Exploring Sexual Schemas in Menopause: Considering the Role of Sexual Function and Depression

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Abstract

Menopause brings a range of sexual (e.g., reduced desire, lubrication) and psychological changes (e.g., depression) that can reshape women's sexual well-being. Sexual schemas—cognitive frameworks that guide beliefs and expectations about sexuality—offer a useful lens for understanding these shifts, yet little is known about how schemas evolve during menopause. This mixed-methods study examined how sexual function and depression relate to postmenopausal women's sexual self-concepts. A total of 101 women (4 perimenopausal, 97 postmenopausal; M age = 54.87) wrote essays describing their sexual self-view and how menopause influenced it. Essays were coded for overall valence and thematic content, and logistic regressions tested whether sexual function (FSFI) and depression (PHQ-8) predicted schema valence. Thirty-five essays reflected positive schemas, including improved function, redefined self-worth, and enhanced intimacy, while 45 reflected negative schemas marked by guilt, insecurity, dysfunction, or a sense of loss; 21 mixed-valence responses were excluded from quantitative analyses. The model predicting schema valence was significant, $\chi^2(6, N = 81) = 40.60$, $p < .001$. Higher sexual function scores were associated with greater odds of endorsing positive schemas (OR = 1.39, 95% CI [1.16, 1.73], $p = .001$). Depression predicted negative schemas ($p = .004$), though this effect weakened when sexual function was included. Overall, findings suggest that sexual schemas during menopause are intertwined with identity, self-worth, and emotional connection, and that sexual function is a central predictor of women's sexual self-perceptions. Interventions addressing both physical and psychological aspects of sexual health may help prevent the development of more negative sexual self-concepts during menopause.

Exploring Sexual Schemas in Menopause: Considering the Role of Sexual Function and Depression

Despite its widespread impact on women's health, menopause remains severely under-researched, receiving only 1% of the $4.6 billion allocated to women's health research by the National Institutes of Health (NIH) in 2023 (NIH, 2024). This lack of attention is particularly concerning given that menopause is a natural transition experienced by most women, and often results in disruptive symptoms, including cognitive difficulties, vasomotor disturbances (i.e., hot flashes), musculoskeletal complications, and increased cardiovascular risks (Moneleone et al., 2018). Among its consequences are the negative impacts on sexual health, including vaginal dryness, decreased libido, and pain during intercourse (Monteleone et al., 2018). These symptoms can cause strain in romantic relationships and psychological distress (Kling et al., 2019; Masood et al., 2016). As a result, the severity of these symptoms can significantly shape women's attitudes toward menopause (Barth Olofsson and Collins, 2000; Marván et al., 2017), highlighting the need to explore how these experiences influence their perceptions of sexuality during this transitional phase.

To understand the full impact of menopause on women's sexual well-being, it is important to consider sexual schemas—the cognitive frameworks that shape an individual's beliefs, expectations, and attitudes about sex. Sexual schemas are thought to be shaped by developmental experiences (e.g., childhood and adolescent sexual experiences and education), hormones, and cultural norms (Andersen & Cyranowski, 1994; Aumer, 2014). Positive sexual schemas play a key role in predicting better sexual satisfaction (Rellini & Meston, 2011), relationship satisfaction (Torabi, 2022), and overall life satisfaction (Dongaheau, 2009). While there is significant research on the influence of sexual schemas and how they develop in early

life, less is known about how they evolve in response to menopause. Menopause introduces significant biological and psychosocial changes, including shifts in sexual function, self-perception, and relationship quality, that likely play a key role in shaping women's sexual schemas during this stage of life.

This study explored how menopausal women's sexual schemas are influenced by a combination of biological, psychological, and social factors using a mixed-method survey approach (i.e., quantitative surveys and a qualitative expressive writing prompt). Existing research on the impact of menopause and aging on women's sexual health suggests that menopausal symptoms, sexual function, self-esteem, and relationship quality may play a critical role in shaping women's attitudes toward sex during menopause (Schaller et al., 2023; Marván et al., 2017; Kısa et al., 2012). Guided by this work, the present study investigated how such factors relate to the ways women describe and make meaning of their sexual experiences. While our approach was primarily exploratory, we anticipated that women reporting poorer sexual function, worse relationship satisfaction, more severe menopausal symptoms, and more symptoms of psychopathologies would express more negatively valenced schemas. In contrast, those reporting greater sexual and relationship satisfaction and overall well-being were expected to write about their schemas in a way that reflects more positively valenced schemas. In the following section, I will examine these potential factors in detail, looking at existing research on the development of sexual schemas, women's attitudes toward menopause and sexuality through aging, and the role of psychological and social dynamics in sexual well-being, particularly during this influential life stage.

Menopause and Physical, Sexual, and Mental Health Symptoms

Menopause is a natural transition that typically occurs between the ages of 45 and 55, marking the end of reproductive capability as ovarian function declines. This transition is characterized by a significant reduction in estrogen and progesterone levels, leading to numerous physiological and psychological changes. The menopausal process is divided into three stages: perimenopause, menopause, and postmenopause. Perimenopause, which occurs around three to five years before menopause, is marked by hormonal fluctuations that cause irregular menstrual cycles and the onset of symptoms, such as mood changes and hot flashes. Menopause is diagnosed when a woman has gone 12 straight months without menstruation, provided that there are no other physiological, pathological, or clinical interventions causing this absence (World Health Organization, 2024). Unlike perimenopause and postmenopause, which describe extended periods of time, menopause refers to a single point in time. After this point, a woman is considered postmenopausal, during which pregnancy is no longer possible, and menopausal symptoms persist for several years.

During menopause, women may experience several major physical, sexual, and psychosocial well-being symptoms. Vasomotor symptoms—including hot flashes, night sweats, migraines, and heart palpitations—are the most common, affecting about 75% to 80% of menopausal women (Peacock et al., 2023). These symptoms are often unpredictable and can severely disrupt daily life, particularly when they interfere with sleep quality and overall function (Peacock et al., 2023). Beyond these immediate effects, menopause is also associated with long-term health risks that extend beyond typical aging-related changes. The decline in estrogen levels during menopause accelerates the risk of cardiovascular disease, osteoporosis, and metabolic disorders at a significantly higher rate than would be expected from aging alone

(Monteleone et al., 2018). These effects establish menopause as both a reproductive transition and an important period for women's overall health and aging.

Genitourinary Syndrome of Menopause (GSM) presents additional challenges, particularly concerning sexual health. Declining levels of sex hormones, including estrogens and androgens, contribute to GSM, which includes symptoms such as vaginal dryness, burning, irritation, urinary urgency, and incontinence (Scavello et al., 2019). These symptoms can significantly impair sexual function, with research indicating that 40-55% of postmenopausal women experience reduced sexual desire, 25-30% experience poor lubrication, and 12-45% experience dyspareunia (pain during intercourse) (Scavello et al., 2019). Unlike vasomotor symptoms, which often subside over time, genitourinary symptoms tend to worsen without treatment, making them a persistent source of physical discomfort, emotional distress, and relationship strain (Scavello et al., 2019). As a result, many menopausal women experience a decline in sexual activity and desire. Around 70% of postmenopausal women experience some form of sexual dysfunction (Dąbrowska & Michalski, 2019).

Although physiological changes during menopause play a critical role in shaping sexual function, hormonal changes impact other dimensions of well-being as well. Menopause has a profound effect on psychological health, with psychogenic symptoms affecting up to 70% of people going through menopause (Peacock et al., 2023). Psychological symptoms can include mood swings, depression, anxiety, lower self-esteem, and sleep disturbances. These mental health challenges, combined with overall physical and genital health changes, all contribute to changing perceptions and experiences during sex. The following section will examine key predictors of sexual function, demonstrating how menopause interacts with other contributing factors.

Factors Predicting Sexual Function in Menopause

While menopause-related physiological changes contribute to sexual dysfunction, they do not act alone—psychosocial factors also play a role in shaping menopausal women's sexual experiences. Mernone et al. (2019) examined the factors influencing sexual function in women over 40. The study found that age and being postmenopausal were negatively associated with overall sexual functioning, sexual arousal, and lubrication, confirming that menopause negatively impacts sexual health. Other life factors, including greater self-esteem, optimism, and overall life satisfaction, further predicted overall sexual function or specific aspects of sexual function, including arousal, orgasm, and sexual pain (Mernone et al., 2019). Additionally, hormonal treatment was positively associated with orgasm (Mernone et al., 2019), highlighting how treatment seeking and hormones can impact sexual experiences during menopause.

A meta-analysis by Nazarpour et al. (2016) looked specifically at the clinical and social factors influencing sexual function during menopause. Clinical factors associated with sexual dysfunction included age, estrogen deficiency, stage of menopause, severity of menopausal symptoms, history of difficult childbirth (dystocia), preexisting medical conditions, and partner sexual function and sexual problems (Nazarpour et al., 2016). Further, social and environmental factors played a role, with drug and alcohol consumption, partner relationship quality, sexual knowledge, and access to healthcare all impacting sexual function (Nazarpour et al., 2016). While these findings highlight the complexity of menopause-related sexual dysfunction, few treatments aim to improve sexual dysfunction and distress, and most existing treatments require hormone replacement therapy, which is not a viable or effective option for all women. In contrast, developing psychological interventions—a relatively understudied avenue to

date—may be a valuable and cost-effective method to improve sexual dysfunction and distress in postmenopausal women.

The first step in creating psychological interventions is to overcome the gap in knowledge pertaining to how menopausal experiences, including sexual dysfunction, shape women's beliefs, attitudes, and behaviors surrounding sex. Sexual function is deeply influenced by cognitive and emotional perceptions. Women's perceptions of their changing sexual health, whether positive, negative, or neutral, may be informed by their underlying sexual schemas. Understanding sexual schemas is essential for exploring how menopausal women navigate intimacy and desire. The following review examines emerging evidence on how these schemas may evolve during menopause and the psychosocial factors that influence them.

Menopause and Sexual Schemas

A strong but nascent body of research suggests that cognitive frameworks surrounding sex shift during menopause, although the exact nature of this change is not yet fully understood. Allen and Tully-Wilson (2003) found that while early adaptive schemas, such as those formed in adolescence and early adulthood, were associated with higher well-being in pre- and peri-menopausal women, no relationship between early schemas was found in post-menopausal women. This suggests that menopause may act as a turning point in how sexual schemas influence well-being, potentially signaling a shift in the function or relevance of early cognitive frameworks as women transition into later stages of life.

Further research highlights the influence of specific sexual schemas in postmenopausal sexual function. Mojtahedzadeh et al. (2023) found that positive sexual schemas, such as comfort in sex and passionate/romantic schemas, were associated with good sexual performance in postmenopausal women. Conversely, shy and cautious schemas and sexual performance were

negatively associated with sexual performance. These findings suggest that schemas are instrumental to postmenopausal sexual experiences—while more open and positive sexual schemas may facilitate better sexual well-being, inhibitive schemas may reinforce discomfort or avoidance.

Qualitative studies offer further insight into how menopausal women experience and navigate their physical and social changes. For example, Bahri et al. (2016) found that Iranian women often engage in sexual "self-sacrifice," prioritizing their husbands' sexual needs over their own desires or comfort during menopause. These findings highlight the potential for cultural and relational factors to shape sexual schemas in later life. Additionally, Marván et al. (2017) found that attitudes toward menopause mediated sexual function, suggesting that women who view menopause more positively overall may develop or maintain more positive sexual schemas, which in turn could support better sexual well-being. These findings point to broader psychological and cultural dimensions of menopause, suggesting that these factors may influence menopausal women's sexual schemas.

Sexual Schemas

Schemas are the cognitive frameworks that help individuals interpret and organize information based on their past knowledge, beliefs, and experiences. They shape thought patterns and influence how people process new situations. While schemas can be adaptive, helping people navigate the world efficiently, they can also become rigid and maladaptive, reinforcing negative self-perceptions and unhealthy behavior patterns (Young et al., 2003). Negative schemas, such as believing one is ineffective or defective, tend to result in maladaptive coping patterns and psychopathology such as depression and anxiety (Young et al., 2003). Schemas can

be generalized across many domains, though there are also domain-specific schemas, such as sexual schemas.

Sexual schemas refer to the cognitive frameworks that shape an individual's beliefs, expectations, and attitudes about sex. These schemas influence how individuals perceive themselves as sexual beings, shaping their comfort, confidence, and experiences in intimate relationships. For instance, individuals with positive sexual schemas may believe that they can be themselves during sex, fostering ease and enjoyment, while those with negative schemas might think they are too unattractive to be sexually desirable, leading to anxiety and avoidance (Andersen & Cyranowski, 1994).

Sexual schemas are thought to emerge from a combination of developmental experiences, biological factors, and cultural influences (Young et al., 2003; Andersen & Cyranowski, 1994). Early sexual education, messages received about sexuality during childhood and adolescence, and personal sexual experiences all contribute to the formation of sexual schemas (Andersen & Cyranowski, 1994; Aumer, 2014). Hormonal factors may also play a role, as changes in hormone levels can influence how individuals perceive and respond to sexual experiences (Jennings & Lecea, 2020). Additionally, cultural norms strongly influence what individuals view as acceptable or shameful in sexual contexts (Aumer, 2014).

Negative schemas are associated with sexual dysfunction, while positive schemas contribute to greater sexual satisfaction (Rillini & Meston, 2011; Heiman, 2002). Cultivating more positive sexual self-schemas has been shown to not only enhance sexual arousal but also positively influence emotional and physiological responses to sexual stimuli, contributing to more fulfilling and satisfying intimate experiences (Kuffel & Heiman, 2006). Meanwhile, women with sexual dysfunction tend to exhibit fewer positive and more negative sexual

self-schemas compared to those without dysfunction (Andersen & Cyranowski, 1994). Because sexual schemas shape how individuals interpret their sexual selves, shifts in the balance of positive and negative schemas may be especially meaningful during life stages marked by changes in sexual functioning—making menopause a particularly important context in which to examine these cognitive patterns.

Identifying Sexual Schemas in Menopause

Previous research on sexual schemas has primarily relied on structured self-report measures such as the Sexual Self-Schema Scale (SSSS; Andersen & Cyranowski, 1994), which classifies individuals into positive or negative schematic groups based on their ratings of pre-selected adjectives. While this approach has aided in identifying sexual schema dimensions such as romanticism, openness, and conservatism, it constrains participants to a fixed set of descriptors and may overlook beliefs that fall outside of this framework. This limitation is especially relevant in the context of menopause, where experiences of sexuality are shaped by physiological transitions, identity changes, and sociocultural shifts, which may not be fully captured by existing qualitative measures.

In contrast, the present study used a qualitative, open-ended approach to identify themes in sexual schemas that were then categorized as positive or negative dimensions, which is conceptually similar to the categorization of dimensions of the SSSS without imposing themes as categorical constraints. Instead of rating adjectives, participants described their sexual self-view in their own words, as well as how this view has shifted as a result of menopause. These open responses were analyzed thematically to identify patterns that may align with, extend, or challenge the dimensions established by the SSSS. For instance, themes akin to romanticism or

openness emerged, but new themes, such as loss of sexual identity or changing body image, were also discovered in our coding.

Prior qualitative work on menopause has provided detailed, nuanced data on menopause, while simultaneously uncovering important associations between personal experiences and symptomatology. For instance, Barth Olofsson and Collins (2000) investigated women's attitudes toward menopause through analyzing interviews and categorizing their attitudes into negative, positive, and neutral categories. They presented rich anecdotal data from women recounting their personal sentiments toward menopause, with participants speaking of positive attitude changes (i.e., "[I] don't need others to confirm my worth [anymore].") and negative attitude changes (i.e., "Being older means that you are not valued by others in the same way."). After coding these statements, they then performed a regression analysis, finding that negative attitudes toward menopause were correlated with negative mood, vaginal dryness, and memory problems. These findings not only amplify the complicated emotions associated with this life transition, but they also allow for researchers and healthcare providers to note the connection between menopausal attitudes and negative symptom presentations. The present study used a similar approach to analyze women's recounts of their sexual schemas, coding responses into negative, positive, and neutral categories and analyzing their associations with symptomology.

Qualitative research on sexuality in menopause has also shown that such approaches are well-suited to uncovering culturally embedded themes and meanings that are often overlooked. For instance, Bahri et al. (2016) collected open-ended data from menopausal Iranian women, who described confronting declining libido by expressing obedience toward their husbands, which is a schema that may reflect marital duty in menopause. Similarly, Ling et al. (2007) found that some Chinese women experiencing menopause described themselves as feeling

"half-a-man," expressing a loss of femininity that shaped their identity after losing their fertility. Such nuanced themes would likely be missed by closed-ended measures, but can be captured through open-ended writing. The current study presented qualitative data alongside quantitative analysis to ensure that women's complex reflections about their sexual schemas were not lost behind their coded categories.

Conclusions

This study examined the complexity of menopausal women's sexual schemas, demonstrating how they are shaped by a combination of physiological changes, psychological factors, and social influences. Prior research has established that menopause-related changes, such as sexual dysfunction, self-esteem fluctuations, and relationship dynamic shifts are closely linked to transformations in women's attitudes toward sex (Ling et al., 2007; Mojtahedzadeh et al., 2023) As a result, women's sexual schemas, or the attitudes and beliefs they hold about sex, are likely to evolve during this life stage. While sexual schemas are beginning to gain recognition as key components of sexual well-being, existing literature on sexual schemas has focused on the impact of early childhood sexual schemas rather than how sexual schemas evolve through older age (Andersen & Cyranowski, 1994; Aumer, 2014; Meston et al., 2013). By integrating findings on menopause, sexual health, and schemas, this study aims to bridge that gap, providing a more comprehensive understanding of how sexual beliefs and attitudes evolve during this life stage. Identifying these factors can contribute to targeted schema therapy interventions to support menopausal women's sexual health and overall well-being.

Methods

Study Design Overview

This study explored the psychological, relational, and biological factors related to the content of sexual schemas in menopausal women. A total of 101 menopausal participants were recruited through Prolific, an online research recruitment platform. They completed self-report survey measures assessing demographics, menopausal status, sexual function and satisfaction (Female Sexual Function Index), menopausal symptoms (Menopause Quality of Life Questionnaire), depression (Patient Health Questionnaire-8), anxiety (Overall Anxiety Severity and Impairment Scale-5), and relationship satisfaction (Global Measure of Relationship Satisfaction).

Following structured items, participants then responded to an open-ended writing prompt describing their current sexual self-perception and how it has changed since entering menopause. Responses underwent qualitative thematic analysis to identify recurring patterns in how women construct their sexual schemas. Themes were then categorized based on their tone and function (e.g., positive vs. negative schemas).

We predicted that poorer sexual function and satisfaction, lower relationship satisfaction, and higher levels of depression, anxiety, and menopausal distress would be associated with more negative, maladaptive themes. In contrast, more favorable sexual and psychosocial profiles were predicted to correspond with more positive and adaptive sexual schemas.

Participants

A total of 101 women (4 perimenopausal and 97 postmenopausal; mean age 54.87) were recruited through Prolific, an online research recruitment platform known for providing high-quality, verified participants. To be eligible, participants first completed a screener survey to

ensure they were between the ages of 45 and 70, able to read English, currently lived in the United States, and had a 90% approval rating on Prolific, which indicates consistent, high-quality work on the platform. The study was designed to recruit postmenopausal women (defined as greater than or equal to 12 months since last menstrual period), though four perimenopausal participants met all other criteria and were retained in the final sample. Finally, factors shown to alter sexual schemas were held consistent; therefore, participants must have had vaginal or anal intercourse in the past 4 weeks, be in a current romantic relationship for longer than six months, and have no history of nonconsensual sexual experiences (Astle et al., 2025; Kilimnik et al., 2018). Participants were compensated in line with Prolific payment recommendations, with an estimated completion time of 30 minutes, earning them $3.40 for their participation. Participant demographics are summarized in Table 1.

Materials and Measures

In addition to demographics, a number of standardized scales were administered to assess measures of sexual function (FSFI), menopausal symptoms (MENQOL), depression (PHQ-8), anxiety (OASIS), and relationship satisfaction (GMREL). Table 2 presents means, standard deviations, and score ranges for all variables.

Demographics

Participants first completed a brief demographic questionnaire to assess variables such as age, sexual orientation, race/ethnicity, relationship length, and sexual frequency. Menopause was confirmed by asking participants to provide the date of their last menstrual cycle. These demographic variables are not part of the study's primary hypotheses but were included for potential exploratory analyses and to aid in sample description and contextualization.

Sexual Function

The Female Sexual Function Index (FSFI; Rosen et al., 2000) is a 19-item measure assessing sexual function over the past four weeks, looking at the domains of desire (2 items), arousal (4 items), lubrication (4 items), orgasm (4 items), satisfaction. (3 items), and pain (2 items). Example items include: "How often did you feel sexual desire or interest?", "How difficult was it to become lubricated during sexual activity?", and "How satisfied have you been with your overall sexual life?" (Rosen et al., 2000). Participants need to have been sexually active in the past four weeks to complete the FSFI. Participants respond using a 5-point Likert scale, with higher scores indicating better sexual functioning. Following scoring instructions, domain scores were computed by summing scores from the items within each domain then multiplying the sum score by the corresponding domain factor to standardize each domain to a comparable 0-6 range. The total sexual function score is the summation of each of the six domain scores. The FSFI has demonstrated strong internal consistency, with Cronbach's alpha reported at .93 for the full-scale score (Rosen et al., 2000). Test-retest reliability coefficients are strong for the individual domains as well (r = 0.79 to 0.86) (Rosen et al., 2000).

Depression

Depression symptoms were assessed using the Patient Health Questionnaire-8 (PHQ-8; Kronke et al., 2009), a self-report measure that evaluates the presence and severity of depressive symptoms experienced over the past two weeks. The PHQ-8 is a modified version of the PHQ-9, excluding the item that assesses suicidal ideation (Kronke et al., 2009). Respondents rate eight symptoms, such as reduced energy and trouble concentrating, on a 4-point Likert scale ranging from 0 ("*Not at all*") to 3 ("*Nearly every day*"). Each item is then summed to create a total score which ranges from 0 to 24, with higher scores indicating greater symptom severity. These total

scores were used in our analyses. The PHQ-8 has demonstrated strong validity and internal consistency, with a Cronbach's alpha of .83 (Kroenke et al., 2009; Levis et al., 2019).

Other Menopause Symptoms

Menopausal symptom severity was assessed using the Menopause Quality of Life Questionnaire (MENQOL; Hilditch et al., 1996), a measure designed to evaluate the impact of menopause on well-being and to provide a comprehensive assessment of how menopausal symptoms affect daily life. The MENQOL consists of 29 items covering four domains of menopausal symptoms: vasomotor (e.g., hot flashes, night sweats; 3 items), psychosocial (e.g., feeling depressed, unmotivated; 7 items), physical (e.g., joint aches, weight gain; 16 items), and sexual symptoms (e.g., vaginal dryness, changes in desire; 3 items). The sexual items were included in the survey to not alter the scale itself, but were not included in analyses as the FSFI is a more widely validated measure of sexual function. Participants indicate whether they have experienced each symptom in the past month and if present, rate how bothersome the symptom is on a 7-point Likert scale. Domain scores were calculated by averaging the items within each domain, where a score of 1 reflects no symptoms in that domain, with higher scores indicating greater symptom presence and severity. Test–retest reliability for the MENQOL was demonstrated using intraclass correlation coefficients ranging from 0.37 to 0.81 across domains, with the physical, psychosocial, and sexual domains showing good stability and the vasomotor domain showing evidence of systematic change (Hilditch et al., 1996).

Anxiety

Anxiety symptoms were assessed using the Overall Anxiety Severity and Impairment Scale (OASIS; Norman et al., 2006), a five-item self-report measure that evaluates anxiety intensity and the frequency of anxious behaviors (e.g., "In the past week, how often did your

anxiety interfere with your ability to do the things you needed to do at work, at school, or at home?" and "In the past week, how often did you avoid situations, places, objects, or activities because of anxiety or fear?") over the past week. Each item is rated on a 5-point Likert scale ranging from 0 to 4, with total scores summed to range from 0 to 20. Total scores were used in our analyses, with higher scores indicating greater levels of anxiety and impairment. The OASIS has high internal consistency (Cronbach's alpha = .80) and good convergent validity with other anxiety measures (Campbell-Sills et al., 2009).

Relationship Satisfaction

The Global Measure of Relationship Satisfaction (GMREL; Lawrence & Byers, 1995) is a brief, five-item self-report scale developed as part of the Interpersonal Exchange Model of Sexual Satisfaction (IEMSS). Participants are asked, "How would you describe your relationship overall with your partner?" and then rate their relationship along five bidirectional adjective pairs: good–bad, pleasant–unpleasant, positive–negative, satisfying–unsatisfying, and valuable–worthless. Each item is rated on a 7-point Likert scale, with higher summed scores indicating greater relationship satisfaction. The GMREL has demonstrated high internal consistency (Cronbach's alpha = .95) and good construct validity (Alitabar et al., 2018). Total scores were used in this study to assess participants' relationship quality and satisfaction.

Sexual Schemas

As part of the qualitative component, participants completed an open-ended writing task designed to assess their sexual schemas:

> *Please describe how you view yourself as a sexual being, currently. In your writing, reflect on how this may or may not have changed from the way you thought about yourself prior to menopause. We ask that you spend at least 10 minutes on this task and*

write a minimum of 1000 characters, but please take as long as you need. We are very interested to hear your perspective.

To encourage thoughtful responses, a built-in timer prevented participants from submitting their writing responses until at least 10 minutes had elapsed, and a word counter showed how many characters typed. The survey text box was set up to prevent copying and pasting from other browsers to ensure participants typed responses.

Procedures

Participants were recruited and screened for eligibility through the Prolific platform. Upon accessing the study, they first reviewed and signed an informed consent form, followed by additional screening and demographic questions to confirm eligibility based on the study's inclusion criteria. A total of 1,213 participants were screened for eligibility, and only those who were eligible ($N = 127$) were invited to participate in the full study. Responses were then reviewed, and participants who did not pass attention checks or gave written responses indicative of low effort were excluded, resulting in the final sample size of 101 participants.

Next, participants completed a series of validated self-report measures in the following order: the Female Sexual Function Index (FSFI), the Menopause Quality of Life Questionnaire (MENQOL), the Patient Health Questionnaire-8 (PHQ-8), the Overall Anxiety Severity and Impairment Scale (OASIS), and the Global Measure of Relationship Satisfaction (GMREL). Attention checks were embedded within the survey to ensure data quality and participant attentiveness. Following the survey measures, participants responded to an open-ended writing prompt about their sexual schemas.

Upon completing the study, participants received a debriefing form explaining the study's purpose, key hypotheses, and relevant resources. Compensation was provided through Prolific's payment system.

Data Preparation and Analyses

Coding of Open-Ended Responses

Responses were analyzed using reflexive thematic analysis, an established and widely used method for identifying and interpreting patterns across qualitative data (Braun & Clarke, 2006). This approach is well-suited to identify patterns in how women construct their sexual schemas during menopause, as it has been used in previous work exploring women's attitudes toward menopause (Barth Olofsson & Collins, 2000). Two independent researchers read all responses and developed a preliminary codebook, a guide that lists and defines key themes identified in the data. The codebook was created based on an initial subset of responses and was refined after coding the first 25% of responses, during which researchers reviewed and adjusted existing themes for clarity. The theme categorizations included descriptions of sexual function, identity and self-perception, relationship dynamics, and emotional responses to menopause (see Table 3 for all themes). All responses were coded for the presence of these themes and then assigned an overall valence category (positive, negative, or mixed).

Once the codebook was finalized, the two researchers independently coded 25% of responses, compared codes, and noted any discrepancies. The number of disagreements were reviewed, revealing an interrater reliability of 89% agreement. Discrepancies in coding were then resolved through discussion, and all decisions were documented to maintain transparency. The remaining 75% responses were then coded individually by one of the two researchers.

Descriptive statistics were then conducted to summarize the frequency of each theme and valence category, providing an overview of the most common narrative patterns (Table 3). Participant quotes are also included in the results section to illustrate major qualitative themes and to relay the nuance and emotion in participants' narratives.

Standardized Measures

All continuous measures were scored according to their respective scoring guidelines. Prior to analyses, distributions were examined for normality, and scores were reviewed for outliers or data entry errors. No major violations of assumptions were detected.

Statistical Analyses

Binary logistic regression analyses were conducted in RStudio Version 4.5.1 (R Core Team, 2025) using base R's *glm()* function from the stats package using a binomial logit link. Schema valence was coded as a binary outcome (positive = 1, negative = 0). All psychosocial measures (FSFI, MENQOL, GMREL, PHQ-8, OASIS) were included in initial regression models to evaluate their associations with schema valence. Preliminary analyses indicated that only sexual function (FSFI) and depression (PHQ-8) were meaningfully associated with schema valence; therefore, the primary analyses reported here focus on these predictors to prioritize a model with the strongest power.

Results

Descriptive Statistics

Participant Characteristics

The analytic sample included 101 participants, of whom 97 were postmenopausal. The remaining 4 participants were perimenopausal; for three perimenopausal participants their last menstruation being 4.5 months (138 days), seven months (213 days) ago, and 10.9 months (332 days) ago. The fourth perimenopausal participant reported having an intrauterine device (IUD) that suppressed her menstruation since 2000. Although she reported believing she is menopausal based on her age and recent onset of menopause symptoms, her menopausal status could not be confirmed in this current study and therefore she was classified as perimenopausal given her symptom presentation. Both postmenopausal and perimenopausal participants were retained in analyses as results did not differ when the 4 perimenopausal participants were excluded. Descriptive statistics for demographic variables are presented in Table 1.

Table 1

Participant Characteristics (N = 101)

Continuous Variables	**M**	**SD**
Age (years)	54.9	4.8
Relationship Length (years)	21.8	12.2
Categorical Variables	***n***	**%**
Race/Ethnicity		
Caucasian / White	77	76.2
African American / Black	19	18.8
Asian	11	10.9
Other	1	1.0

Table 1 ***cont.***

Categorical Variables	*n*	%
Sexual Orientation		
Heterosexual	93	92.1
Homosexual	2	2.0
Bisexual	6	5.9
Date of last menstrual cycle*		
1-11 months ago	3	3.0
1-2 years ago	26	25.7
3-5 years ago	34	33.7
6 or more years ago	37	36.6

Note. *Date of last menstrual cycle reflects participants' menopausal status. Menopause is defined as 12 consecutive months without menstruation; individuals within 1–11 months of their last menstrual period are considered perimenopausal (n = 3), and those 1 year or more since their last period are considered postmenopausal (n = 97). One perimenopausal participant using a menstruation-suppressing IUD is not included in this variable.

Standardized Measures

The mean total FSFI score (25.12) fell just below the commonly referenced clinical cutoff score of 26.55 for potential risk of female sexual dysfunction. Across FSFI domains—desire, arousal, lubrication, orgasm, satisfaction, and pain—domain scores generally fell in the mid-range of their respective scales. MENQOL domain scores were also in the middle of each scale's range across vasomotor, psychosocial, physical, and sexual symptoms, reflecting a range of symptom experiences and burden. PHQ-8 and OASIS scores both fell within the lower portion of their respective symptom ranges indicating lower levels of depression and anxiety on average. GMREL scores fell in the upper portion of the relationship satisfaction scale, indicating

relatively high relationship satisfaction. Using diagnostic scoring criteria for each measure, 20 participants met the standard diagnostic score (clinical cut-off score of 10) for clinically significant depressive symptoms indicating the possible presence of major depressive disorder (PHQ-8), and 26 participants met the threshold (cut-off score of 8) for clinically significant anxiety symptoms indicative of possible presence of an anxiety disorder (OASIS). Table 2 summarizes the descriptive statistics for all psychosocial measures, including observed and theoretical score ranges.

Table 2

Descriptive Statistics of Psychosocial Measures

Variable	M	SD	Observed Range	Theoretical Range
Sexual function (total)	25.12	6.67	9.4–36.0	2–36
Desire	3.27	1.27	1.2–6.0	1.2–6.0
Arousal	4.13	1.36	1.2–6.0	0–6.0
Orgasm	4.19	1.62	1.2–6.0	0–6.0
Lubrication	4.31	1.46	1.2–6.0	0–6.0
Satisfaction	4.41	1.48	1.2–6.0	0.8–6.0
Pain	4.81	1.40	1.2–6.0	0–6.0
Menopausal symptoms	–	–	–	–
Vasomotor	3.64	2.15	1–8	1–8
Psychosocial	3.51	1.79	1–7	1–8
Physical	3.68	1.41	1.19–7.31	1–8
Sexual	3.44	2.51	1–8	1–8
Depressive symptoms	5.98	4.99	0–21	0–24
Anxiety symptoms	4.72	4.38	0–19	0–20
Relationship satisfaction	29.97	6.10	8–35	5–35

Note. Observed ranges reflect values present in the analytic dataset; theoretical ranges reflect possible score ranges for each scale.

Qualitative Coding and Themes

Participants provided open-ended descriptions of their current sexual experiences, which were coded for overall valence (positive, negative, or mixed). Of the 101 responses, 35 (34.7%) were coded as positive, 45 (44.6%) as negative, and 21 (20.8%) as mixed. Within responses and regardless of valence, several recurrent themes were identified. For example, many participants discussed changes in their sexual function, some positive, some negative. Thus, these themes were not coded as exclusively positive or negative. A summary of the major qualitative themes is presented in Table 3.

Positive Valence Responses

Positive responses most often reflected themes of enhanced sexual functioning, improved self-concept, and improved partner dynamics. Many participants described experiencing increased libido or improved sexual quality compared to earlier life stages. For example, one participant explained, *"My sex drive is definitely higher… I've always enjoyed my sexuality, but I do now more than ever. This is the complete opposite of what one is told to expect in menopause.*" (age 53). Participants also emphasized enhanced pleasure and intentionality in their sexual experiences, noting behavioral shifts that improved intimacy with partners ["*Before [menopause] I just wanted to get it over with… With menopause I plan more… I set the mood… Now I see sex as time to connect with my husband and show him how much I love him!*" (age 49)].

Improvements in communication and emotional safety within relationships were also central to positive responses. Several women emphasized that feeling supported by partners

enhanced their sexual well-being ["*Because I feel safe with him… We also can communicate our wants and needs with each other and it makes our time together better.*" (age 51)].

A significant subset of women described menopause as a period of heightened self-understanding, empowerment, or confidence. Participants described understanding their bodies better and having a deeper appreciation for sex, which in turn made having sex more enjoyable. As one woman shared, "*Having sex is fun… I enjoy it just as much if not more than when I was young because I understand my body so much more*" (age 57). Others spoke of newfound clarity regarding their own needs and desires ["*I gained more sense of my own wants, needs, and desires*" (age 61)] as well as a redefined sense of self-worth that was no longer tied to youth ["*Aging doesn't have to be a negative thing*" (age 59) and *"I view myself as a very sexy woman even at the age of 50.*" (age 50)].

Several participants described menopause as freeing or transformative. One person stated, "*I have actually found that hitting 50 isn't a bad thing; it's kind of freeing*" (age 51), while others framed it as a developmental shift ["*For me menopause is just a realization I am in a new phase of life that should be enjoyed and explored.*" (age 51)].

Finally, many women highlighted that the practical relief they found through menopause positively impacted their sex lives. Relief from pregnancy risk or menstrual disruptions contributed meaningfully to positive sexual experiences [*"I no longer have to worry about period-related sex inconvenience*" (age 56), and "*I no longer need to worry about unwanted pregnancies or pregnancy scares*" (age 59)]. These forms of relief often co-occurred with more satisfying sexual encounters overall. For example, one said, "*Since I have shed the worry of pregnancy and other partners' needs I have stronger orgasms, less insecurities and feel more satisfied after intercourse.*" (age 56).

Negative Valence Responses

Negative responses were characterized by declines in sexual functioning, diminished self-concept, strained partner dynamics, and emotional responses such as guilt, insecurity, and grief for one's former self. Many women described menopause as a period marked by a significant loss of desire or arousal, which was a source of sexual frustration. One participant explained that "*arousal feels like it's playing hide and seek*" (age 52) while another wrote, "*Menopause has killed my libido… [I] absolutely want nothing to do with sex*" (age 57). These changes in sexual interest frequently co-occurred with physical symptoms, including pain and decreased lubrication, which further disrupted sexual satisfaction. As one woman put it, "*Every day there is something that hurts, feels weak, or doesn't work like it used to"* (age 54). These compounded shifts often contributed to feelings of inadequacy or bodily failure [*"Sometimes, I feel like my body is broken. It just does not work like it used to"* (age 51)].

Many women articulated a sense that they no longer felt attractive ["*After menopause, I'm aware that I don't inspire… desire in others often…*" (age 57)]. Others described disdain for aging [*"[I feel as though] age erases who I am as a person"* (age 57)] or compared their current self unfavorably to earlier life stages [*"I would love to go back to an earlier time in my life and appreciate youth and being a sexual person."* (age 51)]. For some, partner behavior intensified these insecurities. One participant explained, "*When we were young he wanted to [have sex] all the time… now it's the opposite… [so I'm] feeling unwanted and less desirable*" (age 61). Several women expressed guilt or shame about their changing sexuality, including the belief that they were failing as partners ["*I feel like less of a woman and a good partner by having zero sexual interest.*" (age 51)].

Sexual dysfunction sometimes led participants to engage in duty sex—sexual activity out of obligation or fear of consequences rather than desire. One participant stated, "*I feel obligated to have sex with my spouse because it's a part of my wifely duties*" (age 48), while another explained, "*Sex [has become] this painful, boring process that I must endure if I don't want my partner to leave me*" (age 54).

Participants also described substantial declines in self-esteem, body image, and feelings of desirability. These shifts often reflected grief about aging and a disrupted sense of identity. A striking example came from a participant who wrote, "*When I look in the mirror, I don't recognize the person looking back at me. I long for the days when I knew my body, when things felt 'normal'*" (age 54). Others expressed similar sentiments, but citing specific sources of insecurity like weight gain and physical appearance changes ["*I have gained weight, I'm ugly, my hair is gray. I miss my youth. Nothing about menopause or getting older is good*" (age 57)].

Mixed-Valence Responses

Mixed-valence responses reflected the coexistence of both positive and negative perceptions of menopause. These participants included descriptions of physical discomfort, declines in sexual functioning, or insecurities about aging, while simultaneously highlighting adapting to the changes or newfound clarity about personal needs. For example, one participant explained, *"I view myself as more comfortable in my body...yet, I am also able to do less sexually than I was before and it comes at a higher cost…so I know better what I want, and yet get it less often*" (age 56). These responses were coded as mixed because participants conveyed a relatively balanced combination of positive and negative elements within the same narrative.

Because mixed-valence responses did not map clearly onto a single conceptual category, they were excluded from regression analyses to preserve interpretive clarity.

Table 3

Summary of Major Qualitative Themes Identified in Open-Ended Responses

Theme*	Description
Changes in Sexual Function	Changes in libido, arousal, lubrication, orgasm, sexual frequency, and overall sexual comfort or sexual quality.
Identity and Self-Perception	Shifts in body image, confidence, sense of womanhood, aging perceptions, or self-understanding.
Relationship and Partner Dynamics	How menopause affects partner intimacy, communication, support, desire mismatch, or emotional closeness.
Emotional Impact	Emotional experiences related to menopause, including distress, frustration, empowerment, acceptance, or indifference.
Practical Relief	Relief associated with cessation of periods, no pregnancy concerns, reduced sexual pressure, or increased personal freedom.

Note. Themes reflect overarching patterns across participant responses. Each theme contained more specific subthemes in the full coding structure; however, only the higher-order themes are summarized here for clarity. *Valence (e.g., positive, negative, or mixed interpretations) varied within themes depending on participant context.

Logistic Regression Predicting Schema Valence

Next, we examined whether individual characteristics, being overall sexual function and depression predicted whether participants had positive or negative schemas using a logistic regression. The overall model was statistically significant, χ^2 (6, N = 81) = 40.60, $p < .001$, indicating that the predictors reliably distinguished between positive and negative schemas. Higher sexual function scores were associated with greater odds of endorsing a positive schema (OR = 1.39, 95% CI [1.16, 1.73], $p = .001$). Depressive symptoms alone predicted negative

schema endorsement (p = .004), although this effect was attenuated when sexual function was included in the model. Logistic regression values are summarized in Table 4.

Table 4

Binary Logistic Regression Predicting Overall Sexual Schema Valence

Predictor Variable	**B**	**SE**	***p***	**OR**	**95% CI OR**
Intercept	-10.05	3.38	.003**	0.00004	[<0.01, 0.02]
Sexual Function (FSFI)	0.33	0.10	.001**	1.39	[1.16, 1.73]
Depression (PHQ-8)	-0.21	0.12	.082	0.81	[0.63, 1.01]

Note. N = 80. Binary logistic regression predicting positive (1) versus negative (0) overall sexual schema valence was run using only participants with positive or negative valence; neutral/mixed responses (n = 21) were omitted. Positive coefficients indicate that higher scores of the predictor are associated with greater odds of positive schema valence. Sexual Function (FSFI) and Depression (PHQ-8) were entered as continuous predictors. OR = odds ratio. CI = 95% confidence interval. *p < .05, **p < .01.

Discussion

The purpose of this study was to examine how women's sexual self-schemas during the menopausal transition reflect their psychological, relational, and physical sexual experiences, and to evaluate whether sexual function and depressive symptoms help explain variability in schema valence. Using an open-ended prompt, participants described their current sexual schemas in relation to menopause, which were coded for positive, negative, or mixed valence. These qualitative reports were then paired with validated measures of sexual function, depressive symptoms, anxiety, and relationship quality. The findings highlight the complex ways in which menopause intersects with sexual identity and functioning, suggesting that women's sexual self-schemas during this life stage are shaped most strongly by sexual functioning than by mood symptoms alone.

Valence of Sexual Self-Schemas in Menopause

Consistent with prior literature documenting the heterogeneity of menopausal sexual experiences (Marván et al., 2017; Schaller et al., 2023), participants varied widely in their descriptions of their sexual selves. About one-third (34.7%) of the sample endorsed primarily positive schemas. These women described improved sexual functioning, greater comfort with their bodies, and strengthened emotional connection with partners. Many framed menopause as an opportunity for increased intentionality, self-knowledge, or sexual freedom, particularly due to reduced practical concerns (e.g., no pregnancy risk, kids out of the house). This pattern aligns with work suggesting that menopause can act as a period of sexual autonomy and improved relational intimacy for some women, especially when psychological and relational supports are strong (Rafiei et al., 2024).

In contrast, nearly half of the sample (44.6%) described negative schemas, characterized by diminished desire, arousal difficulties, pain, and decreased lubrication—symptoms well-documented in midlife populations (Dąbrowska & Michalski, 2019). These physical changes were closely tied to declines in self-concept, body image, and partner satisfaction. Women frequently expressed insecurity, grief for their former selves, or the belief that they were "broken" or no longer desirable. These themes reflect existing research showing that genitourinary changes and declines in desire often interact with sociocultural narratives about aging, which perpetuate shame and diminishing women's sense of sexual worth (Ling et al., 2007; Bahri et al., 2016).

Mixed-valence responses (20.8%) captured a nuanced middle ground. These participants acknowledged physical limitations and shifting sexual capacity while also describing growth, resilience, or a clearer recognition of their needs. Their narratives suggest that menopause may simultaneously introduce constraints and opportunities, with some women navigating both loss and empowerment. Although these responses were excluded from quantitative analyses to maintain conceptual clarity, they underscore the importance of attending to the multifaceted, nonbinary nature of sexual self-perceptions in midlife.

Sexual Function as a Key Predictor of Schema Valence

Quantitative analyses further supported the central role of sexual functioning in shaping schema valence. Higher sexual function scores significantly increased the likelihood of endorsing a positive schema, suggesting that women's cognitive and emotional appraisals of their sexuality are strongly intertwined with their physical sexual experiences. This finding is consistent with models of sexual self-schema development, which suggest that sexual

functioning shapes one's internalized beliefs about sexuality (Mernone et al., 2019; Nazarpour et al., 2016).

Although depressive symptoms initially predicted negative schema endorsement, this association was no longer a significant predictor when sexual function was added to the model. This pattern suggests that depression may influence sexual self-perceptions primarily through its association with sexual dysfunction, rather than exerting an independent effect. This is aligned with prior work showing links between mood symptoms and sexual function (Mernone et al., 2019; Nazarpour et al., 2016), and underscores the importance of addressing sexual dysfunction when evaluating psychological outcomes in menopausal women.

Clinical Implications

Together, the qualitative and quantitative findings point to several clinical implications. First, the strong associations between sexual function and sexual schemas suggest that interventions aimed at improving sexual functioning—whether through hormone therapy, behavioral strategies, or sexual health counseling—may have broader impacts on women's sexual self-concept and emotional well-being. Clinicians may consider assessing sexual schemas alongside symptom-focused measures, as schemas appear to shape not only how women interpret changes in sexual function but also how they experience aging, desirability, and intimacy.

Moreover, because results indicate that sexual dysfunction is associated with negative schemas, therapies aimed at reducing negativity in one's schema may help alleviate dysfunction, or perhaps the distress associated with it. Schema therapy is a therapeutic approach designed to identify and restructure negative, maladaptive schemas to promote healthier thought patterns and emotional responses. This approach involves elements of cognitive-behavioral therapy,

attachment theory, and other therapy models (Young et al. 2003). Schema therapy has demonstrated effectiveness in treating various psychological conditions, including personality disorders, depression, and anxiety (Giesen-Bloo et al., 2006; Hawke & Provencher, 2011). Although traditional schema therapy is typically used for broader psychological concerns, its core principles (e.g., challenging distorted beliefs, strengthening adaptive self-concepts) align closely with the mechanism underlying sexual schemas.

Within this broader schema-based framework, targeted writing interventions represent a promising approach for reshaping negative sexual schemas and addressing sexual dysfunction. Prior work shows that brief expressive writing exercises focused on sexual schemas can substantially improve sexual functioning, outperforming other forms of writing in reducing distress and enhancing desire and arousal (Meston et al., 2013). These results suggest that interventions targeting and altering sexual self-perceptions may be effective in addressing sexual dysfunction. Given the centrality of self-perception in the current findings, such interventions may be particularly beneficial for menopausal women navigating identity shifts, body image changes, and evolving relational dynamics. While research is still needed to determine whether these benefits generalize to menopause, the present study highlights the potential utility of integrating schema-focused cognitive strategies into sexual health interventions for midlife women.

Limitations and Future Directions

There are several limitations to consider. Because the sample was predominantly postmenopausal, with only four perimenopausal participants, the findings may not fully generalize to women earlier in the menopausal transition. The demographic characteristics of the sample further limit generalizability, as participants were largely White, heterosexual, and

sexually active. Another limitation concerns the measurement approach: responses were generated from a single open-ended prompt. Although this allowed for rich, detailed narratives, it also required substantial effort, which may have led some participants to provide less fully developed descriptions of their schemas, introducing variability in depth and clarity.

A second set of limitations concerns the quantitative analyses. Although the total sample was sufficient for thematic coding, excluding mixed-valence narratives from regression models substantially reduced the analytic sample (35 positive, 45 negative, 21 mixed), limiting statistical power to detect effects. Additionally, the cross-sectional design prevents causal conclusions about the relationship between sexual function and schema valence. Future research would benefit from larger, more diverse samples and from longitudinal designs that follow women across the menopausal transition to observe how sexual self-schemas change over time. Additional studies should assess whether interventions targeting sexual function or schema-related processes lead to improvements in both sexual well-being and broader emotional or psychological health. Finally, examining sociocultural influences—such as aging stigma, relationship norms, and cultural beliefs about menopause—may offer deeper insight into how sexual schemas develop and shift during midlife.

Conclusion

Overall, the present findings demonstrate that women's sexual self-schemas during menopause are shaped through the interplay of physical, psychological, and relational factors. Across qualitative reports, participants described schemas that reflected not only sexual functioning but also identity, self-worth, and the quality of their intimate relationships. Quantitative results reinforced the centrality of sexual function in shaping these cognitive representations: higher sexual functioning was strongly associated with more positive schema

valence, whereas the influence of depressive symptoms appeared to operate largely through their relationship with sexual dysfunction. Together, these findings suggest that supporting women's sexual well-being during menopause requires attending to both physical changes and the cognitive and relational meanings women attach to those changes. Interventions that address sexual function, identity-related beliefs, and partner communication may be especially important for promoting healthier, more adaptive sexual self-schemas in midlife and beyond.

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