$]. The analysis did not detect a significant interaction, see Table 3 and Figure 2B.

3.4. Main analyses for anxiety

For anxiety symptoms, results showed a main effect of sex [$F_{(1, 126)} = 12.73$, $CI_{95\%} = 1.21$ to 4.32, $p = 0.001$] but no main effect of time [$F_{(1, 372)} = 0.11$, $CI_{95\%} = -1.37$ to 12.49, $p = 0.745$], femininity [$F_{(1, 128)} = 0.13$, $CI_{95\%} = -1.23$ to 0.85, $p = 0.719$], or masculinity [$F_{(1, 124)} = 0.53$, $CI_{95\%} = -1.23$ to 0.57, $p = 0.475$]. We also found a time*sex*femininity interaction [$F_{(1, 376)} = 3.79$, $CI_{95\%} = -1.81$ to 0.02, $p = 0.052$], see Table 4. Similar to the steps performed to decompose the three-way interaction as a function of femininity for stress symptoms, we used scores of 3 (low) and 7 (high) on the Bem Sex Role Inventory scale for anxiety symptoms. *Post-hoc* tests revealed that females with low levels of femininity had significantly ($p \leq 0.05$) higher anxiety symptoms than males with low levels of femininity at T4, see Figure 2C.

4. Discussion

The main objective of this study was to examine the effect of sex and gender roles, as well as the interaction of sex and gender roles on symptoms of stress, depression, and anxiety during the COVID-19 pandemic. Over the course of this long-term stressful event, we found that females generally had more symptoms of stress and anxiety than males. We also found an interaction between femininity, sex, and time, such that females with high femininity had more stress symptoms at the beginning of the confinement measures compared to males with high femininity. Additionally, the results showed that females with low femininity had more anxiety symptoms one year after the confinement measures compared to males with low femininity. For depressive symptoms, no effect of gender roles or sex differences was found, nor any sex differences.

Contrary to our hypotheses, we did not find an association between masculine traits and symptoms of stress, anxiety, and depression. This result is surprising as it is inconsistent with previous studies showing that masculinity has a protective effect on

TABLE 2 Linear mixed model to predict stress symptoms.

	Main Effect			Interaction		
	Estimate	CI	*P*	Estimate	CI	*p*
Intercept	11.00	0.86 to 21.15	0.031*	14.54	−5.19 to 34.27	0.140
Time	0.37	−0.05 to 0.80	0.084†	1.26	−5.86 to 8.39	0.725
Sex	3.95	1.67 to 6.23	<0.001***	−8.64	−33.02 to 15.74	0.477
Femininity	−0.04	−1.57 to 1.48	0.953	−0.77	−3.69 to 2.13	0.592
Masculinity	−0.46	1.78 to 0.86	0.482	−0.26	−3.18 to 2.65	0.857
Sex × Femininity				1.64	−2.01 to 5.28	0.367
Sex × Masculinity				0.62	−2.79 to 4.04	0.715
Time × Sex				4.48	−4.33 to 13.28	0.314
Time × Femininity				0.55	−0.47 to 1.57	0.285
Time × Masculinity				−0.90	−1.93 to 0.12	0.050*
Time × Sex × Femininity				−1.24	−2.54 to 0.06	0.059†
Time × Sex × Masculinity				0.62	−0.57 to 1.82	0.302
Marginal R^2/Conditional R^2			0.062/0.530			0.075/0.540

***$p \leq 0.001$; **$p \leq 0.01$; *$p \leq 0.05$; †$p \leq 0.10$.

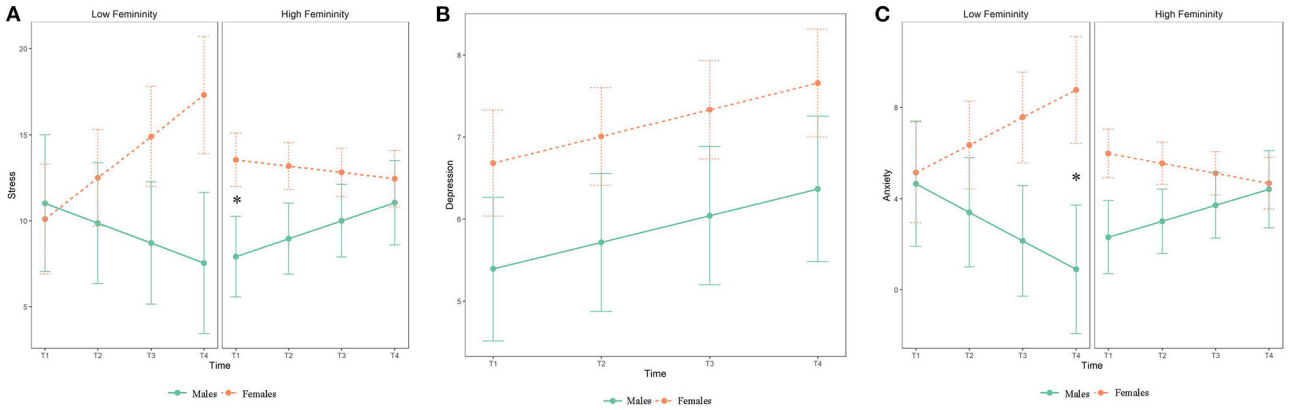

FIGURE 2
(A, C) Depict the joint effect of sex and gender roles on stress symptoms and anxiety symptoms as a function of time. **(B)** Depicts depression levels as a function of sex and the different measurement times. Low femininity refers to individuals with scores of 3 (lowest score in our sample) on the Bem Sex Roles Inventory, while high femininity refers to individuals with scores of 7 (highest score in our sample) on the same inventory. Error bars represent standard errors of the mean. Asterisk (*) indicates significant findings ($p < 0.05$).

mental health (Feather, 1985; Whitley, 1985; Nezu and Nezu, 1987; Stoppard and Paisley, 1987; Eisler et al., 1988; Grimmell and Stern, 1992; Kleinplatz et al., 1992; Thornton and Leo, 1992; Waelde et al., 1994; Bromberger and Matthews, 1996; Lengua and Stormshak, 2000; Stoyanova and Hope, 2012; Gibson et al., 2016; Arcand et al., 2020). One possible explanation for this finding is that the context of the pandemic may have prevented the positive attributes associated with masculinity to be used efficiently. The masculine scale of the questionnaire refers to characteristics of assertiveness and control. However, participants in our study were faced with a situation in which they had little control, had to remain confined to their homes, and had to respect a government-imposed curfew. Together, this may have dampened the expression of masculine traits. This provides insight into our lack of observed beneficial effects of masculinity on psychiatric symptoms. In addition, previous studies have reported that masculinity is associated with the use of active coping strategies and use of less avoidant coping strategies (Nezu and Nezu, 1987; Lengua and Stormshak, 2000). Although coping strategies were not measured in response to the pandemic in this study, individuals with high masculinity likely had coping styles (i.e., active) that could not be deployed as frequently as usual (prior to the pandemic) or that these coping styles did not present the usual beneficial effects. Taken together, our results suggest that masculinity does not appear to have a protective (or fragilizing) effect on psychiatric symptoms in the context of the COVID-19 pandemic. In addition, femininity influenced stress and anxiety symptoms but appeared to be a context-specific effect of the pandemic.

TABLE 3 Linear mixed model to predict depression symptoms.

	Main effect			Interaction		
	Estimate	CI	*p*	Estimate	CI	*p*
Intercept	11.45	2.37 to 20.53	0.012*	11.88	−5.64 to 29.39	0.175
Time	0.32	−0.04 to 0.69	0.078†	−1.41	−7.54 to 4.72	0.649
Sex	1.29	−0.75 to 3.33	0.206	0.79	−20.86 to 22.43	0.942
Femininity	−0.31	−1.68 to 1.06	0.650	0.10	−2.48 to 2.68	0.938
Masculinity	−0.95	−2.13 to 0.23	0.108	−1.52	−4.11 to 1.07	0.240
Sex × Femininity				−0.50	−3.73 to 2.74	0.759
Sex × Masculinity				0.69	−2.35 to 3.72	0.649
Time × Sex				2.95	−4.63 to 10.52	0.441
Time × Femininity				0.20	−0.68 to 1.08	0.655
Time × Masculinity				0.12	−0.76 to 1.01	0.784
Time × Sex × Femininity				−0.42	−1.54 to 0.70	0.460
Time × Sex × Masculinity				−0.10	−1.13 to 0.93	0.842
Marginal R^2/Conditional R^2			0.027/0.544			0.031/0.544

***$p \leq 0.001$; **$p \leq 0.01$; *$p \leq 0.05$; †$p \leq 0.10$.

TABLE 4 Linear mixed model to predict anxiety symptoms.

	Main effect			Interaction		
	Estimate	CI	*p*	Estimate	CI	*p*
Intercept	5.56	−1.37 to 12.49	0.109	10.41	−3.17 to 23.98	0.125
Time	0.05	−0.25 to 0.35	0.744	−3.43	−8.44 to 1.58	0.175
Sex	2.76	1.21 to 4.32	<0.001***	−3.96	−20.74 to 12.81	0.635
Femininity	−0.19	−1.23 to 0.85	0.715	−0.59	−2.59 to 1.42	0.557
Masculinity	−0.33	−1.23 to 0.57	0.467	−0.88	−2.89 to 1.12	0.376
Sex × Femininity				0.80	−1.71 to 3.30	0.525
Sex × Masculinity				0.46	−1.89 to 2.81	0.694
Time × Sex				5.13	−1.06 to 11.32	0.101
Time × Femininity				0.49	−0.23 to 1.21	0.178
Time × Masculinity				0.16	−0.56 to 0.88	0.664
Time × Sex × Femininity				−0.90	−1.81 to 0.02	0.052†
Time × Sex × Masculinity				0.01	−0.84 to 0.85	0.989
Marginal R^2/Conditional R^2			0.061/0.514			0.067/0.517

***$p \leq 0.001$; **$p \leq 0.01$; *$p \leq 0.05$; † $p \leq 0.10$.

Indeed, our results show that females with more feminine traits were more stressed in the initial stages of the confinement measures compared to males with high feminine traits. The very few studies that have explored the impact of psychological gender roles on stress symptoms have reported a negative association between feminine traits and stress symptoms (Kleinplatz et al., 1992; Littlefield, 2004). However, these studies measured gender roles categorically, which could explain the discrepancy between the literature and results from our study. Sarrasin et al. (2014) reported that femininity was positively associated with threat perception in females, whereas this result was not found in males. Additionally, it has been shown that males tend to perceive stressful situations as challenges compared to females. However, it is unknown whether this effect is moderated by gender roles (Ptacek et al., 1992). In light of these findings, females with high levels of femininity may have interpreted the initial months of the pandemic as more threatening compared to males with high levels of femininity. Our results suggest that in the acute phase of pandemic-related stress, femininity seemed to have helped males and harmed females. To our knowledge, no study has investigated the impact of gender roles on stress symptoms in males. Importantly, some studies have reported that high femininity was negatively associated with

mental health outcomes in males (Flett et al., 2009; Szpitalak and Prochwicz, 2013). In the current study, our results suggest that femininity did not increase stress symptoms in males. The typical negative effects of femininity may have been counteracted by the context of the pandemic, which may have been more adaptive for males exhibiting high levels of feminine traits. In fact, the social and economic shutdown triggered by the COVID-19 pandemic and public health measures in Quebec may have required males to suppress their typical masculine behaviors to favor more collectivistic behaviors that protect family and friends. Therefore, males may have appropriated more feminine gendered responsibilities to adapt to the pandemic. These results highlight the importance of contextualizing the use of gender roles, where different contexts could favor or oppose the adoption of given traits by each sex.

Our results also showed that females with few feminine traits were more anxious one year after the pandemic compared to males with few feminine traits. This surprising result is divergent from the existing literature that largely supports a positive association between femininity and anxiety symptoms (Palapattu et al., 2006; Blashill and Hughes, 2009; Arcand et al., 2020). In females, one study reported that femininity was positively associated with social support (Lengua and Stormshak, 2000), where the latter is known to be a protective factor against anxiety symptoms (Munir and Jackson, 1997). Our results align with this finding and suggest that low femininity may be especially harmful to females in the long run. Indeed, we only found an effect at T4, which corresponds to a year after the beginning of the implemented sanitary measures in Quebec. However, these finding warrants replication and is likely to be highly dependent on the contextual nature of the COVID-19 pandemic.

Interestingly, we only found effects for femininity in the current study. This result may be explained by the fact that our sample was more feminine than masculine. In addition, our study had twice as many females as males. For females, this finding is consistent with previous studies (Lengua and Stormshak, 2000; Johnson et al., 2006; Juster et al., 2016; Arcand et al., 2020), though this may be attributable to a sampling bias for males. As mentioned earlier, we re-contacted individuals who participated in our previous laboratory-based experiments to take part in this COVID-19 study. A large portion of our male sample (62%) stemmed from a previous study involving parent-child dyads. Studies have shown that gender roles can be modulated by different roles, worker/student status, and life experiences (Nezu and Nezu, 1987; Fan and Marini, 2000; Bryant, 2003; Kasen et al., 2006; Lemaster et al., 2017; Arcand et al., 2020). Therefore, it is possible that through the nature of their parental responsibilities, fathers exhibit more feminine traits than males without children. A larger sample would allow us to account for parental status in the statistical analyses.

Although we found sex differences for stress and anxiety symptoms, no differences were reported for depressive symptoms. In the literature, several mixed results have been reported. In general, females have higher depressive symptoms than males (Özdin and Bayrak Özdin, 2020; Xiong et al., 2020; Hyland et al., 2021), although a recent study found no sex differences for depressive symptoms (Shevlin et al., 2020). All while controlling for the number of days elapsed between data collection and March 2020, analyses of pre-pandemic depression scores were performed on our sample. Results showed that females were more depressed than males before the pandemic ($p = 0.022$), suggesting that the lack of sex differences observed in our COVID-19 study was likely due to symptoms of depression in response to the pandemic in males. In Quebec, confinement measures were drastic and resulted in the closure of all non-essential services (e.g., recreation, workplaces, schools). Consequently, individuals were forced to stay at home and limit activities outside of the household. As a result, this had a significant impact on factors that are closely related to depression, such as social connectedness (George et al., 1989).

In this study, we showed that individuals with greater psychological traits associated with femininity were better adapted to the COVID-19 pandemic. This suggests that the effect of gender roles on mental health symptoms is highly context dependent. Thus, some situations may favor individuals who possess more characteristics associated with femininity, while others may favor individuals with greater characteristics associated with masculinity.

This hypothesis supports the theory of androgyny proposed by Bem (1974) who argued that individuals with many feminine and masculine traits are able to better adapt to various situations. Thus, individuals with more rigid psychological gender roles (e.g., a male who identifies predominantly with feminine traits or a male who identifies predominantly with masculine traits) may have more difficulty adapting to situations that require them to display psychological traits that do not belong to their dominant gender role (Bem, 1981). Although these individuals may appear to be highly adapted in some situations, they may be less so in other contexts. Therefore, the development of both feminine and masculine traits should be encouraged in children and adolescents. This would allow youth to develop a larger toolbox that promotes their flexibility to adapt when exposed to different roles and contexts.

4.1. Limitations and future directions

Our results should be interpreted while considering certain limitations. First, every variable in our study stemmed from self-reports, including biological sex. The concept of gender is very broad and encompasses several subcategories including gender identity and gender relations (Johnson and Repta, 2012). As we focused on psychological gender roles in this study, this concept only addresses a portion of the multidimensional aspect of gender (Johnson and Repta, 2012). To adopt a more systemic approach, it would be relevant for future studies to include other aspects of gender (e.g., gender identity) to better understand the influence of the latter (Johnson and Repta, 2012). Further, although participants were all in good health at T0, we did not assess mental or physical health during the COVID-19 pandemic. With that said, studies tend to show that individuals with mental and physical health disorders may be more vulnerable to symptoms of stress, anxiety, and depression within the context of the pandemic (Özdin and Bayrak Özdin, 2020). Therefore, future studies should control for mental and physical health (healthy or disordered) to gain a better understanding of the impact of gender roles on symptom patterns during stressful events. Moreover, social support is known to moderate the relationship between femininity and depression.

Given the current sample size and number of predictors in our statistical models, a lack of statistical power prevented us from including social support as a predictor in our model. Nevertheless, future studies should examine the contribution of social support to their findings given its moderating role in the relationship between femininity and mental health. In addition, it has been shown that males with depression tend to exhibit more externalizing symptoms than females (e.g., anger and aggression, substance abuse, and risk-taking; Martin et al., 2013). Therefore, depression scores quantified by the DASS may be underestimated in males. Future studies should utilize tools that are better adapted to the reality of males, such as the Male Depression Risk Scale (Rice et al., 2013). Finally, although we measured depression symptoms before the pandemic, we did not have data for stress and anxiety symptoms. It would be relevant for laboratories with baseline (pre-event) stress, anxiety, and depression data to re-measure these symptoms during a long-term stressful event to better understand the evolution of these symptoms over time.

5. Conclusion

Our findings revealed that females exhibited higher symptoms of stress and anxiety during the COVID-19 pandemic relative to males. Of note, we found that females with higher feminine traits had more stress symptoms at the beginning of the pandemic compared to males with higher feminine traits. However, females with less feminine traits were more anxious one year after the pandemic than males with less femininity. In this study, only feminine traits interacted with biological sex to predict stress and anxiety symptoms. As a result, our study supports the idea that the joint effect of sex and gender provides greater insight into our understanding of stress and anxiety symptoms in adults during a long-term stressful event such as the COVID-19 pandemic.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

The studies involving human participants were reviewed and approved by Institutional Review Board of the CIUSSS-de-l'Est-de-l'Île-de-Montréal. The patients/participants provided their written informed consent to participate in this study.

Author contributions

MA conducted the literature review, participated in the development of the study design, objectives of the article, performed the statistical analyses, and wrote the manuscript. AB-H helped with statistical analyses and created all graphics. R-PJ participated in the development of the study design and objectives of the article and revised the article. M-FM supervised all stages of the project and revised the article. All authors contributed to the article and approved the submitted version.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Publisher's note

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Self-esteem and professional identity among male nurses and male nursing students: mediating roles of perceived prejudice and psychological distress

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Introduction: There are not enough nurses around the world, and there are even fewer male nurses. It has not been easy for men to become nurses because of stereotypes about the roles of men and women in the workplace, which lead to prejudice and discrimination. This study explored how the self-esteem of male nurses and male nursing students affects their professional identity in an environment where stereotypes and social prejudice exist. This study also examined the differences of relevant variables in different sociodemographic characteristics of the research subjects in a Chinese social context.

Methods: By purposive and snowball sampling, 464 male nurses and male nursing students were surveyed through questionnaires from November 2021 to January 2022. Data analysis was performed using SPSS 25.0 and PROCESS Macro 3.3.

Results: Self-esteem could indirectly affect professional identity through perceived prejudice and psychological distress. Nonetheless, self-esteem still had a significant direct effect on professional identity. The total mediating effect accounted for 32.816% of the total effect, and the direct effect accounted for 67.184% of the total effect. Also of note was that 81.7% of participants reported experiencing psychological distress.

Discussion: To improve the professional identity of male nurses and male nursing students, nursing educators and administrators should do the following: protect and improve their self-esteem; take steps to reduce social prejudice against them; value their mental health and alleviate their psychological distress.

KEYWORDS

male nursing students, male nurses, perceived prejudice, psychological distress, professional identity, self-esteem

1. Introduction

The history of male nursing can be traced back to the infancy of the nursing profession. Men had already played an important functional role as nurses in military and nonmilitary activities (disease and plague outbreaks) from the 4th and 5th centuries and continued to be the leading providers of health care services into the 16th century (Arif and Khokhar, 2017). Until the mid-19th century, when Nightingale pioneered modern nursing, she firmly believed that nursing was a job for women, and male nurses were gradually marginalized (Mackintosh, 1997). After that, women dominated the nursing profession, and it became more difficult for men to become nurses, influenced by gender role stereotypes (Egeland and Brown, 1988). Gender role stereotypes are overt societal beliefs about the functional characteristics of men and women that inevitably influence career choices and development (Kagan, 1964). As a result, men in nursing are often perceived as violating masculine norms or deviating from male gender roles and are thus labeled in negative ways, such as incapable, troublemakers, effeminate, homosexual, abnormal, and strange (Harding, 2007; Moss-Racusin et al., 2010; Adeyemi-Adelanwa et al., 2016; Stanley et al., 2016). Stereotypes can be a source of social prejudice and discrimination against male nursing students and male nurses (Nelson and Belcher, 2006; Crandall et al., 2011). Male nurses often experience being denied care by female patients; also, some male nurses reported that they are easily watched in the hospital, making them uncomfortable (Chang and Jeong, 2021). Male nursing students are prone to experiencing ridicule, isolation, and loneliness, and negative attitudes toward male nursing students are evident, especially among male non-nursing students (MacWilliams et al., 2013; Clow et al., 2014). In addition, male nursing students often feel isolated, excluded, and treated differently in academic and clinical settings; for example, they are often singled out by female classmates or faculty for patient roles, and they learn to remain silent rather than actively and enthusiastically speak up in a predominantly female group learning environment (Stott, 2007). There is no denying the persistence of social stereotypes, prejudice, and discrimination against male nursing students and male nurses that may drive them away from the nursing profession (Lou et al., 2007; Kox et al., 2022).

Prejudice is a negative evaluation of a social group or person based primarily on the individual's group membership (Crandall and Eshleman, 2003). Perceived prejudice is an individual's perception that negative external evaluations of him or herself do not correspond to reality but are due to group membership (Yao and Yang, 2017). Prejudice is still at the level of negative attitudes. Discrimination includes negative attitudes and rises to adverse treatment such as rejection and avoidance; prejudice may be a better predictor of discrimination than stereotypes (Thornicroft et al., 2007). Many qualitative studies have found male nursing students and male nurses to perceive social prejudice against them (Gao et al., 2019; Saleh et al., 2020; Lyu et al., 2022; Subu et al., 2022), but more quantitative research is needed (Feng et al., 2016, 2019). In China, men studying nursing or working in nursing are looked down upon due to the low social status of nurses and the influence of the traditional Chinese culture of male preference and men's superiority to women. As a result, male nursing students and male nurses in China may suffer from more social prejudice. Prejudice and discrimination against a group are detrimental to the physical and mental health of members of this group, which may increase their psychological distress (Stuber et al., 2008). Psychological distress refers to non-specific mental health problems such as anxiety and depression (Liu, 2016). Nursing students and nurses are usually under high stress, which is closely related to psychological distress (Watson et al., 2009; Smith and Yang, 2017; Foster et al., 2020), and the prevalence of psychological distress is generally not low, especially for nurses is high. The nurses' workload in China is high; in most public hospitals, nurses work 40 h a week (Lin et al., 2009). The prevalence of psychological distress among Chinese nurses was 83.3%, with 34 male and 428 female nurses participating in this survey (Liu et al., 2021). The prevalence rate of female nurses in China was 85.5% (Zou et al., 2016). The prevalence of psychological distress among Chinese nursing students was 55.8%, with 375 male and 1,366 female nursing students participating in this survey (Qi et al., 2022). However, one study showed that the prevalence of psychological distress among male nursing students in China was 82.2% (Feng et al., 2019). Few studies focus on the mental health of male nursing students or male nurses like this. Since the number of males in the nursing student and nurse population is too small compared to females, more studies should be conducted on male nursing students and male nurses for their psychological distress to be more clearly presented. Overall, male nursing students and male nurses are a minority compared to their female counterparts and are in a particular environment where stereotypes, prejudice, and discrimination exist. Their mental health needs more attention.

The global shortage of nurses is receiving increasing attention (Marć et al., 2019). However, in the global shortage of nurses, the shortage of male nurses is more prominent than that of female nurses. Between 2017 and 2019, the proportion of registered male nurses was 11.1% in Australia, 10.7% in the United Kingdom, 9.1% in the United States, and only 2% in China (Younas et al., 2022). Attracting more men into nursing and reducing their attrition would help alleviate the nursing shortage (Brady and Sherrod, 2003), and gender diversity would help modern nursing evolve (Sullivan, 2000). However, nursing schools get very few male students, and male nursing students are likelier to leave the nursing profession than female nursing students (McLaughlin et al., 2010; Moore et al., 2020). Moreover, male nurses have a lower professional identity than female nurses (Liu et al., 2022), and professional identity is essential in their intentions to leave the profession (Sabanciogullari and Dogan, 2015).

Professional identity is how nurses or nursing students see themselves as part of the nursing profession, how they feel about it, and what it means to society (Ohlén and Segesten, 1998). Nurses' professional identity positively impacts both subjective well-being and job performance (Ren et al., 2021; Yu et al., 2022). In addition, nurses with a high occupational identity tend to have high job satisfaction, enhancing retention intentions (Hanum et al., 2023). However, nurses with low occupational identity and job satisfaction were likelier to leave (Sabanciogullari and Dogan, 2015). Nurses are often seen as subordinate to physicians, and nursing is perceived as low-skilled and bedside care (Teresa-Morales et al., 2022). For a long time, nurses could not shake the image of low social status, and low self-esteem and low professional identity often accompany nurses (Ten Hoeve et al., 2014). In addition, male nursing students and male nurses in China typically have a lower sense of professional identity than their female counterparts (Mao et al., 2021). Studies have shown that Chinese male nurses with a high sense of professional identity are willing to engage in more work and thus promote professional success (Wu et al., 2022). Nurses' professional identity is a dynamic developmental process,

which means that the professional identity of male nursing students and male nurses can be reconstructed or strengthened (Johnson et al., 2012; Van der Cingel and Brouwer, 2021). Studies have shown that nurses' self-esteem is closely related to their professional identity (Ohlén and Segesten, 1998; Olthuis et al., 2007). Self-esteem is one's attitude toward oneself, and it plays a crucial role in personality building, psychological balance, and environmental adaptation (Doré, 2017). Self-esteem has been widely studied in the behavioral and social sciences, and the benefits of high self-esteem have been affirmed time and time again (Orth and Robins, 2022). Tajfel and Turner proposed the social identity theory, in which they considered social identity to be the self-image that individuals perceive themselves to have in the group to which they belong, as well as the emotional and value experiences they have as members of the group (Tajfel and Turner, 1979). Based on social identity theory, we argue that male nursing students and male nurses may harm their self-esteem and social identity through social categorization and social comparison (images of nurses' low social status and perceived prejudice of male nursing students and male nurses), resulting in low professional identity and eventual departure from the nursing profession. We suggest that self-esteem and professional identity may be vital for male nursing students and male nurses and that the relationship between the two needs to be further explored in a setting where stereotypes and social prejudices exist.

Additionally, this study also examined the differences of relevant variables in different sociodemographic characteristics of the research subjects. Graduates from high schools in China can apply for the university majors they wish to pursue. Still, if their grades do not meet the requirements, they might end up being placed in a major for which not many people apply. Usually, nursing is one of those majors that few people apply for. Studies have found that male nurses and male nursing students who applied for the nursing major as their first choice typically had a stronger sense of professional identity than those who did not (Zhang et al., 2018; Zhou et al., 2021). Another study has found that male nursing students at three-year colleges had a higher professional identity than junior male nurses (Chen et al., 2020). However, few studies still compare the professional identity of male nursing students and male nurses. For a long time before, a junior college or below educational level was sufficient to serve as a nurse in China (Jiang et al., 2002). Still, as the nursing profession has grown, hospitals have begun recruiting people with higher educational levels to be nurses (Yang et al., 2021). In summary, this study additionally addressed the following questions: (a) Is there a statistical difference between the professional identity of male nursing students and male nurses who applied for nursing as their first-choice major and that of those who did not?; (b) Is there a statistical difference between the professional identity of male nursing students and that of male nurses?; and (c) Is there a statistical difference in the professional identity of the research subjects at different levels of education?

1.1. The impact of self-esteem on professional identity

Self-esteem positively predicts professional identity; individuals with high levels of self-esteem tend to have a higher professional identity (Motallebzadeh and Kazemi, 2018). Among the many factors influencing nursing students' professional identity, self-esteem and professional values are significant predictors (Min et al., 2021). Studies have shown that Chinese male nursing students' self-esteem and professional identity are positively correlated (Cao et al., 2016). The professional identity of male nursing students and male nurses is subject to constant change, and affirming the importance and value of male nurses themselves can help to increase self-esteem and thus enhance professional identity (Zhang, 2019). There are far fewer male nursing students and male nurses in China than their female counterparts, and they are more willing to leave the profession (Tong et al., 2021). Therefore, improving the professional identity of male nursing students and male nurses is essential. Although there are few studies on self-esteem and professional identity, it is possible to consider self-esteem a critical and influential factor in improving the professional identity of male nursing students and male nurses.

Therefore, the present study proposes hypothesis 1: self-esteem of male nursing students and male nurses can directly and positively predict professional identity.

1.2. Mediating role of perceived prejudice

Perceived prejudice and perceived discrimination both focus on subjective feelings; individuals feel that they have suffered prejudice and discrimination. Previous studies have found that self-esteem negatively predicts perceived discrimination in other groups that are discriminated against (Ji et al., 2019; Maqsood et al., 2021). Feng et al. (2019) found that the self-esteem of Chinese male nursing students negatively predicted perceived prejudice; they also found that the more substantial the perceived prejudice of male nursing students, the lower their professional satisfaction would be and, ultimately, the less willing they would be to become a nurse (Feng et al., 2016). The less willing they are to become nurses, the less they may identify with the nursing profession. However, the job satisfaction of Chinese male nurses was significantly and positively correlated with professional identity (Zhu, 2019). In addition, studies have shown that some negative experiences and feelings in the clinical learning environment may harm the professional identity of Chinese nursing students (Wu et al., 2020). In China, some male nursing students were reluctant to admit their major was nursing in front of their new acquaintances (Chen et al., 2020). Some male nurses talk about the social prejudice they had experienced from their nursing student days to when they joined the workforce and how it has affected their professional identity (Zhang, 2019). However, there is a lack of quantitative research on the impact of perceived prejudice on professional identity among male nursing students and male nurses. Due to the traditional Chinese culture, there is a more significant societal prejudice against men studying and working in nursing. However, high self-esteem is associated with coping with stress, adaptive adjustment, well-being, success, and satisfaction (Mann et al., 2004). In summary, high self-esteem may allow male nursing students and male nurses to perceive less prejudice and thus maintain a higher professional identity.

Therefore, the present study proposes hypothesis 2: self-esteem negatively predicts perceived prejudice, and then perceived prejudice negatively predicts professional identity. That is, for male nurses and male nursing students, perceived prejudice is a mediating factor in the link between self-esteem and professional identity.

1.3. Mediating role of psychological distress

Self-esteem is one of the core elements of mental health and a key element in promoting mental health (Mann et al., 2004). The vulnerability model suggests low self-esteem can lead to depression (Beck, 1967), while the terror management theory suggests that self-esteem can act as a buffer for anxiety (Pyszczynski et al., 2004). Studies have shown that nurses' self-esteem can negatively predict psychological distress (Feng et al., 2018; Duran et al., 2021; Liu et al., 2021). Feng et al. (2019) found that the self-esteem of Chinese male nursing students also negatively predicted psychological distress. In addition, the level of psychological well-being of college students has a positive impact on their professional identity (Strauser et al., 2008). In a study of student teachers, anxiety was negatively associated with career identity (Zhao et al., 2022). However, there is a lack of studies on the impact of psychological distress on occupational identity among male nursing students and male nurses. Low self-esteem is a risk factor for various mental disorders; high self-esteem is associated with mental health, well-being, success, and satisfaction (Mann et al., 2004). In summary, high self-esteem may promote the mental health of male nursing students and nurses, reduce their psychological distress, and thus maintain a high professional identity.

Therefore, the present study proposes hypothesis 3: self-esteem negatively predicts psychological distress, and then psychological distress negatively predicts professional identity. In other words, psychological distress mediates the link between self-esteem and professional identity among male nurses and male nursing students.

1.4. The chain mediating effect of perceived prejudice and psychological distress

Based on Lazarus and Folkman's coping theory (Folkman et al., 1986), the perceived prejudice of male nursing students and male nurses is a stressor. However, it is currently impossible to eliminate social prejudice, which will likely trigger their adverse emotions and poor coping behaviors. In China, 72% of male nursing students believe that social perceptions of the nursing profession cause significant stress (Chen and Mei, 2014). Furthermore, perceived stress among male nurses in China negatively affects professional identity (Chen et al., 2022). Therefore, we suggest that more perceived prejudice among male nursing students and male nurses indicates higher stress, which may cause them psychological distress and low professional identity. Numerous studies have shown that perceived discrimination negatively affects a person's physical and mental health through complex biopsychosocial interactions (Pascoe and Richman, 2009; Todorova et al., 2010; Lockwood et al., 2018). The more discrimination an individual perceives, the greater the risk of psychological distress (Wamala et al., 2007; Schmitt et al., 2014). Feng et al. (2019) found a direct positive effect of perceived prejudice on psychological distress among Chinese male nursing students, but this effect was not strong; also, those male nursing students with high self-esteem tended to perceive less prejudice and thus report lower psychological distress. Self-esteem is a practical resource for coping with stress (Taylor and Stanton, 2007). Studies have shown that self-esteem contributes significantly to nursing students' stress coping, influences stress coping levels (Yildirim et al., 2017), and is associated with positive coping behaviors (Lo, 2002). Lazarus and Folkman's coping theory holds that cognitive assessment plays a vital role in the occurrence and response to stress (Folkman et al., 1986). When social prejudice cannot be temporarily eliminated, male nursing students with high self-esteem may adopt more positive cognitive appraisals and thus perceive less prejudice, thereby buffering stress. Therefore, we explored whether self-esteem indirectly affects professional identity by influencing perceived prejudice and, thus, psychological distress. The aim is to provide more informative information on reducing perceived prejudice, reducing psychological distress, and improving professional identity among male nursing students and male nurses. In addition, few studies discuss the mediating mechanisms that combine perceived prejudice and psychological distress.

Therefore, the present study proposes hypothesis 4: perceived prejudice positively predicts psychological distress, and the effect of self-esteem on professional identity can arise indirectly through this chain path: Self-esteem → Perceived prejudice → Psychological distress → Professional identity.

2. Materials and methods

2.1. Design and participants

This study is a cross-sectional study. The survey subjects were male nursing students studying for a full-time undergraduate degree or higher education and male nurses already working. The sample participating in this study consisted of 296 male nursing students and 168 male nurses aged 17–52 ($M = 22.52$ years, SD = 4.35 years). Additional sociodemographic characteristics of the sample are shown in Table 1.

2.2. Data collection

From November 2021 to January 2022, purposive and snowball sampling surveys were conducted in China. A total of 492 online electronic and paper questionnaires were distributed and returned, of which 464 were valid (an effective rate of 94.309%). All participants gave informed consent to this study and completed the questionnaires anonymously (without their names and the names of their workplaces).

2.3. Instrument

2.3.1. The basic information questionnaire

We made the Basic Information Questionnaire based on the needs of this study, including age, educational level, a male nursing student or a male nurse, and whether nursing was the first-choice major.

2.3.2. The male nursing students' perceived prejudice questionnaire

The Male Nursing Students' Perceived Prejudice Questionnaire was developed and made public in an English version by Feng et al. (2019) to measure the perceived prejudice of male nursing students in China. The questionnaire has a total of 6 items, and each item is scored on a four-point scale ranging from 1 (strongly disagree) to 4 (strongly agree). The average score for all items was calculated, with a higher

TABLE 1 Self-esteem, perceived prejudice, psychological distress, and professional identity according to participant characteristics (N=464).

Characteristic	*n* (%)	Prevalence of psychological distress (≥16) [*n* (%)]	*M*±SD			
			Self-esteem	Perceived prejudice	Psychological distress	Professional identity
Age (years)						
<20	162 (34.9)		29.136 ± 4.774	2.154 ± 0.595	21.889 ± 7.350	58.253 ± 10.444
20–25	243 (52.4)		29.280 ± 4.611	2.191 ± 0.602	22.910 ± 7.829	56.626 ± 11.603
25–30	42 (9.1)		29.262 ± 4.829	2.282 ± 0.564	23.262 ± 7.497	54.238 ± 11.501
>30	17 (3.7)		31.706 ± 5.253	2.422 ± 0.527	22.824 ± 7.204	57.882 ± 10.265
F			1.544	1.381	0.715	1.665
Educational level						
Junior college or below	89 (19.2)		29.157 ± 4.753	2.006 ± 0.571	22.090 ± 8.458	59.337 ± 11.143
Bachelor	354 (76.3)		29.223 ± 4.637	2.241 ± 0.584	22.780 ± 7.412	56.531 ± 10.968
Master or above	21 (4.5)		31.571 ± 5.591	2.222 ± 0.727	21.333 ± 7.186	55.524 ± 13.920
F			2.533	5.690**	0.588	2.453
Male nursing students or Male nurses						
Male nursing students	296 (63.8)	241 (81.4)	29.557 ± 4.654	2.167 ± 0.593	22.047 ± 7.085	57.835 ± 11.162
Male nurses	168 (36.2)	138 (82.1)	28.893 ± 4.819	2.244 ± 0.596	23.524 ± 8.387	55.595 ± 11.101
t			1.459	−1.348	−1.925	2.081*
χ^2		0.038				
First-choice major						
Nursing	289 (62.3)	226 (78.2)	29.595 ± 4.715	2.094 ± 0.575	21.886 ± 7.868	58.910 ± 11.142
Non-nursing	175 (37.7)	153 (87.4)	28.857 ± 4.705	2.361 ± 0.590	23.731 ± 7.026	53.909 ± 10.557
t			1.635	−4.797***	−2.548*	4.779***
χ^2		6.203*				
Total	464 (100)	379 (81.7)	29.317 ± 4.720	2.195 ± 0.595	22.582 ± 7.607	57.024 ± 11.180

M, mean; SD, standard deviation; *p<0.05; **p<0.01; ***p<0.001.

score indicating stronger perceived prejudice. All the items on this questionnaire are also suitable for male nurses, so we contacted Feng by e-mail and used the Chinese version of the questionnaire she provided to measure the perceived prejudice of male nurses and male nursing students. In the study, Cronbach's alpha coefficient for the questionnaire was 0.860.

2.3.3. The 10-item Kessler psychological distress scale

The 10-item Kessler Psychological Distress Scale (K10) (Kessler et al., 2002) has a total of 10 items, and each item is scored on a five-point scale ranging from 1 (none of the time) to 5 (all of the time). The scores of the 10 items were summed up to obtain the total score, with a higher score indicating more serious psychological distress. A total score of 16 or above indicates very high psychological distress (Lyons et al., 2020). The Chinese version of K10 has also been shown to have good reliability and validity (Zhou et al., 2008). In the study, Cronbach's alpha coefficient for the scale was 0.937.

2.3.4. The professional identity questionnaire of nursing students

The Professional Identity Questionnaire of Nursing Students (PIQNS) was developed by Hao (2011) to measure the professional identity of nursing students in China. The questionnaire includes five factors: professional self-concept; benefits of staying and risks of leaving; social comparison and self-reflection; the autonomy of career choice; and social persuasion. We used it to measure male nursing students' and male nurses' professional identities (Chen et al., 2020). The questionnaire has a total of 17 items, and each item is scored on a five-point scale ranging from 1 (strongly disagree) to 5 (strongly agree). The scores of the 17 items were summed up to obtain the total score, with a higher score indicating a higher level of professional identity. In the study, Cronbach's alpha coefficient for the questionnaire was 0.926.

2.3.5. The Chinese version of the Rosenberg self-esteem scale

Mengcheng Wang et al. revised the Rosenberg Self-Esteem Scale (RSE) (Rosenberg, 1965) in Chinese to measure an individual's level of self-esteem (Dai, 2010). The scale has a total of 10 items, and each item is scored on a four-point scale ranging from 1 (strongly disagree) to 4 (strongly agree). The scores of the 10 items were summed up to obtain the total score, with a higher score indicating a higher level of self-esteem. In the study, Cronbach's alpha coefficient for the scale was 0.860.

2.3.6. Data analysis

SPSS 25.0 was used for common method biases test, descriptive statistics, t-test, one-way ANOVA, chi-square test, and Pearson correlation analysis. The mediating effect was analyzed using model 6 in the PROCESS macro 3.3 developed by Hayes (2013), and the bias-corrected percentile bootstrap method was used to test the significance of the mediation effect.

3. Results

3.1. Common method biases test

Harman's single-factor test was used to test for common method bias, and exploratory factor analysis was conducted on all measures' items. The results showed that there were 6 factors with eigenvalues greater than 1, and the first factor explained 31.237% of the variation (less than 40%), which indicated that the study had no significant common method bias (Podsakoff et al., 2003).

3.2. Self-esteem, perceived prejudice, psychological distress, and professional identity according to participant characteristics

One-way ANOVA was used to first test the scores of each variable among different age groups and then to test the scores of each variable among different educational levels. The results showed that there was no statistically significant difference in the scores of each variable among different age groups, but there were statistically significant differences in the scores of perceived prejudice among different educational levels ($F = 5.690$, $p < 0.01$). Further post-hoc multiple comparisons showed that male nurses and male nursing students with an educational level of bachelor's degree had significantly higher perceived prejudice scores than those with an educational level of junior college or below ($p < 0.01$). Then, the scores of each variable were compared between the male nurses and the male nursing students and between the participants who applied for the nursing major as their first choice and those who did not, using independent sample *t*-tests. The results showed that male nursing students scored significantly higher on professional identity than male nurses ($t = 2.081$, $p < 0.05$). Participants who applied for the nursing major as their first choice had significantly lower perceived prejudice scores and psychological distress scores than those who did not apply ($t = -4.797$, $p < 0.001$; $t = -2.548$, $p < 0.05$). Those who did apply also had significantly higher scores for professional identity than those who did not ($t = 4.779$, $p < 0.001$). In addition, the overall prevalence of psychological distress among male nurses and male nursing students was 81.7%. Using the chi-square test, we found no statistically significant difference in the prevalence of psychological distress between the male nurses and the male nursing students. Then the chi-square test was used again to compare the prevalence of psychological distress between the participants who applied for nursing as a first-choice major and those who did not. The results showed that the prevalence of psychological distress was significantly higher in the latter than in the former ($\chi^2 = 6.203$, $p < 0.05$; See Table 1).

3.3. Correlation analysis of all variables

The results showed that self-esteem was significantly negatively correlated with perceived prejudice and psychological distress; both perceived prejudice and psychological distress were significantly negatively correlated with professional identity; perceived prejudice was significantly positively correlated with psychological distress; self-esteem was significantly positively correlated with professional identity. (See Table 2).

3.4. The mediating effects of perceived prejudice and psychological distress

Model 6 in PROCESS was selected to test the mediating effects of the multiple mediation model, with psychological distress and perceived prejudice as the mediating variables, professional identity as the dependent variable, self-esteem as the independent variable, and controlling for the effects of educational level, male nursing students or male nurses, and first-choice major. The multiple mediation model of this study involves the mediation of perceived prejudice, the mediation of psychological distress, and the chain mediation of perceived prejudice and psychological distress (see Figure 1). The results of regression analysis among the variables were as follows (see Table 3): self-esteem significantly positively predicted professional identity ($\beta = 0.451$, $p < 0.001$); after incorporating self-esteem, perceived prejudice, and psychological distress into the regression equation at the same time, the predictive effect of self-esteem on professional identity was still significant ($\beta = 0.303$, $p < 0.001$); self-esteem could significantly negatively predict perceived prejudice ($\beta = -0.234$, $p < 0.001$) and psychological distress ($\beta = -0.472$, $p < 0.001$); perceived prejudice significantly positively predicted psychological distress ($\beta = 0.097$, $p < 0.05$); and perceived prejudice and psychological distress significantly negatively predicted professional identity, respectively ($\beta = -0.265$, $p < 0.001$; $\beta = -0.174$, $p < 0.001$).

The direct effect, specific mediating effect, comparative mediating effect, and total mediating effect were tested for significance using the bias-corrected nonparametric percentile bootstrap method (95% confidence intervals were estimated after 5,000 repeated sampling) (Fang et al., 2014). These effects are significant if the 95% confidence intervals do not contain 0. The results of the mediating effect analysis were as follows (see Table 4): the effect value of indirect path 1 (indirect1) consisting of Self-Esteem → Perceived Prejudice → Professional Identity was 0.062 [95% CI (0.031, 0.099)]; the effect

TABLE 2 Correlation matrix of all variables (N=464).

Variables	1	2	3	4
1. Self-esteem	1			
2.Perceived prejudice	−0.244**	1		
3.Psychological distress	−0.504**	0.232**	1	
4. Professional identity	0.462**	−0.413**	−0.405**	1

**$p < 0.01$.

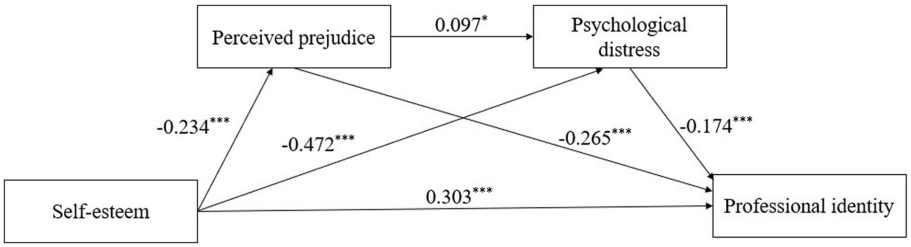

FIGURE 1
The multiple mediation model and each path coefficient. *p<0.05; ***p<0.001.

TABLE 3 Regression analysis between variables (N=464).

Regression equation		Overall fitness index			Significance of regression coefficient	
Outcome variable	Predictive variable	R	R^2	F	β	t
Professional identity		0.512	0.262	40.791		
	Educational level				−0.126	−2.867**
	Male nursing students or Male nurses				−0.096	−2.215*
	First-choice major				−0.147	−3.502***
	Self-esteem				0.451	11.195***
Perceived prejudice		0.342	0.117	15.201		
	Educational level				0.141	2.947**
	Male nursing students or Male nurses				0.081	1.709
	First-choice major				0.162	3.532***
	Self-esteem				−0.234	−5.315***
Psychological distress		0.523	0.274	34.544		
	Educational level				0.038	0.858
	Male nursing students or Male nurses				0.064	1.481
	First-choice major				0.046	1.106
	Self-esteem				−0.472	−11.503***
	Perceived prejudice				0.097	2.285*
Professional identity		0.595	0.354	41.689		
	Educational level				−0.080	−1.913
	Male nursing students or Male nurses				−0.062	−1.521
	First-choice major				−0.093	−2.336*
	Self-esteem				0.303	6.857***
	Perceived prejudice				−0.265	−6.564***
	Psychological distress				−0.174	−3.924***

*p<0.05; **p<0.01; ***p<0.001.

value of indirect path 2 (indirect2) consisting of Self-Esteem → Psychological Distress → Professional Identity was 0.082 [95% CI (0.033, 0.137)]; the effect value of indirect path 3 (indirect3) consisting of Self-Esteem → Perceived Prejudice → Psychological Distress → Professional Identity was 0.004 [95% CI (0.000, 0.010)]; the total mediating effect value (indirect + indirect2 + indirect3) was 0.148 [95% CI (0.090, 0.211)]; and the effect value of direct path (direct) consisting of Self-Esteem → Professional Identity was 0.303 [95% CI (0.20, 0.401)]. All the above Bootstrap 95% confidence intervals do not contain 0, indicating that the chain mediating effect of perceived prejudice and psychological distress, the mediating effect of

TABLE 4 Decomposition of effects in the impact of self-esteem on professional identity (N=464).

Effect	Path	Effect value	SE	95% Confidence Interval		Effect ratio
				Lower	Upper	
Mediation effect	Indirect1	0.062	0.018	0.031	0.099	13.747%
	Indirect2	0.082	0.026	0.033	0.137	18.182%
	Indirect3	0.004	0.003	0.000	0.010	0.887%
Total mediation effect	Indirect1 + indirect2 + indirect3	0.148	0.031	0.090	0.211	32.816%
Direct effect	Direct	0.303	0.051	0.201	0.401	67.184%
Total effect	Indirect1 + indirect2 + indirect3 + direct	0.451	0.045	0.364	0.540	100.000%
Indirect effect contrast	Indirect1-indirect2	−0.020	0.034	−0.088	0.046	
	Indirect1-indirect3	0.058	0.017	0.028	0.094	
	Indirect2-indirect3	0.078	0.025	0.031	0.130	

Indirect1: Self-Esteem → Perceived Prejudice → Professional Identity; indirect2: Self-Esteem → Psychological Distress → Professional Identity; indirect3: Self-esteem → Perceived Prejudice → Psychological Distress → Professional Identity; direct: Self-Esteem → Professional Identity.

psychological distress, the mediating effect of perceived prejudice, and the direct effect of self-esteem on professional identity were all significant. The total mediating effect accounted for 32.816% of the total effect, and the direct effect accounted for 67.184% of the total effect.

4. Discussion

This study explored the impact of male nurses' and male nursing students' self-esteem on their professional identity and its internal mechanisms. The results showed that male nurses' and male nursing students' self-esteem could not only directly affect their professional identity but also indirectly affect it through the mediating effect of perceived prejudice, the mediating effect of psychological distress, and the chain mediating effect of perceived prejudice and psychological distress. This study designed and verified this multiple mediation model based on social identity theory and coping theory (Tajfel and Turner, 1979; Folkman et al., 1986). It aims to emphasize the relationship between the self-esteem and professional identity of male nursing students and male nurses in a particular environment where stereotypes and social prejudice exist and to provide diverse reference information on how to improve the professional identity of male nursing students and male nurses. Stereotypes and societal prejudice against male nursing students and nurses should be seen, acknowledged, and valued to promote an equitable, gender-diverse environment.

In addition, this study found that male nurses and male nursing students with an educational level of bachelor's degree had higher perceived prejudice than those with an educational level of junior college or below. The status of nurses is relatively low-slung in China, and the public perception is that nurses are poorly educated, subordinate to doctors, and do work that is not very technical (Ma, 2019). Even though nurses with an educational level of bachelor's degree are better educated than those with an educational level of junior college or below, there is no difference in the tasks they perform in the hospital. As a result, it may lead to stronger social prejudice being perceived by those male nurses and male nursing students who with an educational level of bachelor's degree. A previous study has found that male nursing students at three-year colleges had a higher professional identity than junior male nurses (Chen et al., 2020); consistent with it, this study found that male nursing students had a higher professional identity than male nurses. However, the research subjects included in this study are more representative. In China, full-time undergraduate nursing students, that is, four-year nursing students, have become mainstream. In addition, the research objects of this study also include male nursing students with higher education and male nurses with unlimited seniority. From this point of view, the research objects of this study are more diverse and more representative, which is also one of the innovations of this study. Compared to male nursing students, male nurses may experience more and more stress in the workplace, leading to a decreased sense of professional identity (Chen et al., 2022). Therefore, nursing managers should take steps to reduce the stress of male nurses, which includes, but is not limited to, perceived prejudice and may include other work-related stressors. Comparing male nurses and male nursing students who applied for the nursing major as their first choice with those male nurses and male nursing students who did not apply, the following findings were found: the former felt less social prejudice and had a lower prevalence of psychological distress, which was consistent with the previous findings on male nursing students (Feng et al., 2019); the former had a higher professional identity, which matched the earlier discoveries (Zhang et al., 2018; Zhou et al., 2021); and the former had lower psychological distress, which was inconsistent with previous studies on male nursing students that found no statistically significant difference between the two in terms of psychological distress (Feng et al., 2019). The inconsistency with the previous finding may be because the subjects of this study were recruited on a larger scale rather than being limited to a particular province in China. From this point of view, nursing educators and managers cannot ignore the care, support, and guidance for male nursing students and male nurses who did not first choose a nursing major to avoid losing them. Because of the current admission system and shortage of nurses in China, nursing schools will continue to admit male students who are assigned to the nursing major because their grades do not meet the requirements of other majors. Therefore, the attitudes and practices of nursing educators and managers toward this population of male nursing students and male nurses are critical.

4.1. Direct impact

This study showed that the self-esteem of male nursing students and male nurses significantly positively predicted their professional identity, consistent with previous findings on other populations (Motallebzadeh and Kazemi, 2018; Min et al., 2021), and the research H1 was verified. Notably, the direct effect of self-esteem on professional identity among male nursing students and male nurses accounted for 67.184% of the total effect, indicating that the direct effect of self-esteem on professional identity is essential. Therefore, nursing educators and administrators should consistently strive to protect the self-esteem of male nurses and male nursing students and improve their self-esteem. For example, (a) emphasize the importance of male nursing students and male nurses to nursing and provide them with timely and positive feedback when they achieve success; (b) invite men who have been successful in their nursing careers to share and exchange experiences with male nursing students and male nurses so that role models can also enhance the self-esteem of male nursing students and male nurses.

4.2. Mediating role of perceived prejudice

This study showed that the self-esteem of male nurses and male nursing students affected their professional identity by affecting perceived prejudice, and the research H2 was verified. The persistence of stereotypes and social prejudice against male nursing students and male nurses is a cause for concern. Self-esteem and professional identity are important for male nursing students and male nurses, and further exploration of the relationship between the two in an environment where stereotypes and social prejudice exist is necessary. However, there is a paucity of research on male nursing students' and male nurses' self-esteem and professional identity, and in particular, no studies have yet taken the effects of social prejudice into account. Therefore, we explored the mediating role of perceived prejudice among male nursing students and male nurses in the relationship between self-esteem and professional identity. Male nurses' and male nursing students' self-esteem could significantly negatively predict their perceived prejudice, which was in line with previous findings on male nursing students (Feng et al., 2019) and other populations (Ji et al., 2019; Maqsood et al., 2021). Perceived prejudice among male nursing students and male nurses significantly and negatively predicted professional identity, which is consistent with the findings of a previous qualitative study in which some male nurses said they had experienced social prejudice from their nursing student days to their working years and that it negatively affected their professional identity (Zhang, 2019). This study examined how male nursing students' and male nurses' perceived prejudice affects their professional identity, filling a gap in quantitative research on this issue. Perceived prejudice among male nursing students and male nurses is a stressor. In the presence of continued societal prejudice against male nursing students and male nurses, high self-esteem may motivate them to use positive cognitive appraisals, which allow them to perceive less prejudice and thus have a higher professional identity. The higher the professional identity, the more they may want to stay in nursing (Johnson et al., 2012; Zhang et al., 2017). Therefore, nursing educators and administrators can reduce the perceived prejudice of male nursing students and male nurses by protecting and improving their self-esteem, thereby improving their professional identity. Actually, one of the reasons men pursue a nursing career is out of helpfulness (Stanley et al., 2016). In addition, male nurses possess some advantages, such as good physical strength, usually calm decision-making in case of emergencies, and an excellent ability to operate medical equipment, which makes them more adapted to work in the intensive care unit, emergency department, psychiatric department, and operating room (Zhang and Tu, 2020). The general public should recognize male nursing students and male nurses, and it is necessary to reduce the perceived prejudice of male nursing students and male nurses. Reducing the perceived prejudice of male nursing students and male nurses should be done in two ways: on the one hand, their self-esteem level should be improved; on the other hand, social awareness and understanding of male nursing students and male nurses can be popularized through the media, thus reducing the prejudice against them and recognizing their profession and work.

4.3. Mediating role of psychological distress

This study showed that the self-esteem of male nurses and male nursing students affected their professional identity by affecting psychological distress, and the research H3 was verified. First, their self-esteem could significantly negatively predict their psychological distress, which was in line with previous findings on male nursing students (Feng et al., 2019) and nurses (Feng et al., 2018; Duran et al., 2021; Liu et al., 2021). Thus, the role of self-esteem in promoting mental health was reaffirmed, which supports the previous views (Mann et al., 2004). Then, their psychological distress significantly negatively predicted their professional identity, similar to previous studies that found that college students' levels of psychological well-being positively predicted professional identity (Strauser et al., 2008). However, there is a dearth of research on the role of mental health in career development (Strauser et al., 2008), particularly in the male nursing student and male nurse populations. Thus, the present study contributes to this. Overall, male nursing students and male nurses with higher levels of self-esteem are likely to experience lower levels of psychological distress and may have a higher sense of professional identity. By examining psychological distress as a mediating variable between self-esteem and professional identity, this study not only focused on the psychological health of male nursing students and male nurses but also linked their psychological distress to their self-esteem and professional identity. The study's results revealed that nursing educators and administrators could reduce the psychological distress of male nursing students and male nurses by protecting and enhancing their self-esteem, thereby enhancing their professional identity. In recent years, psychological distress among nurses has received increasing attention (Chiu, 2022). However, in China, the number of male nursing students and male nurses is too small relative to their female counterparts. So even in studies on psychological distress among nursing students and nurses (Liu et al., 2021; Qi et al., 2022), the findings may be more in line with the situation of female nursing students and female nurses. Thus, this study was conducted on male nursing students and male nurses to present their psychological distress situations more clearly. Among the male nurses and male nursing students who took part in this study, psychological distress was present in as many as 81.7% of them, which was similar

to the results of a previous study on male nursing students (Feng et al., 2019). Not only does this indicate that their physical and mental health is at risk, but it has the potential to reduce their sense of professional identity. In general, it is important to pay attention to the mental health of male nurses and male nursing students and take measures to alleviate their psychological distress. Hence, hospitals and schools can hold more lectures on mental health, screen for the prevalence of psychological distress promptly, and provide psychological assistance to male nurses and male nursing students when necessary. Also, it is very crucial to protect and improve their self-esteem to ease psychological distress.

4.4. The chain mediating effect of perceived prejudice and psychological distress

This study also found that the self-esteem of male nurses and male nursing students could indirectly affect professional identity through the chain mediating effect of perceived prejudice and psychological distress, and research H4 was verified. The prejudice perceived by male nurses and male nursing students could impair their mental health and positively predict psychological distress among them, which was in line with what has been found about male nursing students (Feng et al., 2019) and other groups (Schmitt et al., 2014; Feng and Xu, 2015; Liu and Zhao, 2016; Drabish and Theeke, 2022). However, the effect of perceived prejudice on psychological distress was relatively small, which was consistent with previous research conclusions on male nursing students (Feng et al., 2019). Male nurses and male nursing students may also suffer from psychological distress due to other stressors, but those with positive coping styles, good social support, and good psychological resilience may be able to resist psychological distress (Watson et al., 2009; Klainin-Yobas et al., 2014; Smith and Yang, 2017; Feng et al., 2018; Foster et al., 2020). Therefore, future studies can explore factors besides self-esteem that can reduce psychological distress among male nursing students and male nurses, thus improving professional identity.

Male nursing students and male nurses are in an environment where stereotypes and social prejudice exist, and for them, psychological distress caused by perceived prejudice may be a particular experience. Therefore, the impact of their perceived prejudice on psychological distress cannot be ignored, and this study explored the chain mediation role of perceived prejudice and psychological distress in the relationship between self-esteem and professional identity. The chain-mediating effect of perceived prejudice and psychological distress accounted for only 0.887% of the total effect. The chain-mediating effect was weak and significantly smaller than the independent mediating effects of perceived prejudice and psychological distress. Although it was weak, the effect value was still statistically significant. We cannot ignore the chain mediating effect of perceived prejudice and psychological distress. Social prejudices against male nursing students and male nurses still exist and are difficult to eliminate. In this context, as mentioned in coping theory (Folkman et al., 1986), cognitive appraisal plays a critical role in the occurrence and response to stress. Therefore, male nursing students and male nurses with high self-esteem may adopt more positive cognitive appraisals and thus have lower perceived prejudice, thereby reducing stress. As a result, they may tend to suffer from lower psychological distress and have a higher professional identity. Therefore, to improve the professional identity of male nursing students and male nurses, we can still start from this path: improve self-esteem → reduce perceived prejudice → reduce psychological distress → improve professional identity.

4.5. Limitations

First, this study was cross-sectional, which could not prove the causal relationship between variables; longitudinal research or experimental research can be used to determine the causal relationship between variables. Second, the participants in this study were all from China. Due to differences in culture, education, and management, it may not be possible to generalize all results to other countries; future research should examine the significance of other samples in this model. Third, this study did not examine the differences between male nursing students in different grades and male nurses in different departments on each variable; future studies could improve on this. Fourth, because of the difficulty of obtaining a sample and the fact that male nursing students and male nurses are essentially a common group, this study put male nursing students and male nurses together for research; in the future, they can be separated for more targeted research to provide more targeted and specific reference information for nursing educators or nursing managers.

5. Conclusion

(1) Male nurses' and male nursing students' self-esteem could directly and positively affect their professional identity, and this direct effect cannot be underestimated.
(2) Male nurses' and male nursing students' self-esteem could indirectly affect their professional identity through the mediating role of perceived prejudice, the mediating role of psychological distress, and the chain-mediating role of perceived prejudice and psychological distress.
(3) Male nurses and male nursing students had a high prevalence of psychological distress, and their mental health needed attention.
(4) In general, improving the professional identity of male nursing students and male nurses can start with the following aspects: protecting and improving their self-esteem; reducing prejudice against them; valuing their mental health and alleviating their psychological distress.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

The studies involving human participants were reviewed and approved by the study was approved by the Human Research Ethics committee of Kunming Medical University (ethical approval number: 2022kmykdx6f68). Written informed consent to participate in this study was provided by the participants' legal guardian/next of kin.

Author contributions

XW, WW, and YZ: conception and design. XW, JP, JL, XY, QL, YZ, XZ, ZG, XC, and FT: data collection. XW and XM: analysis and interpretation of data. XW: writing the manuscript. XW, XY, JP, and JL: critical revision of the manuscript. WW: statistical expertise. XY, YZ, and YZ: obtaining funding. YZ: administrative, technical, or material support. YZ: supervision. All authors have contributed significantly to this study and all authors are in agreement with the manuscript.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Supplementary material

The Supplementary material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/fpsyg.2023.1176970/full#supplementary-material

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Learners' perspectives on the prevention and management of pregnancy school dropout: a Namibian case

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Background: Namibia has had a problem with the high rate of learner pregnancy and school dropout for many years, despite implementing education sector policy on preventing and managing learner pregnancy. This study aimed to explore the perspectives of school-going learners in Namibia regarding the factors contributing to learner pregnancy and school dropout and propose interventions to address them.

Methods: This qualitative research employed interpretative phenomenological data analysis, with seventeen individual and ten focus group interviews involving 63 school-going learners: adolescents, pregnant learners, and learner parents.

Results and findings: Emerging factors driving learner pregnancy and school dropout in rural Namibian schools include older men and cattle herders preying on young girls, long school holidays, the proximity of alcohol sites near school premises, and age restrictions after maternity leave. The learners proposed interventions include prohibiting learners' access to alcohol establishments, strengthening collaborations between stakeholders, sensitizing girls and cattle herders, and ongoing advocacy efforts. Findings indicate community hostility, lack of infrastructure and resources, and learner unawareness. It is essential to mitigate community hostility and raise awareness. Incorporating the perspectives of learners in policy interventions remains crucial for effectively addressing the high rates of learner pregnancy and school dropout in rural Namibian schools.

KEYWORDS

learner pregnancy, school dropouts, prevention, management, Namibia

1. Introduction

In Africa, teenage pregnancy remains a significant barrier to achieving gender equality and a leading factor in girls dropping out of school before completing primary education cycles (UNESCO, 2017, 2018; World Vision, 2020). The sub-Saharan African governments introduced comprehensive sexuality education (CSE) into school curricula and implemented laws allowing pregnant and learner-parents to complete their education (Mutua et al., 2019; Zulu et al., 2019; Human Rights Watch, 2021; Chinkondenji, 2022). However, measures have been inadequate, leading to persistent educational barriers for girls due to pregnancy and school dropout in the continent (Zuilkowski et al., 2019; Zulu et al., 2019; Adekola and Mavhandu-Mudzusi, 2023).

Namibia is not an exception. The Namibian government introduced the Education Sector Policy on the Prevention and Management of Learner Pregnancy (ESPPMLP) to decrease the number of learners becoming pregnant and increase the number of learner-parents completing education (Ministry of Education, 2012). Despite the existence of the ESPPMLP, Education Management Information System (EMIS) Reports showed that the number of pregnancy-related school dropouts increased from 1,560 in 2019 to 2,291 in 2020

and 3,658 in 2021 (Ministry of Education, 2021). The cases include primary school learners as young as 11, leading to public outcry and media coverage in the country (The Namibian, 2021, 2022a,b,c). According to the Ministry of Education (2012), the accepted definition of a learner-parent encompasses learners who become a parent while attending school. Learner pregnancy and school dropout refer to an incident where a learner dropped out of school due to pregnancy. A learner-mother and father are those who become mothers or fathers while attending school.

This study argues that despite efforts to democratise the decision and policy-making process, the views and experiences of the learners remain marginalised (Nyariro, 2018). Their experiences are complexly intertwined with their social context, opposing how others discuss them within communities and not aligning with policy provisions (Ruzibiza, 2021; Adekola and Mavhandu-Mudzusi, 2023). Therefore, including learners' voices in developing effective mitigation strategies and policy guidelines are essential as they possess first-hand experience and insight. In addition, the perspectives of learners enable policymakers, educators, and other stakeholders to understand the underlying obstacles related to learner pregnancy and school dropout, which could be easier to allocate appropriate resources and establish tailored support systems that address their needs (Adekola and Mavhandu-Mudzusi, 2023).

Previous studies in Namibia widely researched factors contributing to learners' pregnancy and school dropouts and discovered factors, such as low contraceptive use, early sexual debut, poverty, lack of parental involvement, cultural norms, and poor school performance (Burton et al., 2011; Eloundou-Enyegue and Shirley, 2011; Nekongo-Nielsen and Mbukusa, 2013; David et al., 2017; Maemeko et al., 2018; Indongo, 2020; Mogotsi and Mwetulundila, 2020). However, their findings have neither been related to the implementation of the Namibia ESPPMLP nor underscore the learner's perspectives. This is substantial to document evidence-based views from the learners that can be applied to improve the implementation of the ESPPMLP. Therefore, this study aims to investigate learners' perspectives on preventing and managing learner pregnancy and school dropout concerning the ESPPMLP in rural Namibian schools.

2. Background and context of the study

2.1. The development of the ESPPMLP in Namibia

Before Namibia's independence on March 21, 1990, pregnant learners in Namibia were often expelled from school as a form of punishment, exacerbating the inequality in education (Burton et al., 2011). However, after gaining independence, the parents and community members demanded the reintegration of learner-parents and pregnant learners into schools. Namibia recognised the need to address gender inequalities in education and thus adopted policies to prevent and manage learner pregnancy and school dropout (Legal Assistance Centre, 2015).

The Education Sector Policy on the Prevention and Management of Learner Pregnancy has two main components: prevention and management. Prevention aims to provide age-appropriate life skills programs to Namibia's primary and secondary school learners through compulsory but non-promotional subjects of life skills covering topics such as CSE, abstinence, sexual risks, contraception, gender sensitivity, child abuse, and sexual violence awareness. The management takes over when prevention efforts fail and a learner becomes pregnant or impregnates a fellow learner. Learner-fathers can remain in school without having to take leave. The pregnant learners can continue attending school until 4 weeks before giving birth or take leave at any stage of pregnancy. After giving birth, learner-mothers may choose to return to school, extend their leave to 1 year, or transfer to another school. Schools reserve learner-mothers' spaces provided learners update their intended return date. The parents or caregivers must engage with the school and sign a statement to ensure someone will care for the infant while the mother attends classes.

Besides, management ensures that the learner-mother, father, and learner must receive psychosocial support and counsel from a trusted adult on pregnancy, sexual and reproductive health, and other social issues in school settings. The policy emphasises confidentiality in school settings. It addresses the stigma and discrimination that pregnant, or learner-parents face from teachers and fellow learners through disciplinary measures. In addition, the ESPPMLP mandates the involvement of relevant stakeholders, such as parents, NGOs, and four-line ministries, including the Ministry of Gender Equality and Child Welfare, which must assign social workers for learners' counselling. The Ministry of Health and Social Services provides adolescent-friendly health services through mobile services in school settings, offering pre-and post-natal care, HIV counselling, and related services. The Ministry of Safety and Security Services offers prompt and sensitive social services and investigates cases of rape and other crimes. The ESPPMLP prohibits teachers from engaging in sexual relationships with learners. The teacher faces suspension from the profession, regardless of whether it results in pregnancy.

2.2. The Namibian status of learner pregnancy and school dropout

Despite the investments in addressing the prevention and management of learner pregnancy and school dropout, Namibia continues to face a significant challenge with teenage pregnancy. With a young population, the country has the highest adolescent birth rate of 82 births per 1,000 girls aged 15–19 years, double the global average of 44 (Namibia Statistics Agency, 2014). Teenage pregnancy is one of the leading causes of girls dropping out of upper primary school and failing to graduate high school on time (Ministry of Education, 2020). Rural schools experience learner pregnancy dropouts at three times the rate of urban schools (UNESCO, 2018). Pregnant learners are part of the 13 groups of marginalised children who cannot complete their education in Namibia (Pearson and Van Der Berg, 2015). Between 2018 and 2021, Namibia had 56,300 cases of teenage pregnancy, exceeding the number of pupils qualified for university education, which was only 37,480 during the same period. In the first 2 months of 2022, there were over 2,400 reported cases of teenage pregnancies nationwide (The Namibian, 2022c). Statistics from the EMIS report

for the 2016 to 2020 academic years indicate that Namibia had over 10,000 learners dropping school due to learner pregnancies (Ministry of Education, 2016). This number adds to the staggering figure of over 50,000 learners who drop out of school annually in Namibia (Julius and Amupanda, 2017).

Studies have shown that in addition to losing educational opportunities, pregnancy-related school dropouts face limited prospects, such as a lack of skills, income, food, shelter, access to better health, and face difficulties in entering the labour market later in life (David et al., 2017; Julius and Amupanda, 2017; Legal Assistance Centre, 2017; Ministry of Sport, Youth and National Services, 2020). Learners who drop out of school migrate from rural to urban areas for better living conditions. Women may turn to criminal activities, such as illegal drug dealing, alcohol abuse, sex work, early marriages, or transactional relationships with multiple sexual partners, to cope with their lack of education or unemployment (Legal Assistance Centre, 2017). If this trend is left unchecked, it could significantly strain the government's ability to allocate resources and services such as housing for unemployed individuals, food, sanitation, and access to primary schools and health. This could hinder national policies that target to reduce poverty, gender inequality, unemployment, and other socio-economic issues facing Namibia.

2.3. Literature

The previous literature highlights that pregnant and learner-parents face stigma and discrimination from school teachers, and peers disgust them negatively as "Life Skills teacher's learners" (Legal Assistance Centre, 2017; UNESCO, 2018). Nekongo-Nielsen and Mbukusa (2013) stress the importance of establishing a secure, friendly, and encouraging learning environment in schools and recording the perpetrators' identity to address the increase in pregnancy and school dropout rates. Burton et al. (2011) and the Legal Assistance Centre (2017) reveal that sexual harassment and abuse frequently occur in Namibian schools, with many unreported cases. Pearson and Van Der Berg (2015) and UNESCO (2018) report that Namibian teachers have been known to exploit their positions of authority by engaging in sexual relationships with minor learners. It is worth noting that no law punishes those who engage in sexual affairs with learners except school teachers. Studies conducted by Burton et al. (2011) and Pearson and Van Der Berg (2015) shed light that walking long distances to and from school in Namibia poses a risk of youth victimisation to social evils, making it challenging for every child in the country to attend school.

Additionally, a study on comprehensive sexuality education (CSE) scaling up in practise from Eastern and Southern Africa by UNESCO (2017) elucidated that the Namibian curricula's breadth of CSE content is insufficient. The same study cited a lack of specialised CSE programs at the pre-set level, which could hinder learners from being adequately capacitated to make informed decisions about sexual reproductive issues. Mogotsi and Mwetulundila (2020) raised concerns over the neglect of father-learners' needs in sexual and reproductive programs within the community, underscoring the need for educational interventions to recognise and target male youth to promote positive development. UNESCO (2018) highlighted a lack of formal linkages between schools, health services, and relevant Namibia stakeholders such as parents, religious institutions, and NGOs. In their study, UNESCO highlighted that although learners receive information on Sexual Reproductive Health (SRH) and where to access services, there are weak referral systems to other service providers and limited provision due to resistance from school principals, teachers, parents, and community sensitivities. To address these issues, it is necessary to establish and communicate a minimum CSE package for schools, including referrals (Lukolo and van Dyk, 2014; UNESCO, 2017).

According to World Vision (2020), several countries have implemented strategies to prevent and manage learner pregnancy and school dropout. For example, Gabon has nurseries and childhood centres near schools. Cape Verde and Senegal provide young mothers with exceptional accommodations, such as breastfeeding breaks or time off for infant care. In Ghana, communities have used social accountability to address the issue through civic education and monitoring of national policies. They also have ongoing public awareness campaigns and targeted back-to-school initiatives for pregnant learners through television, radio, and social media advocacy messages. In the same study, World Vision (2020) recommended establishing sexual violence reporting mechanisms through child-friendly, community-based monitoring and responses to ensure the return of vulnerable learner parents at greater risk of not returning to school, collaboration with community members, local politicians, community chiefs, teachers, caregivers, and social workers. Following up, learning about their situations, and facilitating their return to school is also essential. One school community in Ghana successfully used this approach, dropping learner pregnancy school dropouts from seven in 2015 to three in 2016 and none in 2017 (World Vision, 2020). Maharaj (2022) suggested a paradigm shift to support grants through conditional cash transfers as a double-edged sword in reducing adolescent pregnancy and school dropout. This was confirmed in Colombia, where pregnant and learner-parents received a subsidy if they attended school, completed their school year, and enrolled in the following years.

While existing literature has explored diverse perspectives on preventing and managing learner pregnancy and school dropout from various stakeholders, such as social determinants, demographic data, teachers, community voices, and male youth participants, the lack of learners' perspectives in previous studies limits understanding of how well the ESPPMLP works and what improvements can be made. Therefore, this study investigates learners' perspectives on preventing and managing pregnancy and school dropout in selected rural Namibian schools regarding the ESPPMLP for its improvements.

3. Research methods

3.1. Design

The study utilised a phenomenological research design to investigate and elucidate the perspectives of learners on the prevention and management of pregnancy and school dropout in selected rural Namibian schools. Employing a phenomenological approach allows researchers to delve deeper into understanding the essence of the participant's experiences and the contextual

factors contributing to those experiences (Cresswell and Cresswell, 2018; Cresswell and Poth, 2018). During the research process, the participants were asked probing questions to elicit their insights and experiences regarding preventing and managing learner pregnancy and school dropout within their schools, communities, families, and social circles. The researcher attentively listened to and documented the participants' recorded narratives and firsthand encounters related to the investigated issue. In addition, the researcher employed a case study: a qualitative approach that involves exploring a real-life, bounded system through in-depth data collection using various methods such as observation, interviews, documents, and reports (Cresswell and Poth, 2018). The rationale for choosing a case study design focused on accessing multiple units, specifically different schools from the same region, each with varying proportions of learner pregnancy and school dropout cases. By considering the geographical setup and socio-economic dynamics, this study aimed to capture different perspectives of learners from different schools on the same issue (Cresswell and Poth, 2018).

3.2. Site

The study occurred in one of Namibia's 14 regions, located in the far northern area of Namibia, which borders Angola Cunene province. The region is typically rural, and most schools are in rural zones. According to the 2020 EMIS report, the region had 270 schools with 110,127 learners, of which 49.7% were female students (Ministry of Education, 2020). The region recorded the highest number of pregnant teenagers in the country from 2010 to 2022, with 23,700, at a prevalence rate of 11.6%, linked to the lowest rate of contraceptive use among teenage girls, with 13.6% (Indongo, 2020; The Namibian, 2022b). The region had high learner pregnancies and school dropout cases in three academic years, 2017, 2018, and 2019 (Ministry of Education, 2017, 2018, 2019).

3.3. Sampling

The data presented in this study targeted school learners in selected primary and secondary schools located within a rural region in northern Namibia. We utilised purposive sampling to select schools and individuals that can purposefully inform an understanding of the research problem (Cresswell and Poth, 2018). The participating schools were determined by the number of educational circuits in the region [targeting one school per circuit (the region has 10 circuits)] and by intentionally selecting any school-going learner who demonstrated features of interest and was affected by learner pregnancy. We purposely selected schools with a consistent record of high learners' pregnancy school dropout incidents in three academic years (2017–2019). The inclusion criteria for participants were as follows: participants had to attend schools in the rural areas of the undisclosed region in Namibia at the time of data collection. The school of attendance had to consistently record learner pregnancy and school dropout incidents over 3 years (2017–2019). Other inclusion criteria involved communicating in Oshiwambo or English, being ready for audio recording, providing informed consent, and obtaining parental consent. We targeted learners between 13 and 18 years. However, we found learners aged 23 years attending the same schools within the 13–18 age range, and we included them in the study as they expressed willingness to share their experiences. We covered 63 participants in total, as presented in the table below.

3.4. Data collection

The researcher conducted 17 individual and 10 focus group interviews between August and October 2021 with 63 learners. The study followed a set of semi-structured interviews, both for the individual interview guide and the focus group interview guide. Following the interview guidelines by Kvale (1996), Qu and Dumay (2011) cited in Adekola and Mavhandu-Mudzusi (2023), the researcher asked central questions such as "Based on your experiences and perspectives, please tell me the factors that contribute to learner pregnancy at your school and around your community? Why do pregnant and learner parents tend to drop out of school?" This was followed by probing questions for rich and comprehensive data.

The interviews were conducted across three categories: adolescents, pregnant learners, and learner-parents. Despite the distinctions, the questions remained broadly consistent. Individual interviews with pregnant learners and learner-parents were conducted in private settings, such as a school storeroom, to ensure privacy and address the sensitivity of the matters discussed. Considering the busy class schedules, we sometimes followed the pregnant learners and learner-parents at their homes after school hours while maintaining privacy during interviews.

Conversely, interviews with adolescent learners were conducted through focus group discussions held in open school areas, such as under a tree or in open classrooms. The focus group discussions took place after school or during break times. Each interview session lasted ∼1 h and 30 min; recordings were made for transcription. All interviews were conducted in both English and Oshiwambo languages.

After each interview session, we provided written notes to each participant, allowing them to share any additional information about the topic confidentially. This approach, aligned with Cresswell and Cresswell (2018), recognised that not all individuals are equally articulate or express their perspectives during interviews. We further allowed participants to write their notes and discreetly pass them through the researcher's open car window on the school premises to ensure anonymity. This method facilitated a sense of security and freedom for participants to share their experiences without fear of identification.

3.5. Data analysis

The data analysis process began during the interview sessions, where the researcher noted emerging words from the voice recordings. After the data collection phase, the researcher transcribed the audio-recorded data using the interpretative phenomenological analysis data framework. This approach allows the participants to express their lived experiences and stories as

they see fit without any distortion and prosecution (Alase, 2017). The researcher carefully listened to the recorded audio, transcribed some audio from Oshiwambo to English, and simultaneously used the observation's non-verbal cues, reflections, and thoughts related to the participant's narratives. This iterative process aimed to capture and preserve the richness of the participants' lived experiences. The identified themes were then organised into superordinate themes, ensuring that the analysis reflected the depth and complexity of the data. A comparative analysis of the emerging themes was conducted, creating a comprehensive table of themes. This table comprised two superordinate themes, several sub-themes, and relevant participant quotes. Including participants' own words helped maintain the authenticity and credibility of the findings. To enhance trustworthiness, the identified themes were carefully aligned with the goals and directives of the ESPPMLP, ensuring coherence between the research findings and the study's overall purpose. Additional reviews were carried out to identify any potential overlaps or contradictions within the themes, further strengthening the reliability of the analysis.

3.6. Ethics

Permission to conduct the research was obtained from the Tokyo University of Foreign Studies where the researcher is a student pursuing a Ph.D. This was followed by a second permission acquired through an authorisation letter from the Namibia Ministry of Education's Executive Director at the Head Offices. At the regional level, the Education Director in the region also signed off the study permission letter. These letters were then presented to the school principal for their approval. This procedure ensured that all administrative parties granted their consent for the research. Since the researcher has no prior relationship with the participants, the life skills teacher introduced and announced the researcher at the morning assembly for interested participants to volunteer and convene to meet after school. We thoroughly explained the study instructions to all participants and ensured their understanding that it was voluntary. Any participants could withdraw at any point.

To ensure that participants were well-informed about the objectives, procedures, and expectations, an orientation session about the study was conducted 1 week before every school's scheduled data collection date, reiterating that their participation was voluntary and had the freedom to withdraw at any point, even with parental consent. Given that some participants were minors, we handed individual and parental consent for their participation. Prior to data collection, all participants submitted their consent forms, including parental consent. To maintain anonymity and confidentiality (Sim and Waterfield, 2019), participants were instructed not to use their real names and assured that all information would be confidential.

4. Results

This study aims to investigate learners' perspectives on preventing and managing learner pregnancy and school dropout in relation to the ESPPMLP in rural Namibian schools.

4.1. The learners' perspectives on the causes of learner pregnancy and school dropout

This theme presents the perspectives of learners based on their experiences on the factors that contribute to learner pregnancy and barriers that lead to school dropout among pregnant learners and learner parents in the schools and communities.

4.1.1. Elder men, cattle herders, and police officers preying on young girls, schools

The interviewees revealed that grown men, including those in positions of authority, are preying on vulnerable girls as young as 11 years old by luring them with little gifts. Fellow learners (father-learners) were cited in rare cases. The men are not just random strangers but include people in positions of authority and professional men who approach young for sexual relationships.

In addition, when asked why cases are high, many learners, with disdain and blame, cited, "*The cattle herders are sleeping with our young girls. Blame it on them.*" The participants expressed that men from a neighbouring country are employed as cattle herders in their communities. These men are from a lower socio-economic and educational background and seek employment opportunities. These cattle herders view the schoolgirls as easy targets for sexual relationships. They often stalk the girls in Savannah areas and on their way to and from school. They entice them with small gifts and money, making it easier to coerce the girls into sexual favours. *"Many of my friends have fallen pregnant due to sexual relationships with male cattle herders. The cattle herders entice girls with gifts such as radios with USBs to play music. I also slept with a cattle herder but did not fall pregnant." [Maya, 15 years Female]*

Some participants reported that their schools are near roadblocks and police stations, where police officers frequently inspect traffic and transport goods. As a result, learners pass by these areas on their way to and from school. This exposes them to police officers to coerce them into sexual relationships. The learners expressed discomfort and fear at these experiences, feeling sexually intimidated and powerless to change their route to school.

> *"Our school is located near a police roadblock, and as a girl, you can never walk alone without being called by a police officer. Sometimes it is scary, and you start to think you did something wrong. Once you go there, the police officer asks for your cell number and if they can see you later. I am worried that the police officers are interested in young girls. If I report the officer's friend, would he protect his friend?" [Martha, 18 years, Female]*

4.1.2. No knowledge that sexual harassment and statutory rape are crimes

The study revealed that although the ESPPMLP aims to educate learners on sexual violence awareness and empower them to report indecent assaults, the interviewed learners demonstrated a lack of knowledge that statutory rape and sexual harassment perpetrated against a minor violate the law. When asked whether they were aware that it is criminal law, many learners responded with a

"No," indicating a lack of familiarity with this term and its legal implications. Similarly, one of the anonymously written notes from a learner-parents who encountered rape sought guidance from the researcher on responding to these traumatic experiences.

> *"When I was 15 years old in 2020, I got involved in a case rape. My friend's brother raped me. So, I disclosed it to my life skills teacher on a Monday since it happened on a Friday. This made me very emotional and shy to go out of the house. However, thanks to God, I was not pregnant. What can we do now?" [Fiina, 17 years, female]*

4.1.3. "Shebeen and cuca shop" alcohol sites within schools and threats of sexual coercion

Participants revealed that the proximity of alcohol sites near schools poses a significant danger to learners, especially at a young age, as their peers tend to pass by these alcohol sites on their way home near the school premises, leading to dangerous situations such as hanging out with strange men at bars and receiving free drinks while still in school uniforms. They believed that such sites expose many learners to the earlier taste of alcohol, with girls particularly vulnerable to the social evils associated with alcohol consumption. Participants mentioned that even young boys are at risk of being propositioned by older women in exchange for alcohol, increasing the risk of unwanted pregnancies and other negative consequences.

Some female learners reported becoming pregnant unwillingly due to persistent sexual coercion and persuasion from older male perpetrators who relentlessly pursued them until they gave in to their advances. Also, sexual coercion occurs at water points and after-school activities such as sports, church, and other public gatherings or isolated areas. In addition, learners mentioned that rape often occurs at night, perpetrated by distant family members when parents are away from alcohol sites in the village.

> *"At first, you refuse sex, but later, we buy into it. It is not that we want to get pregnant situations we are in. I have a friend that used to be forced by her cousin's father to have sex. Also, I know a friend who is 16 years old and in an abusive relationship. Her boyfriend forces her to have an abortion." [Tulela, 18yeras, female]*

4.1.4. Stigma and discrimination and no confidential reporting system for the sexually assaulted victims

Learners reported that fellow learners are the most discriminatory towards them in class, with some teachers also perpetuating discrimination among pregnant and learner parents. The senior female teachers were more supportive than their younger counterparts, who were reported to yell at learners about their pregnancy during class sessions.

> *"We cry here. They call us names and mock us, saying things like 'Oya lya omaandi yeengumi' (they were fed, and their stomach is full of condom lubricant) and 'ota kuti wala omuvali namwene, inaapanda ku longelwa mumwe naavali' (you mothers keep quiet! we are not happy to be in classes with you). We are afraid of our class teacher; she is not very friendly." [Leena, 16years, female]*

Relatedly, when asked why they did not report the sexual coercion incidents, participants expressed choosing to remain silent about incidents of sexual coercion due to fear of shame and humiliation. It is insensitive to have their traumatic experiences discussed openly and publicly by villager residents, with the perpetrator even being named in a pervasive culture of stigma and victim-blaming in their communities.

> *"Village people are insensitive to absurdly say 'hano' (this one) 'kakwatelwe keenghondo komufita wiimuna mafiku aa' (who was recently raped by the cattle herder) while even mentioning the name of the perpetrator." [Tuyeni, Female, 19 years]*

4.1.5. The absence of community collaborations, stakeholders' involvement, and parental care

The participants mentioned poor stakeholder involvement in preventing and managing learner pregnancy in school settings, despite the ESPPMLP's directives to partner with stakeholders and line ministries. The interviewed learners reflected that stakeholders outside the classroom are not visible as they do not encounter the Ministry of Gender and Social Welfare conducting mobile sessions in school settings but travel long distances to access them. Similarly, they hardly experience the Ministry of Health and Social Services nurse's adolescent-friendly health services in school settings. The Ministry of Safety and Security, responsible for law enforcement, is also hardly involved in addressing them in school settings. Concerning the NGOs, the learners mentioned Ombetjia Yehinga Organisation and Intra Health as the common NGOs that visit their schools. However, their visits are infrequent, occurring only once or twice a year. Although the activities of NGOs are informative, they often occur after school hours, making it difficult for learners to participate.

Furthermore, the interviewed learners revealed that in their community, learner pregnancies and school dropouts have become so frequent that no one shows concern anymore. Community members seem indifferent towards learners who are not their family or relatives. Shockingly, instead of offering support, they mock, gossip, and blame pregnant learners for their family's shortcomings. This societal attitude makes pregnant learners feel ostracised and cursed, leading them to drop out of school.

> *"It is a very normal practise here. We do not get surprised when they do not return any more. I know more than 50 young girls in my community who fell pregnant. We see them at bars and cuca shops, breastfeeding their babies. Our community is not taking any action, even when they encounter pregnant or mother learners who drop out of school. 'Ngayenya eshi topitipo, ovo ghee veli ohaa miti ashike vashona oshavo iha va endeko', which*

> *translates to, 'When you walk by them, elderly women gossip, it is in the family ties, those are promiscuous; they fall pregnant at a tender age, that is how they are."' [Tekla, 17years female]*

Some interviewed learners reported that poor parental involvement and negligence contributed to learner pregnancy and school dropout. There is a tendency for parents to spend time at alcohol sites without taking part in their children's day-to-day activities. Besides, some parents are reluctant to engage in practical discussions around sexual and reproductive health issues with their children and refuse to consent to contraceptives at health centres. Additionally, it surfaced that for the re-admission of learner-mothers to school, ESPPMLP requires parents or caregivers to sign a letter as a commitment with the school to take care of the infant. However, the learners reflected that some parents refuse to take over such responsibility, and the school refuses to re-admit them.

4.1.6. No privacy and trust among the teachers

Learners claimed that after sharing their personal stories with teachers, they are often speculated about around the school and community. Counselling sessions are also conducted in unfriendly and insensitive settings, such as under the tree and behind classes, which makes learners reluctant to disclose their problems. The lack of privacy and confidentiality was observed during data collection when a life skills teacher unexpectedly walked into the storeroom during an interview with a learner-parent, highlighting the need for a culture of privacy and confidentiality in schools. *"I wish they could talk to me very confidentially, and nobody will spread it. Now I confide in you, as we exist in separate environments. Any mistakes you share your stories here, you would hear from it somewhere else." [Immanuel, 18-year-old male]*

4.1.7. Age restriction for re-admission for grade nine pregnant and learners-parents after the 1-year maternity leave

It has emerged in the study that despite the ESPPMLP allowing for a 1 year leave of absence for learner-mothers, those over 18 years old are not permitted to return to school after their leave as they are over-aged. Additionally, even if school authorities know that a particular learner-mother's academic progress was disrupted due to maternity leave, they still refuse to admit her. *"That grade 9 age policy prevents many learner-mothers from returning to school. If I become pregnant in grade 9 at 18 or above and take a one-year leave of absence, I will be 19 years or older upon my return, and schools will not enrol me in grade 9 due to my age. The age limit for grade 9 needs to be revised. Why am I only allowed to return to school if I am under 18? What if I started school late or was over 18 when I got pregnant? It is unfair that the government excludes them because of age." [Tuyoleni 18 years, female]*

4.1.8. Long school holidays

The interviewed learners reasoned that pregnancy occurs during school holidays and semester breaks when they are not restricted to school activities. Thus, they are likely exposed to social evils such as alcohol and drug abuse. Furthermore, learners opined that they quickly forgot about sexual reproductive health education during the holiday. There are also no recreational facilities in the village and seeking relaxation exposes them to activities of unintended pregnancies. In addition, pregnant and learner parents tend to lose school interest and not return after the school holiday.

4.1.9. Walking long distances to school and the lack of accommodation

According to the learners, the long distances between schools in rural areas and the prevalence of savannah areas emerged as significant concerns. Young girls endure 1–2 h walks to and from school during the early morning and late afternoon, thus, possessing some danger of sexual threats and coercions. The pregnant and learner parents cannot endure until their last pregnancy dates. This forces them to drop out of school.

In addition, the study found that many schools in rural communities are scattered, and the junior secondary schools have no hostels. This forces parents to build temporary shacks for their children near the schools. According to the learners, this exposes young learners, some as young as 11, to live alone without parental supervision. As a result, they become vulnerable to sexual exploitation and transactional relationships.

4.1.10. Shortage of flexible facilities for pregnant and learner parents

Besides, the participants cited that pregnant and learner-parents in boarding schools remained in the hostel even after they gave birth. However, it was apparent there was no appropriate furniture for pregnant learners in classrooms, no childcare or caregiving facilities on non-boarding school premises, and no designated space for breastfeeding. The learner-parents indicated that they arrange with their families or use church buildings or open spaces near their schools during breaks for breastfeeding as their requests for better chairs or storage rooms for breastfeeding were deemed unreasonable by school authorities.

4.1.11. The shortage of comprehensive sexual education and accessibility to contraceptives

Some learners reported that they only hear about pregnancy during life skills classes, but no comprehensive programs exist to educate them as the content is minimal. Also, some life-skills teachers offer CSE in bits and pieces, withholding in-depth information because they have their relatives or biological children in their classes. Also, teachers focus on abstaining from sex to avoid getting pregnant without emphasising education on contraceptives. Besides, learners have expressed that only the school's principals and life skills teachers seem to care about learners getting pregnant, as other teachers do not address the issue, making it seem like preventing pregnancy is not a priority.

Participants voiced an objection to walking long distances to access condoms. They reported being constrained from using condoms as the only means of contraception since other forms require parental consent. Learners also mentioned that schools hide condoms in staffrooms, making accessing them freely complex and not private and confidential. "*The only means of contraception here*

are condoms. Like those ejections[sic], they cannot be used because my parents will not approve. Taking ejection[sic] will decrease fertility." [Monika, 17 years, female].

4.1.12. Exclusion of male learners in CSE programs

In the study, male learners bemoaned not being included in CSE and counselling programs. The visiting NGO and school meetings only focus on educating and supporting girls while insisting they should wait. Even though the ESPPMLP direct that counselling and support for father learners, the male learners reflected that it is provided to pregnant girls and female learners, neglecting them. *"Our school does not involve us in support and counselling sessions, even if we impregnate a girl from another school or the same. I was never summoned to the office about being a learner-father, and I am unaware of how they learned about it." [Tom, 19 years, male]*

4.1.13. Peer pressure and ignorance

Besides, some learners noted that girls are prone to peer pressure and influence from their male counterparts in exchange for material items and "nice things." Some learners described their peers as disobedient and ignorant, not listening to their parent's advice. *"The girls at our school like to show off and are attracted to money and alcohol. If a boy offers to give them money daily, the girls will follow them even if they initially decline. A friend wanted money for a farewell party but could not get it from her parents. She went to a man and received N$ 150, but he demanded sex in return." [Tulonga, female, 17 years]*

4.2. Learner-innovative approaches to overcome pregnancy-related school dropout

This theme's central idea was to gather learners' insights on the most effective ways to reduce the incidence of learner pregnancies and enhance learner-parents completing their education. The interventions proposed were derived from the data obtained from the participants and aligned with the directives of the ESPPMLP.

4.2.1. Introduce harsh punishments for learner pregnancy offenders and targeted awareness campaigns for girls and cattle herders

The female learners felt that men, including young boys and older men impregnating school learners, should be held accountable for their actions. Thus, urging the government to impose severe punishments on individuals who impregnate and engage in sexual relationships with young learners. Participants believed that holding the offenders accountable may discourage them and protect vulnerable individuals from exploitation and harm. *"Why is it that when a girl gets pregnant, she is the only one who must drop out of school while the boy continues his education as if nothing happened? Both parties are equally responsible, but only one bears the burden. It is as if I did this alone." [Peya, 18 years, female]*

Also, the participant felt sensitising girls about the risks of interacting with cattle herders. The young girls must be alerted to the dangers of being alone with strangers, especially with men who may have a different cultural background and may not share the same values and norms. They further urged organised teachings with girls to learn how to detect the signs of manipulation, set boundaries, seek help if uncomfortable or threatened, and advise them not to walk alone in isolated areas after school and avoid late walks. The participant emphasised that the government or community members must engage cattle herders to stop interacting and engaging in sexual activity with girls.

4.2.2. Ban learners from entering "cuca shops and shebeen" and educate the owners

The participants proposed an intervention to prohibit learners from accessing cuca shops and shebeens to reduce the likelihood of engaging in risky behaviours, such as underage drinking and unprotected sex, which causes unintended pregnancies.

4.2.3. Address bullying, stigma, and discrimination in school settings

According to the interviewed learners, to reduce stigma and discrimination in school settings, steps must be taken to hold frequent discussions and ongoing advocacy about its harmful effects and focus on promoting acceptance, respect, and empathy to create a safe and inclusive learning environment. Furthermore, appointing learners' ambassadors and class captains who can advocate against stigma towards pregnant and parenting learners and who may report incidents to the principal for appropriate disciplinary actions. *"If we could have two Learner Representative councils (LRSs) in a class and two class Captains, one sit in front, and the other sits at the back of the corner, where they monitor the situation and report them to the principal for punishment." [Maya, 17years, female]*

4.2.4. Conduct regular school visits by police officers, social workers, and nurses

Learners suggested regular visits from police officers, social workers, and nurses' schools' visits. Participants believed that police officers' school visits could promote reporting of sexual harassment and educate learners on recognising sexual coercion and harassment. Social workers can provide extensive counselling sessions and identify learners at risk of dropping out of school due to pregnancy through a friendly and confidential system. At the same time, nurses can address health concerns and provide sexual health education to learners.

> *"Suppose social workers and professional counsellors can be allocated in schools or could do mobile counselling sessions. Our schools are in rural areas, where such services are far away, and we need a platform to raise pertinent issues. Offloading issues to a stranger is more comfortable than someone you see daily within school premises." [Immanuel, 18 years Male]*

4.2.5. Reinforce stakeholder collaborations and reinforce parenting

Some participants proposed hosting community meetings involving all parties concerned, including the school administration, parents, community leaders, and Ministry of Education officials, to address the pregnancy-related issue of school dropouts. The learners felt that such meetings might provide a platform for discussing the reasons behind the high dropout rate, brainstorming solutions, and educating the community on the importance of education for learners and their children. They also suggested that learners must be given inclusive and non-judgmental to air their voices to the community members for support during the meeting.

> *"I think we need to look for people in the community, nurses, and doctors to talk to girls and boys about the risks and consequences of learner pregnancy. There seems to be insufficient education on this topic, and I believe school principals should talk to us more about it." [Maya, 15, Female]*

In addition, participants suggested that parents are the most supporting system to influence them to return to school after falling pregnant. Thus, it is crucial to educate them about the importance of involvement in their children's lives beyond attending parent meetings and participating in more school activities. "*Charity starts at home, so the courage to return to school comes from home before anyone else. If your parents do not give you the courage, forget to do it yourself; the teachers counselling and support cannot keep you in school, but parents' assurance." [John, 18 years, Male]*

4.2.6. Sensitive teachers on confidentiality and sensitivity and introduce a rural-school-friendly anonymous reporting mechanism

Participants cautioned that teachers must be sensitised on handling sensitive information, maintaining confidentiality, and promoting ethical practises.

4.2.7. Remove age restriction for re-entering pregnant and learner parents in Grade Nine

Regardless of exceeding the typical age, participants felt that schools consider extending the opportunity for learner-mothers who took maternity leave at or after the age of 18 to re-enrol for grade 9 full-time and recognise that their pregnancy contributed to their age surpassing the limit.

4.2.8. Reduce or introduce activities during the school holiday

The participants felt that specific activities could be introduced to keep them busy during the long school holidays to prevent boredom. Learners also felt that some home environments may not be conducive to healthy and safe behaviour and could be vulnerable to social evils such as sexual exploitation and abuse. The participants suggested reducing the length of school holidays or organising extra-curricular activities that promote positive behaviours and values among learners.

4.2.9. Promote school hostels create a comprehensive database for the pregnant and learner-parents

Participants believed that providing accommodation in school hostels could keep learners within the safety of the school premises, reducing exposure to shebeens on their way home, where they may be exposed to alcohol, and for them to focus on their studies without distractions. Besides, the interviewed learners suggested that relatives and friends, including the life skills teachers, do home visits to learn more about their challenges and encourage pregnant and learner parents to return to school. *"Their names should be listed in some papers, where teachers could screen them on reasons and engage the parents and the community." [Tulonga, 14 females, years]*

4.2.10. Expand access to CSE in schools and condom distribution

Learners voiced that condoms are expensive to buy from shops, and some must travel long distances to clinics to access them. Thus, they found that schools must distribute condoms to learners in school settings to reduce the risk of unintended pregnancies and the spread of sexually transmitted infections. *"Condoms are expensive to purchase at local shops. We buy a pack of three condoms for $20 at a nearby service station. We spend little cash on transportation to the clinic over 20 kilometres from our school. Schools must provide easier access to condoms and other contraception." [Taya 17 years male]*

4.2.11. Ongoing advocacy

Participants proposed schools, particularly life skills teachers, to continuously remind learners and speak about pregnancy, not only when they see learners leaving school.

> *"Ova pumbwa kupoya manga omeya ina aya mumwe nomandu. Direct translation 'Talk before water is mixed with sand. Meaning they must consistently advocate for prevention before the situation worsens.'" [Taati, 17 years old Female]*

5. The findings and discussions

This study aimed to investigate the perspectives of learners regarding the prevention and management of learner pregnancy and school dropout, specifically concerning the ESPPMLP. Table 1 provide a summary of the sample of the study participants by educational circuits, schools, participants, and gender. As shown in Table 2, two main themes emerged from the study: learner perspectives on the causes of pregnancy and school dropout and learner-focused approaches to addressing these issues. The learner perspectives on the causes of pregnancy and school dropout findings were further categorised into four: community hostility, educational factors, lack of infrastructure and resources, and learner unawareness. The learner-focused approaches were categorised into four initiatives: mitigate community hostility, improve educational conditions, allocate necessary infrastructure and resources, and raise awareness among learners.

TABLE 1 Summary of the sample of the study participants by educational circuits, schools, participants, and gender.

Educational circuits	Rural school	School level	Male participants	Female participants	Mother learners	Father-learners	Pregnant learners
One	School A	Primary	2	4			
Two	School B	Primary		4			
Three	School C	Junior secondary	1	3	3	1	
Four	School D	Junior secondary	2	3	2		1
Five	School E	Combined	2	3	2		1
Six	School F	Junior secondary	1	4	2		
Seven	School G	Combined	2	4	2		
Eight	School H	Secondary	2	2	3		
Nine	School I	Secondary	1	3			
Ten	School J	Combined	2	1			
Total number of participants: 63							

5.1. Learners' perspectives on the causes of learner pregnancy and school dropout

As per the perspectives of learners, the causes of learner pregnancy and school dropout are influenced by community hostility or unwelcoming behaviour that tolerates or promotes harmful attitudes with factors such as elder men, cattle herders, and police officers preying on young girls into sexual affairs, the proximity of alcohol sites "shebeen and cuca shop" within schools premises, the threat of sexual coercion, stigma and discrimination, the lack of community collaborations, stakeholders involvement and parental care, a lack of trust among the teachers, and the lack of confidential reporting system for the sexually assaulted victims.

Relating to the implementation of the ESPPMLP that only prohibits and punishes schoolteachers who engage in sexual relationships with learners, the study revealed that there is a trend of older men in communities such as cattle herders, police officers, and prominent and respected men whose names are concealed who bribes, prey, and entice learners, particularly females, against their consent, leading to learner pregnancies and school dropout. Those men abuse power and exploit vulnerable young girls, eroding the sense of safety and security while creating an atmosphere of fear and distrust within the community. Our findings correlate with the Namibian media outlets that widely reported that older men engage with school-going girls (The Namibian, 2022a; Namibian Sun, 2023; New Era, 2023). In contrast to media reports of male teachers bribing parents for their silence in Namibian schools (Pearson and Van Der Berg, 2015; UNESCO, 2018), this study also established that many learner pregnancies are not caused by teachers but rather by someone outside the school system (Nekongo-Nielsen and Mbukusa, 2013). As the scope was limited to exclusively school-going learners, we could not verify these claims by consulting with other members of the communities.

Furthermore, this study established that the proximity of alcohol sites to school premises exposes learners to alcohol at an early age, stimulates underage drinking, and potentially increases the chances of earlier sexual debut, and loss of interest in school attendance. Pearson and Van Der Berg (2015) noted similar results with drunkenness and fighting in the proximity of schools in Namibia. The study shows that while the ESPPMLP promotes schools as safe environments free from sexual abuse and harassment (Ministry of Education, 2012), participative learners endure the threat of sexual coercion and increased likelihood of sexual violence and harassment. Furthermore, walking long distances to and from school triggers and expose learners to sexual relationship, earlier pregnancy, and dropping out of school. Pearson and Van Der Berg (2015) and Burton et al. (2011) also highlighted the risks of youth victimisation and the challenges of attending school when walking long distances in Namibia. In addition, while the previous study insinuated Namibian schools as sites of sexual harassment (Legal Assistance Centre, 2017; Burton et al., 2011; UNESCO, 2018), we recognise that the safety and wellbeing of learners are not only influenced by school environments but also by the broader community where they live.

Despite the provisions set forth by the ESPPMLP to combat stigma and discrimination against pregnant or learner-parents (Ministry of Education, 2012), the study revealed a culture of stigma and discrimination in school settings that prevail among learners and junior teachers, which intensify a hostile environment for pregnant and learners' parents to drop out of school. This finding is in accordance with the previous studies in Namibia by Burton et al. (2011), Nekongo-Nielsen and Mbukusa (2013), Pearson and Van Der Berg (2015), Legal Assistance Centre (2017), and UNESCO (2018). This study further revealed the attitudes of community hostility towards pregnant and learner parents that relate learner pregnancy to family failures and generational curses, leading to increased school dropout rates. The stigma and discrimination are also propagated upon learners who have experienced sexual assault through victim-blaming, shaming, and humiliation. While the ESPPMLP promotes the counselling and support session and emphasises confidentiality in school settings (Ministry of Education, 2012), the absence of flexible and confidential reporting mechanisms and the lack of trust among teachers intensifies learner pregnancy and school dropout, hinders the reporting process, and obstructs the provision of essential support to those in need.

TABLE 2 Emerging themes.

Perspectives of learners on causes of learner pregnancy and school dropout		Learner-focused approaches	
Community hostility	Elder men, including cattle herders and police officers, preying on young girls	Mitigate community hostility	Introduce harsh punishments for learner pregnancy offenders and create awareness for girls and the cattle herders
	The threat of sexual coercion		
	The proximity of alcohol sites "Sheeben and Cuca Shop" within schools		Ban learners from entering Cuca Shops and Shebeen and educate the owners of the alcohol sites about it
	Stigma and discrimination		Address bullying, stigma, and discrimination in school settings
	The lack of community collaborations, stakeholders involvement, and parental care		Reinforce stakeholder collaboration, community partnership, and parental care
Educational factors	Lack of trust among the teachers		Sensitive and train teachers on confidentiality, ethics, and sensitivity
	No confidential reporting system for the sexually assaulted victim	Improve educational conditions	Introduce a flexible and anonymous reporting system
	Age restriction for re-admission for grade nine pregnant and learners after the 1-year maternity leave		Remove age restriction for re-entering pregnant and learner parents in grade nine
	Long school holidays and walking long distances to school		Reduce school holiday Create a database for pregnant and learner parents' school dropout
The lack of infrastructure and resources	Unfriendly facilities for expectant and learner parent	Allocate necessary infrastructure and resources	Expand access to CSE in schools and condom distribution
	The lack of sexual education and inaccessibility to contraceptives		
	Exclusion of male learners in CSE programs		
Learner unawareness	Peer pressure and ignorance	Raise awareness among learners with ongoing advocacy	Ongoing advocacy

Additionally, while the ESPPMLP focuses on stakeholder sharing responsibility, learners in the study claimed that they encounter inadequate stakeholder support as there are no formal linkages between government institutions (the three ministerial bodies) and schools for effective communication, thus causing cancellations and delays in learner referrals and interventions (UNESCO, 2017). The learners in the study also claimed that stakeholders outside the classroom were invisible, particularly police officers, nurses, social workers, and parents, with only a few NGOs visiting the school occasionally. The study established that learners travel long distances to nearby towns for services, such as access to social workers for counselling and access to contraceptives, which can be time-consuming and inconvenient, leaving them without the necessary support and finally making them to give up. In addition, it emerged that the community members do not care about supporting or encouraging learners and pregnant learners who are not their relatives. UNESCO (2018) highlighted similar findings, highlighting the absence of formal connexions between schools, health services, and relevant stakeholders such as parents, government institutions, and NGOs in Namibia. These circumstances increase the likelihood of learner pregnancy and school dropout.

Considering educational factors, the age restriction to re-enrollment in grade nine for the learner-mothers above 18 years after 1 year of maternity leave, and the long school holiday emerged in this study. While the ESPPMLP directs that learner-mothers may choose to return to school or extend their leave to 1 year, learner-parents, particularly mothers over 18 years, struggle to seek admission into the formal system. The Namibia Ministry of Education has repetition policies restricting learners over 18 years from sitting twice in grade nine (Pearson and Van Der Berg, 2015). This applies even to learner-parents over 18 upon the return of their 1 year leave of absence as schools refuse to admit them as they are categorised as over-aged for grade nine. This restriction disregards the importance of providing educational support and opportunities for learner-mothers, potentially leading to higher dropout rates among this group. Pearson and Van Der Berg (2015) also highlighted the age limit to school enrollment for over 16,000 Namibian children who drop out of school every year after failing grade 10 (10). Regarding long school holidays, this study found that long school holidays could contribute to learner pregnancy and dropout as participants believed that extended breaks from school provide free time for young individuals, which may increase the likelihood of engaging in risky behaviours, including sexual activity and alcohol abuse.

Insufficient infrastructure and the lack of resources were also highlighted in this study, including the walking long distances to school, lack of accommodation and recreational facilities, unfriendly facilities for pregnant and learner parents, the lack of sexual education and inaccessibility to contraceptives, and the exclusion of males into sexual reproduction health programs. The study noted that schools in rural Namibia areas are distanced (Pearson and Van Der Berg, 2015). Thus, the learners in this study experience walking to and from school in isolated rural savannah areas while exposed to sexual harassment. Previous literature highlighted the risks of youth victimisation by attending school when walking long distances in Namibia (Burton et al., 2011; Pearson and Van Der Berg, 2015). The lack of recreational facilities in rural areas results in learners having too much free time and fewer structured activities. Adekola and Mavhandu-Mudzusi (2023) found similar results on the lack of recreational facilities and risky sexual behaviours.

Regarding the directives of the ESPPMLP that emphasise the provision of CSE, the learners in this study encountered a shortage of CSE in their schools and no access to contraception as the ESPPMLP strictly instructs school principals only to provide contraceptive information but not to distribute condoms in school settings. Our findings contrast with UNESCO (2018), which reports limited access to contraceptives in schools due to resistance from school principals, teachers, parents, and community sensitivities. In addition, the male learners in the study are not being catered to within CSE programs, neither offered counselling nor support for impregnating fellow learners. This constraining of contraceptives in school settings is likely to lead to a lack of knowledge and awareness about safe sex practises and, unprotected sex, risky sexual behaviours. Male exclusion may point to a lack of gender insensitivity and awareness. This is a common phenomenon in many sub-Saharan countries, as highlighted by various scholars, such as Nyariro (2018), Mutua et al. (2019), Zulu et al. (2019), Mogotsi and Mwetulundila (2020), Ramalepa et al. (2020), Chinkondenji (2022), Ruzibiza (2021), and Adekola and Mavhandu-Mudzusi (2023), who raised similar concerns.

The inadequate restroom facilities, lactating rooms, and insufficient support for breastfeeding create an unfriendly school atmosphere that discourages pregnant and learner-parents from continuing their education, leading to early school dropout. Pearson and Van Der Berg (2015) emphasised the health hazards of the absence of proper sanitation facilities, contributing to pregnant learners dropping out of school. In the study, the absence of adequate accommodation and hostels for young learners, some as young as 11 years old, in makeshift arrangements exposes them to pregnancy and school dropout potential risks.

The issue of learner unconsciousness linked to peer pressure and ignorance among learners who engage in sexual and transactional relationships for financial support and access to free alcohol and entertainment was further noted. Previous studies in sub-Saharan African countries also identified peer pressure and ignorance as critical barriers to preventing learner pregnancy (UNESCO, 2018; Ramalepa et al., 2021; Ruzibiza, 2021). The study agrees with Adekola and Mavhandu-Mudzusi (2023), who emphasised that despite the sexuality education programs, young people might not apply acquired sexuality due to peer pressure and ignorance.

5.2. Learner-focused approaches to preventing and managing learner pregnancy and school dropout

This study revealed learner-focused approaches to prevent learner pregnancy and school dropout, highlighting the need for interventions that mitigate community hostility, improve educational conditions, allocate necessary infrastructure and resources, and execute ongoing advocacy. The identified approaches aim to improve the implementation of the ESPPMLP and ultimately reduce the rate of learner pregnancy and school dropout in rural Namibia schools.

Mitigating the community hostility includes the following: introducing harsh punishments for learner pregnancy and offenders and creating awareness among girls and cattle herders; prohibiting learners from entering cuca shops and shebeen and educating the owners; addressing, enhancing stakeholder collaboration, and community partnership and parenting; bullying, stigma, and discrimination in school settings; sensitising teachers on confidentiality; and introducing a rural-school-friendly anonymous reporting mechanism.

Introducing strict legal repercussions and punishment for learner pregnancy and enforcing severe consequences may hold perpetrators accountable. The fear of legal repercussions may discourage older men, cattle herders, police officers, and taxi drivers from engaging in unlawful relationships with learners and shift the focus from blaming the learners to holding the adults responsible. This may also send a message that such actions are unacceptable. Nekongo-Nielsen and Mbukusa (2013) stress that schools should record the perpetrators' identities to track and bring them to book.

Educating learners, cattle herders, and older men about the legal risks associated with interacting with minors may increase awareness about statutory rape and encourage minors to speak up when feeling unsafe. This sensitisation can also educate the cattle herders about the importance of girls' education while empowering vulnerable learners to protect themselves and report incidents of abuse. Studies established that involving perpetrators in developing strategies and solutions has decreased learner pregnancy cases (Nekongo-Nielsen and Mbukusa, 2013). Prohibiting learners from accessing alcohol sites may protect them from engaging in risky behaviours. Combining this measure with awareness campaigns that educate learners on the dangers of alcohol consumption while targeting alcohol site owners located near schools may have positive outcomes in preventing learner pregnancy and school dropout rates.

Reinforcing collaboration among stakeholders, including community leaders, educators, and government officials, may achieve significant results in addressing these challenges. Establishing awareness and guidelines to monitor and report inappropriate behaviour for girls in the community is necessary. Empowering and reinforcing parenting through community leadership can help increase parental involvement in education. This can be achieved through information-sharing platforms and meetings, capacity building, resource mobilisation, and monitoring activities with local chiefs. One school community in Ghana successfully used this approach, and its learner pregnancy and school dropout rate decreased from seven in 2015 to three

in 2016 and none in 2017 (World Vision, 2020). Adekola and Mavhandu-Mudzusi (2023) cautioned that it could address parental objections, misconceptions, and contradictory messages about sexuality education. Organising regular mobile counselling sessions in school settings and mobile clinics in rural schools may identify learners at risk of pregnancy or dropping out of school, provide them with counselling, and build confidence to continue their education. Law enforcement visits may deter perpetrators from targeting girls in the community, as they will be held accountable for their actions.

Addressing the bullying, stigma, and discrimination is essential to creating a safe and accepting culture in the community to support pregnant and learner-parents. Nekongo-Nielsen and Mbukusa (2013) also emphasise establishing a secure, friendly, and encouraging learning environment. This could be correctly implemented when teachers and community members are trained on confidentiality, gender sensitivity, care, and the ESPPMLP mandate. Studies recommended that knowledge about the re-entry policies may influence the outcomes of learner pregnancy in school settings (Zuilkowski et al., 2019). Besides, establishing an anonymous reporting mechanism for sexual violence at school and community levels may provide survivors with a safe and supportive environment to report incidents of sexual assaults. This can break down the culture of shame, silence, and victim blaming perpetuated in schools and communities. World Vision (2020) and UNESCO (2021) emphasise that these systems can successfully enable learners to report their concerns without revealing their identities.

Concerning the educational intervention, the study recommends the amendment of the school repetition policy to accommodate learner-mothers who may have turned 18 years or older during maternity leave and raise awareness among school authorities about learner-mothers' right to education. Removing this restriction can make the ESPPMLP inclusive to learner-parents. Furthermore, creating a database for pregnant and learner parents' school dropouts to follow up with parents and relevant stakeholders on their challenges and whereabouts for interventions to return to schools. The Namibian EMIS report does not report the return rates of learner pregnancy and school dropout (Ministry of Education, 2021). Studies emphasised that by providing statistics on the number of pregnancies caused by school dropouts, the completion and admission rates determine whether policies have been successful (Kennedy, 2017).

The allocation of infrastructure and resources, such as the provision of accommodation, can be enhanced by providing school hostels, which can protect learners from social issues in their villages, reduce long commutes to school, and discourage risky behaviours after school, thus promoting academic focus. These findings correspond to those of Pearson and Van Der Berg (2015), who viewed hostels as a means of alleviating poverty and overcoming physical distance. Additionally, reducing long school holidays and providing recreational activities through community affiliations can shorten learners' idle time and reduce their inclination to engage in risky activities. Expanding CSE and distributing condoms in schools may empower learners to make informed decisions about their sexual health, preventing unintended pregnancies and enabling them to continue their education. This can be achieved by increasing accessibility to contraceptives and sexual and reproductive health services through mobile clinics in school settings and the community (Lukolo and van Dyk, 2014; UNESCO, 2017). This must be accompanied by ongoing advocacy efforts that may prioritise the issue and remind learners of the consequences of learner pregnancy and school dropout.

In addition to the learner's proposed interventions, various countries have implemented strategies to prevent and manage learner pregnancy and school dropout, including nurseries and childhood centres near schools in Gabon, special accommodations for young mothers in Cape Verde and Senegal, and conditional cash transfers, as demonstrated in Colombia (World Vision, 2020; Maharaj, 2022). Finally, this study determined that addressing the root causes of risky behaviours among learners is crucial for creating sustainable solutions to preventing learner pregnancy and school dropout.

6. Conclusion

The findings of this study indicate learners' perspectives on various factors that contribute to learner pregnancy and dropout in rural Namibian schools, such as older men and cattle herders preying on young girls, peer pressure, ignorance and stigma, long-distance walking to school, threats of sexual coercion, poor reporting systems, long school holidays, lack of recreational facilities, limited access to CSE and contraceptives, unfriendly school and community environments for pregnant learners and learner mothers, limited stakeholder involvement, and age restrictions on re-admission. Regarding the ESPPMLP, this study proposed learner-focused approaches such as prohibiting learners' access to cuca shops and shebeens, implementing harsh punishments for offenders involved in learner pregnancy and sexual engagement, conducting targeted awareness campaigns for girls and cattle herders, organising regular visits by nurses, social workers, and police officers to schools, addressing bullying and stigma, fostering a culture of acceptance in school settings, empowering parenting, strengthening stakeholder collaborations, reducing long school holidays, establishing a comprehensive database, expanding access to CSE and condom distribution, and ongoing advocacy efforts.

This study also emphasises that policymakers must incorporate learners' perspectives into interventions targeting learners' pregnancy interventions, such as mitigating community hostility and behaviours, improving educational conditions, allocating necessary infrastructure and resources, and raising awareness among learners about the consequences of learners' pregnancies and dropping out of school. Future research should explore the viewpoints of teachers, parents, and relevant stakeholders and investigate the regulations governing alcohol sites near schools.

7. Limitations

The finding of this study was based on a small population and cannot be generalised to all rural schools in Namibia. The

lack of out-of-school pregnant and learner-parents' perspectives and the inclusion of learners as old as 23 years attending schools within the 13–18 age range may influence the overall findings and generalisability of the study. Learners may have felt anxious or uncomfortable sharing their perspectives with the researcher, who had no prior relationship with them. Additionally, limited data from the stakeholders, such as the Namibia Ministry of Gender and Equality, the Ministry of Safety and Security, and the Ministry of Health and Social Services, may create further challenges in concluding.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

The studies involving human participants were reviewed and approved by the Namibia Ministry of Education. Written informed consent to participate in this study was provided by the participants' legal guardian/next of kin.

Author contributions

The author confirms being the sole contributor of this work and has approved it for publication.

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The author declares that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Women health providers: materials on cures, remedies and sexuality in inquisitorial processes (15th–18th century)

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Background: The first inquisitorial trials were against Muslims and Jews. Later, they focused on women, especially caregivers. Progressively, they were linked to witchcraft and sorcery because of their great care, generational and empirical knowledge. The historiography of health in the 15th–18th centuries still has important bibliographical and interpretative gaps in the care provided by women.

Objective: To analyse the care provided by healers as health providers, accused by the Inquisition, justifying the importance of nursing in the diversity of community care in the 15th–18th centuries.

Method: A scoping review was conducted following the Dialectical Structural Model of Care (DSMC). A database search was conducted for the period 2013–2022. Bibliographic and legislative resources were used. Cases and convictions from Castilla la Nueva were found in the National Historical Archive and the Diocesan Archive of Cuenca.

Results: The concepts of healer, witch and sorceress envolved during the study period. They reflect and reveal the collective imaginary of the social structure. They had healing laboratories, practised psychological and sexual care. They used to accompany their therapeutic action with prayers and amulets. They shared their professional activity with their main denouncers, doctors, apothecaries and priests. They were usually women in socially vulnerable situations, who did not conform to social stereotypes.

Conclusions: They were predecessors of today's nursing, they overcame socio-cultural difficulties, although they were condemned for it. Healers did not manage to regulate their profession, but they acted as agents of health in a society that demanded them while participating in the "witch-hunt".

KEYWORDS

history of nursing, gender, culture, witchcraft, traditional healers, health, sexuality

1. Introduction

A1 culture is not only defined by its ability to affirm the principles that underpin it. There are also significant gestures or symptomatic traces, which sometimes go unnoticed because they are assumed without the need for any explanation, i.e. they are familiar. When they gain strength, they become true archetypes and crystallise in figurative representations, easily recognisable, without the need to question them (Siles, 2010).

This happened on a cultural level with women at the end of the late Middle Ages and during the Modern Age. Between the 14th and 18th centuries, the greatest persecution of women took place under the accusation of quackery, witchcraft and sorcery. They became structured in the collective imagination as a figure inspiring fear. The origin of this fear was none other than the very mystery of feminine nature, which posed a threat (Federici, 2021).

In this context, Pope Sixtus IV authorised the Spanish Catholic Monarchs to study and persecute heretics through the inquisitorial process. But what influence did the Tribunal of the Holy Office have on culture and social control in Spain from that time until its end in 1820? Because of its politic-religious status, it was supposed to restore the values of the Church to the moral and social order. However, once this objective was achieved, the Holy Office focused and harshly expanded its persecution on a large number of women, many of whom were dedicated to the care of the Church (Caro-Baroja, 2015). In this sense, there was a continuity between the persecution of women dedicated to care and the preceding persecution of heresy which, under the pretext of imposing religious orthodoxy, punished other forms of social subversion (Ginzburg, 1980).

After the first inquisitorial proceedings brought for reasons of faith against Muslims and Jews (15th–16th centuries), cases against women linked to physical and psychological care, although existing in the previous period, became even more prevalent in the 17th and 18th centuries (Pérez Ramírez, 1982; Sierra, 2005).

The social and cultural construction of the image that was generated of women dedicated to health and care during the XV-XVIII centuries defined a historical framework that must be seen from three angles: (1) *scientific*, and the consequent rejection of women being part of this world; (2) *religious*, where Christian tradition was an instrument of judgement; (3) *legal*, as an instrument of repression and punishment of dissident behaviour (Zamora Calvo and Ortiz, 2012).

Women of this period possessed knowledge of herbs, ointments and concoctions to treat different illnesses and different groups, children, women, men and the elderly, as well as different situations that altered the health-disease process (Ganso Pérez, 2017). Thus, in the face of their knowledge and their wide range of care, an irrational fear arose on the part of the three great powers of the time: medicine, the Church and the State.

The practices, herbs and remedies known to women were passed down through female, oral and generational channels, and thus their knowledge escaped male control. Their ability to intervene in people's lives and health through *magical arts* could even cause harm to those who trusted in their knowledge or simply had a relationship with them. Thus, the people around them were even condemned (Green, 1989).

Women's knowledge and practices were progressively marginalised, condemned and persecuted as they were identified with witchcraft. Thus, already in the 15th–18th centuries, witchcraft became clearly associated with the feminine, and a slow demonization of traditional beliefs began. The line separating folk healing practices from witchcraft, superstition and heresy was as thin as that between woman and witch (Federici, 2021).

The institutionalisation of medical knowledge from the twelfth century onwards separated women from the regulated practice of medicine and care, stigmatising their knowledge (Guerrero Navarrete, 2012). In addition to this, paganism and popular folklore followed two paths of adaptation to the new socio-political and religious situation. On the one hand, the Church appropriated certain pre-Christian traditions, such as the celebration of the bonfires of St. John. On the other hand, it added a series of preventive rites to festivities already impregnated with popular superstition. For example, to avoid the curses of witches at the beginning of Holy Week, the tradition of placing blessed bouquets on the doors and windows of homes on Palm Sunday was established (Pedrosa Bartolomé, 2012).

The Dominicans Heinrich Kramer and Jacob Sprenger, authors of the *Malleus maleficarum* or *Hammer of Witches*, published in Germany in 1486, the most appreciated synthesis of the classical treatises on magic, as well as of the mythology that had been developing since antiquity around witches. But its most important distinctive feature is that it is the work par excellence that triggered the witch-hunt. The authors fervently defended that witches were not the fruit of popular imagination; on the contrary, they were real beings, extremely evil, and had close links with the devil (Green, 1989; Guerrero Navarrete, 2012).

Given the enormous relevance and dissemination of this manual, it ended up becoming a legal instrument of the Royal Court of the Inquisition used to know, differentiate and judge a wide range of specifically female patients. It even went so far as to condemn doubly the midwife, in charge of conducting the birth and assisting the mother and the newborn, both for her condition as a woman and for her capacity for healing. Such a situation is perfectly described in the following excerpt from the *Hammer of* Witches:

"Let us consider women first of all; first, because this kind of perfidy is found in so frail a sex, more than in men. And our enquiry will be first of all general, as to the type of women who indulge in superstition and witchcraft; and thirdly specifically, with regard to midwives who surpass in malignity all others" (Kramer and Sprenger, 1847).

In order to understand the cultural and social situation of the history of women carers in the 15th–18th centuries, it is not enough to know the inquisitorial machinery, i.e. to glimpse the origins and foundation of the Inquisition, its nature and purpose, the territorial organisation, the number and quality of the trials, the conduct of commissaries, governors and other officials. It is necessary to examine the contextual, social and individual situation, to understand the concepts and attributions with which these women were filled with meaning, their qualities and character. It is therefore necessary to try to unravel through each trial, the specific

Abbreviations: DSMC, dialectical structural model of care; FU, functional unit; FF, functional framework; EF, functional element; NHA, National Historical Archive; DAC, Diocesan Archive of Cuenca; PARES, Spanish Archives Portal; RSA, Royal Spanish Academy.

facts for which they were tried, the testimonies, the crime attributed to them and the final outcome, acquittal or conviction.

Only in this way will it be possible to arrive at the intimate reason for many political and social events in the history of nursing during the Modern Age in Spain. It is a history of a dangerous panorama for the State in the time of the Catholic Monarchs, marked by the important social austerity of the Golden Age. This framework placed women in a vulnerable situation (single, widows, poor, etc.), having to survive with difficulty with domestic jobs or unregulated trades, under a way of life in which the relics of the ancestors of Christianity and ancestral paganism were intermingled.

Studies linking the Inquisition and health tend to focus on the figure of doctors, barbers and bleeders (Sarrión Mora, 2006; Arce and Damián, 2011; Martín Conty, 2015), few address the female perspective of care (Rojo Vega, 2012; Beltrán Muñoz, 2014) or tend to focus especially on the midwifery profession (Cabré i Pairet and Ortiz Gómez, 2001; García Martínez, 2012) and not so much on care with a broader vision. In fact, the persecution of women for reasons of quackery, witchcraft and sorcery is still one of the least studied phenomena in the history of Europe (Federici, 2021).

The history of nursing is a reflection of the history of women, as the female gender has been one of the main backbones of tradition and for the understanding of care in diverse populations. In the past, the right to access a minimum of literacy and much more higher education in different fields of study was reserved for only a privileged part of the population, generally men and sometimes wealthy women (Guerrero Navarrete). From this position, the situation of the female figures dedicated to care in the XV-XVIII centuries was and has been shaped.

For this reason, the present work acquires an important scientific relevance as it attempts to contribute to filling an existing gap in the diversity of the history of nursing, that of women as providers of health care and care in the Modern Age (15th–18th centuries). In order to do so, it is essential to resort to primary sources that can provide the closest possible version of the history of healers, witches and sorceresses, based on what is closest to the truth, their testimonies.

For this purpose, we will use the documents preserved in one of the most important communities and regions of the Inquisitorial period, Castilla la Nueva (Spain), which holds almost all the documents of the territory in their entirety. It should be noted that the jurisdiction of the Holy Office of Toledo was not limited to this province alone, but included the current dioceses of Toledo, Ciudad Real and Madrid-Alcalá (Spain). The Holy Office of Cuenca centralised the jurisdiction of Cuenca and Sigüenza (Spain). All these districts were grouped together in what is known as Castilla la Nueva.

The following section presents the methodology for carrying out the analysis according to the research objectives. The main objective was to analyse the care provided by healers as health providers, accused by the Inquisition, justifying the importance of nursing in the diversity of community care in the 15th–18th centuries. The secondary objectives were: (1) to differentiate the names by which the predecessors and health providers of today's nursing were known during the 15th–18th centuries; (2) to determine the structure of care and the materials used for cures through the inventories made of the accused; (3) examine the physical and psychological care provided by women healers, taking into account social determinants, through the analysis of testimonies.

2. Materials and methods

2.1. Study design

In this article, a scoping review was carried out as a method to address the objective of the study, which was to analyse the care exercised by female healers accused by the Inquisition in the 15th–18th centuries. The scoping review is an optimal tool to determine the impact of a set of available publications and studies. In addition, it facilitates researchers to acquire a more focused view on the evaluation, synthesis and critique of primary documents (Munn et al., 2018). In addition, the JBI Critical Appraisal Checklist was used, specifically for systematic reviews and synthesis (Aromataris et al., 2015).

The Dialectical Structural Model of Care (DSMC) was used, which is suitable for studying the social and cultural history of care, fundamentally linked to the sexual and gender division of labour (Siles, 2010; Siles González and Solano Ruiz, 2016). For this research, it is of utmost importance taking into account the social and cultural aspects that interact in the assistance and care exercised by female healers in the 15th–18th centuries.

The DSMC makes it possible to analyse the care structures in order to subsequently establish relationships between them. The structures used were: (1) Functional Unit (FU), which represents the beliefs, knowledge and feelings of the people who live together and socialise within the same social structure, through which the social and cultural systems are constructed that determine the sexual and gender division of labour, which are so decisive in the health and care professions. In this case, it has to do with the concepts of *healer*, *witch* and *sorceress* that are articulated around the pseudo-professionalisation of care exercised by women. These reflect the beliefs, knowledge, norms, legal and professional limits as well as their evolution through the 15th–18th centuries; (2) Functional Framework (FF), which refers to the objects and space enabled to develop the activities of care, specifically, the materials of cures and uses known through the inventories of goods made to these women; (3) Functional Element (FE), integrates the social actors in charge of care as well as the care actions performed, in this research, the forms of physical, psychological and sexual care through the inquisitorial processes (Siles González, 2010; Espina-Jerez et al., 2022a,b).

This research proposes four thematic blocks interrelated and analysed through the structures of the DSMC (Siles González and Solano Ruiz, 2016; **Figure 1**).

2.2. Search strategy

The review process began with an exploratory research question, aimed at systematically synthesising and critiquing existing knowledge (Colquhoun et al., 2014; Peters et al., 2015). In this case: "What was the impact of the three powers (Medicine, Church and State) on health care and health provider figures during the 15th–18th centuries?"

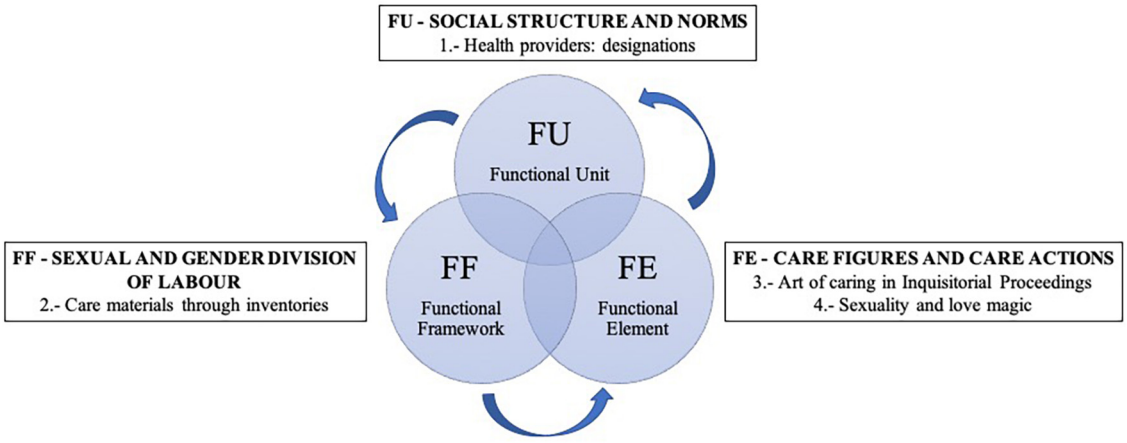

FIGURE 1
Theoretical dialectical structural model of care (DSMC): application of its structures. Source: authors' own elaboration.

To answer this question, the DSMC was applied. The researchers agreed on the eligibility criteria, which had to contain information on the modern-day healer. The review included the different names under which the predecessors of today's nurses and health care providers were known, as well as their evolution taking into account the social and cultural history during the 15th–18th centuries. In addition, we explored the cases of women whose property was inventoried in order to find out about the materials used to cure them, as well as other processes that reveal the physical and psychological care they provided in the social framework in which they lived.

The review included as primary sources inquisitorial processes from the period of study, 15th–18th centuries, dictionaries of the period and legislative material. Peer-reviewed articles, official dissertations, proceedings and reports were also included. Conference proceedings, proposals and editorials were excluded. The documents consulted were in English, Spanish and French.

We began with an initial search aimed at finding out the background and delimitation of the subject of the study. In this phase, various databases were consulted: (1) PubMed; (2) Cochrane; (3) Bibliographic database on health in Latin America (CUIDEN); (4) Scopus; (5) Web of Science; (6) SciELO.

For database browsing, a natural or free-text language was used, normalised and controlled with MeSH and DeCs descriptors. These were combined with Boolean operators ("and/and", "or/or", "not/not"). The results obtained and used, as well as the search equations and filters used to arrive at them, are summarised in Table 1.

After this initial search, we proceeded to consult manuals in physical and virtual format from different territories through the library service of the University of Castilla-La Mancha and the Toledo Public Library. In order to have up-to-date information, the search in database was limited to the last 10 years. However, due to the fact that this is a historical topic and perhaps not so prone to bibliographic updating, previous publications were consulted and selected due to their interest.

For the examination of dictionaries of the time as well as relevant legislative sources, the Miguel de Cervantes Virtual Library and Official State Bulletins respectively were consulted.

The inquisitorial cases and convictions of New Castile are essentially divided into two archives. The documents of the Courts of the Holy Office belonging to the archbishopric of Toledo are in the National Historical Archive (NHA), and those of the archbishopric of Cuenca are in the Diocesan Archive of Cuenca (DAC). For the consultation of documents held by the NHA, combined searches were carried out through the Spanish Archives Portal (PARES), entering the search terms and filtering by archive (NHA), Institutions of the monarchy and the Tribunal of the Inquisition of Toledo. On the other hand, the search in the DAC was carried out manually through the Catalogue published by Dimas Pérez (Pérez Ramírez, 1982).

The terms used in the PARES search after filtering the archive (NHA), Institutions of the monarchy and Tribunal of the Inquisition of Toledo, were: "healer", "cure", "cures", "sorcery". It was not necessary to filter the period of study as the "Tribunal of the Inquisition of Toledo" parameter itself already narrowed the search by date.

The search in the DAC followed a different procedure, as the catalogue is not digitised. A manual search was carried out,

TABLE 1 Thematic blocks related to search equations.

Database	Search strategy	Filters	Points extracted
Pubmed Cochrane Take care Scopus Web of Science SciELO	history of nursing AND witchcraft nursing AND witchcraft healer and nursing sorceress and nursing history of nursing AND gender AND legislation Modern Age and nursing healer AND inquisition witchcraft and Castile	Last 10 years Article English/Spanish	Health providers: designation Care materials through inventories Art of caring in Inquisitorial Proceeding Sexuality and love magic

Authors' own elaboration.

following the two existing records on the documents collected in the DAC, that of Sebastián Cirac Estopañán (1965) and that of Pérez Ramírez (1982), both contained in the same handbook (Pérez Ramírez, 1982). The chapters "Criminal Proceedings" and "Fourth series: Criminal Proceedings, II" were reviewed. In the search, the same terms were used as in the NHA.

During the literature review and filtering process, a number of inclusion and exclusion criteria were applied (**Figure 2**). A total of 62 papers were found to meet the criteria.

2.3. Data analysis

The documentary analysis was conducted from a qualitative perspective, systematically following the objective of the study. The steps followed in the analysis were: (1) a thematic linkage; (2) a preliminary classification of the documents based on inclusion and exclusion criteria; (3) selection of relevant information; (4) interpretation and comparison of the results. The selected material was analysed from the point of view of the four thematic study blocks, each of them encompassed within the DSMC structures: (1) health providers: designations; (2) care materials through inventories; (3) art of caring in Inquisitorial Proceedings; (4) Sexuality and love magic. These blocks were contextualised in the Castilian population of the Modern Age (15th–18th centuries) in Castilla La Nueva (Spain).

To extract and summarise the data, the first and second authors conducted a general data extraction. The third author examined the findings in depth. The fourth author identified the four thematic blocks encompassed in the DSMC structures, from Functional Unit, Functional Framework and Functional Element. Discrepancies were resolved by consensus among the researchers. Thus, after working with all the material it was possible to answer the initial question of this study: "what impact did the three powers (Medicine, Church and State) have on care and health care providers in the 15th–18th centuries?"

3. Results

3.1. Health care providers: designations in the 15th–18th centuries. Functional unit

Depending on the place and time in history, women in care have been called by different names, so it is useful to focus on the terms and concepts before moving on to a more in-depth analysis.

According to the period on which the present study is focused, the 15th–18th centuries, the terms healer, witch and, sorceress the most commonly used to name what is known today as a *nurse*, will be broken down. In order to achieve an adequate approximation to the concepts according to their historical moment, the first dictionary of the Spanish language, published in 1611 by Sebastián Covarrubias Orozco, was used. (de Covarrubias Orozco, 1611) and the dictionary of the Castilian language of the Royal Spanish Academy (RSA) published in 1783 by Joaquín Ibarra (Royal Spanish Academy, 1783).

3.1.1. Woman healer

It is noteworthy that the first dictionary does not contemplate the profession of *healer*, and only describes the term *cure*, which is defined as "to medicate a sick or injured person, because of the care that must be taken with him" *(to cure, which is* defined as "to medicate someone who is ill, or injured, by the care that must be taken with him") (de Covarrubias Orozco, 1611).

On the other hand, the RSA does include the concept, except that it only applies it to the masculine gender. It determines that healer is "the one who introduces himself to give remedies and prescriptions without being an approved doctor" (Royal Spanish Academy, 1783). This meaning is quite interesting, as it does not reflect the fact that women in Castile who worked in the care professions in the 16th–18th centuries were left without regulated training and, consequently, at risk of legal and/or inquisitorial persecution (Espina-Jerez et al., 2022a). In the Modern Age, women were legally excluded from the caring sciences by being denied the opportunity to obtain adequate professional training (Clark, 1968).

3.1.2 Witch and sorceress

For the case of the *witch*, female or male, the Covarrubias dictionary (de Covarrubias Orozco, 1611) offers a very broad definition of the witch. Furthermore, to refer to their acts, he cites the *Malleus Maleficarum* and thus avoids going into further description. Years later, the dictionary of the RSA of 1783 (Royal Spanish Academy, 1783) completed and included some characteristics that the previous version did not include (**Figure 3**).

Regarding the term *sorceress*, it is only contemplated by the second dictionary analysed, that of 1783, however, its definition is implicit in both dictionaries with the word “enchant” (de Covarrubias Orozco, 1611; Royal Spanish Academy, 1783; **Figure 3**).

However, the distinction between witch and sorceress is not entirely clear. There is some controversy among current researchers. Lisón Tolosana (1992) differentiates between them according to their relationship with the occult and the perverse. He understands that the witch renounces her faith by making a pact with Satan, whom she worships, while the sorceress only invokes the demon to perform her spells and rituals. She also considers that both figures can coexist in one, and be both witch and sorceress, as in the case of Celestina (Lisón Tolosana, 1992), a Spanish comedy published in 1499 whose title corresponds to the name of the sorceress-witch. For Caro-Baroja (2015) the difference is established by the environment in which they carried out their activity: the witch in rural areas, victim of the "witch-hunts" of the XV-XVIII centuries, while the sorceress in urban areas (Caro-Baroja, 2015).

Undoubtedly, literary sources also socially represented the witch or sorceress, terms that will henceforth be used interchangeably in the text. In this respect, it is worth mentioning a fragment from one of Miguel de Cervantes' Exemplary Novels (Rodríguez Cerdá, 2007) The Colloquy of the Dogs, which in one part of the work lists the multiple faculties and characteristics of a sorceress known as *the Camacha de Montilla*:

"You must know, son, that in this town lived the most famous sorceress that ever lived in the world, whom they called the Camacha of Montilla; she was so unique in her craft that the Eritos, the Circes, the Medeas, of whom I have heard that the histories

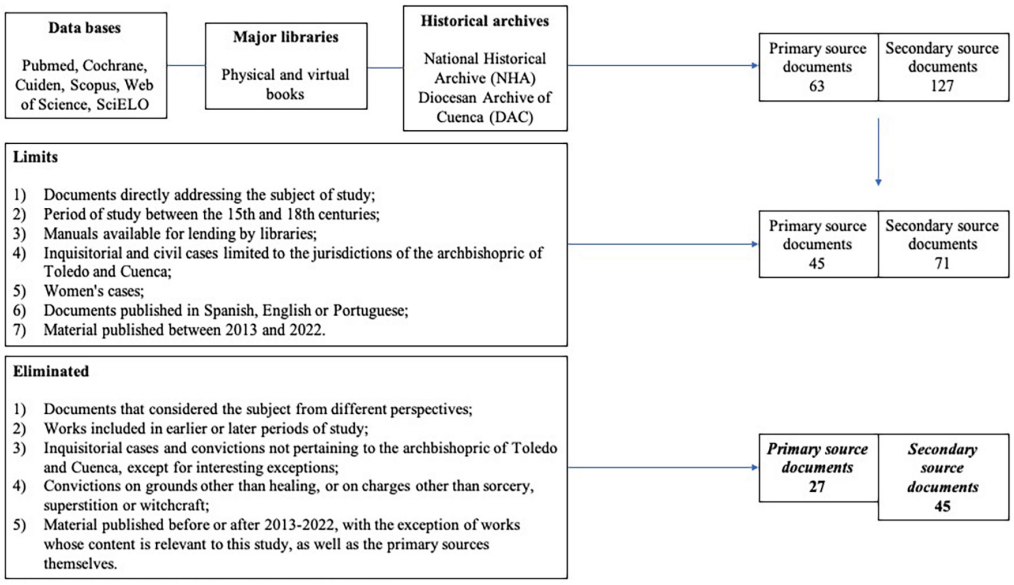

FIGURE 2
Filtering strategy. Source: authors' own elaboration.

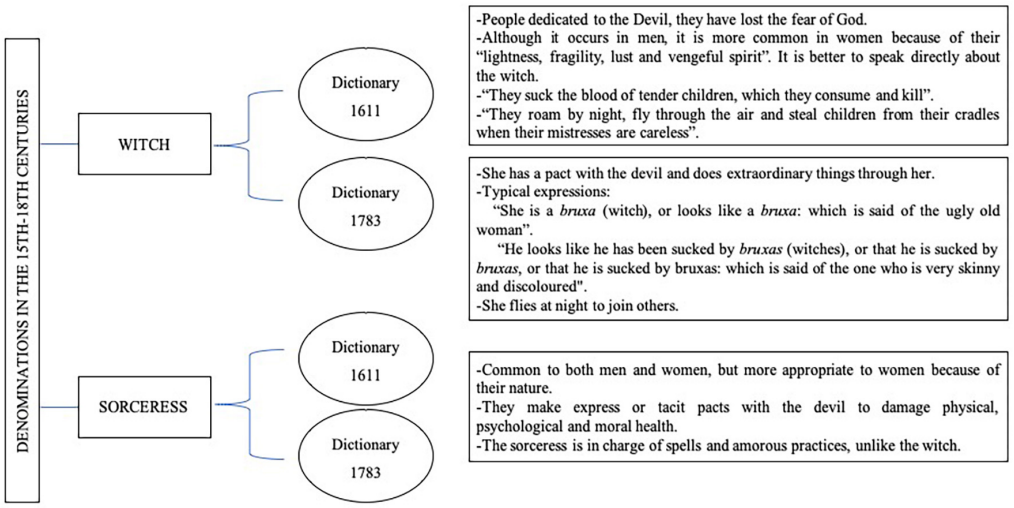

FIGURE 3
Witch and sorceress in the dictionaries of 1611 and 1783. Source: authors' own elaboration based on de Covarrubias Orozco (1611) and Royal Spanish Academy (1783).

are full, did not equal her. She froze the clouds when she wished, covering the face of the sun with them, and when she wished she made the most troubled sky serene; she brought men in an instant from distant lands, she wonderfully remedied the maidens who had neglected to keep their integrity, she covered widows so that they would be honest and dishonest, she unmarried the married women and married those she wanted to (.) She was famous for converting the women of Montilla, she was so unique in her profession that she was so unique that the Eritos, the Circes, the Medeas, whom I have heard of in stories full of them, did not equal her.) She was reputed to turn men into animals, and to have made use of a sexton for six years, in the form of an ass, really and truly, which I have never been able to find out how it is done, because what is said of those ancient magicians who turned men into beasts, those who know best say that she was not a magician, those who know best say that it was nothing more than that they, in their great beauty and with their flattery, attracted men in such a way that they loved them well, and subjected them in such a way, using them in everything they wanted, that they seemed like beasts" (Rodríguez Cerdá, 2007).

The premise of magic is that the world is alive, unpredictable and all things have something hidden in them that can be deciphered and manipulated according to one's will (Wilson, 2000). Thus, the fragment shows how the sorceresses of the time can influence nature, prevent conception or save the moral honour of women, and intervene in the emotional situation of couples. Another accusation that is reflected is bestiality, that is, the

transformation of men into beasts, a kind of male castration in a figurative or psychological sense.

In order to learn more about the characteristics of the figure of the Castilian witch or sorceress in the 15th–18th centuries, it is useful to refer to the character and the work of *La Celestina*, published in 1499 by De Rojas (2005). In most cases, these women fulfilled the stereotype of single or widowed women, sometimes of advanced age, experienced and who had to use various occupations to get by. Celestina had up to six professions, she was a sorceress, a procuress, a child physicist, a farmer, a perfumer and a master of making oils and virgins, that is, capable of restoring the hymen of women to make them believe that they were "virgins" (Montero Cartelle and Herrero Ingelmo, 2012). She was not a midwife, but a close friend of one of them, the mother of Pármeno. Her occupation was linked to gynaecology, obstetrics and the physical-emotional care of people without resources. In addition, the work alludes to the subject of abortion which, despite its express medical prohibition, was carried out given the frequent extra-marital relations in the 15th century, which were reprobated by Christian morality (Beltrán Muñoz, 2014).

TABLE 2 Most relevant materials from the inventories to Beatriz de los Ríos and María Sánchez de la Rosa, and their usefulness.

Woman healer	Healing material	Utility
Beatriz de los Ríos (1584)	"A little iron weight with its scales made of sugar".	Measurements
	"A glass vial with pink water".	Eye wash
	"A glass jar with some powder in it". "Two tiny little arches in which the curative powers are poured".	Healing the eyes
	"A jar bathed in ointment from the *rijas*".	Healing the eyes
	"A boot with medicines"	
	"Four pots of ointment	Healing the eyes
	"A pot and a jug, one with honey and the other with mead".	
	"Plus a coloured pouch with a magnet stone".	Mother sickness
	"Plus a chest in which he carries medicines".	
María Sánchez de la Rosa (1693–1701)	Seed of *negrilla*	Facial blemishes
	Calamint or betony	Cicatrizant, astringent, treatment of migraines and neuralgia.
	Dried peppermint and sulphur flower	–
	A prescription paper	For various ailments
	A Talavera pot with black amber stones; crystalline stone; *Ymán* stone; *Ymán* stone.	–
	Senna leaves	Purgative medicine

Authors' own elaboration from Provincial Historical Archive of Valladolid (1584) and National Historical Archive (1699).

3.2. Inventories of goods: the women healers' laboratories. Functional framework

Through the inventories of goods made on the death of the women healers or when a process of faith was opened, it has been possible to verify that these women of the 15th–18th centuries used a diversity of objects and instruments in the exercise of their profession. The utensils and raw materials they used to prepare ointments, medicines, perfumes and everything they needed for cures were kept in the cupboards or corners of their kitchens. The majority of the processes analysed show that once the entire arsenal of these health care providers had been gathered, doctors and apothecaries were responsible for drawing up the list of goods and materials and interpreting their use (National Historical Archive, 1699, 1663, 1622).

The first laboratories found under the jurisdiction of Toledo and Cuenca date from the 17th century. However, it is pertinent to refer to the inventories of three of their predecessors found in the Provincial Historical Archive of Valladolid. The first of these is Beatriz de los Ríos (Provincial Historical Archive of Valladolid, 1584).whose inventory is dated 1584, and shows a list of objects that leads us to believe that she was quite precise in her measurements, in addition to her possible specialisation in ophthalmology (**Table 2**).

The second case of interest is the inventory of María de Vega (1597), in which we find a whole pharmacological office at the service of the quackery. María was the owner of a water distillation workshop with nine stills, from which official medicinal waters were supplied to the local apothecaries. Among her list of assets, a water book and an accounting book were found (Provincial Historical Archive of Valladolid, 1597).

Something common in the inventories of these women is the number of beds, especially when they were widowed or lived alone. Possibly, the mattresses and other belongings were intended for the care of the sick, as in the case of Francisca Hernández. She ran a joint in which, when justice arrived to arrest her, they found a tavern, a noble couple making love, card players and, most interestingly, honest people who were secretly being anointed against syphilis. It was a place on the fringes of legality in different aspects, but as far as health was concerned, it was because the place where these treatments were applied was the Hospital de la Resurrección in Valladolid, where Cervantes' *The Colloquy of the Dogs*, mentioned above, was located (Rojo Vega, 2012).

The first interesting laboratory found in the jurisdiction of Toledo and Cuenca was discovered in Madrid in 1622, in the house of Josefa Carranza. Among its curative materials of interest were a pot with resin and turpentine for women's hips, fish (meconium), wheat, saffron, holy water, among other things (National Historical Archive, 1622).

Many other laboratories were found in the area of Castilla la Nueva (**Figure 4**), however, the best equipped of all those discovered in the inquisitorial processes of the study area was that of María Sánchez de la Rosa. The apothecary Juan de Armuiña scrutinised a great variety of pots, pans, jars, papers with powders, ingredients and ointments (National Historical Archive, 1699; **Table 2**).

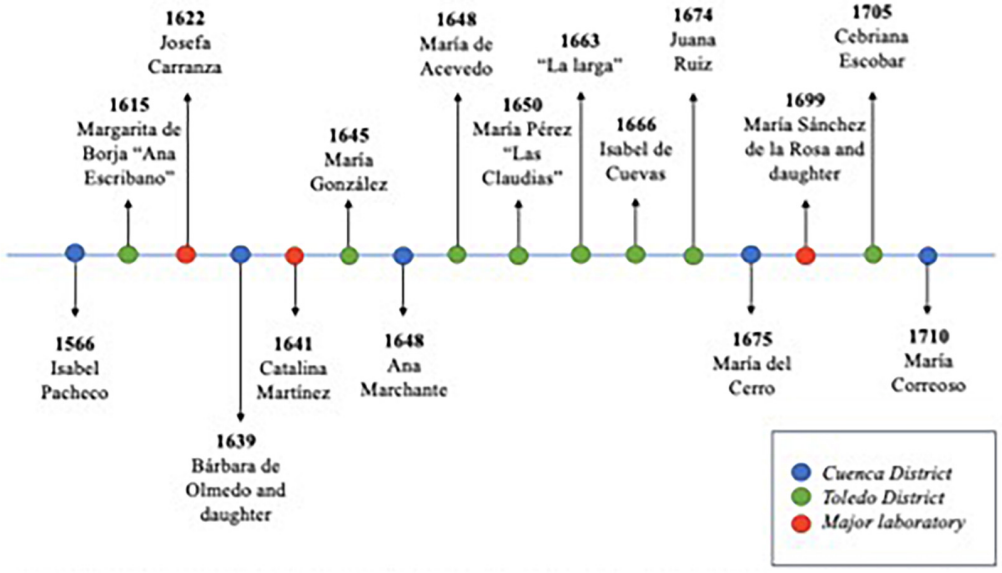

FIGURE 4
Timeline of women healers who were invented and found to have been used for cures. Source: Authors' own elaboration from Diocesan Archive of Cuenca (1566, 1639, 1641, 1648, 1675, 1713) and National Historical Archive (1615, 1622, 1645, 1648, 1650, 1663, 1666, 1674, 1699, 1702a).

Maria also had human and animal bones, used as reliquaries, as was the custom at the time among sorceresses. It was also common to find religious holy cards. She kept them of Our Lord, Our Lady, St. Barbara and a *Lignum Crucis*, which the apothecary interpreted as relics of devotion (National Historical Archive, 1699).

3.3. Healers: evils, advice and prayers during the cure. Informers and sentences. A functional element

One of the ailments with which the population resorted to healers and/or sorceresses was the evil eye. This issue, which was already contemplated and had various remedies in the Andalusian medical treatises (Abu L-'Ala' Zuhr (Avenzoar), 1994; Ibn Ḥabîb, 1992), was a cause of inquisitorial condemnation for many women, both for those capable of causing it and for those skilled in reversing it.

They were accused of being superstitious healers. In order to provide a closer look at this point, the cases of Isabel Rascalbo, Catalina Laso, Ana and Agustina, followed by the Inquisition Tribunal of Toledo, as well as that of Isabel Martínez followed by the Inquisition Tribunal of Cuenca, were analysed (**Table 3**).

3.3.1. Catalina Laso: a case of conflict of interest

Misnamed "La Coracha", she was accused of witchcraft and superstitious cures, which led to a trial of faith in the early 18th century (National Historical Archive, 1703).

When the Tribunal is informed of Catalina's activities, an information letter is sent to the area commissioner, requesting further investigation of the elements of the statement with appropriate witnesses. The original letter states the following against Catalina:

"(.) there is a woman in the Vª de Hita who is misnamed la Coracha, who has the custom of sanctifying and cure animals, healing them with different things and the main one is with partridge feathers, and that she makes psalms and that to cure and to know the evil eye they bring her some jewels from the sick person and with them she knows the damage; and lastly, he does and says such nonsense that it has caused a great scandal in the town; and that the Apothecary and the priest of San Pedro and others that they could cite would testify at length about all this (.)". (National Historical Archive, 1703) [1].

In this statement, in addition to the account of their practices, the complainants, both opponents, one in professional matters and the other in moral-religious matters, stand out. Finally, however, it is equally appropriate to highlight the conclusion of the commissioner who analysed and closed the case, who determined that the witnesses were not telling the truth.

3.3.2. Isabel Rascalbo: plasters and prayers

Isabel Rascalbo in her cause called *"la R."*, it is understood that by Rascalbo, declared in the prison of the same city, to have made different cures of gallic disease, mother's disease and others, using chickpea water, mallows and other ingredients, without superstitious intentions and inclined to "do good" (National Historical Archive, 1742).

The Commissioner who handled the case noted in his report a paradox that was quite common for these women: on the one hand, they were well known, frequented and sought after by the population, while on the other hand, they were feared, mysterious and had a bad reputation:

"And it should be noted that the most said witnesses publicly testify and mention the bad work and reputation of the R. in the said city as a quack and shyster; and the Commissioner adds in his report that the same thing happens in all the places in the region,

TABLE 3 Women accused of being superstitious healers.

Name	Marital status	Source	Office	Date of process	Accusation	Sentence
Catalina Laso, "la Coracha"	–	Hita (Madrid-Alcalá, now Guadalajara)	Healer	1703–1704	Superstitious cures	–
Isabel Rascalbo, "la Valentina"	73 years old	Ciudad Real	Healer	1742	Superstitious healer, liar and panderer	Prisoner in the Royal Prison of CR
Isabel Martínez, "la dentera" (the toothache)	Single Lived together 32 years old	Tomelloso (Ciudad Real)	Healer	1726–1728 (1°) 1767 (2°)	Superstitious healer Sorceress Levi's suspect	Prisoner in medium prisons and banishment (part 1)
Ana Díaz and Agustina Álvarez (mother and daughter)	–	Castañar de Ibor (Cáceres) Archbishopric of Toledo	Healers	1741–1745	Sorcery and superstitious cures	In abeyance

Authors' own elaboration from National Historical Archive (1703, 1726, 1741, 1742).

and that when the R. is mentioned, everyone is scandalised and fearful of her (.)" (National Historical Archive, 1742) [2].

In the case of Isabel Rascalvo, the testimony of seven witnesses is recorded, and as a sample, the testimony of two of them is shown (**Table 4**).

3.3.3. Ana Díaz and Agustina Álvarez, mother and daughter, cure and cause the evil eye

Following the accusation, a trial was opened against them that lasted four years (1741–1745). Joseph Suárez de Herrera, declarant of the same town, informed the prosecutor of the Holy Office of the Archbishopric of Toledo about both of them in a letter. Joseph's letter is certified before a notary, and signed by the latter, *Francisco Xavier de Lisnero*, which reveals Joseph's own difficulty in doing so himself. He states that:

". . . Ana and Agustina cure the evil eye and other illnesses, and give evil spirits in such a way that anyone who offends them in anything at the point of revenge, or in persons or properties, if they do not invite them to the vows, they prevent the consummation of the marriage and it is by going to them, and giving them something with certain prayers and crosses in a determined number that they cure" (National Historical Archive, 1741) [5.1].

"Likewise, some women complain that they lack milk and other natural things, and there are witnesses who can testify to this, and lastly, the whole town is full of fear because of these women, trying to give them what they ask for at the end, and not to give them what they ask for, because if they don't do so, they will immediately take revenge: No corrections have remained for these women, neither from the priests nor from the religious" (National Historical Archive, 1741) [5.2].

The complainant then describes how his mother and daughter have affected him. He says that he started making soap three years ago and was very successful at it. However, one day, half a year ago, they had "some anger" and since then they have prevented him from making soap, "even though the materials had been put in the last perfection", which is a great grievance for him as he then had difficulties in supporting his family. What is equally interesting is that "at the least diligence that they make, it is perfect", which gives them the ability to make and unmake their curse at any time they wish (National Historical Archive, 1741).

3.3.4. Isabel Martínez: the wax cake with prayers

The trial against Isabel Martínez lasted from 1726 to 1728. She was nicknamed "*la dentera*" (the toothache) for using teeth as an amulet. The cause of Isabel Martínez, whom the notary summarises

TABLE 4 Witnesses against Isabel Rascalvo.

Witnesses	Verbatim
Informant 1 Francisca García. 22 years old. Single	". she testifies that while serving in Ciudad Real, in the house of Phelipe Ruiz Casueros, and his mistress and wife, Mariana Sanchez, suffering some accident, she saw the R. frequenting the said house and staying alone with the sick woman for some time, but that the witness did not know what they were doing; that although on one occasion she would say that the R. made a fire in the room to make an ointment, she did not know what ingredients it was made of; she although said that the R. had a bad reputation in the said city of being a woman who knew how to make and unmake a spells". [3].
Informant 2 Mª Gregoria de la Cuadra. 25 years old. Married.	". she testifies having heard in public and notorious that the R. was in common opinion to know how to cure and make prayers, make and unmake spell; that there will be about 4 or 5 years that the witness served in the house of Francisco Ruiz Carneros, neighbour of Ciudad Real, and his mistress Gerónima Sanchez wife of the referred one suffered severe accidents, the R. went to cure her staying some days in said house, that with effect it was experienced repeatedly that it made her well. However, the doctor said a thousand times that he could not achieve the protection of such evils; the witness could not (?) of the means by which the R. would be cured, but that on some occasions the R. took honey and put it on some tow, she applied it to the painful part, mixing certain powders on the honey that the informant did not know what they were". [4.1]
	". . . A few days later she saw the R. in her house treating a child of the evil eye and saying words that the informant did not understand. When she asked to the R. what prayer she was saying, the R. replied that it was the Gospel. The witness sourly reprimanding her for such nonsense and for treating her with gospels, told her that more credit should be given to her gospels than to the sacred ones, and that the witness, speaking with such blasphemy, left her". [4.2]

Authors' own elaboration from National Historical Archive (1742).

as "*la Y*", gained momentum when the bishop of Amiclan, with whom Isabel had secretly confessed, wrote to the Tribunal on 5 September 1726 with the confession she had made to him (**Table 5**).

Several witnesses acknowledged that Elizabeth cured different sick people. Once the doctor had indicated that there was no chance for the sick person, or even that he or she was bewitched, the relatives would turn to Isabel. According to the process, she managed to cure, usually with poultices and ointments *from the votica*, which were often accompanied by the wax doll and prayers recited in a low voice or in the absence of the relatives, with the intention of preserving her legacy and profession, as she acknowledged (National Historical Archive, 1726). Wax dolls for healing purposes were known as *votive offerings*. They were usually offered under divine promise by the families of sick people who requested their healing, and were then exhibited in temples and chapels as a reminder of the healing benefit (Cobo Delgado, 2016). In the case of Isabel, the witnesses also point out that she was able to estimate the number of days that the sick person had left to live, and once this had passed, the mourner would die (National Historical Archive, 1726).

Subsequent to these declarations, the Tomelloso police commissioner, Julio Alexandro, made a statement. He wrote to the Court justifying the fact that he had not previously denounced Isabel's case, when the local doctor came to the commissioner to testify against her. He decided to do so when he heard María Rodríguez tell what had happened when Isabel was asked to go to a sick person's house (**Table 3**).

Although most of the witnesses reported that Elizabeth provided welfare, and for some a positive outcome, she was judged to be suspected *of levi*, and was ordered to be imprisoned in medium prisons. As a prisoner, she asked to testify to *unburden her conscience* and told how she was initiated through Catherine into healing with the wax cake, the doll and the prayer to St. Germain:

"Glorious S. German, luck you cast for the sea, if good you cast it, good you took it out, run, and walk, galleys for the sea" (National Historical Archive, 1726) [7].

On this occasion, the prayer is collected because it is his own testimony, and it is noted that objectively it can be absolutely harmless.

TABLE 5 Witnesses against Isabel Martínez.

Witnesses	Verbatim
Informant 1 Bishop of Amiclan	"(.) she was a widow who had an affair with a man, and that she wanted to get out of her bad state by marrying him and for this she asked him to interpose himself; And she also reported that she had cured many people who were cursed and had been taught by Cathalina Araque, deceased, and that for this she used a wax cake and a doll with wooden legs and arms, and that by placing the cake under a pebble, and the doll in her hand, she would say the prayer to San German and the bishop said that it was an invocation of the devil for other illicit means". [6.1]
Informant 2 Commissioner of Tomelloso (Ciudad Real) *Indirect implication* Local doctor Maria Rodriguez	"(.) giving an account of the diligences and proceedings that he made in the year 1719 by note that the doctor gave him against the Y, of which he did not give notice beforehand, as it seemed to this commissioner that it was all gossip and jealousy, but seeing that the Court has called the and what about them is that the doctor informed the commissioner what he heard Mª Rodríguez, that he and priest Ana Sacristán, having called the patient's wife and that he and she offered to cure him because the said woman of the patient was not at home, and that he had preceded that he and, threatened Ana because took a hand fan from him, and that he entered between the two communication and unlawful" [6.2].

Authors' own elaboration from National Historical Archive (1726).

3.4. Sexuality and love magic: types. A functional element

3.4.1. Male impotence

One of the accusations common to these women, shared by Ana Díaz, Agustina Álvarez and Isabel Martínez, is related to what is known as love magic. The first two were said to be capable of preventing marriages from being consummated if they were not invited to weddings.

In the case of Isabel, one of the declarants accused her of having rendered the man with whom she was having relations impotent. The discourse is loaded with repeated events and magical justifications, so it is not surprising that the interviewer pointed out at the end that "the above-mentioned person gives signs of dishonesty in her declaration" (the aforementioned woman gives signs of dishonesty in her statement) (National Historical Archive, 1726) [8]. On the other hand, Isabel was living in an affair with Antonio Fernández, a misdemeanour condemned by the Inquisition, and for which Isabel herself confessed to the bishop, expressing her repentance and desire to change the situation. However, Antonio himself stated at his 1st and 2nd hearings that "(.) having taken leave of the Y (Isabel), he said that he had been driven mad because he could not rest without seeing her (.)" (National Historical Archive, 1726) which, applying logic, could be said to respond more to a natural desire than to a spell.

The belief that women could cause impotence in men was widespread. They were held to act by diminishing sexual desire or blocking their generative potency. They could even lead to what became known as *theft of the virile member* to hide them in large quantities in birds' nests or boxes (Bueno Domínguez, 2012)until, under pressure, they were forced to return them to their owners (Federici, 2021). This issue was widely developed by European iconography of the time (Mattelaer, 2010).

Throughout the Middle and Modern Ages, impotence was considered a serious problem that went beyond medical knowledge. Andalusian midwives and physicians were familiar with many remedies to stimulate sexual potency in men and women, which are recorded in the recipe books of the period (Ibn Wâfid, 1980; Ibn Sa'îd, 1991). The knowledge of these women, coupled with the lack of medical training in this area, led to the search for sorceresses, who were held responsible for both inflicting and reversing it (Bueno Domínguez, 2012).

The case of Henry IV of Castile, nicknamed by some historians as *The Impotent*, who ended up accusing his wife Blanca of Navarre of being a witch when it was impossible for him to consummate the marriage, is well known. This situation degenerated into the granting of a marriage annulment to Blanca and the subsequent

marriage to Juana of Portugal, from which his daughter Juana was born. Her paternity was questioned in the conflict of succession to the crown, as she was nicknamed the Beltraneja, given the rumours that she was conceived by Queen Juana and Beltrán de la Cueva (Ohara, 2004).

The sorceress created impotence by various means. It was even speculated that when a man was about to have a sexual encounter, an invisible body would come between him and the woman and prevent intercourse. It could also cool the man's sexual arousal just at its peak, completely suppressing the erection of his member (Federici, 2021). The religious scholars Kramer and Sprenger threw out a somewhat logical, albeit biased, interpretation. Although the witches are responsible, rather than stealing the member, they make the man imagine that he does not have it, i.e., he is suggestible to the idea and possibly to previous failures in the sexual encounter. On the other hand, they alluded to the possibility that the demon, through the mediation of the sorceress, interfered with the senses and thus with the process of perception (Kramer and Sprenger, 1847).

Not only were women held responsible for male impotence, but female sexuality was made an object of fear. They could be accused of creating excessive erotic passion in men, so that it was easy for them to say that they had been bewitched or bewitched (Kors and Peters, 1972) as happened to Isabel Martinez when her ex-partner testified against her.

3.4.2. Love filters: love me more or love me better

But love magic was not only about male impotence; love filters and love concoctions were also very popular. These were mainly used by women who wished to initiate, maintain or increase the affection of men. The practices and objects they used were diverse in nature: bodily elements, including hair and fluids, animals, plants, minerals, objects that could be tied together, such as ribbons or clothes, and prayers or incenses (Gómez Alonso, 2018).

Usually, something belonging to the applicant of the spell was used. In women, it was common to use armpit and pubic hair, as well as fingernails. Although it was even more common to use menstrual blood as an ingredient in the food or drink intended for the recipient of the spell (Gómez Alonso, 2018). The sorceresses Francisca Caballero (National Historical Archive, 1753), María Montoro and Catalina Ángel de Torres (National Historical Archive, 1789), as well as María Patiño (National Historical Archive, 1776) were accused by their own petitioners and prosecuted by the Toledo Inquisition for recommending the use of menstrual blood as a love spell, but they were not the only ones.

Among the foods popularly consecrated to love was the meat of the turtledove, a bird that medieval bestiaries considered a symbol of fidelity. One of the common forms of use was for the animal to come into contact with the woman's genitals, prior to its preparation and offering to the beloved (Bueno Domínguez, 2012). Another main food or element of the Castilian sorceresses was the hen and its eggs, probably because they were easy to acquire. The aforementioned María Montoro and Catalina Ángel de Torres (National Historical Archive, 1789) used it in their spells.

However, women not only resorted to superstition to maintain or increase the love of a loved one towards them, but unfortunately they also did so to avoid mistreatment by their husbands. Isabel Fernández turned to María Romero so that, through Cebriana Escobar, she could obtain a remedy that would free her from the abuse and threats she suffered at the hands of her husband (National Historical Archive, 1702a,b). Cebriana, a 40-year-old widow, and María, friends and residents of Toledo, were forced to combine their work as seamstresses with witchcraft, given the low income they earned from their first job. Leonor Barzana (National Historical Archive, 1530) recommended to abused women that on Mondays, Wednesdays and Fridays they should pour their menstrual blood into the broth basin.

4. Discussion

As stated in the *Malleus Maleficarum* or Hammer of Witches (Kramer and Sprenger, 1847) although witchcraft also occurs in men, it is a woman's own thing because of her inherent and innate physical and psychological characteristics. During the Modern Age, the debate on the "nature of the sexes", which had already begun in the Middle Ages, was taken up again, leaving women stereotyped as weak in body and mind and biologically prone to the Devil. In this way, male control over women and the need for patriarchal order was justified (Green, 1989; Federici, 2021).

In the 15th–18th centuries, accusations of contraceptive practices, abortions, infanticide, sexual perversion and destruction of the generative potency of humans played a central role in the trials of women caregivers and in the imaginary of the witch (Federici, 2021). This can be seen in the descriptions in the *Malleus Maleficarum*, in the Spanish dictionaries of the time and in the trials collected in this study. The manual written by Kramer and Sprenger (1847) and the dictionaries of the historical period constitute the references that articulated the social and cultural systems of the 15th to 18th centuries, that is, the thoughts, beliefs, and feelings of the people who socialized with women providing care during this time, and who grouped themselves around the FU.

It is worth highlighting the evolution of the term witch in the second dictionary analysed. Although it directly defines the witch as feminine without explaining why, it refers to her attributions as "according to vulgar opinion" (Royal Spanish Academy, 1783). Something very interesting in this case is that it seems to indicate that the saying "be sucked of bruxas" does not actually occur, but rather refers to those who are thin or pale. This could occur in neonates or underweight infants, premature babies, babies with a disease or malnutrition, taking into account the conditions of poverty. In fact, in the 16th and 17th centuries, neonatal and infant mortality rates were very high. Thus, midwives and healers were accused of causing babies to die shortly after birth, to die suddenly or to be responsible for their illness despite the socio-sanitary conditions of the time (Murray, 1921; Federici, 2021; Espina-Jerez et al., 2022a). It also alludes to the popular belief that these women could fly and gather in witches' covens, which some authors (Murray, 1921; Cohn, 1980; Ginzburg, 2003, 1991) indicate that it was nothing more indicate that this was no more than a pre-Christian practice of fertility worship.

On the other hand, the boundaries and conceptual abstraction between the figures of witch and sorceress in Spain are blurred in their own time, as can be seen in dictionaries, and in the present

day, as anthropologists and historians (Lisón Tolosana, 1992; Caro-Baroja, 2015) are unable to find agreement on the terms. In part, this may be due to the fact that the Inquisition itself did not distinguish between them in its trials and condemnations (Zamora Calvo and Ortiz, 2012), as can be seen in the trials collected in this study.

Following Ginzburg's (1980) theory, it is possible to observe the presence of institutionalized and official care, as well as non-institutionalized care rooted in popular culture. This common circumstance in the study of nursing history is articulated in the interrelationship between the FU and the FF, resulting in the final FE that is analysed. The diverse population of New Castile in the 15th–18th centuries resorted to natural and supernatural means to improve, maintain or restore their physical and emotional health. When the first means failed, or were physically or economically inaccessible, they resorted to a supernatural explanation and cure. This happened in the case of Isabel Martínez, alias "la Y", in whose trial witnesses acknowledge that she cured several sick people once the doctor had not found a scientific solution.

Something that is sometimes left to be seen in the trials is the veracity of the witnesses, as happened in the case of Catalina Laso. In this process, the commissioner ends by saying that the witnesses "are very untruthful" (National Historical Archive, 1703). In many cases, the denouncers are people with a clear conflict of professional interests. Catalina Laso was denounced by the apothecary, the scientific power, and the priest of San Pedro, her village, who held ecclesiastical power. The same happened to Isabel Martínez, who was initially denounced by the local doctor, to whom the commissioner paid no attention, and later by the Bishop of Amiclan, making use of the allegedly secret confession that Isabel Martínez had had with him.

For Federici (2021) the persecution of women was an attack on the power they had gained through the ability to heal, sexuality and control reproduction. In Essex (England) and other rural areas of England, peasant and poor women were accused by wealthy and prestigious members of the community, thus individuals who were part of the local power structures (Macfarlane, 1970). Similarly, in the case of the women in this study who were accused of quackery and sorcery, the power figures of the time, doctors, apothecaries and priests, prevailed as accusers. This illustrates the sexual and gender division of labour in an interrelationship between the three structures of the DSMC.

In the testimonies against Isabel Rascalbo and Isabel Martínez, the witnesses acknowledge that they do not know the care practices, the ingredients of their medicines and the prayers that sometimes accompanied the cure. However, such a situation is not surprising if one takes into account that for them it was an unprofessionalised profession and, therefore, the transmission of their knowledge was purely oral (Zamora Calvo and Ortiz, 2012; Espina-Jerez et al., 2022a), and on many occasions, passing from mother to daughter, as in several of the processes discussed here. On the other hand, the durability of the care provided by a declarant in the proceedings against Isabel Rascalbo and Isabel Martínez is striking. The latter stayed at the home of the mourner for several days until the respective patients got better.

The ingredients and healing materials were accessed through the inventories of goods taken from these women. In many cases, the objects take on a superstitious tinge, but in others, the scientific rigour of the ingredients used and the measuring and preparation instruments can be observed.

In many cases, the prayers used during the cure were the same as the sacred ones. However, it is noted that this could be one of the grounds for condemnation when they were used for healing outside the ecclesiastical sphere. For example, the prayer to St. Germain that "the Y" performed while treated was interpreted by the church as an invocation to the devil, rather than a cure by Christian mediation as traditionally done.

The marital status of these women was a social determinant of gender. Being a widow and living in an affair was considered a sexual misdemeanour (Sierra, 2005) which like Isabel Martínez, could have consequences for them. Since neither the training nor the trade was regulated (Espina-Jerez et al., 2022a) and they were poor women, they did not have the resources to cope otherwise and defend themselves.

Healers, witches and sorceresses were endowed with great powers and abilities to cause, justify and undo any evil that afflicted the population (López-Muñoz et al., 2008; Federici, 2021). It was said that Isabel Rascalbo knew how to cast and undo spells (National Historical Archive, 1742). Isabel Martínez was said to be able to guess the day on which a person would die. Ana Díaz and Agustina Álvarez were blamed for the fact that some women lacked milk and "other natural things". A declarant whose trade was soap making was prevented by his mother and daughter from continuing his work until he forced them to give him back his soap-making skills (National Historical Archive, 1741).

Likewise, the intervention of these women prevented the consummation of the marriage and produced male impotence (Gómez Alonso, 2018), another care action of a psychological nature (FE). However, the main consultants of love magic in Castile were women, who asked to maintain or increase the love of their husbands, or to avoid mistreatment. It is most likely that few or none of the above remedies had the expected direct effect, which is why in most cases the sorceresses were denounced. What did occur, however, was a framework and a secret environment for women to share and support each other's emotional suffering, whether it was due to heartbreak or abuse.

The DSMC theory (Siles González and Solano Ruiz, 2016) has allowed the classification of the various phenomena surrounding the figures of care during the 15th–18th centuries, as well as the care provided by them. For the study of social and cultural history, it is necessary to clarify the social processes that are articulated around what is regulated at the macro level (FU). In this case, explicit and implicit norms regulate the way society thinks and acts during the 15th–18th centuries. It is important to take into account where care actions take place and whether or not there is a sexual and gender division of labour (FF), which is so present in nursing history during this period. Finally, the actors and their health actions (FE) should be considered, trying to give a place to the invisible women healthcare providers in history, in this case, midwives and healers, who combined physical care with a folk framework, under the demands of a society that requested their services.

In terms of primary sources, property inventories and testimonies are the only way of gaining direct access to these women in the first person. However, in the case of testimonies, as

Ginzburg (1991) pointed out, the victims' point of view is somewhat biased if we take into account that all that remains of their voices are the confessions written by the inquisitors, in many cases obtained under threat and/or torture.

5. Conclusion

The boundaries between one type of healing and another were never defined, but often coexisted, sometimes harmoniously, sometimes in conflict. Similarly, physical and emotional healing could go hand in hand, for sometimes the emotional spell had caused a physical ailment, or vice versa.

The health providers were immersed in the social nucleus in which they assisted. Some were highly trained for the job, while others, even if they were, combined their technical performance with a more popular and empirical knowledge typical of the rural world. The latter usually introduced materials, rituals or prayers that were considered superstitious by the Church. On most occasions, the elements were similar to those used in the ecclesiastical sphere, such as votive offerings, offered as a promise to obtain divine healing. Common saints were usually prayed to in prayers, and yet the very act of praying to them outside the framework of the Church was judged as an invocation of the devil. This double standard reveals the competition between the powers of the time (State, Religion and Medicine) for social dominance, displacing and condemning the activities of healers.

The persecution of women was an attack on the power they had gained in healing, sexuality and control of reproduction. People who turned to a healer or sorceress sought to keep away from harm and to achieve good, which consisted of well-being, health, life-support, fertility and so on. Even when they were not expert healers or sorceresses, they were called upon to heal their neighbours, give them amulets or potions for love, predict their future, and so on.

The use of their wisdom undermined the power of other regulated health figures and those belonging to church and state. The prosecution of women caregivers was directed at a wide variety of women's practices. However, it should be noted that these women were actually persecuted for being the ones who carried out these practices, as sorceresses, healers, witches, soothsayers, etc.

If we look at the social determinants, we see that these women, in addition to generally living in rural areas, tended to be single or widowed. They lived in a situation of poverty, which meant that they had to work in various trades in order to survive. This combination of situations placed women, and in particular those dedicated to caregiving, in a double situation of social and inquisitorial vulnerability.

The care exercised by women has not always been studied from a perspective free of prejudices surrounding the popular. For this reason, it was of vital importance to analyse and discuss the primary sources, taking into account social structures, gender as a structural determinant, religious, economic and symbolic factors and their mentalities, under the dialectic between the official health culture and the popular culture.

The predecessors of today's nurses overcame difficulties and socio-cultural barriers, but they were also condemned for it. The healers of the time did not manage to regulate their situation, but they acted as health agents in a society that demanded them and at the same time condemned them for the slightest error, without any kind of cover or support, on the contrary, with an inquisitorial network of "witch-hunting".

The situation of these women reflects the fact that social change cannot only go in hand with professionals and recipients, but requires political transformations that cut across society. History takes us on a journey between before and after, through the legacy received from the anonymous women caregivers in today's recognised health professions. However, there is still a long way to go in a profession in which the majority are women, and in which we still see various phenomena of inequality and inequity within and between professions.

Author contributions

BE-J, JS-G, MS-R, and SG-C: conceptualization. BE-J and MS-R: methodology. SG-C and BE-J: formal analysis. BE-J and SG-C: writing – original draft preparation. BE-J, JS-G, and MS-R: writing – review and editing. MS-R and SG-C: supervision. All authors have read and agreed to the published version of the manuscript.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Supplementary material

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Purity or perversion? from taboo to fact: kindergarten teachers' reflections on age-normal sexuality

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Many educators and pedagogues around the world face challenging situations in their everyday work. Being caught off guard when children begin to explore their bodies and show curiosity about body parts and sexual issues is one of the most uncomfortable realities in the work of educating our children and can generate a series of worrying questions, such as, "Is this child* normal? Should I stop him/ her from masturbating? What should I tell him/her?. Although talking to children about body changes and sexual matters may seem strange or embarrassing, providing correct and age-appropriate information is one of the most important things kindergarten employees can do to ensure that children grow up protected, healthy and safe in their bodies. The current study is based on empirical evidence from focus group interviews with 18 kindergarten teachers from four different kindergartens. The aim is to provide a real overview regarding kindergarten employees' experiences when it comes to their work with sexual development in small children. The findings show that sexuality is still a taboo even in western societies, as it is usually linked to abuse or pathological behavior. Additionally, key information about lack of focus on these topics in pedagogical educational programs is provided. Furthermore, the informants highlight the importance of knowledge and resources for them to feel in control and in confidence to face these challenges. Future directions and tips are provided to improve the educational field and ensure a healthy and balanced development which is after all part of all children's rights.

KEYWORDS

Sexuality, child development, normality, kindergarten children, Taboo

Introduction

Like all forms of human development, your child's sexual formation begins at birth. This includes not only the physical changes that occur as children grow, but also the knowledge they learn, the beliefs they internalize, and the reactions adults have to the child's early sexual explorations. Sexuality is innate and is a natural and expected part of human growth, stemming, among other things, from the drive for seeking closeness and love. Thus, it is a basic need that constitutes a facet of being human and cannot be separated from other aspects of life (WHO, 2006). That sexuality is innate and not learned may be inferred from the first signs of sexual reactions being observed in the fetal stage. Rather than young children experimenting as a reaction to internalizing adults' feelings and understandings, they react to the pleasure experienced when exploring their bodies (Almås and Benestad, 2017). Such experiences are

crucial for the ability to experience and take care of one's own sexuality in a good way, and it is important that children get the opportunity to get to know their own bodies (Grünfeld and Almås, 2021). In the strategy for sexual health "Talk about it" (2017), it is stated that the foundations for positive sexual health are laid early, in which regard the kindergarten needs more knowledge of this aspect of development. Good sexual health is both a resource and a protective factor that promotes coping and quality of life (Ministry of Health and Care, 2016). The strategy is a clear political signal that helps to equate the sexual health of the youngest children with children's general health, both physical and psychological.

There is a deep-rooted taboo surrounding discussions of sexuality in kindergarten (Kimerud, 2009; Skarpsno, 2013; Thorkildsen, 2015; Aasland, 2020), especially when it comes to topics such as sexual abuse and incest (Søftestad, 2018). This is likely connected to the limited linguistic and social tools we have for talking to young children about sexuality (Kimerud, 2017), which lead to children's wonder and sexual exploration being curtailed (Friis, 2019). Friis (2019) argues that this could lead to children being robbed of an important part of their children's culture and the right to privacy. Adults who have close relationships with children can do a lot of damage if they show discomfort when children express sexual feelings and display sexual behavior, thus imposing guilt on the child (Langfeldt, 2013). The experience of guilt, shame and fear can curtail the child's normal development, creating a taboo around their sexuality, making it harder for them to distinguish fact from myth on the topic. This will also have consequences for how the child relates to their own sexuality later in life.

In the framework plan for kindergartens (Rammeplan for barnehagen– KD) (2017), the concept of sexuality is not explicitly invoked. However, the plan lays down clear guidelines for staff to contribute to children becoming familiar with and confident in their own bodies, thus gaining a positive perception of themselves and getting to know their own and others' feelings. The staff must support children's identity development and positive self-esteem. Children must learn to set limits for their own bodies and respect the limits of others, and their wonder and exploration must be met with recognition. The kindergarten must promote equality and equality regardless of gender, sexual orientation, gender identity and gender expression (KD, 2017). Even if the framework plan does not use the terms related to sexuality when referring to play, health, development or recognition, it is implicit, and should be reflected in the staff's interpretation of the guidelines (Langfeldt, 2000; Bancroft, 2003; Træen, 2008; Kimerud, 2017).

The kindergarten has both a preventive and health-promoting responsibility, and should address all aspects of child development (KD, 2017). However, children's sexuality is hardly visible in kindergarten research and education (Kimerud, 2017). This is problematic because the myths and taboos surrounding the topic can only be challenged through knowledge and education (Vildalen, 2014; Almås, 2020). Similarly, openness and knowledge on the part of the staff can give them an opportunity to reflect on how they can meet children's sexual expression (Kimerud, 2017). By recognizing sexual exploration and play, staff can help children develop positive sexual health. This article explores how kindergarten teachers reflect together with colleagues about children's sexuality and sexual exploration in kindergarten everyday life. The study is based on data obtained from five focus group interviews with 18 kindergarten teachers. The research questions are; how do kindergarten teachers relate to children's sexuality and sexual exploration, and what reflections arise in the kindergarten teachers in conversations about children's sexuality and sexual exploration.

Historical review of children's opportunities to explore and express their own sexuality

One potential limitation of this study is that it studies children indirectly, via the adults who take care of them, without children being able to contribute as informants. When the children themselves do not get the opportunity to give us the knowledge directly, history and research can contribute with different understandings of child sexuality. Epistemology or cognitive theory is a contribution to understanding how kindergarten teachers interpret today's reality and what they perceive as valid knowledge, which further influences their practice. Kimerud (2009) outlines a historical retrospective from the 18th century, which shows that sexuality has gone from being seen as a great sin, via a cause of serious illness, to more liberal attitudes up until the 70s. In the 1970s, the focus on abuse prevention increased, which according to Jones (2003) helped to stop the liberalization process.

The innocent and non-sexual child

Until the end of the 19th century, it was a common opinion in both medicine, psychology and pedagogy that sexuality first arose when people reached puberty (Skundberg, 2020). Rousseau (1991), known as the father of childhood in pedagogy, held that children needed to be shielded from the problems of the adult world, which has been highly influential until today (Almås and Benestad, 2017). He argued that the child was innocent and that sexuality would be an aberration of this innocence. For example, he argued that masturbation was a perversion, suggesting that it had to be prevented through correct upbringing, which was a prevailing view in the scientific community of the time. His view was particularly inspired by the doctor Tissot (2012) who similarly pathologized masturbation, suggesting that it sapped vital energies, and would lead to infertility. The pathologizing of sexuality and the shieling attitudes still remain, and lead to withholding information about sexuality from children (Løvereide, 2019). This is extremely difficult to change, because the idea of children as innocent and non-sexual has been constructed over so many years that, for many, sexuality becomes an invisible topic that neither is discussed nor problematized (Kimerud, 2017). Adults who protect and look after children express love and care, but seen in a critical light, they can also act oppressive and marginalizing.

Different perspectives and views on child sexuality

The history of sexuality goes back a long way, but according to Bancroft, (2009), there have mainly been two epistemological perspectives that have dominated research into children's sexuality. The traditional natural science where the idea of the innate authentic child sexuality which is as much as possible unaffected by external factors. Moreover, the postmodern understanding that considers

childhood sexuality as culturally and socially created. Skundberg (2020) suggests that too much attention has been given to the origin of sexuality, arguing that the heterological perspective can contribute to us being able to assess sexuality based on the function and effect it has for the child rather than being concerned with whether it comes from within or from without.

A large number of studies also that parents', educators' and other professionals' relationship and actual interpretation of young children's sexual development, behavior and play is generally characterized by a hesitant, suspicious and uncertain attitude, despite a principled desire to recognize the natural sexuality of children (Balter et al., 2016; Brouskeli and Sapountzis, 2017; Davies et al., 2000; Heiman et al., 1998; Popovich et al., 2000; Stone et al., 2013). According to Martin (2014, p. 1637), child sexuality is understood alternately as natural, as a sign of abuse or as a warning of a "sex offender in the making," and these conflicting possibilities make suspicion safer than harmlessness. Nevertheless, sexual behavior is not a sure indicator of abuse, because up to 40% of abused children show no sexual behavior at all (Friedrich et al., 2003).

Homologous understanding of children's sexuality

At the end of the 19th century, the attitude about the innocent child was challenged (Skundberg, 2020). Freud, who was a student of Charcot, is considered the discoverer of child sexuality, because of his three essays on sexual theory (1991[1905]). In his first essay, Infantile sexuality, he states that children have an innate sexuality. Freud, who had previously asserted that children's sexual behavior was unhealthy tendencies and the result of artificial influence from the outside, was swayed by Moll's research, which suggested a homologous approach, meaning that childhood and adult sexuality stemmed from the same biological and developmental drives (Sauerteig, 2012). Freud's normalization of childhood sexuality must be nuanced according to Skundberg (2020) because Freud's claimed that childhood sexuality had a future significance and was a preparation for adulthood. Freud claimed that children were polymorphically perverse, which means that they are attracted to both sexes, and that there was a deviation from the preferred heterosexual intercourse (Freud, 1991; Grünfeld and Svendsen, 2014).

Further suggested that children's masturbation arose as a result of "seduction" from other children or adults (p.50) and if children were curious about other people's bodies and showed off their bodies, it was one step on the way to seeing others as sexual objects, meaning that children had to learn to control their urges and desires (Skundberg, 2020). He considered most activities that created pleasure in the child as sexual, e.g., thumb sucking and going to the bathroom.

Heterological understanding of children's sexuality

Small children's sexuality is both academically and politically recognized as a natural and healthy aspect of their play and development. Nevertheless, many studies show that parents and educators have a complicated and ambivalent relationship with children's sexual behavior and play. The prevention of and vigilance for signs of abuse or harmful behavior means that age-normal behavior is perceived as disturbing or pathological, especially when it is associated with adult sexuality (Skundberg, 2020). Anchored in the child psychologist Charlotte Bühler's critique of Freud's sexual theory, and with concepts from Sauerteig's (2012) analysis of Bühler, it is argued that this is a question of epistemological understanding, and that the problem is partly that one interprets children's sexuality as if it is triggered of, inspired by or created by impulses from adult sexuality.

Bühler's research on child sexuality constitutes a break from earlier conceptualizations. She was critical of the homologous understanding and argued that childhood sexuality had nothing to do with adult sexuality. She saw children's sexuality as fundamental, with intrinsic value and a natural part of the child's development. Children's sexual actions were not to be confused with adults, because their sexuality was mainly bodily characterized by exploration, sensory sensations and desire. She argued that most young children were easily distracted in their exploration, but that some children could become more concentrated and "hung up" on achieving the feeling of pleasure than others. In a heterological perspective, sexual play and behavior is therefore not a problem in itself, but must be covered by the same precautions, restrictions and risk assessments as all other play and activity (Sauerteig, 2012). In this way, Bühler is one of the few who consider children's sexuality as an important and natural part of development and with intrinsic value for the child in the present (Skundberg, 2020). He argues that the heterological understanding is in line with prevailing ideals of seeing children as constructors of their own world of experience. Children's sexual formation is an active testing process as a movement between free exploration and cultural socialization.

Today's discourse of child sexuality

Despite significant advancements in knowledge on the field, openness about sexuality has decreased since the 1960s (Langfeldt, 2000). A natural reason for this is probably that in the 1970s, sexual abuse of children was placed in a medical context that gave knowledge of how harmful it was. Thus, the positive relationship with sexuality was too vulnerable, so that we were unable to combine the problem of abuse with the positive and life-affirming sexuality Today, Norwegian legislation on violence and abuse against children is one of the strictest in the world (Aakvaag et al., 2016). In recent decades, various bodies have directed the spotlight on children's right to a life free of violence and abuse. It has been a necessary and decisive boost in skills that must be worked on further (Emilsen and Lehn, 2020). Steine et al., (2016) concluded that it takes an average of 17.2 years before victims of sexual abuse come forward, and that some of the reasons for the delay were, among other things, that they were afraid of not being believed, of being shut down and that they lacked words and concepts. Through an increased focus on abuse prevention, the responsibility is placed on adults and the children are again seen as innocent and not – sexual. Kimerud (2017) argues that it can be challenging to accept that the youngest children have a sexuality that is significant. She questions whether the non-sexual thought creates a non-existent attitude toward child sexuality, that adults are unable to relate to it.

It may seem that children's sexuality is often linked to abuse prevention in today's Norwegian kindergartens. Skundberg (2020)

points out that there is a need for research and theory on age-normal sexuality in order to be able to distinguish between the pathological sexuality, harmful sexual behavior and the sexuality that is age-normal, biologically and psychologically expected. He builds on several studies that show that educators look at children's sexual development, behavior and play with an uncertain and suspicious attitude, even if they want to recognize the natural and age-normal child sexuality (Stone et al., 2013; Balter et al., 2016; Brouskeli and Sapountzis, 2017). Furthermore, a Danish study shows that the dominant discourse among the kindergarten staff and parents, on the subject of children's "doctor games," was characterized by boundary setting, vigilance for abuse and intentions to protect. While a small number saw child sexuality as healthy and natural (Leander et al., 2018). There are few scientific studies on the sexual development of the youngest children (Rademarkers et al., 2003; Kimerud, 2009). Within Norwegian educational research, there are few scientific studies related to the kindergarten context, there are, however, a few specialist books and bachelor's and master's theses. Students and educators express they have learned too little about children's sexuality in education (Øverlien and Sogn, 2007; Kimerud, 2009; Island, 2009). A lack of thematization within kindergarten research and education will lead to the kindergarten teacher not being able to build on professional competence and have a reflective attitude (Kimerud, 2017). Children's age-normal sexuality seems to be little thematized in kindergarten teacher training, management documents and research. In the "Escalation plan against violence and abuse against children" (2017–2021), however, everyone who works with children is held accountable and it is pointed out that children must receive age-appropriate training about body, identity and emotions (Ministry of Children and Equality, 2016). The plan is nevertheless in a context where sexuality is linked to abuse and prevention of the phenomenon. The strategy(…) "Talk about it," on the other hand, is a clear political signal that equates the sexual health of the youngest children with children's general health, both physical and psychological. The strategy is based on a heterological understanding that considers age-normal sexuality and children's sexual exploration as an expected part of development. Good sexual health is established early and the kindergarten is an arena for recognizing children's sexual expression and exploration. The strategy points out that good sexual health is a resource and protective factor that promotes quality of life and coping (Ministry of Health and Care, 2016). In the strategy, the youngest children have been given a place. Almås and Johannessen (2017) suggest that the plan clarifies the importance of sexual health from childhood to old age and there is a greater focus on the positive aspects of sexuality. Skilbred (2018) is critical of the fact that the strategy constructs sexuality as both a phenomenon that should benefit the individual's health, but also focuses on the fact that it should benefit society as a whole. The consequence then is that sexuality ends up in the head, in the form of rationality and self-control, while the bodily and immediate experience is forgotten. In the framework plan for the kindergarten (2017), the concept of sexuality does not exist. The closest we can get is that the kindergarten must promote equality and equality regardless of gender, sexual orientation, gender identity and gender expression (KD, 2017). Several nevertheless take the floor that sexuality must still be implicit in the staff's interpretation of the guidelines, despite the fact that the terms sexuality, sexual play, – health, – development or sexual recognition are absent (Langfeldt, 2000; Bancroft, 2003; Træen, 2008; Kimerud, 2017).

Method and design

The current study is base on semi-structured focus group interviews where all the informants are kindergarten teachers and colleagues from four different kindergartens. The study is based on a social constructivist perspective which, in this context, means that the starting point is based on the fact that the kindergarten teacher's understanding of the reality of children's age-normal sexuality is shaped by the situation they find themselves in and the experiences they have, which in turn is linked to who they communicate with (Tjora, 2018).

The study is based on empirical evidence from focus group interviews with 18 kindergarten teachers, from four kindergartens. The informants were recruited through an e-mail request sent to practice kindergartens associated with a kindergarten teacher training program in Norway. The kindergartens in question are defined as large institutions, with four departments/bases or more and located in the same municipality. The selection of informants can be considered both strategic and random (Tjora, 2018). The kindergartens participating in the current study were randomly selected from a list of practice kindergartens, while the selection of informants was strategically chosen by the researcher to ensure answers to problems that focus on kindergarten teachers.

Focus group interviews

Group interviews were a deliberate choice to bring out reflections because it is similar to way of collaboration that kindergarten staff often use in their daily work, which suggests that are used to it. Four group interviews were conducted with a total of 18 kindergarten teachers, with professional experience from 1.5 to 21 years in kindergarten. The interviews lasted 60–70 min and were audio recorded.

The group interviews were planned as semi-structured, where the goal was that they could reflect freely together, where the researcher collecting the data only acted as a mediator who brought the topic to the table. This was a conscious choice to bring out perspectives, contradictions and understandings during the group process. The advantage of group interviews for this study is that informants who are in dialog with each other can elicit a different type of information than if they were interviewed individually (Ringdal, 2018). The informants inspired each other and what was said had an "activating and mobilizing" effect on the others (Tjora, 2018). After the first interview, we nevertheless learned that we had to be clearer in distributing the word as the informants became eager and tended to talk over each other and side conversations arose. It then became demanding to take notes and follow along. In the next rounds of interviews, the researcher conducting the interview was a more active moderator (Tjora, 2018), which meant ensuring that everyone got the floor and the opportunity to complete their own reasoning. The participants were asked to take notes in order to be able to remember what they wanted to convey when the opportunity presented itself. The group interview form is suited to a social constructivist perspective because the participants both listen, think and express themselves as a group. However, this also makes the particularly challenging (Fern, 2001). As the participants listen to each other, and see the positive and negative reactions that others' statements elicit, it

is possible that their own perspectives shift. On the one hand, this is itself an example of socially constructed ideas, but on the other, there is a danger that the participants feign agreement. In order not to hinder good conversations, keywords were written down and the informants would be later asked to continue. In between, follow-up questions were asked such as, could you tell me a little more about it or what did you mean when you said etc.

The central topics were:

- Participants' own base knowledge and relationship to children's age-normal sexuality
- The place children's age-normal sexuality and sexual health have in the participants' kindergarten, management of educational processes
- The opportunities and challenges participants face in their management of age-normal sexuality as an educator
- How parental cooperation is experienced around age-normal sexuality

Analytical approach

Raw data material has been analyzed using a reflexive inductive approach where the themes were coded and classified. It will never be a pure induction as our preconceptions would constantly affect even when trying to identify data without predetermined theories (Richardson and Pierre, 2005).

Procedure

The interviews started with the researcher reading literature about children's age-normal sexuality, but during the investigation, specialized research articles related to the kindergarten context were highlighted. Based on this, one of the main goals was to investigate how kindergarten teachers relate to children's age-normal sexuality. The purpose was to develop an understanding of collected data that became something more than descriptions of practice. In such an interpretation, different relevant concepts can be related to the categories of the material (Thagaard, 2013). Therefore, the theoretical basis was developed during the analysis of the data collected. Based on the data base, we have endeavored to find a theory that can help frame and help discuss findings. Thagaard (2013) believes that various projects often have a center of gravity linked to the development of new theory or through further developing existing theory.

All the topics are relevant when the goal is to understand how kindergarten teachers experience their work with children's age-normal sexuality. The themes represent different dimensions of the experience that the informants highlighted. The participants' voices and use quotes to support them are emphasized.

Assessment of the method/credibility

It will not be possible to find a universal truth about this topic, but it is hoped that it can be a contribution to expanding the research field and that kindergarten teachers and students can make use of the results (Kvaale and Brinkmann, 2009).

Ethical considerations

By stopping the conversation midway, there may be a danger that some people did not get their full reasoning across as they might have done in an individual interview. Nevertheless, the conversations flowed well between the informants and they actively challenged each other. In the research process, there is a high probability that some findings have disappeared along the way. Bringing preconceived notions was controlled; full awareness about this has been taken into consideration during the entire process.

All the informants have given their consent and the audio recording was transcribed and deleted shortly after the interview in line with the Norwegian center for research data-NSD's guidelines. The transcripts from the four groups of interviews constitute extensive empirical raw materials. Part of these have been focused on, analyzed and discussed in this current article.

Result and discussion

Sexuality is intimate and personal

The interviews started with a free association exercise, where the participants were asked to close their eyes for a few minutes before being encouraged to put into words what they immediately think about children's age-normal sexuality. Almost all the participants expressed what was interpreted as negatively charged words and feelings: sensitive, difficult, embarrassing, shame, private and personal, challenging, abnormal, scary, serious and dark. The negatively charged words, and statements like "it's not normal," "you should not do this," "embarrassing," can indicate that they themselves carry personal experiences. This is borne out in the following dialogs from the conversations:

- "It's a heavy topic because it's so personal" (B -2)
- "Yes, my God, it's not our sex life we are talking about in the break room exactly" (B -4)
- "It is difficult for me to accept what is normal in relation to the theory I have read, because it is not normal for me" (A – 1).
- "yes, it's challenging for me to change my view on children's exploration because it sits so well in my own body that you should not do that. Then I know at the same time that I am actually passing on the shame that was imposed on me" (A - 4)

The participants mainly start from the private and personal when they initially reflect freely on children's sexuality, which may indicate that it can be difficult to relate to children's sexuality without building on their own personal experiences. The ways in which these experiences played out, and the way they were met would have been decisive shaping the way in which the participants conceptualized sexuality as adults (Grünfeld and Almås, 2021). Subsequently, the adults' reactions to their own experiences will be transmitted to the children in their care, as attachment to our closest caregivers is a contributing factor to how we manage our own and other people's sexuality (Aasland, 2020). Other people's feedback that creates a feeling that it is wrong to feel sexual feelings can lead to anxiety and guilt. A previous experience of shame is a bodily feeling that can influence thoughts and action patterns. The findings show that the participants are to a small extent able to distinguish between their own experiences and the role of pedagogues from the thoughts they immediately get when they have to express their thoughts about children's age-normal sexuality.

Something that can be substantiated with Kimerud (2017), who argues that a lack of thematization in education means that kindergarten teachers will have challenges with reflecting and building on subject-related professional competence. Here a conflict can be glimpsed between a heterological understanding of knowledge and one's own personal experiences which seem to be rooted in a homologous understanding which appears as an obstacle to recognizing children's sexuality as a natural and expected part of development.

Fear of stigma

During the interviews, it emerges that the informants experience situations where children's sexual expression and exploration are not validated because the children are stopped, reprimanded or diverted. Assessments of themselves and feelings that they themselves are doing something wrong come out clearly, as well as the importance of what others think of them. This can be made concrete through selected quotes:

- "..children have always explored and masturbated, but we quickly divert and stop them.
- "yes, I sort of try to straighten things out a bit when others yell or get brusque" (B -1).
- "It becomes our responsibility that children are not violated, but how do we recognize the children without it being perceived as wrong or perverse in the ears of others?" (B-4)
- "..I am afraid of saying the wrong thing in view of other employees' experiences from their own lives" (A-4) ".
- "I have always been open, but have been met with a lot of skepticism. You are stigmatized, you who are concerned with sex, as it were. I've got that in my head. The problem is that the normal exploration is easily linked to sexual abuse, so I go around and try to correct when the others stop the children or are too strict. We have to meet them with recognition" (A – 3).
- "For me, this has become a natural part of pedagogy, I have knowledge of the topic that convinces me that this is important. It's just as easy to get the others on board, it's a lot about both emotions and judgment being challenged. I keep things like that to myself really" (C 1)

The way the conversations were interpreted, recognition of children's sexuality is linked to a taboo and fear of stigmatization. As previously pointed out, it is a common perception that sexuality is a taboo subject in kindergarten (Skarpsno, 2013; Thorkildsen, 2015; Kimerud, 2017; Aasland, 2020). Fear of stigmatization can be a fundamental reason why the topic is not discussed or actively avoided. One expresses it like this: "I have never dared to bring it up as a leader, it is a sensitive topic" (B-3). Fear of being stigmatized can arise when attitudes are not reflected and seen in the light of theory and/or existing research. This may indicate that a "room" has not been created to talk together about practices related to children's sexual expression, and that the staff lacks a common platform. Fear of being seen as sex-crazed and perverted can underpin previous interpretations regarding the fact that children's sexuality is linked to the kindergarten teacher's personal insecurities. Furthermore, it emerges that the staff do not talk together about practice, but mainly just practice. It seems that it is being communicated in the present when children's sexual expression occurs, but that it is particularly based on spontaneous and unprofessional actions.

None of the informants has sexuality as a theme in the annual plan. Furthermore, it emerges that the topic is not the subject of professional reflection in formal meetings, but that communication occurs when children's sexuality is brought up in daycare. Although many people think that it is normal, they are still afraid of other people's reactions if they, for example, acknowledge children's sexual play or answer questions from the children. This can be explained by the fact that the framework plan does not have sexuality explicitly expressed, it thus requires the educators to interpret the content (Bancroft, 2003; Kimerud, 2017).

If kindergarten teachers do not put the topic on the agenda for professional reflection, other employees probably will not either. However, and in line with the Norwegian framework plan for kindergarten education-KD (2017), it is the pedagogical leader who is responsible of implementing and leading the pedagogical work. Not all of the informants were pedagogical leaders, but the kindergarten teacher nevertheless plays a key role in meeting the requirements and intentions of the framework plan (KD, 2021).

Is the concept of normality over-or underestimated? Just a tabu?

- "I've thought, why are you so concerned about this when somehow, the danger is that the others in the staff think I'm an abuser if I front this work" (B-2).
- "I have been afraid to be alone with children and enter into dialog with them if they ask, as a man you are extra exposed to suspicion, so I probably avoid quite a few situations" (D-1)
- "Before, I could look out the window and not think of any danger around, e.g., boys who had taken their pants down and were studying each other, but now I immediately think of abuse. Or… actually, I think about what the parents and other employees might think, if I do not intervene, and that there could be a lot of trouble. Then I become unsure of my own knowledge, even though I actually know a lot." (A – 3)

The last two quotes show that the informants link sexuality to the problem of abuse, but also thoughts about their own leadership become more prominent. The kindergarten teacher's knowledge of age-normal sexual development will have an impact on children's right and opportunity for sexual play, – health, – development or sexual recognition.

A heterological understanding is made visible in the form of children's sexual exploration being mentioned as self-evident in contrast to a homologous understanding which would not have recognized and allowed this. Nevertheless, it may seem that society's focus on child abuse makes it difficult to distinguish between expected and age-normal sexual expressions and abuse issues. Something that is in line with the lack of focus in education and research (Kimerud, 2017).

From individual thought processes to explicit reflection

Few of the informants have had education about age-normal sexuality in education. Several have taken part in courses with the

theme of sexual abuse and where the focus has been on worrying and deviant behavior. Knowledge made them more confident, even so, responsibility can be great if not all employees integrate new knowledge. This is made visible in the following quote:

- "Yes.hmm, shifting the focus from abuse to the normal is also difficult. I think it's pleasant, normal, exciting and perhaps a bit funny, while some in the staff group think that exploration and sexual play do not belong in the kindergarten. Disagreement and strong opinions can stop me. But if we are talking about abuse, no one disagrees about what we think about it like that" (A – 5)

During the interviews, all the groups touch on children's masturbation and the informants expressed that this occurs regularly in the kindergarten. The informants explain that masturbation is natural and that they themselves believe that they have a clear relationship with this as part of the child's development, yet it is experienced as challenging for the pedagogues. One of the informants' experiences represents several of the informants' experiences:

- "I do not make a big deal out of the children masturbating, I register it and move on. However, I had a girl who did it all the time, and when it prevented her playing and being with the other children, I felt like bringing it up at a department meeting. Only then I understood that not everyone thinks like me. It was difficult and unprofessional. Many attitudes emerged from some who were not professionally grounded, and that some did not think it was okay to masturbate at all. So even though I know this is natural and important, I do not get everyone on board. What I strive for is to have a professional discussion where we can free ourselves from our own and private perceptions. I'm afraid someone might interrupt the children and reprimand them if they masturbate." (A2)

Several had similar experiences, and several told of situations where children were interrupted and reprimanded if they played exploratory sexual toys. The kindergarten teachers asserted that they themselves could personally look after children's sexual expression and exploratory play in everyday life, but that the biggest challenge was getting the whole staff group involved. The informants described an uncertainty in relation to taking the lead and creating shared practices that ensure children's right to explore, ask questions and play freely.

One of the informants has participated in a joint course day and development work in a kindergarten school she worked in previously. The topic was sexual abuse, but knowledge about children's age-normal sexuality was a large part of the day. The informant says that she experienced a more unified understanding and enthusiasm in the staff group after the course. Informant C 2 says:

- "After the course, the boards took hold of the entire personnel group, we had several processes where we anchored the work in such a way that we got a professionally anchored basis from which to work. We elicited our own attitudes and experiences and then professional discussions. We arranged a parents' meeting that only dealt with children's sexuality with the same course instructor. It was useful and crucial to keep both us and the parents safe. We had a clear leader, so I think everyone understood that they have no choice, but some have to spend more time than others." (C2)

The informant describes a development work where the board is a clear leader in the process. Her experience stands out, and provoked immediate reactions in the In the focus group interview in which she participated. It is probably an effect of the pedagogues being given the opportunity to reflect professionally on the topic, and gaining more faith in their own specialist knowledge.

One of the others spontaneously breaks in were:

- "But here we are, we just have to start talking about it. Here you are sitting on valuable knowledge without me knowing about it. I hear that you are also concerned with the topic, but that you find it difficult to deal with it. We have each other. I already know that I am more motivated to lead my group now, I am not as alone as I have felt. And then we must have a clear director who legitimizes" (C1)

The quote above represents well what happened in the other group discussions as well. The participants became very enthusiastic during the focus group interview and many thoughts emerged about how they could best develop their management related to the place of sexuality in the kindergarten. Here the findings show that the participants call for the place of sexuality in the framework plan. One of the participants expressed the following:

- "Legislation and the framework plan are good support for me, it's not like I'm concerned with this and that, but it is determined and anchored. Nevertheless, it would have been a good help if children's sexuality had been made clear. Children's sexuality is not the same as ours, but it is not so easy to understand, we mix it up and then it is easily associated with abuse." (A4)

At the same time, several participants state that the framework plan that came out in 2017 is clearer on the preventive and health-promoting perspective than the framework plan from 2017. They say that they can find more arguments for the work under the subject areas; body, health and movement and equality, as well as in the value base and related to coping with life. Furthermore, the participants suggest that themes such as the body and sexuality must be anchored as a theme in the annual plan for the kindergarten, and that a progression plan is necessary. Clearer guidelines, literature and research emerge as a need, but most participants place responsibility on the boards, who are expected to take the lead in putting the topic on the agenda together with the management team.

- "We see that knowledge in itself is of little value, we know a lot about this topic when we just sit down and talk about it. But we must stand together and we must discuss and reflect aloud together, we must professionally anchor the work in order to rid ourselves of myths, taboos and attitudes that each individual carries with them in the face of this topic" (D-2).

- "Yes, I think we can actually uncover more people who are exposed to abuse if we manage to recognize children's sexuality

and exploration as a natural part of their development. How can we establish trust if we stop and prevent everyone" (D -4).

Conclusion

Based on the lack of focus in education (Kimerud, 2017) and the fact that sexuality as part of children's development is not explicitly expressed in the Framework Plan (2017), it may appear that educators are in a cross-pressure between the desire to recognize children's sexual expression and the fear of being stigmatized.

Both higher education and pedagogues in kindergartens also lack relevant and sufficient research and literature that can challenge myths and taboos (Almås, 2020), as well as expand theoretical understanding and underpin the importance of facilitating children's sexual health, which is pointed out in the strategy, "Talk about it" (Ministry of Health and Care, 2016).

We also see that a focus on sexual abuse of children and the kindergarten's responsibility to prevent and detect (Emilsen and Lehn, 2020) can dominate the kindergarten teacher's practice, when they lack theoretical knowledge of age-normal sexual development. Through an increased focus on the prevention of sexual abuse, the child will easily be seen as not - sexual, i.e., a homologous view which, according to Skundberg (2020), dominated in the 20th century.

Through the analysis of data from the group interview, an effect of sitting together with other pedagogues is made visible. The participants discover that by having time and space to discuss and share their experiences, they become more confident in their own knowledge. This is in line with claims from several researchers who point out that there is a deeply rooted taboo in the nursery, as well as a lack of language and knowledge about age-normal sexual development in young children (Skarpsno, 2013; Thorkildsen, 2015; Kimerud, 2017; Aasland, 2020).

Future research

Further research will be necessary to find out how kindergarten teacher training can facilitate the pedagogues to gain more theoretical knowledge, and help to interpret the content of the framework plan (KD, 2017) which focuses both on sexual orientation, play, health and not least recognition. It will be equally important that education facilitates the students to have the opportunity to discuss and reflect together. Discussions based on cases will be able to enhance both the ability to take different perspectives and increase the confidence to be able to defend pedagogical measures when they go out as leaders in the nursery school.

Students will need more teaching to distinguish between a homologous and a heterological understanding, so that they can work both health-promoting and preventive, as the framework plan (KS, 2017) points out. Children have the right to be met with openness and recognition also in this part of their development, which according to Skundberg (2020) is about prevailing ideals where children are seen as constructors of their own life world.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

The studies involving human participants were reviewed and approved by Norwegian center for research data. The patients/participants provided their written informed consent to participate in this study.

Author contributions

EL collected and analized the data. All authors contributed to the article and approved the submitted version.

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Educating to sexuality care: the nurse educator's experience in a multicenter study

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Background: Sexuality is an issue inherent in the lives of all human beings. Education for Sexuality takes place informally, through relationships with the environment, with the family as a model, and formally, as a pedagogical practice in Teaching. Education for sexuality is recognized as an instrument of social transformation that leads to changes in behaviors and norms related to sexuality.

Objectives: Knowing the perception of nursing professors about sexuality education in professional training, recognizing attitudes of these professors in relation to sexual education and identifying barriers in education for sexuality.

Methods: Exploratory and descriptive study, using qualitative methodology. Data collection was carried out from semi-structured interviews and thematic analysis.

Results: The interviewees consider sexuality education to be very important, being taught in the nursing course, addressing different themes. In general, they reported feeling comfortable teaching these topics. The identified barriers to the level of education students are in, students' knowledge and reactions to the topic, religious and cultural issues, and the time available to talk about the topic and professional aspects.

Conclusion: Sexuality is a fundamental theme in nursing education and needs to be further explored to overcome the barriers associated with its approach.

KEYWORDS

sex education, health education, sexuality, faculty nursing, health knowledge, attitudes, practice

1. Introduction

In 2017, the World Health Organization (WHO), defined several terms related to sexual and reproductive health. These terms include sex, sexual health, sexuality, and sexual rights. Going deeply into the definition of sexual health, it is described as: "a state of physical, emotional, mental, and social well-being about sexuality; it is not merely the absence of

disease, dysfunction, or infirmity. (…) it requires a positive and respectful approach to sexuality and sexual relationships, as well as the possibility of having pleasurable and safe sexual experiences, free of coercion, discrimination, and violence. For sexual health to be attained and maintained, the sexual rights of all persons must be respected, protected, and fulfilled" [World Health Organization (WHO), n.d.].

Sexuality education promotes the sexual rights of all people, is supported by the Sustainable Development Goals (SDGs), namely by SDG 3, which promotes Gender Equality, and SDG 4, which ensures Quality Education for all by lifelong. The results of this article, which is part of the European Project Sexuality Education: A Breakthrough for European Health (EdSeX), meet the priorities of SDG 3, linked to the objective of eliminating all forms of violence against women and girls, eliminating harmful practices, such as child marriage and female genital mutilation, ensuring universal access to sexual and reproductive health and rights, and increasing the use of information and communication technologies, to promote women's empowerment; and SDG 4, which focuses on ensuring quality education for all throughout life, helping societies to deal with problems related to health risks and health promotion (Vilaça, 2017; United Nations, 2030).

Through sexuality, people express their most intimate feelings of individuality and their need for emotional closeness with other human beings. Sexuality is not just about sexual intercourse, it is about the concept of people as men and women, about their manliness or femininity (Coleman et al., 2013).

To maximize the value of sexuality and sexual health education, it is crucial to understand how to optimize comfort in the delivery and reception of this education. Sexual health education aims to impart young people with the information they need, to make informed decisions about their sexual health (Mueller et al., 2008) and provides students with the knowledge and skills necessary to understand sexual development, establish healthy relationships, prevent sexually transmitted diseases, and unintended pregnancy, becoming healthy adults (Buston et al., 2002). Sexual health education has been shown to delay the initiation of sexual intercourse, reduce sexual activity and the number of sexual partners, increase condom or contraceptive use, and improve academic achievement (Kirby et al., 2007).

Previous studies show that several factors could impact teachers' delivery of health education (Vamos and Zhou, 2003) and, more specifically, their delivery of sexual health education (Eisenberg et al., 2012). Comfort has been identified as one of those factors (Cohen et al., 2012). In a study conducted by Rose et al. (2018), interviews with middle school health education teachers and focus groups with students were collected to examine the factors that influence the perceived comfort of those who deliver and receive education in a public school district. Findings identified key barriers including disruptive behavior, insufficient time, and lack of dedicated classrooms. Some key facilitators to comfort included professional development and establishing ground rules (Perez et al., 2013; Rose et al., 2018).

Barriers can be substantial for teachers, and some researchers have explored ways to incorporate online approaches and computer-assisted instruction into sexual health education to enhance student learning experiences and minimize some of these barriers (Roberto et al., 2007; Chen and Barrington, 2017). Although sexual health education incorporating online platforms has demonstrated some success in shifting students' sexual health knowledge and attitudes (Evans et al., 2000), such approaches are best utilized as a part of a comprehensive instructional design that uses multiple delivery systems, both teacher and student led.

Rose et al.'s (2018) study highlighted facilitators that may help increase comfort levels in the classroom, including the establishment of ground rules, using a question box, and offering professional development opportunities for teachers to improve classroom management. Creating a comfortable, safe, and supportive environment is essential, and this type of environment has been identified by researchers as a key characteristic of effective sexual health education curricula (Kirby et al., 2006; Rose et al., 2018).

Sexual health education works best in classrooms where there is mutual trust and comfort for both teachers and students (Mkumbo, 2012). Comfort has been expressed in the context of teachers' knowledge about sexual health, as well as their comfort in teaching and discussing sexual health topics (Cohen et al., 2012; Mkumbo, 2012). The teachers' comfort has also been associated with their coverage of sexual health topics and their ability to address student reactions to sexual health content, as well as other classroom management issues. The understanding of the vulnerabilities of university students is fundamental for the development of training courses that create environments for debate and democratic participation with access not only to information, but effective training on sexuality, which leads to practices reflected and internalized by the student in their daily lives (Ninomiya, 2010; Mkumbo, 2012; Brancaleoni et al., 2018).

Research studies in health have reported many nurses are not comfortable speaking with their patients about topics related to sexual health. Many nurses tend to neglect sexual health care because they do not feel they have sufficient education, experience, or confidence to properly engage with patients (Sung et al., 2016; Martel et al., 2017), and this creates a barrier to the patient's sexual care (Klaeson et al., 2017).

Several researchers have published about patients' benefits when nurses had comprehensive training on topics related to sexual health care (Sung et al., 2016; Yingling et al., 2017). Furthermore, nurses who were formally trained on how to best deliver sexual health information were more effective in addressing patients' sexual health concerns proactively instead of reactively (Sung et al., 2016).

Three studies highlighted barriers experienced by nurses as the lack of policies about the role of nurses in discussing sexual health care with patients, in addition to organizational and management support to allow nurses the time to engage with patients about their sexual health (Moore et al., 2013; Krouwel et al., 2015; Jonsdottir et al., 2016). This lack of support lead to role confusion decreased comfort and the belief sexuality is not an essential aspect of the nursing assessment (Beebe et al., 2021).

Time constraints and privacy concerns have been expressed as barriers in many of the research studies. Attitudes and beliefs of nurses working in oncology, ranged from the belief that patients would feel embarrassed or offended, sexual health is a difficult issue to address, a lack of privacy, and/or there is not enough time to discuss sexual health (Moore et al., 2013; Krouwel et al., 2015; Jonsdottir et al., 2016). Huang et al. (2013) noted sexual health care "*can be highly problematic within primary care because of its sensitivity, complexity and the constraints to time and expertise of healthcare professionals*" (Huang et al., 2013). Klaeson et al. (2017) suggested time, lack of education, and nursing

profession regulations were contributing factors that led to a barrier to delivering sexual health information to patients (Klaeson et al., 2017).

In several studies, it has emerged that most medical students and medical health professionals do not receive sufficient education on sexual health and do not feel comfortable when dealing with sexual problems. It has been suggested that more sexual health courses are needed in medical schools to overcome this deficiency (Coleman et al., 2013; Turner et al., 2016; Beebe et al., 2021).

Since sexuality education in the area of nursing has an impact on the training of nursing students and on the care they can provide as a nurse in the area of sexuality, this study is important because it identifies the knowledge, attitudes and barriers that nurse educators report when they educate about sexuality, which can influence training and care in this area.

The objective of this study is knowing the perception of nursing professors about sexuality education in professional training, recognize the attitudes of professors in relation to sexual education in nursing education and to identify the barriers in education for sexuality in the nursing degree.

2. Materials and methods

2.1. Design type

This is an exploratory, descriptive study with a qualitative approach.

2.2. Data collection

Data were collected through semi-structured interviews, being the same carried out by the researchers themselves, in the period of August and September 2022. In each country, two interviewers were selected (a total of 8 interviewers), who are part of the European Project Sexuality Education: A Breakthrough for European Health (EdSeX), having contributed to the preparation of the interview guide and were trained to carry it out.

The interview guide questions have been created considering the study of Rose et al. (2018), integrating questions that meet the objectives of the study. It is organized into five parts, the first corresponding to the sociodemographic data to the interviewee, the second to professional data, the third to the perception of the importance of sexual education, the fourth to attitudes/comfort in matters of sexual health and the fifth to pedagogical barriers to sexual health.

The interview guide questions were translated into the language of the partner countries (Spanish, Italian and Portuguese) to facilitate its use, and submitted to a pre-test with teachers with similar characteristics to the research sample, but not involved in the research.

The interviews were carried out in an atmosphere that is pleasant and close to the participant, defined with them to favor communication, had the duration approximately 1 h and were registered by means of recording, after the participant's authorization.

2.3. Sample

International convenience sample composed of 45 teachers of nursing and nurses.

The sample was determined by saturation of the information collected totaling 45 respondents, identified as ES_1 to ES_12 (interviewees in Spain), IT_1 to IT_10 (interviewees in Italy), PTE_1 to PTE_12 (interviewees in Évora, Portugal), PTS_1 to PTS_11 (interviewees in Santarém, Portugal).

Inclusion criteria are: (1) having at least 2 years of experience as a nursing teacher in the field of nursing, (2) mastering the language of the location where the data are collected, and (3) teaching more than 3 h per week. These inclusion criteria ensured a minimum of professional experience in the field of nursing, thus allowing contact with this theme both in theoretical teaching and in clinical practice. Teaching for a minimum of 3 h per week allows nurses who work in clinical practice and do not have teaching experience to be excluded from the sample. Language is important to ensure the absence of language barriers during the interview.

2.4. Data analysis

In the data analysis, the Thematic Analysis (TA) method was used to analyze the content of the interviews. We used this method to describe in a detailed and differentiated way the theme of Education for Sexuality in Higher Education in Nursing, allowing us to identify standardized meaning as the main themes emerging from the interviews.

The interviews were analyzed following 6 sequential phases that can be combined, based on the data that emerged:

1. Familiarization with the data: consisting of data reading and re-reading, to become familiar with the contents;
2. Coding: with the identification of labels identifying relevant elements which could be linked to the research outcomes;
3. Generating initial themes: it is based on analysis of previous labels/codes, to identify potential themes;
4. Reviewing themes: to understand if they support a convincing interpretation of the data, answering the research question;
5. Defining and naming themes: developing themes in a single story/interpretation, and giving a name to each of them;
6. Writing up: describe the emerged results, of the existing literature (Braun and Clarke, 2019).

To guarantee the criteria of reliability and validity of the research, all precepts were followed to guarantee the accuracy of the registration of the data obtained (recording and transcription); verification of the data by four different teams and then the analysis and development of relationships between the data found in the interviews, to ensure consistency between the theoretical constructs and the analysis developed.

2.5. Ethical considerations

The ethical principles set out in the Helsinki Declaration have been followed. The permission of the participants was obtained through an informed consent in which they expressed their voluntary desire to participate in the study. Data were recorded anonymously

and treated confidentially. The study was authorized by the Research Ethics of University Castilla-La Mancha (UCLM).

3. Results

3.1. Sociodemographic data

The sample consists of 45 nursing professors and nurses, 26.7% of whom were interviewed by researchers from the University of Castilla-La Mancha (Spain), 26.7% by researchers from the University of Évora (Portugal), 24.4% of the sample was interviewed by researchers from the University of Santarém (Portugal) and 22.2% of the sample comes from the University of Modena and Reggio Emilia (Italy). Globally, the most represented age group is between 40 and 50 years old (49%), followed by the age group from 31 to 40 years old (31%), those over 51 years old (13%) and respondents aged between 20 and 30 years old (7%). The predominant gender is female, representing 62.2% of the sample. In terms of qualifications, 35.6% have a master's degree (2° cycle) and 35.6% have a Doctorate. This is followed by the Master with 7 professors (15%) and the degree (cycle I) with 6 teachers (13%). Most of the sample works at the University (56%), 13 respondents work at the hospital (29%), 3 work in both contexts (7%), 2 work in the community (Community Nursing) (4%) and 2 do not specify (4%) (Table 1).

The comprehensive reading of the content of the interviews allowed the construction of the following themes: (1) Importance of education for sexuality; (2) Integration in the Study Plan; (3) Content; (4) Barriers; (5) Teachers' attitudes; (6) Teacher training (Table 2).

3.2. Importance of education for sexuality

All interviewees agree on the importance of the topic: "*it is a holistic approach to the person, (...) an identity component, essential*" (IT_3); "*it is important because it is a dynamic aspect of health in general*" (PTS_8); "*It is not only important for health professionals, but also for all areas (...) that must consider these aspects because they are relevant for the construction of personality and socially balanced individuals*" (PTE_1). Not only that, a teacher at the University of Santarem reports: "*It is very important to address this issue of sexual health, especially in the area that is maternal and obstetrics health (…) Every health professional should know how to deal with these issues very well*" (PTS_2); "*It is very important since the patient is a biopsychosocial being*" (ES_2, ES_4, ES_7; ES_12).

3.3. Integration in the study plan

Sexuality education is part of the study plan of the nursing degree course, in some universities and others where it is not. Which allows us to say that within the theme, integration in the study plan we have the sub-theme, integrates the study plan, and does not integrate the study plan.

When integrated into the study plan for the curriculum, it can be discussed across many different courses, and can use theoretical

TABLE 1 Sociodemographic characteristics (n=45).

Variables		*N*	%
Interviews	University Castilla La Mancha – Spain	12	26.7%
	University of Évora – Portugal	12	26.7%
	University of Santarém – Portugal	11	24.4%
	University of Modena and Reggio Emilia – Italy	10	22.2%
Age	20–30	3	6.7%
	31–40	14	31.1%
	40–50	22	48.9%
	>51	6	13.3%
Gender	Male	17	37.8%
	Female	28	62.2%
Qualification	Bachelor Degree (1° cicle)	6	13.3%
	Master	7	15.6%
	Master Degree (2° cicle)	16	35.6%
	PHD	16	35.6%
Workplace	University	25	55.6%
	Hospital/University	3	6.7%
	Hospital	13	28.9%
	Community nursing	2	4.4%
	Other	2	4.4%
	Total	45	100.0%

models of nursing, such as Nancy Roper's model that describes the activity of life - sexuality, or other specific curricular units, such as Child Health Nursing and Pediatrics, Maternal and obstetric health nursing, Elderly Health Nursing, and psychology. "*This kind of topic is addressed*" (IT_1; ES_6; ES_9); "*The issue of sexual education is part of the curriculum, when we address human needs, we have Nancy Roper's Theoretical Model as a reference, which addresses the life activity Expressing Sexuality and there the issue of sexuality is addressed. This issue can be addressed in all curricular units, since it is recommended to address all activities of life, according to this model, whether in the UC of Nursing in Women's Health, or in the UC of Nursing in Elderly Health or other*" (PTE_3); *"At the level of the maternal and obstetric health specialty, yes!"* (PTS_3).

There are universities that do not address sex education, but professors consider it to be important, in these places it may still not be valued. *"I do not think it is valued enough to be part of the curriculum, but it should be. In the nursing course I think it should be a compulsory subject"* (PTE_6, PTE_9, IT_4).

3.4. Contents

Regarding to the content theme, we can say that it has several sub-themes (1) gender issues; (2) ethical dimension of sexuality; (3) Contraceptive methods and sexually transmitted infections; (4) Violence; (5) Emotions and affections; (6) Body Image and female genital mutilation.

In Italy and Portugal the issue of gender-based violence is worked on adults and children (IT_1, IT_3, PTE_4, PTE_5), "*I try to sensitize students on the topic, not only because they are involved in the assessment, but also to raise awareness of what can be premonitory signs, being a spokesperson for the peer group*" (IT3); *"this school has several important works, works associated with the Ministry of Education that are related to gender identity issues, so it is a school that is very used to dealing with these themes in which there is also an intersection with sex education"*(PTS_10).

The ethical dimension of sexuality is reported by a couple of interviewees: an Italian teacher states that ethics "*concerns the dimension of modesty and respect for the dignity of the other*" (IT_3). From the University of Evora, a reflection is made on the awareness of the student in this regard: "*I make students aware of aspects that are not directly related to sexuality, but are sexuality,* e.g., *when we ask for the patient's consent for hygiene care (hygiene of the genital organs)*" (PTE_5). In considering the experience of the person, reference is made to the patient, the professional (IT_2), but also the issue of gender equality (PTS_10); "*What we have now seen with some regularity and more often are, for example, (…) couples of 2*

TABLE 2 Thematic analysis.

Theme	Sub-theme	Register unit
Importance of education for sexuality	(1) Is important	IT_1, IT_2, IT_3, IT_4, IT_5, IT_6, IT_7, IT_8, IT_9, IT_10, PTS_1, PTS_3, PTS_5, PTS_10, PTS_11, PTE_1, PTE_2, PTE_3, PTE_4, PTE_5, PTE_6, PTE_7, PTE_8, PTE_9, PTE_10, PTE_11, ES2, ES3, ES_7, ES_12
Integration in the Study Plan	(1) Is part of the study plan (2) Isn't part of the study plan	IT_1, ES_6, ES_9, PTE_3, PTS_3 PTE_6, PTE_9, IT_4
Contents	(1) Gender issues; (2) Ethical dimension of sexuality; (3) Contraceptive methods and sexually transmitted infections; (4) Violence; (5) Emotions and affections; (6) Body Image and female genital mutilation.	IT_1, IT_3, PTE_4, PTE_5, PTS_10 IT_3, PTE_5, IT2, PTS_10, PTS_2 PTS_4, PTS_9, IT10, ES4, IT_1, PTE_4, PTE_5 PTE_3, PTE_4, PTS_10 IT_3, IT_4, IT_6, IT_7, PTE_4, PTS_1, PTS_4,
Barriers	(1) Level of education (2) Taboo subject (3) Students' knowledge and reactions (4) Cultural and religious issues (5) Lack of time to address sexuality education (6) Professional aspects	IT_3, IT_4, PTE_6, PTS_3, ES_5, PTS_11, PTS_9, PTS_4 IT_1, IT_5, ES_1, ES_6, PTS_3, PTS_4, PTS_8, PTS_9, PTE_3 IT_1, IT_2, IT_3, PTE_1, PTE_2, PTE_4, PTE_5, PTE_6, PTS_1, PTS_8, PTS_9, PTS_11, IT_3, PTS_3, PTE_5 IT_1, IT_3, IT_7, IT_9, IT_10, ES_2; ES_4, PTS_1, PTS_2, PTS_3, PTE_ 3, PTE_8 PTS_2, PTE_1, IT_2, PTE_5, PTS_11,
Teacher's attitude	(1) Feeling comfortable (2) Discomfort	IT_9, IT_10, ES_5, ES_6, ES_7, ES_8, ES_9, PTE_3, PTE_4, PTE_6, PTE_7, PTE_11, PTE_12, PTS_1, PTS_2, PTS_3, PTS_6, PTS_7, PTS_8, PTS_9, PTS_10, IT_5, ES_2, ES_4, ES_10, ES_11, ES_12, IT_7, PTE_8, PTE_9, PTS_2 IT_1, IT_2, PTS_6, IT_4
Teacher training	(1) Comparison between colleagues (2) Specific training or expertise (3) Importance of continuous updating of knowledge, both subject-specific and pedagogical strategies	IT_2, PTS_4 IT_2, IT_3, IT_4, IT_5, IT_6, ES_1, ES_2, ES_3, ES_4, ES_5, ES_6, ES_7, ES_8, ES_9, ES_10, ES_11, ES_12, PTE_2, PTE_7, PTS_3, PTS_5, PTS_6, PTS_7, PTS_9, PTS_10 IT_5, IT_9, PTS_9, PTS_11, ES_5, ES_12, PTE_8

women who show up to have children, for example, which is an issue that is starting to be seen nowadays more often and that requires openness and respect on our part like any other type of couple and especially when we have students we try to instill in them this way of dealing with people who have to be the same as everyone else respect the sexuality of all people and provide the best possible care in any of the situations" (PTS_2).

Sexually transmitted diseases are covered in depth in terms of diagnosis, prevention, and treatment by all the universities involved, in the same way as pregnancy and contraception. *"Other aspects of sexuality… STIs, unwanted pregnancy and contraception*" (PTS_4); "*… methods of contraception (…) I think especially for 2 years and more on sexual and reproductive health, infectious diseases*" (PTE_9); "I teach Sexually Transmitted Diseases, prevention practices, diagnosis and treatment of STDs" (IT_10, ES_4).

Addressing topics such as domestic violence and dating violence."*…because unfortunately there are, to mistreatment, so I do this about this(…) also the sexual injury that can be done and how to stem it, on the child depending on the age and which communication strategies maybe to use,(…) in gynecology, where there is often a direct access where there are abuses and therefore we enter this aspect, which is always part of this sexual sphere where you go to harm the person*" (IT_1); "(...) *we talk about violence in the relationship and address the various forms of sexual violence.*" (PTE_4; PTE_5).

The part concerning the student's emotions at stake is reported under several headings: "*Students address the subject related to emotional caresses*" (PTE_3); and "*We talk about principles, values, and affections, before addressing sexuality itself*" (PTE_4); *"I know that other psychology colleagues addressed issues related to values, attitudes, including values and attitudes associated with sex education and also gender equality.*" (PTS_10).

Some interviewees refer to the cultural aspect of sexuality concerning anthropology (IT_6, IT_7, PTE_4), with specifics related to female genital mutilation (IT_3, PTS_4). *"Female genital mutilation that we thought was important we integrated into our curricular unit (…) it cannot be just for maternal and obstetric health nurses; it has to be for all nurses because mutilation is not identified only in the delivery room*" (PTS_4). About body image, it is addressed in nursing of surgical specialties, in the case of mastectomies, hysterectomies, etc. *"(…) example in the disturbance of the body image, citing a woman in a mastectomy for example, the importance of the reconstruction, however, the restoration of the body image also from a personal point of view but also from a relationship point of view*" (IT_4); *"When let us go to the surgery area, for example, one of the dimensions that I remember, is the care for people with ostomies and who have a colostomy bag, in the dimension of the preparation for the return home that is done from the first day, the questions of sexuality must be addressed with the couple and worked on effectively. While the professional must work on the issues of skin care, he must have the same type of care appreciation in all dimensions. This care must be integrated; it cannot be torn apart. The person's experience of sexuality is part of their life; it cannot be a separate drawer"* (PTS_1).

3.5. Barriers

Although many teachers report that they have no problems in dealing with the topic (IT_5, IT_6, IT_8, IT_10, ES_3, ES_5, ES_8, ES_9, ES_10, PTE_1, PTE_9, PTE_10), awareness of the possible barriers is many and common to all countries. The first, in chronological order, related to the first level of education, that is, the school path before university, which should introduce the topic (IT_3, IT_4, PTE_6, PTS_3), starting with body awareness (ES_5). Dealing with the topic at school, in addition to how it is dealt with in the family, brings added value: "*school speaks in technical terms (...) it has a pedagogical organization*" (PTS_11) and *"at the level of civic training*" (PTS_9). It is widely recognized that it is more difficult to deal with adolescents than with nursing students (PTE_4).

More generally, on a socio-cultural level, sexuality is still referred to as a (2) taboo subject: "*in our reality, there is still a taboo on sexuality in general*" (IT_1) and this is reported by all countries (IT_5, ES_1, ES_6, PTS_3, PTS_3, PTS_4, PTS_8, PTS_9). "*Sometimes we ask a question, but we perfectly feel that the person is ashamed or does not want to talk*" (PTS_3); "*In the case of health professionals, I think that a barrier they may encounter when addressing the issue may be that it is considered a taboo subject, and that is why clients/patients do not open up the issue*" (PTE_3); *"(Difficulty?) Yes, I believe in those somewhat conventional paradigms of the taboo, because in our reality there is always a taboo, sexuality in general. (…) perhaps the taboo, the grinning happens every now and then* "(IT_1);

"Break taboos with sex in the climacteric and old age" (ES_6).

Among the barriers related to (3) students' knowledge and reactions, the primary barrier is related to the difficulty in tackling the topic (IT_1, IT_3, PTE_1, PTE_2, PTS_5, PTS_9), especially about the age of the target population (PTS_5, PTE_6). While awareness and openness to different orientations of sex are recognized (PTS_11), it remains difficult to address the specific issues: "*often young people go to seek knowledge in their relational groups in schools (…) or with "Dr. Google" (…), subject to bad information (…), to deviations that are not healthy*" (PTS_11, PTS_8); "*Sometimes the fact that the student has low participation can be a barrier, because the student is afraid of sharing more intimate matters, they are afraid of bullying, of cyberbullying, so we have to be sensitive and accept the difficulties of the students.*" (PTE_4); *"It is difficult to capture the attention of the students"* (ES_7). In general, there is great difficulty in sharing issues related to sexuality, even if they are related to traineeship experiences (PTE_4, PTE_5).

Also, in the approach to sexuality in clinical training contexts, the difficulty emerges related to the sense of modesty and the difficulty of touching the body of the person, who is often elderly (IT_2). If the topic is introduced in the first year, without a direct correlation or experience with clinical practice, the student risks not understanding its meaning (PTS_1). *"Some of the dimensions of sexuality are worked on, for example, in the first year, in Fundamentals of Nursing I... they are part of the program, it is not always easy, students later understand how these areas are important aspects to be integrated later..."* (PTS_1).

Cultural and religious issues (4) are also a barrier identified in sexuality education. The cultural and religious diversity of patients to whom the nurse provides care, influences their sexual practice. *"But I would say that, as I said before, it is really a question, precisely cultural, where the awareness of the potential of sexuality has not yet matured(...) we need to free ourselves from our point of view, I would say cultural in relation to traditions*" (IT_3); *"We currently have an added difficulty, which is cultural issues, I have many migrants in my workplace. Issues of contraception, for example, must be addressed across cultures and very differently"* (PTS_3); *"It can come from an environment, or from a religion, from a paternalistic family, which does not facilitate the conversation about sexuality.*" (PTE_5).

The (5) lack of time to address sexuality education is mentioned in the four countries (IT_1, IT_3, IT_7, IT_9, IT_10, ES_2; ES_4, PTS_1, PTS_2, PTS_3, PTE_ 3, PTE_8). *"There is not much time to develop this topic, since the subjects have a very concentrated"* (ES_4); *"The time usually ends up being more limited for these types of approaches and for these types of issues that often pass a little to the side"* (PTS_2); *"…during clinical teaching, not only the subject of sexual education is addressed. So many more topics are covered, and I end up not having time to explore sex education and the importance of teaching sex education."* (PTE_8). Despite this lack of time, one respondent reports: "*Time is something that we do not have enough of, but I usually say that when we want it and when it becomes important, if we feel that it is very important to address this issue, I think that everyone can find a curriculum to start addressing these issues*" (PTE_10).

The professional aspects (6) related to the education and comfort of professionals are also described as a barrier. *"Sometimes they are not awake to address issues related mainly to these new complexities, that revolve around sexuality and that are more in evidence today, the issue, for example, of non-binary, binary people, all these new concepts that arise today and that I believe that many health professionals and many people in education do not have knowledge or sometimes do not feel comfortable addressing these issues"* (PTS_2); "*The teacher has to feel comfortable with this theme, he has to say, he has to prepare himself adequately to teach this theme. (...) They need to equip themselves with tools and strategies that allow them to connect to the student.*" (PTE_1). The issue of the barrier related to the sex/gender of the teacher appears less frequently but is mentioned by more respondents (IT_2, PTS_2): **"***the fact that nursing is mainly female students, teachers, especially male teachers, may have difficulties in dealing with certain questions from these young women*" (PTE_5). An interview refers to the issue from a gender diversity perspective: "(…) *now in the approach of new typologies, (…) everything that is linked to gays, lesbians, transgender (…) the type of language that must be used, the acceptance of these situations. (...) there are health professionals who still do not understand these new typologies well (…) there are colleagues [pediatric nurses] who often use political correctness (…), they feel embarrassed to talk about these issues*" (PTS_11).

There are interviewees who do not identify any barriers in approaching sexuality education (IT_5, IT_6, ES_3, ES_5, PTE_1). *"I do not find it difficult to teach sexual education"* (ES3); *"So far, I have not identified any, it is easy to work on this topic with students of this educational level (undergraduate)* (PTE_1).

3.6. Teachers' attitudes

The vast majority of respondents report (1)feeling comfortable dealing with the topic (IT_9, IT_10, ES_5, ES_6, ES_7, ES_8, ES_9, PTE_3, PTE_4, PTE_6, PTE_7, PTE_11, PTE_12, PTS_1, PTS_2, PTS_6, PTS_7, PTS_8, PTS_9, PTS_10): "*I consider that I have bases to help in this orientation, I happen to deal well with this subject, I have no problem, I have no shame, it is an area that I enjoy working*" (PTS_3). One lecturer reported promoting classroom discussion and debate with students (PTS_10). Some lecturers link this to the fact that they treat the topic by relating it to specific clinical contexts (IT_1, IT_4, IT_7, PTE_3, PTE_5, PTS_1, PTS_9).

Some state that they have no difficulties, although they have never dealt with the topic, and declare themselves open to this possibility (IT_5, ES_2, ES_4, ES_10, ES_11, ES_12). Some lecturers correlate this with specific training and years of experience (IT_7, PTE_8, PTE_9, PTS_2) or state lack of and need for specific training (IT_8, IT_9); one lecturer correlates this element with the fact that he is a white heterosexual male (IT_6), contrary to an interview reported earlier.

One of the elements reported as facilitating is the introduction of the topic from a specific request/problem of the students (IT_2), also with an accompanying approach to the growth of future professionals (IT_3).

One teacher report: "*It is not so difficult to work on sexual health issues with students, it is often difficult to try to pass on to students what was difficult for me, to answer without my judgment of value being present and which helped me to deconstruct and arrive to what I am today* (PTS_1).

The aspects reported as (2) discomfort refers to aspects already dealt with: the lack of correlation to the clinical care (IT_1, IT_2), lack of specific teacher training (PTS_6), the age of the teacher (very distant from students) (PTS_6), or topics related to individual affectivity (IT_4). *"I personally would find it difficult to talk about the more psychological aspects or those related to affectivity, personal experience, rather than difficulties of a sexual or relationship nature"* (IT_4); *"Maybe I need to deepen some knowledge, I will not say no. Even in the way of approaching them, because it is a difficult topic to approach (…) Personally, I think it is a difficult topic for some professors to address… the older ones and for the students"* (PTS_6).

3.7. Teacher training

In the topic of teacher training, some of the elements already mentioned above emerge. Some teachers share the need for a (1) comparison between colleagues, within their university (IT_2, PTS_4), to follow "*a common thread in dealing with this type of topic in the three years of the course, also in the awareness that sexual health has many aspects*" (IT_2).

More generally, teachers perceive the need to involve other professionals with (2) specific training or expertise (IT_2, IT_3, IT_4, IT_5, IT_6, ES_1, ES_2, ES_3, ES_4, ES_5, ES_6, ES_7, ES_8, ES_9, ES_10, ES_11, ES_12, PTE_2, PTE_7, PTS_3, PTS_5, PTS_6, PTS_7, PTS_9, PTS_10), in order not to trivialize the meaning of training (IT_4). "*I do not think I would already be willing to give. First, I must educate myself and know what I can talk about, then, based on that, I can go on to the subject in question. Now, I do not feel ready* (…)" (PTE_10).

This expertise could be clinical (e.g., nurses working in dedicated services, midwives) (IT_1, IT_4, IT_5, ES_2, ES_3, ES_4, ES_5, ES_8, ES_10, ES_12, PTE_12, PTS_9, PTS_10), communicative (PTS_3), intercultural/anthropological (IT_3, ES_5, PTS_11), psychological and sociological (IT_6), about public health (IT_5) or human sexuality (Level II training) (PTS_8, PTS_9, PTS_11): "*…this topic was taught by a professor with a doctorate in particular on human sexuality and that was a great asset because she had a good body of specific knowledge (…). I believe that it is an asset, if possible, for the people who teach to be close or connected to this area*" (PTS_8). About the communication, one teacher reported: "*Nurses must be prepared, able to have*

appropriate language, so that the couple feels free to clarify any doubts they have about sexuality" (PTS_4). A broader look at the topic suggests: "*now we are expanding more because of the goals of sustainable development, there are also more topics that future teachers have to receive in their training*" (PTS_10).

One aspect reported is the (3) importance of continuous updating of knowledge, both subject-specific (IT_5, IT_9, PTS_9, PTS_11) and pedagogical strategies (IT_9, ES_5, ES_12, PTS_9, PTS_11): "*Even the approaches themselves tend to evolve very fast (...) one is up to date (...) a person who is used to doing research on sexuality (…) with a vision more scientific about the situation*" (PTS_11). "(…) *Is a subject that is constantly evolving, constantly changing and we have to learn new techniques and develop new skills*" (PTE_8).

While recognizing the need for collaboration, one teacher reflects on the risk of compartmentalization of nursing (IT_2). To this reflection, he/she adds: "*it is a dimension that is multifactorial, so I think it requires the integration of different knowledge aspects from different disciplines, precisely also because of the delicacy of the thing. (...) it does not detract from the importance of specific teaching and training which, also because of the area related to a series of taboos, cultures,* etc.*, certainly calls for a multiple knowledge approach*" (IT_3). Some teachers report feeling prepared on the contents but having difficulties with the pedagogical strategies suggested to better deal with the complexity and delicacy of the topic (ES_2, ES_3, ES_4).

4. Discussion

The importance of the inclusion of sexuality in nursing curricula is beyond dispute [World Health Organization (WHO), n.d.]; all the participants in the study agreed on this aspect as an identity component of the person and therefore indispensable for holistic care. Despite this certainty, many nurses do not feel comfortable with sexuality (Martel et al., 2017) and the main risk of this aspect is that the dimension is not addressed in the clinical setting (Moore et al., 2013; Krouwel et al., 2015; Jonsdottir et al., 2016).

The study shows that nursing education devotes little attention to sexuality, which is dealt with in specific moments, within individual teachings, and that teachers do not always have an overview.

The elements developed and reported are diverse and refer to different aspects, not only clinical care. Among the general topics are the meanings of sexuality and, considering them with a double sociological and clinical valence, cultural specifics, and gender-based violence. Among the more health care specific topics, we find gender medicine, sexually transmitted diseases (Buston et al., 2002), female genital mutilation, contraceptive methods (Buston et al., 2002), body image disturbance, and ethical assistance aspects that are part of needed sexuality education. In general, no specific disciplines emerge, but a wide variability of topics becomes part of individual teaching modules, without any real program coordination (Roberto et al., 2007), and which remains managed by the individual teacher. Although the added value of the cross-curricular subject matter is repeatedly reported, the risk of compartmentalization of knowledge is highlighted. Several studies in the literature emphasize the importance of an increased focus on sexuality, as it not only creates knowledge and skills but also helps professionals feel more comfortable dealing with such a complex and sensitive topic (Kirby et al., 2007; Coleman et al., 2013; Baggio et al., 2015; Turner et al., 2016; Beebe et al., 2021).

The barriers that emerged from the study are diverse and attributable to students, lecturers, and the institution. Added to these is the sociocultural barrier that struggles to eliminate the conception of the subject as forbidden, despite a great openness in recent years on the part of the younger generation. In this regard, because sex and gender diversity is an abundantly debated and daily topic, especially in the media, there remains the difficulty of considering sexuality to be important related to illness and the elderly person, especially among the young students in our nursing education programs.

The main barrier related to the teacher appears to be the lack of specific training, both about content and teaching strategies, as already reported in the literature (Ninomiya, 2010; Cohen et al., 2012; Mkumbo, 2012; Klaeson et al., 2017; Rose et al., 2018). It is important to point out that these elements appear to be closely related to the teacher's ease in dealing with the topic (Cohen et al., 2012). Although most of the respondent's report feeling comfortable, it is necessary to underline the fact that part of the sample has never dealt with the topic, even if they declared themselves open to this possibility.

Among the institutional barriers, the lack of time appears to be the main one in all the countries involved in the study and is in line with the findings of the literature (Moore et al., 2013; Perez et al., 2013; Krouwel et al., 2015; Jonsdottir et al., 2016). This constraint should be seen because of what was previously noted, regarding the lack of general coordination at the curriculum and institutional level (Perez et al., 2013).

The study has limitations because it is a subjective approach, typical of qualitative studies, which makes it impossible to generalize its results. However, its contribution lies in the possibility of encouraging reflection among nursing professors on sexuality education, in order to create strategies that allow transforming the identified barriers into an opportunity to improve the quality of teaching on this topic.

5. Conclusion

Nursing professors consider sexuality education to be very important. In the vast majority, this topic is integrated into the study plan of the nursing course where they teach. The same can be integrated into specific disciplines, such as child health and pediatrics nursing, maternal and obstetric health nursing, psychology, etc., or it can be approached transversally in different curricular units, through the implementation of a Theoretical model, for example, with Nancy Roper's Theoretical Model, integrates sexuality education into the life activity "expressing sexuality." The most discussed contents within this theme are gender issues, ethical and cultural issues, sexually transmitted infections, violence, emotions and affections, alteration of body image and female genital mutilation.

The common barriers that teachers encounter when teaching content about sexuality are the students' education level, it being a taboo subject, students' knowledge and reactions to the topic, religious and cultural issues, time available to talk about the topic and related professional aspects. The subject, namely training on the subject and

the comfort of professionals. Despite these issues, teachers report that they feel comfortable approaching the topic of sexuality.

Teachers understand that to teach this theme, there must be a standardization of the way in which the content is taught. Teachers who teach sexuality must have specific training or specialization in the area, and they need a continuous updating of knowledge, either in relation to the specific content, or in relation to the pedagogical strategies.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Ethics statement

The studies involving human participants were reviewed and approved by Research Ethics of University Castilla-La Mancha (UCLM). CAU-661803-V4Z4. The patients/participants provided their written informed consent to participate in this study.

Author contributions

CG and DM: conceptualization. EC and FF: data curation. MB-R and SP: formal analysis. SG-C: funding acquisition. MLF and CG: investigation. FF and MB-R: methodology and validation. DM and SG-C: project administration and visualization. MLF and EC: resources. CG: software. SG-C and SP: supervision. MB-R and SG-C: writing—review and editing. All authors have read and agreed to the published version of the manuscript.

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The impact of health volunteering of radiology students on improving their self-skills and practical capabilities in the Kingdom of Saudi Arabia

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Background: Volunteering is a beneficial activity with a wide range of positive outcomes, from the individual to the communal level. In many ways, volunteering has a positive impact on the development of a volunteer's personality and experience. This study aimed to evaluate the impact of health volunteering on improving the self-skills and practical capacities of students in the western region of the Kingdom of Saudi Arabia.

Materials and methods: The study was a descriptive cross-sectional electronic web-based survey that was submitted on a web-based questionnaire; 183 students answered the survey, and then, the data were analyzed using SPSS.

Results: This study shows that 95.6% of participants agree and strongly agree that the health volunteering experience was useful, 2.7% of the participants neither agree nor disagree, and 1.6% disagree and strongly disagree. Regarding the distribution of the participants on skills learned from volunteering experience, the largest proportion of student (36.1%) volunteers in the health sector acquired communication skills and the smallest proportion of student (14.8%) volunteers in the acquired time management skills. Regarding the disadvantages, 81.4% of the participants do not think there were any disadvantages to their previous health volunteering experience, while only 18.6% of them think there were any disadvantages to their previous health volunteering experience. Additionally, the study found that the type of the sector affects the skills acquired from health volunteering.

Conclusion: Research revealed that the majority considered volunteering a great experience. Volunteering increased the self-skills and practical capacities of radiology students, which proved the hypothesis.

KEYWORDS

health volunteering, radiology students, self-skills, practical capacities, theoretical knowledge

1 Introduction

Philosophers and researchers have discussed the ideas that are making people feel happy and comfortable since ancient times and volunteerism is one among them. Volunteering is an activity where the volunteers spend their time free of cost to help another individual, organization, or cause. It is one of the beneficial activities that have a wide range of positive results, from a personal to a community level (1, 2). A volunteer is an individual who is socially aware, energetic, and enthusiastic about the world in general, as well as willing to make sacrifices for the good of others (3). In several regions of the world, student volunteerism as a method of community interaction is not only a crucial component of higher education's goal but also a requirement for graduation that plays a crucial role in experiential learning (3, 4). Volunteering is crucial for students and helps to develop their personalities, communication skills, and capacities because education alone cannot meet all of their needs to be successful and healthy students (5). Several categories of organizations such as welfare and community, sports, recreation, education, and training, all rely on volunteers. Although volunteering is meant to assist others, however, it also brings benefits to the volunteers and has recently been the subject of significant discussion (6, 7). Professional development, skill and knowledge growth, personality and fulfillment, and academic achievement are among the areas of influence, according to the literature (8). Students who volunteer are more capable, employable, and efficient in completing their academic objectives (3). The possibility to become competent and employable can be taken advantage of after finishing all the learning objectives (9, 10). The phrase "student volunteering" has been used to describe a variety of endeavors, including work with clubs and organizations and university service (ranging from environmental groups to photography, business, and sports centers) (6, 11). The health of a community and the continuation of civilization require volunteerism.

A young person's personality, character, identity, values, and drive can all be positively impacted by volunteering (12). It also gives them new opportunities to practice their communication and enhance their problem-solving and cooperation skills (13). The benefits of helping others are numerous and include improved personal wellbeing, decreased mortality, increased physical function, higher levels of self-rated health, less depressive symptoms, and higher levels of life satisfaction (14, 15). Volunteering can also offer a chance to hone job search strategies, as the process of seeking, securing, and applying for volunteer positions closely mirrors that of job hunting (16). According to a study, 59% of medical students at the National University of Ireland volunteer during pandemics (17). Medical students have demonstrated a strong drive to volunteer for medical-related causes. The possibility to interact with individuals from many cultures, a natural desire to give back, educational possibilities, the chance to advance one's clinical abilities (18), and the chance to collaborate with numerous healthcare professionals are among the main drivers (19).

On the other hand, medical students could encounter several obstacles that hinder them from taking part in volunteer work. Undoubtedly, psychological considerations are the most frequent of these obstacles (20). Most researchers around the world focus on the effect of volunteering on healthcare students, especially medical and nursing students (21). However, health volunteering has been recognized as an effective means of providing practical experience and enhancing the personal and professional development of students in various healthcare fields; there is no such research discussing the effects of volunteerism on the behavior, skills, and personal development of radiology students. In addition to this, no research has focused on the impact of health volunteering specifically on diagnostic radiology students in the western region of Saudi Arabia. This study may provide a rationale by examining existing evidence on the benefits of health volunteering for students in diagnostic radiology while highlighting the added value of conducting this research in the specified region. Therefore, the current study was designed to evaluate the effects of (i) health volunteering on improving the self-skills of students, (ii) health volunteering experience on practical abilities, and (iii) to demonstrate the advantages and disadvantages of health volunteering based on student perception.

This study holds several added values for the field of diagnostic radiology education and healthcare volunteering in the western region of Saudi Arabia. First, by specifically focusing on this region, the study will provide localized evidence on the impact of health volunteering on diagnostic radiology students. This will enable educational institutions and healthcare organizations in the region to tailor their volunteering programs focusing on the specific needs and contexts of the students and communities. Additionally, the study will contribute to the existing body of knowledge by highlighting the unique experiences and challenges faced by diagnostic radiology students in the western region of Saudi Arabia, thereby expanding the prevailing understanding of the impact of health volunteering in diverse cultural and healthcare contexts.

2 Methodology

2.1 Study design and population

The study was conducted in the western region of the Kingdom of Saudi Arabia because it attracts a diverse population, including

residents, pilgrims, and tourists. By focusing on the impact of health volunteering in this region, the study can shed light on the specific skills and competencies that students need to develop in order to effectively serve this diverse population.

The study was a descriptive cross-sectional electronic web-based survey. A web-based questionnaire was prepared (see Supplementary File) that dealt with the impact of health volunteering on improving the self-skills and practical capacities of students in the western region of the Kingdom of Saudi Arabia. The research study was conducted from February to May 2022. The questionnaire was distributed across the western region of Saudi Arabia through digital tools. All the radiology students were included in the study who have been involved in health volunteering anywhere in the western region of Saudi Arabia regardless of gender, educational level, and type of sector. The study sample size is 300, with 95 and 5% margin of error.

2.2 Hypothesis

Health volunteering may improve the self-skills and practical capacities of the students.

2.3 Data collection process

The data were collected using a data collection sheet (questionnaire) designed specifically for the study and submitted via the web for participant inclusion via an electronic survey (Google Forms). The questionnaire was accompanied by a cover letter outlining the objectives of the study, noting that participation was entirely optional, and providing the authors' contact details. If participants had any questions about the questionnaire, they were urged to get in touch with the researchers. The Google Forms questionnaire was disseminated through social media (Telegram, WhatsApp, Facebook, email, and Twitter) across the western region of Saudi Arabia as an electronic link. The participants often answered the survey by entering the response directly.

2.4 Ethical compilation

The Scientific Research Ethics Committee, reference number 2021/127/314/DRD, approved the research proposal. Informed consent was obtained from all participants prior to their voluntary participation in the study. The study does not contain any information that might be used to identify the participants.

2.5 Statistical analysis

Statistical analysis was carried out using SPPSS ver. 26.7, where a test of significance is applied through the use of ANOVA, a one-way analysis of variance. It is a statistical technique that divides the observed variance data into various components for use in further testing. ANOVA is used to find out how the dependent and independent variables are related when there exist three or more data groups within the study.

3 Results

Volunteering is one of the beneficial activities that have a wide range of positive results from a personal to a community level. A volunteer is someone who is socially aware, energetic, and enthusiastic about the world in general, as well as willing to make sacrifices for the good of others. In several regions of the world, student volunteerism as a method of community interaction is not only a crucial component of higher education's goal but also a requirement for graduation that plays a crucial role in experiential learning. A Google Forms questionnaire was sent to the radiology students. The questionnaire was answered by 183 students. Of 183 participants, 106 (57.59%) were female participants, while 77 (42.1%) were male participants (Table 1).

Moreover, 47.5% of the participants were from Almadinah Almunawara, followed by 36.1% from Jeddah, 7.1% from Taif, 6% from Makkah Al-Mukarramah, and 3.3% from Qonfotha. Similarly, the maximum number of participants, approximately 57.4%, volunteered for the Ministry of Healthcare Facility, followed by 36.6% for the government healthcare facilities (military and education), and 36.1%

TABLE 1 The demographic characteristics of the study participants.

Variables	Types	Frequency	Percentage
Gender	Female	106	57.9
	Male	77	42.1
	Total	183	100
Location	Almadinah Almunawara	87	47.5
	Jeddah	66	36.1
	Taif	13	7.1
	Makkah Al-Mukarramah	11	6.0
	Qonfotha	6	3.3
	Total	183	100
Sector	Private Healthcare	66	36.1
	Ministry of Health Healthcare	105	57.4
	Governmental Healthcare	67	36.6
	Total	238	130
Frequency of time	One time	64	35.0
	Two times	46	25.1
	Three times	45	24.6
	Three times+	28	15.3
	Total	183	100
Scope of volunteering	Within and outside of your specialty	70	38.3
	Within specialty	67	36.6
	Outside specialty	46	25.1
	Total	183	100

(the lowest) volunteered for private healthcare facilities. Furthermore, in the distribution of the participants on the frequency of volunteering time in the health sector, 35% of the participants have volunteered in the health sector only once, 25.1% of them have volunteered two times, 24.6% volunteered three times, and 15.3% volunteered more than three times (Table 2). In addition, 36.6% of the participants determined that it was within their specialty, followed by 38.3% who determined that it was both within and outside their specialty, and 25.1% of them determined that it was outside their main specialty.

In regards to the usefulness of health volunteering experiences, majority of the study participant 60.1% strangely agree and 35.5% agree that it was useful, while only 2.7% and 1.1% neither agree nor disagree and disagree respectively.

Table 3 demonstrates that 56% of them stated that they have gained practical skills, 24% of them stated that they have gained new skills, 13.7% of the respondents stated that they have gained theoretical knowledge, only 4% of them stated that they have gained many friends, and 2.3% of them stated other reasons, such as Table 4 illustrates that the primary justification for individuals who responded with "disagree" or "strongly disagree" was twofold: the lack of practical skills acquired and the absence of theoretical knowledge gained. Concerning the main skills that gained from health volunteering, the results shows that communication is selected by 36.1% of the study participants, problem solving selected by 29 %, then the leadership and time management selected by 20.2% and 14.8% of the study participants respectively.

Table 5 demonstrates that there is no relationship among the extent of benefit from the volunteering experience, gender ($p = 0.478$), academic year ($p = 0.759$), volunteer experience location ($p = 0.606$), number of times volunteered in the health sector ($p = 0.077$), experience in health volunteering ($p = 0.229$), number of healthcare facilities volunteered for ($p = 0.115$), longer duration of healthy volunteering experience ($p = 0.220$), and type of sector ($p = 0.338$).

TABLE 2 The usefulness of health volunteering for the study participants.

Question	Total frequency	Total percent
Strongly agree	110	60.1%
Agree	65	35.5%
Neither agree nor disagree	5	2.7%
Disagree	2	1.1%
Strongly disagree	1	0.5%
Total	183	100%

4 Discussion

There is no such research discussing the effects of volunteerism on the behavior, skills, and personal development of radiology students. The current study is designed to evaluate the effects of health volunteering on improving the self-skills and practical abilities of radiology students in the western region of the Kingdom of Saudi Arabia. Data collection through Google Forms is a reliable and convenient way of collecting data from students (22). As observed the study shows that volunteerism has a positive impact on and practical abilities of radiology students in the western region of the Kingdom of Saudi Arabia. In addition, 35% of the participants volunteered in the health sector one time only, 25.1% of the participants volunteered two times, 24.6% volunteered three times, and 15.3% volunteered more than three times. This study's results, shows that 57.9% of respondents were female, this result was compatible with those of Shi et al. and Boni et al., who found that the majority of study participants were female (12, 23). Moral obligation, individual interest, social commitment, and prosocial drive all have an impact on health professional students' desire to volunteer (6). In addition, 36.6% of the participants volunteered inside their main specialty, 25.1% volunteered outside their main specialty, and 38.3% determined that it was both within and outside their specialty. These results are in contrast with the studies conducted by Drexler et al. and Wymer et al., who reported

TABLE 3 The main reasons if the answer was "agree" or "strongly agree."

Questions		Strongly agree		Agree		Frequency	Percentage
		Frequency	Percent	Frequency	Percent		
Gained practical skills		65	37.14%	33	18.86%	98	56.00%
Gained new skills		25	14.29%	17	9.71%	42	24.00%
Gained theoretical knowledge		13	7.43%	11	6.29%	24	13.71%
Gained many friends		6	3.43%	1	0.57%	7	4.00%
Others	No experience	0	0.00%	2	1.14%	2	1.14%
	All answers were yes	0	0.00%	1	0.57%	1	0.57%
	Counted volunteering hours	1	0.57%		0.00%	1	0.57%
Others		1	0.57%	3	1.71%	4	2.29%
Total		110	63%	65	37%	175	100%

TABLE 4 The main reasons, if the answer was "disagree" or "strongly disagree.

Disagree or strongly disagree	Disagree		Strongly disagree		Frequency	Percentage
	Frequency	Percent	Frequency	Percent		
Did not gain practical skills	1	33.33%	0	0.00%	1	33.33%
Did not gain theoretical knowledge	1	33.33%	0	0.00%	1	33.33%
Total	2	66.7%	1	33.3%	3	100%

that most medical students wanted to volunteer during pandemics (24, 25). Moreover, 13.1% of the participants volunteered for more than three healthcare facilities, 19.1% volunteered for three healthcare facilities, 33.9% of the participants volunteered in one healthcare facility, and 33.9% volunteered in two healthcare facilities. Researchers reported that because of their loving, giving, and compassionate character, women were more likely to volunteer, but for a shorter time than male participants (26, 27).

The majority of students said that participating in volunteer work had tangible advantages, such as increasing one's sense of helping others directly, getting professional experience, and honing teamwork skills (28, 29). A large percentage of students agreed that health volunteering experience was useful and the reasons for those who agree were as follows: 56% of them stated that they have gained practical skills, and 24% of them stated that they have gained new skills; in addition, 13.7% of them stated that they have gained theoretical knowledge, only 4% of them stated that they have gained many friends. Moreover, 2.3% of participants emphasized other reasons for the importance of volunteering in healthcare, including the provision of relationships with others and the counting of volunteering hours in careers opportunity. These results are in line with earlier research (30–32). A minority of the study participants mention that that health volunteering was un-useful, with the primary reasons for that the heath volunteering not improve practical or theoretical skills for them. Additionally, approximately 90.2% of the participants advised a colleague to have their experience, and those who advised the colleagues to have their experience were those who gained many benefits from health volunteering and agreed that volunteering was a useful experience ($p = 0.000$).

This finding is consistent with earlier study showing the beneficail effects of health volunteering experinces on people's attitude and views about volunteering (33). The participants who reported gaining substantial benefits from their own volunteering experiences were more inclined to recognize the value and usefulness of such experiences. Consequently, they actively encouraged their colleagues to engage in health volunteering, potentially creating a ripple effect within their professional networks. In addition, two separate studies conducted by Ali et al. and Siqueira et al. reported that "The volunteering activities during the COVID-19 pandemic developed key skills from RCSI's medical curriculum, significantly fostered medical students' resilience and guided their career choices. Major areas of development included communication, teamwork, compassion, and altruism, which are not easily developed through the formal curriculum. A further area that was highlighted was the importance of evidence-based health in a pandemic" (34, 35). Additionally, it has been proposed that clinical exposure has a significant role in helping students become resilient and that volunteering during a pandemic enhances students' professional growth and helps them build a professional identity.

The strong association between personal benefits and the recommendation of health volunteering experiences to colleagues underscores the potential transformative effects of these experiences on individuals' self-perceptions, practical capacities, and professional development. Through health volunteering, diagnostic radiology students have the opportunity to enhance their skills, gain practical experience, and expand their understanding of healthcare delivery in diverse settings (36). These experiences can foster personal growth, increase self-confidence, and strengthen their commitment to serving their communities.

There was a perception of a lack of enthusiasm, personal health difficulties, a lack of protocol and understanding, and transportation issues (21). Regarding the main benefits, approximately 31.7% of the participants stated that gaining knowledge and understanding of other ways of life was the main benefit they gained, 28.4% of them stated to advance their career by improving their skills, 20.8% of them stated that they gain all the benefits of health volunteering, 10.9% of them stated to meet new people and build a community, and, finally, 8.2% of them stated to boost their self-esteem. Additionally, the study found that the type of sector affects the skills acquired from health volunteering ($p = 0.001$). Those who volunteered in the Ministry of Health facilities gained communication skills more than those who volunteered in private and governmental facilities, while those who volunteered in the private facilities gained problem-solving, leadership, and time management more than others. Those who volunteered in the governmental healthcare facility gained communication skills more than those in the private sector. Furthermore, the study shows that the sector also affects the benefits the students gain from health volunteering ($p = 0.008$). Those who volunteered in private healthcare facilities say that they gained knowledge and understanding of other ways of life, boosted their self-esteem, met new people, and built a community more than others who volunteered in the government and Ministry of Health facilities while those who volunteered in the ministry of health sector advance their career by improving their skills and gain all the benefits of health volunteering more than those in the private and governmental sectors. Those in the governmental sector gain benefits more than those in the private sector. Regarding the disadvantages to the previous health volunteering experience, 81.4% of the participants do not think there

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TABLE 5 The relationship between demographic data and the usefulness of the volunteering experience.

Question	Health volunteering experience was useful					*P*-value
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	
Gender						
Male	0	2	2	27	46	0.478
Female	1	0	3	38	64	
Academic year						
Fourth year	1	1	1	26	54	0.759
Intern year	0	1	1	18	21	
Second year	0	0	1	9	9	
Third year	0	0	2	12	26	
Volunteer experience location						
Almadinah Almunawara	0	1	2	35	49	0.606
Jeddah	1	0	3	20	42	
Taif	0	0	0	3	10	
Makkah Al-Mukarramah	0	1	0	4	6	
Qonfotha	0	0	0	3	3	
How many times have you volunteered in the health sector?						
One time	0	1	3	25	35	0.077
Two times	0	0	1	22	23	
Three times	0	1	0	8	36	
More than three times	1	0	1	10	16	
Scope of your experience in health volunteering						
Both	0	0	2	19	49	0.229
Within specialty	0	1	2	31	33	
Outside specialty.	1	1	1	15	28	
Number of healthcare facilities have you volunteered for						
1	0	0	3	24	35	0.115
2	0	1	1	27	33	
3	0	0	0	9	26	
More than 3	1	1	1	5	16	
Duration of your longest health volunteering experience						
2 weeks—1 month	1	1	4	39	42	0.220
1—2 months	0	1	1	16	36	
2—3 months	0	0	0	8	31	
More than 3 months	0	0	0	2	1	
What sector did you volunteer for?						
Private Healthcare Facility	0	1	1	18	46	0.338
Ministry of Healthcare	0	1	3	28	43	
Governmental Healthcare Facility	1	0	1	19	21	

were any disadvantages to their previous health volunteering experience, while only 18.6% of them think there were any disadvantages to their previous health volunteering experience and they mentioned many reasons.

Additionally, 94.5% of the participants agreed that health volunteering improves their confidence, while only 5.5% of them did not agree that health volunteering improves their confidence and they mentioned the following reasons: "confidence is something we get

through practicing our specialty in real life" and "I am confident in myself before I joined the volunteer field." These results are in line with the research conducted by Yeung et al., Proulx et al., and Lee (37–39), who documented that volunteering improved self-confidence and happiness. Finally, the study showed that volunteering in general has many benefits on a personal level, including social interaction, increasing self-esteem, and improving relationships with others, and this is similar to the result (40). Another study showed that most of the students agreed that they had a useful health volunteering experience and that they developed their self-skills and learned new things. This is similar to the results of Chawłowska et al. (41) and Silva et al. (42).

5 Conclusion

This study has been conducted to evaluate the impact of health volunteering on improving the self-skills and practical capacities of radiology students in the western region of the Kingdom of Saudi Arabia. The results of the study proved the validity of the hypothesis. A large percentage of students agreed that the health volunteering experience was useful, as they improved their self-skills, and practical capacities and gained knowledge. There was no significant correlation between the participants response concerning the usefulness of health volunteering with gender, academic years, frequency of volunteering in health sector, scope of experince in health volunteering, duration of volunteering and type of sectors in which they performed health volunteering.

6 Limitations

Although the study used an online questionnaire, which was prepared for focused groups and made it possible to reach a sizable number of participants, the cohort was relatively small. However, it must be emphasized that using such a strategy prevents objectively validating the facts. As such, the obtained results may not be generalizable to other volunteering medical students' groups.

Data availability statement

The original contributions presented in the study are included in the article/Supplementary material, further inquiries can be directed to the corresponding author.

Author contributions

AFA, ZH, NE, and AMA: conceptualization, resources, project administration, and funding acquisition. AFA, ZH, NE, IF, AO, AhA, AmA, MA, NA, RH, and BE: methodology. BE and AM: software. ZH: formal analysis. AFA, ZH, NE, IF, AO, AhA, AmA, MA, NA, RH, and BE: investigation and data curation. ZH: writing—original draft preparation. ZH, MK, and NE: writing—review and editing and supervision. MK and NE: visualization. All authors contributed to the article and approved the submitted version.

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Publisher's note

Supplementary material

The Supplementary material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/fmed.2023.1243014/full#supplementary-material

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Nursing students' knowledge regarding sexuality, sex, and gender diversity in a multicenter study

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Introduction: Sexuality is an integral part of development and personality, and is important in healthcare. Nurses are among the most representative healthcare professionals. For holistic and inclusive nursing care practice and to improve equality, human rights, well-being, and health of individuals, the curricula of nursing courses must integrate broad knowledge about sexuality and its diversity. This study aimed to identify and analyze nursing students' knowledge of sexuality, sex, and gender diversity. The present study was part of a multicenter study conducted in Europe.

Methods: Questionnaires were administered in three nursing schools to assess nursing students' knowledge (n = 75). Data processing was performed using Excel® software version 20 and IRaMuTeQ (R Interface pour les Analysis Multidimensionnelles de Textes et de Questionnaires) 0.7 alpha 2, allowing organization by category and subsequent thematic analysis using content analysis.

Results: The *textual corpus* "Nursing students' knowledge about sexuality in its diversity," was divided into two sub-corpus: "Students' perception of sexuality" and "Students' perception of gender identity," originating Class 6 "Eroticism" (14.23%) and Classes 4 "Sexual Orientation" (16.07%) and 3 "Heteronormative" (16.07%), the latter with greater proximity to each other and consequently to Class 6. Similarly, Classes 1 "Gender" (20.36%) and 5 "Cisgender" (12.14%) also presented a greater interrelationship between themselves and consecutively with Class 2 "Gender Identity" (15.36%).

Discussion: The analyses revealed that though nursing students possessed knowledge about sexuality and its diversity, this knowledge was elementary and did not reveal a sustained appropriation of concepts related to sexuality, sexual orientation, and gender diversity. For some questions, the absence of students' answers were noteworthy, and may be associated with their personal reservation in expressing themselves on this sensitive and intimate theme. To ensure diversity, inclusivity, and impartiality in nursing practice, it is imperative to change the curriculum plans of nursing courses to address the theme of sexuality during the training process of nurses in Europe.

KEYWORDS
sexuality, sex, gender diversity, sexual knowledge, nursing students

1 Introduction

The relationship of societies and individuals with human sexuality has been undergoing major changes, influenced by technical and scientific knowledge, and demographic and epidemiological transitions (Manandhar et al., 2018).

Sexuality is a natural part of human development and a component of each individual's personality. It includes several aspects such as sex, gender, gender identity, sexual orientation, eroticism, pleasure, intimacy, and reproduction (WHO, 2006). Sexuality is a subjective, dynamic, and complex experience influenced by biological, psychological, social, economic, political, cultural, legal, historical, religious, and spiritual factors (WHO, 2006; UNESCO, 2018), is a social construct shaped by cultural values, traditional beliefs, and social norms are expressed individually through thoughts, fantasies, desires, beliefs, values, behaviors, practices, roles, and relationships in various sociocultural contexts. Sexuality also refers to issues related to sexual and reproductive health, the use of technology, and the exercise of power in society (WHO, 2006; UNESCO, 2018). However, not all dimensions of sexuality are always experienced or expressed (WHO, 2006); some may be more evident than others and may be influenced by biopsychosocial processes that mark each stage of human development (UNESCO, 2018).

According to the World Health Organization (WHO), sex education for children and young people involves continuous learning about the cognitive, emotional, social, interactive, and physical aspects of sexuality, thus contributing to broader social changes, namely, incorporating education for citizenship and health (Picken, 2020).

The transition to higher education marks a stage in the lifecycle of young people with adjustments, changes, and multiple challenges. This transition is a path to professional achievement and social ascension, and promotes the expression of sexuality, new relational practices, and experiences driven by new academic experiences. Thus, the quality of sexual health of students in higher education acquires their own expressiveness. That is, along with the physical, emotional, and cognitive maturation changes to which young people are subjected to, there is exposure to situations of risk to sexual health resulting from risky behaviors, such as the consumption of alcohol, drugs, risky sexual practices (DGS, 2006; Firmeza et al., 2016), inadequate or absent guidance on contraceptive methods, and the prevention of sexually transmitted infections (STIs), with important emotional, organic, and socioeconomic repercussions (Moser et al., 2007).

In the search for full and secure sexuality and sexual well-being, sexual and gender diversity provide visibility to the broad and complex interaction of the various components of sexuality, namely, in the dimension of human freedom for any expression of affection and physical and emotional pleasure (WHO, 2006; UNESCO, 2018). By itself, the word sexuality has different meanings depending on the language, and when associated with strong sociocultural traits in the experience of sexuality, it is perceived that sexual behaviors are determined by diverse and sometimes distinct sociocultural norms of conduct between and within cultures (UNESCO, 2018).

Sexual and gender diversity imply knowledge of oneself in what one learns and incorporates throughout the process of change and maturation, desires and affections, behaviors, and ways in which each one presents oneself to others. It also requires broad information about concepts and terms related to the theme, awareness, and openness to the deconstruction of socially imposed and assumed prejudices and stereotypes, aiming at more inclusive societies where an egalitarian acceptance and respect for the other in their differences of identity and social role that they exercise, prevails.

International scientific evidence is consistent with the relevance of implementing student-centered sex education programs in schools adjusted to local ages and contexts (UNESCO, 2018). Educational programs offer knowledge and oriented information, positive and inclusive values, and skills to young people for a responsible practice of sexuality to make informed decisions about their sexual health (Mueller et al., 2008; Reis et al., 2011) and provide satisfaction, well-being, and quality of sexual life (DGS, 2006; UNAIDS, 2013; UNESCO, 2018). However, international technical guidelines on sex education target students aged 5–18 years (UNESCO, 2018; Cunha-Oliveira et al., 2021).

Thus, regarding sex education programs in the context of higher education, the evidence shows that they are especially centered on a biophysiological perspective, focused on the functioning of reproductive organs, devaluing sexual and gender diversity, and their practical and everyday needs (Gómez and Torres, 2015). Cunha-Oliveira et al. (2021), in theirs scoping review, on the approach to sex education from a gender perspective in youth education systems in Spain and Portugal, considering the legislation of both countries, concluded that the presence of an approach still to be consolidated, accompanied by political and legislative changes gradually implemented in both countries was based on the influence of the hegemonic social model: the patriarchal system. De Silva et al. (2019) added that, although the school environment contributes to changing the conception of sexuality, feelings such as shame and shyness persist in students, anchored in stereotypes and taboos. In a study of Portuguese nursing students, found a tendentiously conservative meaning in the role attributed to the female gender, resulting from the socialization process experienced where the role of family and religion were striking. Other studies on medical students and health professionals have reported that they did not receive sufficient education about sexual health and did not feel comfortable dealing with sexual problems (Beebe et al., 2021).

In the southern part of the European Union (EU), namely Spain, Italy, and Portugal, the teaching-learning process of nursing students advocates the acquisition of sexual competencies, through *"a standardized curricular dimension guided by a behaviorism based on a biological view of sexuality (...) approached from the perspective of reproductive health with scarce and outdated content that does not draw the attention of students"* (Soto-Fernández et al., 2023). A perspective that is not conducive, responsible, and healthy experience of one's own sexuality, does not contribute to the training of competencies and skills to support and assist the sexuality of those cared for (Sehnem et al., 2013).

In fact, the literature clearly highlights the importance of creating guidelines and intervention strategies for the sex education of young people in higher education, which favors continuity in the acquisition of healthy skills, values, and behaviors. A holistic and inclusive approach includes a reflective practice on attitudes and behaviors (Sehnem et al., 2013; Soto-Fernández et al., 2023) appropriate to sexual and gender maturity and diversity, sociocultural contexts, and new decision-making possibilities promoting satisfactory sexuality (UNESCO, 2018). Considering the strong sociocultural and religious influence on sexuality issues, transnational and transcultural studies on sexuality and gender provide deeper knowledge about cultural diversity, contribute to the reduction of risk behaviors to sexual and reproductive health, as well as favoring the development of the cultural competence of health professionals and the cultural adaptation of sexual health promotion programs (Barroso, 2018; Alarcão et al., 2022). Highlighted here are aspects that contribute to achieving the Sustainable Development Goals of the 2030 Agenda, namely, continued progress in sexual and reproductive health - Goal 3, achieving gender equality and empowering all women and girls – Goal 5, and strengthening the implementation of partnership actions between countries for sustainable development - Goal 17 (United Nations, 2023).

The present study is part of a collaborative and multicenter project, entitled "Educating in Sexuality: Advancing European Health," or "EdSeX," with the main objective of describing the teaching of human sexuality in nursing courses and analyzing the context in which these contents are contemplated. Partner universities for this project are: The University of Castilla-La Mancha, Toledo, Faculty of Physiotherapy and Nursing, Spain; The University of Évora, Nursing School of S. João de Deus in Évora, Portugal; The Polytechnic Institute of Santarém, School of Health of Santarém, Portugal; The University of Modena and Reggio Emilia, Italy; and, as a guest university, Seattle University in the United States (Soto-Fernández et al., 2023).

The present study refers to one of four results generated in this multicentric project, namely Outcome 2 – Open Educational Resource (OER-EdSeX) for Higher Education, intended for students of the degree in nursing at the universities involved (Soto-Fernández et al., 2023) and aims to identify and analyze students' knowledge about sexuality, sex, and gender diversity.

2 Materials and methods

This qualitative and descriptive study was a part of the workshop *OER-EdSeX, for Higher Education* (Soto-Fernández et al., 2023) as mention in the previous section.

Outcome 2 was organized into two training blocks, each of them subdivided into two modules: The 1st training module dealt with the main topic of *Covert Sexual Violence: Behind sexual consent?* and the 2nd training module addressed the topic of *Sexual Diversity: Validating emotions from sexuality.* The training blocks were developed in workshops and taught in the original language of each university, integrated into the project (Spanish, Portuguese, Italian, and English), with the intention of working on the foundations of healthy and holistic sexual education, with the student as the main protagonist and agent of health education. The EdSeX project predicted 10–30 participants for each partner university and 6 for the invited university. Nursing students were recruited through posters and in the classroom by a specialized faculty member (Soto-Fernández et al., 2023). The workshop was conducted between October and December 2022 in specific days, defined by each partner university, each with an approximate duration of 60–80 min.

With the aim of evaluating the knowledge obtained by nursing students who participated in the workshop, a questionnaire was prepared with the topics covered, since the questionnaire is a written recording instrument, properly planned to research the subject's data, through questions, referring to knowledge, attitudes, beliefs, and feelings (Vilelas, 2022). This way, data collection was performed through a mixed questionnaire with a combination of closed and open-ended responses, allowing free responses to the variables under study. The questionnaire was organized into three parts: (1) the first contained sociodemographic variables; (2) the second included questions assessing cognition, opinion (suggesting exemplification of a specific situation) and students' attitudes regarding the topics of sexuality, sex and gender diversity; (3) and the third part, focused on the domain of behavior/attitudes with statements of myths and realities about sexuality.

Participating nursing students completed the questionnaire after the workshop. The students were informed of the nature of the study, their time commitment to participate, and that there were no consequences for not participating. Written informed consent was obtained from all participants. The average response time of the questionnaire was approximately 15 min.

A total of 75 students from the 2nd, 3rd, and 4th year of the nursing degree were recruited through convenient sampling, which was representative of students from the Faculty of Physiotherapy and Nursing in Toledo, Spain; the Nursing School of S. João de Deus in Évora; and the Health School of Santarém in Portugal. Only students of 2nd, 3rd, and 4th year, were recruited since, the 1st year students would have had either little or no sexuality content or would not have started taking nursing classes yet. Students from the Universities of Modena and Reggio Emilia and Seattle Pacific University, as foreseen in the initial project, did not complete the questionnaire after the workshop; therefore, they were not included in this study.

2.1 Ethical considerations

This study was part of a multicenter research, and followed the Declaration of Helsinki. It was submitted and approved by the Ethics Committee of Social Research of the University of Castilla-La Mancha, Toledo, Spain (CAU-661803-V4Z4). All participants were informed about the nature of the study, and provided written informed consent.

2.2 Data analysis

Sociodemographic data and other closed questions were analyzed thru Excel® version 20 and the IRaMuTeQ Software (Interface de R pour les Analyses Multidimensionnelles de Textes et de Questionnaires) 0.7 alpha 2, which allows statistical analyses on textual corpus and on individual/word tables with the advantage of encoding, organizing, and separating information (19), was used for the textual data of the open questions (Camargo and Justo, 2018).A *textual corpus* is a set of texts to be analyzed (Camargo and Justo, 2018); in this case, it was applied to the questionnaire responses of nursing students.

For the analysis of the *textual corpus* of the present investigation, the Descending Hierarchical Classification (DHC) of the Reinert method was used. The text segments were classified according to their respective vocabularies, the set was distributed based on the frequency of reduced forms, and organized in an easily understandable and visually clear manner (Camargo and Justo, 2013; Camargo and Justo, 2018) through the grouping of statistically significant words and their qualitative analysis. Each interview was called an Initial Context Unit (ICU). The Elementary Context Units (ECU), in turn, correspond to the text segments that make up each class and are obtained from the ICU, presenting vocabularies similar to each other and different from the ECU of the other classes (Camargo and Justo, 2013; Camargo and Justo, 2018).

The present analysis of the *textual corpus* was carried out in 4 stages: configuration of the *textual corpus* to be analyzed through the transcription of the written questionnaires, complying with the procedures defined by the IRaMuTeqQ software; importation of the *textual corpus* of analysis; encoding of the initial text through its processing by DHC techniques; and the interpretation of the generated classes based on the dictionary of words and the use of the chi-square (χ^2) (Camargo and Justo, 2018).

After transcribing and reading the answers to the questionnaires, an analytical model composed of categories was built that corresponded to the word classes generated by IRaMuTeQ. Categories can be established as priori in the exploratory phase of the research or as posteriori after the research has been carried out (Bardin, 2016). In this study, we established *a posteriori* analytical category, which was analyzed and interpreted using the thematic analysis technique of the content analysis method (Bardin, 2016; Vilelas, 2022).

3 Results

The sample consisted of nursing students ($n = 75$) from the two countries included in the multicenter study (Spain and Portugal), with an average age of 26 and 21 years respectively, attending the 2nd ($n = 21$), 3rd ($n = 34$), and 4th ($n = 19$) years of the program (Figure 1). The majority were female (89.3%), reflecting the trend at EU level with regard to students enrolled in higher education as can be seen in the 2021 statistical data, by teaching area, with women (72.0%) are mostly enrolled in the area of Health and Social Protection (Fundação Francisco Manuel dos Santos and Pordata, 2023). Nursing is a career widely chosen by women, associated with its nature of caring and imparts social attributes associated with femininity, generating prejudices in populations and in students' choices, namely the risk of being devalued professionally (Sim-Sim et al., 2022).

The *textual corpus* consisted of 75 ICU, corresponding to all applied questionnaires, and 312 ECU of which 260 text segments were used, which corresponds to 83.33% of the total textual corpus. An index of 75% or more is considered a good use of ECU (Camargo and Justo, 2018; de Souza et al., 2018).

From these ECUs, of the DHCs, six classes emerged, which represent the segments of the text classified according to their respective vocabularies, considering the analysis of the words that presented a χ^2 value greater than 3.84 and $p < 0.0001$, aiming at its significance and reliability (Camargo and Justo, 2013; Camargo and Justo, 2018; de Souza et al., 2018) (Figure 2).

Figure 2 illustrates the DHC dendrogram, allowing us to understand the expressions and each of the words enunciated by the participants, analyzing them from their places and social insertions (Camargo and Justo, 2018). Reading from left to right, it presents the distribution moments that were conducted in the *textual corpus* and their relationships until the final classes emerged. In the first distribution, the *textual corpus "Nursing students' knowledge about sexuality in its diversity,"* was divided into two sub-corpuses: *"Students' perception of sexuality"* and *"Students' perception of gender identity."* In a second instance, both sub-corpuses were subdivided into tree others, originating Class 6 "Eroticism" (14.23%), Class 4 "Sexual Orientation" (16.07%) and Class 3 "Heteronormative" (16.07%). Classes 3 and 4 have a greater proximity to each other and consequently to Class 6. Similarly, Class1 "Gender" (20.36%) and Class 5 "Cisgenders" (12.14%) also presented a greater interrelationship between themselves and consecutively with Class 2 "Gender Identity" (15.36%). The DHC ended here with the stabilization of the six classes composed of ECU with similar vocabulary, which is the result of a selection carried out automatically by the software, thus avoiding any bias of the researchers in the selection of contents. Data from emerging classes/categories were interpreted using the thematic analysis technique of content analysis (Bardin, 2016). Content analysis is a set of communications analysis techniques, through systematic and objective procedures for describing the content of messages. Often used as a diagnostic tool, in order to make

Country		Gender		Degree Year			$\tilde{x}$ Age
				2nd	3rd	4th	
Portugal	Santarém	Female	13	4	1	8	21 years
		Male	2	0	0	2	
	Évora	Female	21	12	4	5	
		Male	2	1	1	0	
Spain	Toledo	Female	33	4	24	5	26 years
		Male	4	0	4	0	
Total					75		

FIGURE 1
Demographic distribution of students by country, year degree, and gender.

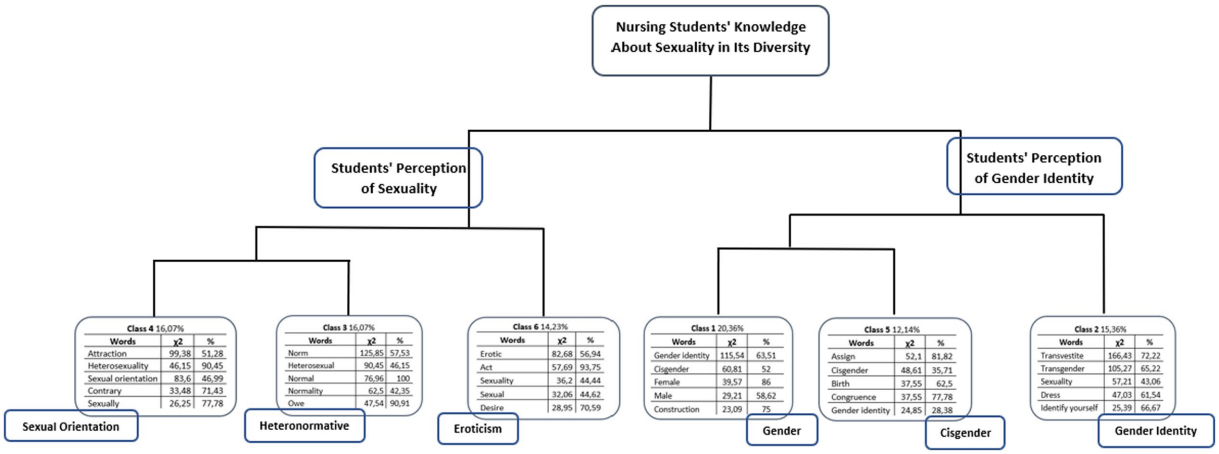

FIGURE 2
Dendrogram of descending hierarchical classification with partitions and research corpus content. Source: research data from IRaMuTeQ.

specific inferences or causal interpretations about a given aspect to be investigated, based on the frequency of appearance of certain elements of the message (Bardin, 2016).

4 Discussion

Based on the objective of this study to identify and analyze students' knowledge about sexuality, and sexual diversity, we present an interpretative analysis of the *textual corpus*: *"Nursing students' knowledge about sexuality in its diversity."*

4.1 Students' perception of sexuality

The sub-corpus *students' perception of sexuality* comprised classes/categories pertaining to knowledge about the concepts of sex, sexuality, sexual orientation, heterosexuality, and eroticism. From these emerged Class 4 "Sexual Orientation" (16.07%), Class 3 "Heteronormative" (16.07%) and, Class 6 "Eroticism" (14.23%).

Class 6 (14.23%), farther from the rest, represented the students' perception of the concept of sex, through the expression of eroticism, through words, erotic (56.94%, $\chi^2$82.68), act (93.75%, $\chi^2$57.69), sexuality (44.44%, $\chi^2$36.2), sexual (44.62%, $\chi^2$32.06), and desire (70.59%, $\chi^2$28.95). Although sex refers to anatomical and other biological differences between men and women that are determined at the time of conception and intrauterine development (Rubin et al., 2019; Costa-Val et al., 2023; Ludwig et al., 2023), not all students have this understanding of the concept.

> *Biological dimension that includes the external and internal sexual organs, chromosomes and basically, is the sexual act (P7).*
> *It is the act performed by two people who relate and act for pleasure or for reproduction (P19).*
> *On the one hand, I understand sex referring to the biological, I mean, if the reproductive system you are born with is female (vagina) or male (penis). On the other hand, I understand sex as the sexual act between two or more people (P32).*

Most students understood the concept of sex as only a physical act or sexual intercourse. Sexual acts and sexual activity are distinct concepts with different dimensions, although they are difficult to define because of their close relationship. Some studies have highlighted that people distinguish between having sex and sexual activity. Sexual activities included practices such as individual masturbation, cybersex, and oral sex (Halwani, 2023). The students' responses demonstrated the difficulty of defining the concept.

> *Sexual act and physical contact between two people (P66).*
> *It is the expression of your sexuality either as a couple or with yourself (P30).*

Sex also appeared to be associated with eroticism, as we can see from the proximity of the prevalence of words in students' responses.

> *Stimulus awakened in people, through the five senses, that is, without having sexual intercourse itself. It's like what happens in the seduction phase or demonstration of interest (P3).*
> *Erotic, is related to sexual and intimate relationships. It has to do with sexual attractions, which cause, for example, pleasure (...) sexual desire (P39).*

Eroticism, which is also difficult to define (Fellmann, 2016), is not just a sexual activity; it is a psychological aspect dependent on and, at the same time, independent of sexuality. Throughout human evolution, erotics have diverted sexual activity from the main goal of reproduction (Fellmann, 2016; Halwani, 2023). For students, these concepts of sex and eroticism are more closely related to desire, pleasure, and effective sexual acts than to the full experience of sexuality in itself.

> *Sensuality, fantasy. What is meant by erotic varies from person to person (P5).*
> *Eroticism is given to those who make us receptive and to those who give us pleasure in an individual and unique way (P51).*

> *There are several forms of pleasure, such as kissing, caressing, hugging, sexual intercourse (…). Also including non-physical forms (P56).*
> *It is the attitude and desire in sexual activity (P75).*

Within this sub-corpus, Class 4 (16.07%) and Class 3 (16.07%) appear, representing the concepts of "sexual orientation" and "heteronormativity," associating the concept of heterosexuality with the social norm, as happens in some countries of the EU (Michielsen and Ivanova, 2022). In Class 4, words such as attraction (51.28%, $\chi^2$99.38), contrary (71.43%, $\chi^2$33.48), sexual orientation (46.99% $\chi^2$83.60), and heterosexuality (90.45%, $\chi^2$46.15) significantly identified heterosexuality as a sexual orientation, demonstrating students' knowledge of the concept.

Currently, sexual orientation is understood as the basic and organizing sexual preferences of one person over another (Dalrymple et al., 2020; Halwani, 2023). Three main components of sexual orientation can change throughout one's life cycle: attraction, behavior, and identity. Some of the most common sexual orientation identities are lesbian, gay, bisexual, and straight, although many more (Dalrymple et al., 2020) are represented by the acronym LGBTQIA+. Nursing students demonstrated knowledge of this concept.

> *Each person's sexual orientation depends on their attraction to one gender or another, although it can also be for both or even for neither (P28).*
> *Sexual orientation is associated with what the person means and what they are attracted to (P66).*
> *It is the gender that the person is attracted to according to their sexual identity (P67).*

As previously mentioned, heterosexuality is a sexual orientation identity; thus, understanding the proximity of Classes 4 and 3. The concept of heterosexuality refers to the attraction of a person to another of the opposite sex, although the strictest definition states attraction to the opposite gender (O'Brien, 2012). Regarding this concept, students demonstrated knowledge of both simple and strict aspects, with no uniformity of answers.

> *By heterosexual I mean a person whose sexual orientation states that you are attracted to a person of the opposite sex (P27).*
> *Person who is attracted to people of a different gender (P33).*
> *Those people who like others of the opposite gender (P44).*
> *It is a person attracted to the opposite sex (P55).*

Currently, we live in a society that is constantly changing, but heterosexuality remains largely represented by various forms of artistic and social expression (O'Brien, 2012; Brancaleoni et al., 2018), leading students to assume that this is the current social norm.

> *Heterosexuality is the norm because it allows reproduction and therefore is what is most "accepted" by society (P15).*
> *Culturally and socially, it is "accepted" (P50).*

Heteronormativity can be understood as the invisible deductive imposition of a normative binary framework of sex and gender and the practice of coercive and naturalized heterosexuality in societies worldwide (O'Brien, 2012; Wilkinson, 2023). Although 60% ($n = 45$) of the students stated that heterosexuality is not a social norm, it is considered "*more socially accepted,*" justifying the approximation of these classes.

> *It is what has classically been socially accepted, but it is not the norm (P28).*
> *It's not the norm. It's the most common, but it does not have to be that way. It's like that because that's how we were brought up (P49).*
> *It's not the norm. I believe it still makes up most of the cases in the country. It was what was always transmitted by ancient generations by culture, as well as by the church and being a country based on Christianity, it has always influenced people's way of thinking (P55).*

It should be noted that, despite being able to define heterosexuality, 12% of the participants did not respond when asked about their understanding of whether they "think it is the norm." This lack of response may demonstrate not a lack of knowledge, but an omission of your personal and intimate opinion on the issue. This attitude can be understood as the acceptance of this norm or, in contrast, its non-acceptance.

Still, regarding the students' perception of human sexuality, they were presented with several statements about specific situations alluding to the theme, for them to classify the statements as myths or reality present in today's society. After the statistical analysis of the data, it was identified that the majority (96%) were able to recognize statements called myths and distinguish them from reality statements. Only one student did not answer this question (1.33%), as shown in Figure 3.

Through the analysis of the dendrogram, the students' answers verified the existence of knowledge about some concepts referring to sexuality, namely, the prevalence of heterosexuality in the context of sexual orientation, bringing it closer to the current social normative standard, although agreement with the same was not expressed in their responses.

4.2 Perceptions of gender and gender identity

The sub-corpus *perception of gender and gender identity* is representative of the recognition that the student has of himself, within the standards of female and male gender, in an understanding that integrates the social, cultural, and historical processes that determine and link gender (Manandhar et al., 2018) and a gender identity that refers to the experience of gender felt individually, which may or may not be in accordance with the physiology of the person or the sex assigned at birth (UNICEF, 2017; Manandhar et al., 2018; WHO, 2021).

In this sub-corpus, from the expressiveness of the words in the corpus of analysis, the classes/categories emerged: Class 1 "Gender," Class 2 "Gender identity," and Class 5 "Cisgender."

Class 1, the most expressive, with a classification of 20.36%, showed how the concept of gender was understood by the students. This was mostly described as a binary construction (75%, $\chi^2$23.09)

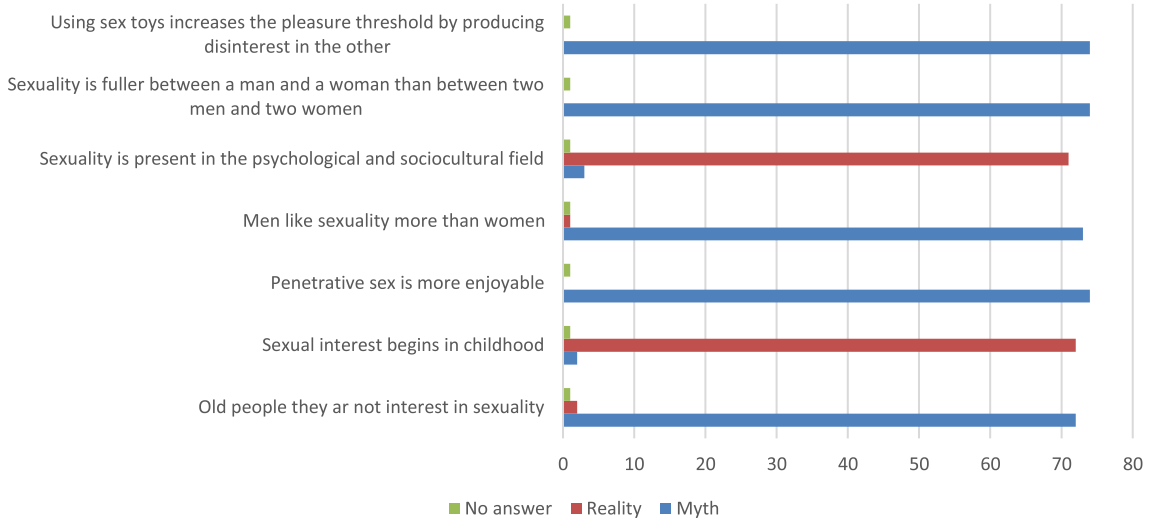

FIGURE 3
Myths and beliefs about sexuality.

about the sexual differences that socially reference the feminine and the masculine; which according to Basso and Paula (2020) among the classifications of sexual gender, gender binary is the most common way to determine gender.

> *How society classifies you for having the genitals that you have (sex) (P31).*

Despite a significant number of responses with brief descriptions of the concept of gender, a characterization that includes socialization, norms, and gender roles stands out (Heise et al., 2019). However, since gender is based on sexual bodies, the biological dimension was also considered by the students.

> *Gender is a social label (P18).*
> *Gender is a social construction, namely the sum of values, attitudes, roles, practices, or cultural characteristics, based on sex (P6).*

The manner in which gender is expressed is revealed in the description of its concept. However, under the effect of social pressure, culturally determined attributes and rights for women and men (which vary from culture to culture) are identified simultaneously with power relations between them (Manandhar et al., 2018).

> *They are those behaviors or attributes that are considered to be male or female (P21).*
> *Gender is the set of expectations, behaviors, and rules that are expected of people, and are very diverse (P43).*

However, in an opposite sense, for some students, the concept of gender still represents the biological dimension, that is, as a synonym of "sex," referring to what is proper to the male and female sex. According to Heise et al. (2019), these two terms are often confused not only in popular discourse, but also in the scientific literature on health.

> *Gender has to do with the biological side, with the sexual organs (P57).*

The terms gender identity (63.51%, $\chi^2$115.54) and cisgender (52%, $\chi^2$60.81) being expressive in this class, not only reveal a close relationship between the concepts, but also reflect an imprecise description of the concept of gender, with some incongruity in its definition.

> *Gender is how I feel, whether I identify more as female or male (P53).*

Class 2 "Gender Identity," with a percentage of 15.36% ($\chi^2$115.54), revealed the main aspects that give meaning to gender identity. Gender identity is the inner feeling of being a woman, a man, another gender, or not having any gender, which may not align with the sex assigned at birth and may change over time for some people (Dalrymple et al., 2020). In the students' answers, the way a person builds and recognizes himself is described with expressions that give meaning to the perception they have of their gender, valuing their individual character.

> *Gender identity is how you really feel (P20).*
> *Gender identity is based on which one feels most identified (P25).*
> *Gender identity is how I see and feel in my own body (P58).*

The data suggest the existence of a concerted understanding that all people have a gender identity, in the way each one sees himself, thinks and wants to be socially recognized, represented by the word "Identify yourself" (66.67%, χ^2 25.39). Consistency in recognizing that not all people fit into the binary notion of man/woman by reference to different perceptions of gender, namely that of an identity associated with biological sex (cisgender) or of the person who identifies and/or expresses your gender identity different from the gender you were assigned at birth (transgender).

> *It's how you identify; it does not have to agree with your gender at birth (P23).*
> *A person can be female and identify as male (P11).*
> *Gender identity is how a person feels. It is the perception of gender; the woman, man or combination of both; internal reference mark (P47).*

The expression of terms such as "Transvestite" (72.22%, $\chi^2$166.43), "Transgender" (65.22%, $\chi^2$105.27) and "Clothing" (61.54%, $\chi^2$47.03) in Class 2 are suggestive that the students had knowledge that allowed them to distinguish terms that define different gender identities. Transgender is defined as a person whose gender identity does not correspond to the biological sex assigned at birth (Basso and Paula, 2020; Cislaghi and Heise, 2020) and who expresses, behaves, or assumes social roles different from those socially agreed upon for their gender (Basso and Paula, 2020). It encompasses different types of gender identities such as transsexuals, transvestites, queers, and bigender, among others (Basso and Paula, 2020). With regard to the definition of the terms that were questioned–transgender, transsexuals, and transvestite, even after approaching them in a workshop, there were descriptions with reference to one or two characterizing aspects of each term, suggestive of a "popular" knowledge about these unconventional gender identities. When other characteristic aspects were mentioned, they appeared in an inaccurate or incongruous way, suggesting a weak representation of each of these words, maintaining a very close relationship with the definition of transgender.

In the description of the transvestite, the person who is born male and has a female gender identity is globally referenced, and very often the students refer to the fact that they dress in women's clothes (clothing). It was described with some frequency as assuming gender roles that were different from those determined by society. However, the possible changes in the body are not very visible, and in this type of gender identity, one does not want to undergo surgery for sexual reassignment.

> *A person, usually a man, who presents and expresses himself as the opposite sex, however, identifies with his birth sex (P1).*
> *Man, who wears clothes and behaves like a woman (P12).*
> *Person who dresses in a way contrary to what society dictates (P18).*

Class 5 "Cisgender," with a percentage of 15.36%, defined as a person whose gender identity is congruent with the identity associated with their biological sex and/or social designation (Basso and Paula, 2020) was a term that students defined correctly and precisely, by the expressiveness of the words "Attributed" (81.82%, $\chi^2$52.10), "Congruence" (77.78%, $\chi^2$37.55) and "Birth" (62.50%, $\chi^2$37.55) associated with this class. However, this may also suggest a greater willingness to expose a socially accepted gender identity, and, simultaneously, protection, meeting the evidence that shows that people who deviate from prevailing gender expectations can suffer discrimination and social sanctions, namely the stigma associated with mental illness, disrespecting their freedom and dignity (Castro-Peraza et al., 2019).

> *It is the coherence and identification of a person who in childhood was designated as a woman, having feminine characteristics and who identifies as a woman (P2).*

It should also be highlighted that the influence of social values in the construction of gender identity was not consistent in the students' responses, and the cultural influences and historical contexts in which each person is located were not mentioned as characteristics of this concept. The study by Sim-Sim et al. (2022) reveals that students from conservative religious backgrounds are more traditionalist in their attitudes towards sexuality.

In fact, despite a progressive change, both in the educational and legislative systems, namely in Spain and Portugal (Cunha-Oliveira et al., 2021), and the progressive emancipatory claims of transgender people and people with gender diversity drawing attention on a global scale, they together show restrictive societies where gender inequality is implicit, (Heise et al., 2019; Cislaghi and Heise, 2020) and manifests itself in different ways depending on the social and cultural models present in societies. Furthermore, scientific evidence has demonstrated the absence of LGBTQIA+ population from health services and consequently more pathologies due to the lack of preparation of health professionals (de Moura et al., 2023).

5 Conclusion

Nurses constitute one of the largest professional groups in the field of health, and consequently, have a greater relationship of proximity and responsibility with people in their health-disease process. In this way, they are in a privileged position to act as catalysts for change towards quality health care, sensitive to sexuality issues, not in line with socially determined behaviors for men and women, but with culturally competent behaviors in sexual diversity, (Heise et al., 2019) and as promoters of sexual and reproductive health through education and awareness (Michielsen and Ivanova, 2022).

In 2020, the WHO suggested a fundamental role for higher education in Europe's future. Sexuality emerges as a relevant programmatic content to be implemented in nursing training (Picken, 2020), giving continuity to the "school" as an institution that can influence and contribute to the process of building an inclusive education with regard to sexual and gender diversity, demystifying inequalities and respecting individuality (Rodrigues, 2017). Simultaneously, developing nursing students' knowledge of themselves, their references, values, beliefs, and (pre)concepts, and, in a professional way, developing interpersonal and systemic skills to address human sexuality in nursing care throughout the life cycle, integrating sociocultural, historical, and political influences, is important. However, literature has shown that the approach to sexuality is still incomplete in curriculum plans (Cunha-Oliveira et al., 2021; Patrão et al., 2023; Soto-Fernández et al., 2023).

The study aims to show the teaching community the importance of integrating content related to sexuality and health education into students' curricula. The results revealed that the nursing students participating in the study, after holding a workshop on the theme of sexual diversity, when asked to describe terms related to sexual orientation, gender diversity, and sex, their opinions and examples demonstrated only elementary knowledge, not allowing the appropriation that characterizes and differentiates each of the terms. The study suggests that the difficulty in assuming a personal position in relation to a sensitive, intimate theme that is marked by a sociocultural construction may be underlying, namely, when verifying the frequent use of the third person (she/his/she or the person) in the

answers given. A significant aspect of the professional practice of nursing is that it focuses on the interpersonal relationship of the nurse with the person/group of people (clients of care), and is ruled by humanistic principles, respect for freedom, human dignity, and the values of people/groups (Consejo General de Enfermería, 1998; Ordem dos Enfermeiros, 2015).

Therefore, it is fundamental to reflect on and change the curriculum plans of nursing courses through the inclusion of the theme of sexuality in a comprehensive, impartial, and inclusive manner. For future nurses to provide quality, person-centered sexual and reproductive healthcare, knowledge supported by scientific evidence is essential, thus enabling the removal of stereotypes and socially rooted prejudices that can lead to stigmatization and have a negative impact on people's health.

To verify a change in the practice of nursing care, it is also relevant to develop the skills and knowledge of teaching staff regarding sexual health beyond the biological, thus integrating psycho-emotional dimensions. Changes must also be driven by an active role with peers and nurses in clinical practice. Health professionals mention this flaw in their curricula and the need for better skills to work in the sexual health care of the general population and the LGBTQIA+ population, particularly in overcoming prejudice and resistance (Costa-Val et al., 2023).

The EdSeX project aims to improve this knowledge by promoting up-to-date educational strategies and tools suitable for the different populations where it operates. Although the study sample was a limitation, as it included only 75 participants. However, we consider that the study was very important and made a significant contribution to Outcome 2 – Creation of the Open Educational Resource (OER-EdSeX) for Higher Education, with the specific objective of profiling students' attitudes and beliefs about sexuality and sex education (Soto-Fernández et al., 2023), favoring the implementation of joint transformative strategies and actions, in line with sustainable development goals 3, 5, and 17 of the 2030 Agenda.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Ethics statement

The studies involving humans were approved by Ethics Committee of Social Research of the University of 165 Castilla-La Mancha, Toledo, Spain (CAU-661803-V4Z4). The studies were conducted in accordance with the local legislation and institutional requirements. The participants provided their written informed consent to participate in this study.

Author contributions

CS: Software, Resources, Methodology, Data curation, Conceptualization, Writing – original draft, Investigation, Formal analysis. AG: Formal analysis, Investigation, Writing – original draft, Conceptualization, Data curation, Methodology, Resources, Software. TC: Validation, Supervision, Data curation, Writing – review & editing. SP: Validation, Supervision, Data curation, Writing – review & editing. FB: Validation, Supervision, Writing – review & editing, Data curation. JP-P: Visualization, Writing – review & editing, Data curation. AF: Validation, Supervision, Project administration, Writing – review & editing, Conceptualization. SG-C: Validation, Supervision, Project administration, Funding acquisition, Writing – review & editing, Conceptualization. HD: Validation, Supervision, Project administration, Writing – review & editing, Conceptualization.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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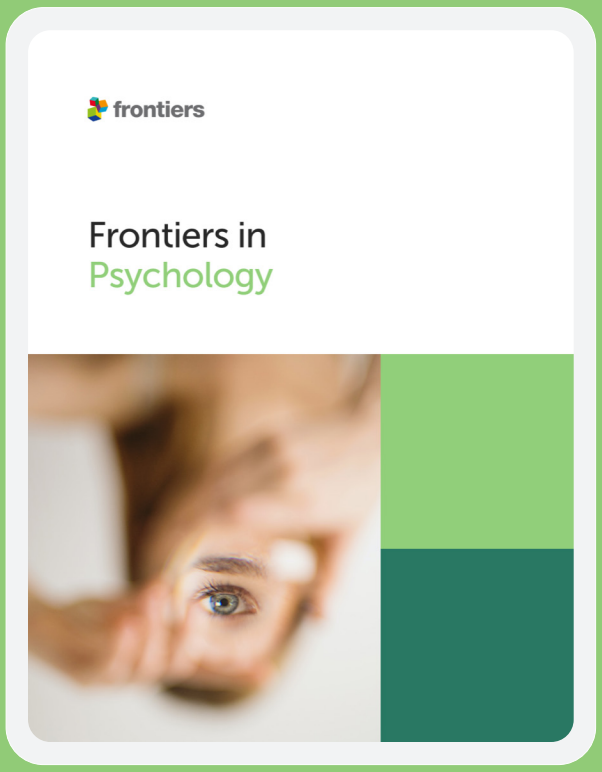

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