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Qualitative Findings from a Pilot Trial of Mindfulness for Low Sexual Desire in Midlife and Older Women

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Abstract

Low libido is a common and potentially distressing problem among midlife and older womeWe recently reported results from a pilot randomized controlled trial of a mindfulness intervention for midlife and older cisgender women with low libido; the purpose of this qualitative investigation is to illustrate women's experiences with being recruited for, enrolling in, and participating in the trial. We conducted individual interviews with a subset of trial participants, some of whom attended a group-based mindfulness intervention and some attended an educational control group ($N = 25$). We also interviewed participants who were enrolled but did not attend any groups ($N = 9$). A semi-structured interview guide was developed by the study team. A co-investigator with qualitative research expertise and the primary investigator conducted interviews, which were audio recorded and transcribed. We used a thematic analysis approach to analysis, co-coding a subset of interviews to develop and refine a codebook, then assigning codes to all data. Codes were grouped into subthemes and themes and key insights were extracted. Three key themes emerged from women who attended groups. First, women were interested in the intersection of sexuality and mindfulness. Second, women in both groups valued the sense of community they gained from participating; the interactive nature of sessions contributed to this. Third, experiences with attending groups over videoconferencing software were largely positive. Suggestions for improvement included a better explanation of the randomization process and more didactic information about sexuality and aging in both groups. Non-attendees listed time conflicts as their top reason for not attending. We recommend researchers consider utilizing a group format when designing behavioral interventions for midlife and older women, as this design offers

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Declarations

Ethical Approval This study was approved by the University of Pittsburgh's Institutional Review Board.

Consent to Participate All participants provided informed consent to participate in this research and have their de-identified data published in scientific journals.

Conflicts of interest Dr. Thomas is an unpaid member of the Board of Trustees of The Menopause Society. Dr. Thurston has served as a paid consultant or on a paid advisory board for Astellas Pharma, Bayer, Hello Therapeutics, and Happify Health. No other authors have conflicts of interest to declare.

Code Availability (Software Application or Custom Code)
Not applicable.

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many benefits for participants, but ensuring that a qualified professional is present can ensure information exchanges is evidence-based. In addition, healthcare systems can consider building in opportunities for midlife women to gather and exchange information regarding health.

Keywords

Pilot randomized clinical trial; Mindfulness-based interventions; Online interventions; Sexual desire; DSM-5

Introduction

Changes in libido are common as women move through midlife (approximately ages 45–60 years) and into older age (Avis et al., 2009, 2017; Dennerstein et al., 2001; Thomas et al., 2018). Over half of midlife women report low libido, and around 15% of women in this age group report low libido that causes significant distress (Shifren et al., 2008). Low libido is associated with negative outcomes, including poorer self-image, feelings of guilt and shame, and lower quality of life (Biddle et al., 2009). There are pharmaceutical treatments available for low libido, but they are not Food and Drug Administration approved for use in postmenopausal women, and concerns about adverse effects and medication interactions limit their use (Clayton et al., 2022; Jaspers et al., 2016).

Behavioral interventions targeting low libido represent a potentially attractive alternative (Lerner et al., 2022; Rashedi et al., 2022). In particular, mind–body interventions are well-suited to address low libido (Brotto & Basson, 2014; Brotto et al., 2012; Paterson et al., 2017), because low libido is the sequela of psychological, social, and biological processes (Reed et al., 2014; Thomas & Thurston, 2016). Mindfulness-based interventions, which teach participants how to pay attention in the present moment to body sensations and other sensory input while minimizing self-judgment, have been studied for low libido and other sexual problems in women. Mindfulness has been found to improve symptoms in women with both low libido and sexual pain, but these interventions were not targeted to midlife and older women (Brotto et al., 2019, 2020, 2021). Our group recently reported on results of a pilot randomized controlled trial (RCT) of a group-based, virtually-delivered mindfulness intervention for midlife and older women with low libido (Thomas et al., 2023). We found that the intervention was feasible and acceptable and resulted in greater improvements in sexual distress compared to a general menopause and health education control group.

To better understand women's experiences with the trial and with both the mindfulness and education groups, we conducted a qualitative research study. Our primary purpose was to understand women's experiences with the trial, from screening and randomization, to group participation, to assessment completion. We probed regarding reasons for participation, experiences with screening and enrollment, positive and negative aspects of the intervention and the control group, experiences with the virtual format, and barriers and facilitators to attendance. These probes were aimed at improving the study procedures for a future larger trial and to provide information for other researchers conducting trials of online mind–body interventions.

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Method

Participants

Women were recruited to the trial via multiple methods, including advertisements in primary care and gynecology practices and on social media platforms, a local electronic registry of individuals in the Pittsburgh area who have agreed to be contacted for potential research studies, and e-mail invitations to University of Pittsburgh employees. Interested participants underwent a screening assessment. Inclusion criteria were being a cisgender woman, aged 45 years or older, and screening positive for bothersome low libido by answering yes to all questions on the Decreased Sexual Desire Screener (Clayton et al., 2009, 2013). Women were excluded if they did not have a current sexual partner; could not perform basic activities of daily living without assistance; if they had current elevated depression symptoms on the Patient Health Questionnaire-2 (Kroenke et al., 2003); current use of recreational drugs (other than marijuana); consumption of more than 7 alcoholic beverages per week; having started a new antidepressant medication in the prior three months; current intimate partner violence as measured by the Hurt, Insulted, Threatened, Screamed screener (Punukollu, 2003); reporting very high relationship dissatisfaction on the one-item version of the Relationship Assessment Scale (Fülöp et al., 2022), or answering "high" or "very high" levels of pain with vaginal intercourse on a 5-point Likert scale. This study was approved by University of Pittsburgh Institutional Review Board and all participants provided informed consent. Informed consent took place with a trained member of the research team, who described the risks, benefits, and voluntary nature of the study using an IRB-approved script. The research staff member also explained the randomization process to potential participants. Participants were given an opportunity to ask questions and opt to participate or wait and decide whether to participate later.

Procedure and Measures

Women were randomized to a mindfulness group or an educational control group. Both groups met for approximately two hours once a week for six sessions total. Groups had four to eight participants each. The principal investigator (HNT) facilitated both groups. A mindfulness teacher also co-facilitated the mindfulness groups. Both groups met over videoconferencing software (Zoom, Zoom Video Communications, San Jose, CA). The intervention was a six-session mindfulness-based intervention adapted to focus on sexual health at midlife. It contained instruction in mindfulness-based stress reduction (meditation, body scan, awareness of breathing, yoga, loving-kindness meditation) and sexual psychoeducation (female sexual response, factors contributing to sexual difficulties in midlife/menopausal women, partner sexual issues, body image). The comparator was a six-session health education intervention. Topics included osteoporosis, heart disease, menopause symptoms, preventive health, stress, mood, and sleep. Women who were randomized to the education group received a brochure regarding local mindfulness resources after they completed all sessions.

The follow-up qualitative interviews were part of the design of the original trial. At the conclusion of the final meetings for both groups, participants in both the mindfulness and education groups were invited to participate in individual interviews by the group facilitator,

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yielding a convenience sample. These interviews were conducted over videoconference by a Ph.D.-level, female, trained qualitative research specialist (FAC), lasted approximately 60 min, and used a semi-structured guide (supplemental materials). The semi-structured guide was developed by all members of the research team. This qualitative research specialist was not involved in the execution of the clinical trial. No others were present during these interviews. The interview guide asked about participants' experiences with the trial, including screening, consent, randomization, group participation, technology, and study assessments. The full interview guide has been included in the supplementary materials. Both the mindfulness and the education groups were probed using open-ended questions regarding preferences about their group format and topic preferences. Interviews were audio recorded and then transcribed verbatim, with personally identifying information omitted. Transcripts were not returned to participants prior to analysis.

We also conducted qualitative interviews with women who were enrolled but did not attend groups. These were women who screened into the study, agreed to participate, enrolled, and were randomized, but did not attend any sessions. The principal investigator conducted interviews with these women via telephone using a semi-structured guide focused on barriers and facilitators to participation. Interviews lasted approximately 20–30 min. Interviews were audio recorded and transcribed verbatim. Participants in the longer interviews for those who attended the intervention and control groups were compensated $20 for participating in interviews. Participants in the shorter interviews of those who did not participate in any sessions did not receive compensation. Interviews took place in 2021. Participants completed interviews within 12 months of participating in the trial.

Data Analysis

We used a thematic analysis approach to data interpretation (Braun & Clarke, 2006). Themes were not identified in advance but were allowed to emerge from the data. Atlas. ti software (Lumivero, Berlin, Germany) was used to assist with coding. First, the two investigators (HNT and FAC) familiarized themselves with the data by reading all transcripts. Next, these two investigators met to define an initial codebook with descriptions of each code. This codebook was applied to a subset of two interviews to further refine the codebook. Discrepancies were discussed. Then, the two-investigators both coded four interviews and compared to ensure inter-coder agreement, after which the principal investigator applied codes to all data. Once codes were applied, the investigative team met to identify subthemes and themes in the codes. Finally, key insights were extracted. We did not review key insights with participants. In our results, we present the key themes with illustrative quotes.

Results

The demographics of participants are summarized in Table 1. The mean age of interview participants was 58.4 (SD 7.5). The majority of women were White (88%) and had some college education or higher (97%). Most women were married (75%) and most were post-menopausal (81%). Out of 18 women who attended at least one mindfulness intervention session, 11 completed an interview (61%). Out of 23 women who attended at

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least one educational session, 14 completed an interview (61%). Demographics of interview participants were similar to the demographics of women in the larger pilot RCT. Some qualitative information regarding trial outcomes was previously published in the main results paper from this trial (Thomas et al., 2023). The current analysis will focus more on reasons for participation, positive and negative aspects of the groups, the experience of participating online, and reasons for not attending sessions.

Three key themes emerged from women who attended groups. First, women were interested in the intersection of sexuality and mindfulness. Second, women in both the mindfulness and education groups valued the sense of community they gained from the group format. Women praised the interactive nature of sessions, and this likely contributed to the feeling of community participants experienced. Third, experiences with attending groups over videoconferencing software were largely positive. Suggestions for improvement included a better explanation of the randomization process and more didactic information about sexuality and aging in both groups. Non-attendees listed time conflicts and lack of private space to participate in groups as their top reasons for dropping out. Themes are discussed with representative quotes below.

Interest in the Intersection of Mindfulness and Sexuality

When asked in an open-ended question why they were drawn to the study, many women stated it was because they found the combination of mindfulness and sexuality novel. Women had a desire to learn more about sexuality and aging, and many had not considered the role of mind–body connections or mindfulness with regards to sexuality. Most women cited this interest as their main reason for participation, while smaller numbers of women cited treating low libido, contributing to science, or receiving money. Most women expressed long-term difficulty with libido and a desire to find an effective treatment, and this motivated them to participate, but beyond that, they saw mindfulness as a novel approach to this issue. Said one woman:

> It was just really intriguing to me - the interesting part was mindfulness. I really wasn’t that familiar with before I took the course… I just thought that was a unique way to go about it. - Age 64, randomized to mindfulness

Some women had some previous experience with mindfulness, and this attracted them to the study. Other women had very little experience with mindfulness, but the desire to learn more drew them in. One woman said:

> When I saw it was for my age group and a topic that I had been struggling with forever - the libido stuff, I just thought how amazing. I didn’t have to pay for this. They’re paying me. I thought it would be a great opportunity to learn in that area. Mindfulness. – Age 50, randomized to mindfulness

Value of Group Format

Women in both the mindfulness and education groups found the group format highly valuable. One woman described it:

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> A feeling of support. And I'm not going to see any of these women probably ever again, but the feeling that there are these other women who are out there experiencing the same thing, and we're all in the same boat - that's comforting. The sense of community - that was unexpected and nice. – Age 51, randomized to education

This woman was surprised by the degree of connection she formed with the other women in her virtual group. Women reported that the group experience led to increased positive feelings about the menopause transition.

The group format gave women the sense that menopause is a shared experience among midlife women. They reported that they felt less alone.

> [With] some of the other women sharing their experiences, [it] helped you feel like you weren't alone… it was great to talk to other women because women don't really talk about this stuff in general. It was really nice to have a roomful of people going through the same thing. – Age 54, randomized to education

Another positive aspect of the group format was allowing women to feel more "normal." Hearing that other women experienced some of the symptoms they were having was reassuring. This was especially true for symptoms that women do not traditionally associate with menopause, such as body aches or cognitive symptoms. Said one woman:

> Everybody was nice and kind and being open. And it's nice to know there's people that will open up and share their experiences to help each other… Giving me the knowledge to know I'm not alone, other people were out there doing this, and that I'm not abnormal. [I'm] just feeling better about myself now. – Age 56, randomized to education

When they found out that other women experienced some of the same menopause symptoms that they had, they felt less "abnormal" and less anxious about the menopause experience. Another woman reported:

> I definitely am not worrying quite so much. It was nice to know that other people are going through the kind of stuff that I am, as far as menopause. So it wasn't so scary, when I think about what changes are going on." – Age 51, randomized to education

Finally, women reported that the group format was valuable because it allowed them to exchange ideas regarding how to manage menopause symptoms and related health concerns. In groups, women discussed with one another treatments they had tried for low libido, vaginal symptoms, hot flashes, and weight. Women found personal testimony from other women about potential solutions valuable. Women in the groups felt they could trust one another's advice, even thought they had just met.

> [We] talked about what medications they've been given by doctors and how those were working… Even if you look things up online or if you're trying to get help with symptoms, you really don't know who to believe, or who to trust, so it's a nice in a group. – Age 52, randomized to education

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Interactive Sessions

The intervention and control groups were designed to have opportunities for participants to interact with the instructors and with one another. These interactive pieces included opportunities to share within the larger group, as well as the use of "break-out" rooms using the video-conferencing software for participants to interact in smaller groups of two to three women each. This build-in interactive nature of the sessions may have been a key reason why women were able to develop connections with one another in the groups. Most women found these opportunities for participant interaction valuable and engaging. One woman described:

> I thought that was good, especially the Q and A parts, that [the facilitator] really listened to people. She gave great information, but I really liked that she took everybody's question, and it wasn't a dumb question, you know what I mean. It was done really well. – Age 59, randomized to education

Experiences with the Online Format

Originally, this study was to be conducted in face-to-face groups; due to the COVID-19 pandemic, a virtual format was adopted. Despite initial study team concern about participant acceptance of the virtual format and of facility with the videoconference software, the vast majority of participants had positive experiences. Participants had a wide range of experience levels with videoconferencing software. We found that even new users reported that they were able to learn the software without undue difficulty. Some even felt surprised that they were able to learn it.

> Once I had it set up, then I learned to work my way around it… I just never used it before then. I thought it was great. It's nice to have a setting right in front of your face at home. I don't have to go out in the snow, I don't have to find a way to get to a meeting, everybody's in front of me, it's more comfortable… When I told her [research assistant] I couldn't get in, and she said try this, try that. And then we popped into each other. So, I did have help, and that was fine. - Age 56, randomized to education

This woman found the virtual format valuable so that she did not have to travel to a study group, and she felt she had adequate support for the study. In particular, the in-the-moment support from research staff during a session was highly valuable. This participant also notes that being able to see one another's faces contributed to forming a connection. This sentiment was echoed by other participants, who reported that they were looking forward to being able to use the videoconferencing in other venues, such as to communicate with family. Some women pointed out that if the intervention had not been virtual, they would not have been able to attend due to transportation challenges, mobility limitations, time issues, or geographic factors.

Women did report on some technological issues that occurred during the sessions, such as an unclear video image or forgetting to mute/unmute. However, these issues were infrequent and were able to be resolved quickly. One woman noted that the home practice recordings were difficult for her to hear.

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A few women reported they preferred a face-to-face format. They wondered if even stronger connections would be formed with an in-person format. One woman said:

> I think maybe it might have been easier to have conversations [in person], because when you're on Zoom sometimes two people might try speaking the same time… I think people might have opened up a little more if we were in person. And the computer makes it a little colder, even though you see the people. – Age 62, randomized to mindfulness

However, the majority of participants preferred the virtual format.

There was a subset of women who would have liked more didactic information in the sessions, including increased use of visual aid like screen sharing slide presentations and handouts, to reinforce the information that was being discussed. Both groups did devote some portion of sessions to slide sharing, and each participant in the mindfulness group was provided a printed workbook. However, the majority of sessions were more interactive and experiential than didactic.

Understanding of the Randomization Process

Women underwent an informed consent process explaining the study, potential risks, and potential benefits. Some women understood that they could be randomized to the mindfulness group or an educational control group. A subset of these women did express disappointment about being in the educational group. However, most women in the educational group were satisfied and enjoyed attending the group, even if it was not focused on low libido. One woman explained:

> And I was hoping that I would be in an intervention group that would give me some helpful tools for improving my low libido. But, I understand how research works, and I think I was in the control group, so that's fine. I thought it was really nice to connect with some other ladies that were going through a lot of the things that I've experienced at this stage of life. And it was very informative as far as things that are going on with my body and my emotional state. I didn't really expect to talk about them, but it was really helpful to learn that they are normal and part of going through menopause. – Age 48, randomized to education

In contrast, there were a few women who expressed surprise at being in the educational group. Said one woman:

> I was surprised how little talk there was about why you don't have a high sex drive, or some do. But maybe because I was in a different group. Like, what causes it, why do some people have it and some don't, what else can you do, eat, drink, feel, to make it rise – Age 56, randomized to education

Despite the informed consent process, this woman expected to be in an intervention focused on low libido. These women expressed frustration, as the group was not what they expected.

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Women Who Were Not Able to Attend

Women were enrolled into the study after consent, and then randomized to the intervention or control group. After randomization, women were informed when the groups would be meeting. This process led to some women needing to drop out after randomization due to schedule conflicts. In fact, for the majority of women who were not able to attend (six out of nine women interviewed), it was due to time conflicts. Several of these women stated they were very interested in the group and expressed strong disappointment that they would not be able to attend due to scheduling conflicts. Said one woman:

> I agreed to participate, and I was fairly excited about this one. And I got in my e-mail a list of dates and times for meeting. And I was looking over it and every single one of them I KNEW I would be working… And I'm looking at all of them like, this one too? Come on! So I had to let her know that I wouldn't be able to do it. – Age 60, randomized to mindfulness

A few women who did not attend their group meetings stated that personal conflicts arose that would make them too busy to participate in the study at the present time. One woman explained:

> We were put into a situation where we became foster parents… And my life just completely changed and I couldn't figure out how I was gonna put room into my schedule to participate in that study. – Age missing, randomized to mindfulness

Some of these women noted they would like to be contacted in the future if another opportunity to participate arose.

Three women of the nine dropouts interviewed expressed concern about privacy. They noted that it would be difficult for them to participate in the sessions, because they shared living space with others, such as husbands, and discussing intimate subject matter with others in their space was prohibitive to participation. One woman explained:

> My husband would be home and I just thought I would be uncomfortable talking. I've done studies, but most of them I would go into the office or whatever. I was really hoping I could get involved, because when I saw that study, I was like, yeah this is perfect for me… And if there would be something in the future I would definitely consider it." - Age 58, randomized to mindfulness

Discussion

Prior to this paper, little was known about what aspects of group-based behavioral interventions midlife women find most useful, whether women appreciate online-delivered group-based behavioral interventions, and why women may choose or not choose to participate in this type of clinical trial. In this qualitative study of midlife and older women enrolled in a pilot RCT of a mindfulness intervention for low libido, several important themes emerged. Women were interested in the topics of sexuality and mindfulness and appreciated the sense of community gained from the group format. Women did not encounter undue difficulty using videoconferencing software and found the interactive nature of the sessions valuable. However, some women requested a better understanding

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of the randomization process prior to enrollment and more didactic information within the sessions. For most women who were randomized but did not attend their group, it was due to scheduling and time conflicts.

When asked in an open-ended question why they were drawn to the study, many women stated their interest about the intersection of mindfulness and sexuality. Many women in our study had little prior experience with mindfulness, but a strong desire to learn more. Mindfulness has been growing in popularity in the past two decades and is becoming more and more a part of the public consciousness (Kachan et al., 2017). The general public's increasing familiarity with mindfulness may make individuals more comfortable with considering participation in such a group.

Women found the group format valuable because it provided a sense of a shared experience of the menopause transition (Dunn et al., 2012; McDaniel et al., 2003). Women in both the mindfulness groups and the education groups spoke about this shared experience. Women reported that they felt less "alone" in the experience of menopause. This could mean that participating in either one of the groups could result in some therapeutic effect. However, significant improvements in sexual distress were only seen in the mindfulness group.

The value of a shared experience has been highlighted in other studies of group-based interventions (Due-Christensen et al., 2012). A sense of shared experience and community may be particularly beneficial among midlife and older women. Experiences of isolation and loneliness are often higher in midlife and older women (Umberson et al., 2022), and isolation and loneliness can have negative effects on the physical and mental health of older adults (Hawton et al., 2011). Researchers should consider utilizing a group format when delivering behavioral interventions to midlife and older women.

Women also found the groups, both mindfulness and control, valuable because hearing from other women normalized their menopause experiences and symptoms. Other studies have found that normalization of experiences is a valuable aspect of group-based interventions (Henoch et al., 2016). Our prior research has highlighted the importance that midlife and older women place on understanding whether their menopause symptoms (H. M. Thomas et al., 2022), especially those tied to sexuality and sexual function, are "normal." While learning that certain menopause symptoms are common is valuable for women, it is also important to continue highlighting that the experience of menopause is highly variable and dependent on a range of factors. Healthcare providers should keep this variability in mind when counseling women.

Women also valued being able to share potential treatments and solutions with one another. They found it valuable to hear from others what had worked well for various menopause symptoms, such as hot flashes or vaginal dryness. Another study found that sharing advice was a valued part of a menopause support group (Moghadam et al., 2019). Personal testimony can be particularly powerful when considering treatment of symptoms that are self-reported and often difficult to measure biologically, such as vasomotor symptoms. It is important to note that, in this study, a physician researcher with expertise in menopause was present at all sessions. Menopause groups where peers can exchange ideas can be valuable,

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but those organizing the groups should consider whether groups should be facilitated by an individual with medical training so that it can be highlighted when non-evidence-based approaches are being discussed. Future work could be focused on the development of various avenues, both inside and outside the healthcare system, for women to have these positive group formats to discuss the changes that come with midlife. Future work could also build in even more opportunities for group interaction.

The primary results of this pilot trial have been previously published (Thomas et al., 2023). We found that satisfaction with both groups was high, but women from the mindfulness group experienced significant improvements in sexual distress, while women in the educational group did not. A previous study found that both a mindfulness group and a sex education group resulted in significant improvements in sexual desire, arousal, and distress (Brotto et al., 2021). This study and other work highlight that supportive group environments seem to be therapeutic in and of themselves, beyond the effects of the group content. Controlled that utilize an "active" control of this nature can try to control for the effects of attention and group support, but they can also decrease the likelihood that an intervention will show effects above and beyond the "active" control. Researchers need to balance these tensions when designing studies.

Women's experiences with videoconferencing technology were mostly positive. Most women, even those with little experience, were able to learn to use the videoconferencing software. Having ample support from study staff, before, during, and after sessions to help teach and trouble-shoot was important to facilitating full participation. Most women noted that the virtual format made attendance more convenient (and safer, given this trial was conducted when many people were self-isolating due to the COVID-19 pandemic), with some even saying they would not have been able to attend a face-to-face session. When considering health disparities, the virtual format has both the advantage of extending reach and accessibility while also the disadvantage of having technological requirements that may represent barriers to participation for disadvantaged groups (Budhwani et al., 2022). Few trials have compared in-person to virtual mindfulness in the same study. One group has found that in-person and virtual mindfulness both result in significant improvements in stress and post-traumatic stress disorder symptoms, but in-person mindfulness results in higher class satisfaction and trust in the instructor and other participants compared to virtual mindfulness (Rice et al., 2018, 2024; Rice & Schroeder, 2021).

Our qualitative findings yielded some opportunities for improving the mindfulness and educational groups as well as the study procedures. Women found the interactive nature of the sessions valuable, but some requested more didactic information. When designing the study, especially given the pivot from in-person to virtual, the study team wanted to ensure that participant engagement in sessions was high. Therefore, ample time for discussion and interaction was built into the sessions. In future iterations of this intervention, we will plan to intersperse more didactic information in between interactive and group discussion elements.

Some women also conveyed a lack of understanding of the randomization process, expressing surprise at not being in a mindfulness group. On the other hand, some women were initially disappointed at being randomized to the educational group, but later reflected

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that it was valuable. These findings underscore the importance an enhanced informed consent process for future studies. Some women who were randomized later realized they had a time conflict with the sessions and had to withdraw, despite interest in the study. These findings also point to the value of setting the dates and times for sessions *prior* to study enrollment and randomization.

There are limitations to this study. The pilot study that this qualitative study was nested in only included cisgender women. There is an urgent need for further research on experiences of sexuality and aging among transgender and nonbinary individuals. Most participants were White and more highly educated. Only a portion, as opposed to all participants, agreed to participate in follow-up qualitative interviews, which could yield a biased sample. In addition, the principal investigator of the trial conducted the follow-up interviews with participants who did not complete any sessions. These women may have been biased to provide more favorable responses, since it was the principal investigator interviewing them.

Our use of qualitative interviews after completion of intervention and control groups is innovative. Qualitative studies are often performed prior to behavioral randomized controlled trials in order to inform the intervention content; we did perform qualitative interviews prior to this intervention that did indeed inform the design and content of the intervention and the study itself (Thomas et al. 2020). The purpose of the interviews in this study was to better understand why participants enrolled, barriers and facilitators to attendance, and aspects of the study they liked and did not like. This information could be used by research teams to improve the design of future trials and interventions, hopefully leading to more successful studies. Integrating qualitative data collection into randomized controlled trials can assist with not only the design of future studies, but also interpretation of results (Dworkin et al., 2006). As a result of this study, we recommend researchers consider utilizing a group format when designing behavioral interventions for midlife and older women, as this design offers many benefits for participants, but ensuring that a qualified professional is present can ensure information exchanges is evidence-based. In addition, healthcare systems can consider building in opportunities for midlife women to gather and exchange information regarding health.

Conclusions

Midlife and older women are interested in novel treatments for managing low libido, including mindfulness. Group-based formats are highly valuable for midlife and older women. This population is able to learn new technology to successfully participate in virtual behavioral trials, and they appreciate a balance between interactive and didactic material. Establishing dates for behavioral sessions prior to randomization may help minimize dropout due to time conflicts. These findings can assist in planning larger clinical trials of mindfulness-based interventions for midlife and older women.

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Availability of Data and Material (Data Transparency)

On request from the corresponding author.

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Table 1

Demographic data on participants in qualitative interviews

	Mindfulness group (*N* = 11), *N*(%)	**Education group** (*N* = 14), *N*(%)	**Non-attender** (*N* = 9), *N*(%)*	**Overall** (*N* = 34), *N*(%)
Age (in years) (M, SD)	59.6 (7.8)	58.2 (8.4)	56.8 (5.0)	58.4 (7.5)
Race				
Asian American	1 (9)	0	0	1 (3)
Black or African American	1 (9)	2 (14)	0	3 (9)
White	9 (82)	12 (86)	7 (100)	28 (88)
Education				
Completed high school	0	1 (7)	0	1 (3)
Some college or college grad	3 (27)	6(43)	3 (43)	7 (38)
Master's or professional degree	8 (73)	7 (50)	4 (57)	19 (59)
Marital status				
Divorced	1 (10)	4 (29)	1 (14)	6 (19)
Living with partner	1 (9)	1 (7)	0	2 (6)
Married	9 (82)	9 (64)	6 (86)	24 (75)
Menopausal status				
Pre/perimenopausal	1 (9)	3 (21)	2 (29)	6 (19)
Postmenopausal	10 (91)	11 (79)	5 (71)	26 (81)

*Demographic data were not available for two participants