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ORIGINAL STUDY

''It just makes me feel a little less alone'': a qualitative exploration of the podcast ''menopause: unmuted'' on women's perceptions of menopause

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Abstract

Objective: Menopause can negatively impact women's quality of life, with many women reporting inadequate information and support. Podcasts have grown in popularity in recent years and have been found to be accessible methods for increasing knowledge and challenging perceptions of stigmatized topics. The current research aimed to understand the impact of the podcast ''menopause: unmuted'' on women's menopause-related knowledge, understanding, and communication practices.

Methods: A diverse sample of 30 women aged 40 to 60 years listened to the podcast series, which focused on menopause stories, before taking part in semistructured interviews to discuss the impact of the podcast on how they understood and communicated about menopause. The interviews were analyzed thematically.

Results: Two overarching themes were identified in the data. A ''journey of knowledge gain'' explores participants' understanding of menopause before listening to the podcast and describes how this is deepened by hearing and connecting with women's stories. ''Reframing menopause'' describes the impact of the podcast, where women reflect on the value of communication amongst women, challenge and re-evaluate the stigmatization of menopause, and discuss ways to make positive behavioral changes in their lives.

Conclusions: The podcast ''menopause: unmuted'' helped women to learn about the menopause experience, have a greater sense of belonging to a community of women, and feel empowered to make changes in their own lives. Sharing stories via podcasts has potential as an accessible and impactful medium to educate women and reduce the widespread stigma associated with menopause.

Key Words: Aging – Menopause – Podcasts – Qualitative research – Women's Health.

Menopause is a ''milestone event of remarkable changes'' (p. 33)[1] in a woman's life, defined by the final menstrual period, which reflects a loss of ovarian follicular function.[2] In the United States (US), the average age of natural menopause is 52 years, but this varies considerably from 40 to 58 years.[2] Among other symptoms,

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women frequently report vasomotor symptoms (80%), impaired cognitive function (60%), and depressive symptoms (23%).[3] While the specific symptoms experienced, the duration, and the severity of symptoms vary, research has consistently shown that menopausal symptoms negatively impact quality of life.[4-7]

Sociodemographic and lifestyle factors have also been observed to affect menopause-related quality of life. A healthy body mass index, having a college degree, not smoking, and regular exercise were associated with higher quality of life for women going through menopause.[8] Research shows that quality of life during menopause transition is negatively impacted by menopause symptoms yet positively influenced by social support.[6,9] Despite this, research has demonstrated that women perceived there to be insufficient support for their menopause journey and report feelings of isolation.[10-12]

Moreover, varying levels of engagement with healthcare providers related to menopause symptoms have been reported. Research found that 60% of 3,135 peri- and postmenopausal women had sought support from healthcare providers about general menopause symptoms in the last year.[13] For more intimate symptoms, such as vaginal atrophy (reported by up to 50% of women postmenopause[14]), this figure decreased to less than half of those experiencing these symptoms.[15] Many reasons have been put forward to account for these relatively low levels of communication, including believing symptoms to be a natural part of ageing,[16] feeling uncomfortable talking about menopause,[16,17] the historical stigma of menopause,[18] and its association with the ''failing'' of the female body.[19,20]

Given the impact of menopausal symptoms on women's quality of life and the impact of social discourse on help-seeking behaviors, there is a need for accessible health information on this topic.[21] However, written health information regularly exceeds the literacy abilities of the general public in the US.[22,23] Only a minority of menopause websites have appropriate readability levels for the population.[24,25] A small body of research has found general health information presented verbally increased health knowledge[26,27] more than written content,[28] suggesting that audio-based materials may be an accessible and understandable means of communicating health information.

Podcasts are audio files that are designed to be downloaded from the internet and listened to on personal devices.[29,30] According to recent data, 75% of people living in the US were aware of podcasts, and 37% had listened in the last month,[31] with the primary motivation to learn new information.[32] Therefore, podcasts provide opportunities for communicating health information, and have been shown to increase knowledge and change health-related behaviors in relation to nutrition[33,34] and weight loss.[35,36] Moreover, podcasts have been observed to challenge negative attitudes and normalize perceptions around health topics in Western cultures.[37]

Given the stigma surrounding menopause, podcasts may be particularly relevant and well-received by interested listeners. Women make up 49% of regular podcast listeners in the US.[38] Of total monthly podcast listeners in the US, 32% were aged 35 to 54 years, and 20% were aged 55 or over. These demographic statistics suggest that a podcast on menopause may be relevant to the large proportion of the population who already consume information through this channel.[38]

The podcast series explored in this research, ''menopause: unmuted,'' uses single-point perspective and immersive story-telling techniques to share the experiences of five US women during this mid-life stage. Each episode features one woman describing her story. Alongside these first-hand accounts, a women's health professional provides a medical perspective to contextualize the women's stories, offer evidence-based lifestyle advice, and address menopause myths. The podcast was funded by Pfizer Inc Women's Health Team and was designed to raise awareness of menopause symptoms and encourage increased communication about menopause.

The aim of this qualitative study was to explore the impact of the podcast series on women's menopause-related knowledge, understanding, and communication practices. A qualitative research design was deemed the most appropriate approach to address this aim, particularly when exploring personal, sensitive, and under-researched areas.[39] Rather than investigating causal relationships, qualitative research allows for open-ended questioning to tap into the richness of personal experiences[40] and socially dependent concepts,[39] with relevant in-depth analysis leading to new understanding around individuals' perspectives and feelings.[40] To capture the experiences of a wide range of women, we sought to recruit a sample that was diverse in terms of race/ethnicity, menopause experience, and education.

METHODS

Sample

Maximum variation sampling was employed within the current study. This approach involves identifying key dimensions of variation and then recruiting participants that differ from each other, based on these factors.[41] This sampling strategy was used to recruit 30 women to participate in telephone interviews, with the aim of having a diverse sample in terms of race/ethnicity, age, stage of menopause, and education.

To be eligible for the study, participants had to be (1) female, (2) aged 40 to 60 years, (3) English speaking, (4) willing to listen to the five ''menopause: unmuted'' podcast episodes, and (5) have no severe hearing or visual impairment. Participants were recruited through online advertisements placed on Craigslist in the following regions of the US: New York City, NY; Birmingham, AL; Raleigh, Durham and Charlotte, NC; Chicago, IL; Atlanta, GA; Detroit, MI. However, potential participants from other states could also access these advertisements and express interest in participating. The advertisements specified the aims and objectives of the study and the inclusion/exclusion criteria. Interested participants contacted the research team and were asked to complete a verbal telephone eligibility screening questionnaire, which included questions regarding participant demographics, stage of menopause, contact with healthcare professionals, and health literacy. Health literacy

was measured with a single-item question ''How confident are you filling out medical forms by yourself?'' (p. 561),[42] where participants could answer on a five-point Likert scale (Extremely, Quite a Bit, Somewhat, A little Bit, Not at all; reflecting most to least adequate health literacy).

To facilitate the maximum variation sample, the sample demographics were monitored during the screening process. When 25 participants had been recruited, remaining recruitment focused on participants who were non-White and/or were not college educated to increase the range of race/ethnicity and education. The final sample enabled saturation relating to scope, as the sample was both adequate (large enough for replication), and appropriate (female participants were purposefully recruited as experts-by-experience), allowing for diversity in perspectives.[43]

Procedures

Prior to the interview, participants were asked to listen to five of the ''menopause: unmuted'' podcasts (with an additional sixth episode, summarizing the content of the previous five). An overview of the podcast episode descriptions is provided in Table 1. The podcast episodes presented real women's personal experiences of menopause in a story-telling format and was not intended to offer advice on pharmaceutical treatment options for menopause. The main topics covered within the podcast centered around physiological and psychological changes, the management of menopause symptoms, interpersonal relationships, and communication about menopause. Participants were given approximately 1 week between their enrolment (after confirming eligibility) and taking part in the interview to listen to the podcasts. All participants self-reported listening to all five of the podcasts (with about half listening to the optional sixth episode), which was demonstrated by participants being able to discuss the content of the podcast during the interview. Telephone interviews lasted 30 to 45 minutes (average: 36 min) and were conducted in October 2020 by two experienced qualitative researchers (P.S. and A.E.). A semistructured interview guide was developed through discussion with the research team. It was used to facilitate conversations and was designed to explore participants' motivation for taking part, experiences of listening to the episodes, any impact on knowledge and understanding, and on conversations about menopause. The interview guide can be found in Supplemental Digital Content 1, http://links.lww.com/MENO/A815. After participation in the telephone interview, participants were compensated with a $50 gift certificate to thank them for their time and effort.

Role of the researcher

A critical realist epistemological approach was adopted. Critical realism acknowledges ''knowledge of reality is mediated by our perceptions and beliefs'' (p. 11).[44] In line with this, the researchers in this study align with hermeneutics, with the researchers actively interpreting and analyzing the participants' sense-making of their experiences and perceptions.[45,46] Therefore, it was important that the research team worked collaboratively to design this study and ensured rigor through the analysis process with the reviewing of codes and themes.

The participant eligibility screener and interview guide were developed collaboratively by A.E., P.S., and T.C. with input from experts in the health literacy field (S.B., M.W., C.H.). Recruitment and screening of participant eligibility was conducted by S.B. The interviewers (P.S. and A.E.) were PhD students, White British females in their late 20s, based in London, and had not experienced any menopause symptoms. These two researchers also analyzed the transcripts, in collaboration with a third researcher (T.C., an academic health psychologist and experienced qualitative researcher) who reviewed 10% of the transcripts for the analysis process and theme generation.

Analysis

Interviews were audio recorded and transcribed verbatim, with any identifiable information removed. Transcripts were analyzed inductively using thematic analysis, which is a method for identifying, analyzing, and reporting patterns within the data.[47] To facilitate analysis, transcripts were imported into NVivo (version 12) and were subjected to an iterative six-step process.[47] This included: (1) familiarization, (2) generating initial codes, (3) searching for themes, (4) reviewing themes, (5) theme definition and naming, and (6) writing this into a coherent narrative.

TABLE 1. *Overview of podcast episodes (taken from episode descriptions on www.menopauseunmuted.com)*

Episode	Title	Description
1	Susan's story	Susan's story is about honesty of experience. She has no doubt that talking and sharing experiences with her friends and confiding in family and coworkers helped her navigate her way through menopause.
2	Rachel's story	From feeling invisible to invincible, Rachel's story is about trying to navigate the emotional turbulence and physical changes associated with menopause, while managing other personal pressures.
3	Charlene's story	With the sudden onset of menopause, Charlene's story is about her taking control, changing the way she worked to help manage hot flashes, and finding ways to manage her anxiety. In hindsight, she wished she'd been more vocal.
4	Kathie's story	Kathie experienced menopause in her 30s, induced by a partial hysterectomy. Now aged 54, her story is about becoming a cheerleader for her friends experiencing menopause and being there to talk and help them stay positive throughout this next phase of life.
5	Rebecca's story	Of all the symptoms she experienced, Rebecca felt powerless to combat the weight she gained. Rebecca's story is about switching focus to celebrating the power and capabilities of a woman's body and sharing her experience with her two teenage girls.
6	Sharing stories	In the final episode of season one, Dr Mary Jane Minkin shares some of her story highlights.

To begin analysis, three transcripts were selected for richness and diversity of themes; these transcripts were analyzed independently by three members of the research team (T.C., P.S., and A.E.). A preliminary analysis meeting was held to discuss the emerging themes, any divergences in views, and coding consistency. After this preliminary meeting, two team members (P.S. and A.E.) analyzed the remaining transcripts independently. To increase trustworthiness, regular analysis meetings were conducted to discuss new themes and any instances of disagreement in coding until a consensus was reached. A final meeting was also held to discuss the hierarchical structure of the themes. Only data relating to the impact of the podcast is presented in this paper; data relating to the mechanisms of a podcast format for communicating health information are reported elsewhere.[48]

Representative quotes are presented throughout the findings. These quotes are contextualized with key demographic information. Participant number (P), age, self-reported race/ethnicity (A = Asian, B = Black/African American, W = White, White, H = Hispanic/Latina, O = Other), and whether they felt they had experienced menopausal symptoms (SY = yes, SN = no, SU = unsure) were displayed in brackets after the quote. Therefore participant 1 who was 55, identified as White, and was unsure if they had experienced symptoms would be contextualized as (P1, 55, W, SU).

Ethics/consent

Ethics approval was granted by the University of Westminster, Liberal Arts and Sciences Research Ethics Committee (ETH2021-0043). All participants provided informed consent via an online platform (Qualtrics) or went through the consent process verbally with a researcher. The interviewers reestablished informed consent verbally before the interview with all participants, reiterating the rights of the participant to decline to answer questions, and the right to stop the interview at any time. Postinterview, participants were provided with information that included signposting to menopause organizations. Audio recordings of the interviews were professionally transcribed verbatim and all identifiable information was removed. Transcripts were linked to demographic information using a participant number.

FINDINGS

An overview of the final sample participant demographics is provided in Table 2. The majority of participants felt that they had experienced menopause symptoms ($N = 19$, 63.3%), while a quarter were unsure ($N = 8$, 26.7%). Half of the sample had been told by a healthcare professional that they were going through menopause ($N = 15$, 50.0%), but only around a third had specifically had an appointment with a healthcare provider about menopause ($N = 9$, 30.0%). Almost all women ($N = 29$) self-reported having adequate health literacy skills. Within the qualitative data, two overarching themes were identified exploring the impact of the podcast series on women's menopause-related knowledge, understanding, and communication, as shown in Table 3.

TABLE 2. *Overview of sample*

	Category	Number (percentage)
Age	40-45 y	12 (40.0)
M = 48.80 y	46-50 y	6 (20.0)
SD = 7.42 y	51-55 y	4 (13.3)
	56-60 y	8 (26.7)
Race/ethnicity	White	16 (53.3)
	Black/African American	6 (20.0)
	Hispanic/Latina	4 (13.3)
	Asian	1 (3.3)
	Other[a]	3 (10.0)
Education	Grade 12/general education development (GED)	3 (10.0)
	College 1-3 y	5 (16.7)
	College 4 y +	22 (73.3)

M, mean; SD, standard deviation.
[a]Participants who identified as ''other'' stated their race/ethnicity as: American, East African, and Turkish.

The first theme revealed the journey of knowledge gain through hearing women's diverse personal stories. The second theme describes the impact of reframing negative perceptions of menopause on participants' feelings of isolation, and their confidence in sharing experiences and prioritizing self-care. These themes and associated subthemes are presented here.

Journey of knowledge gain

The theme, ''journey of knowledge gain,'' captures participants' initial and often limited knowledge about menopause. Through engaging with the stories presented on ''menopause: unmuted,'' participants reflected on the many unknowns of menopause despite the inevitability of it for all women. The journey of knowledge gain was also discussed in relation to participants' perceived increase in understanding of menopause symptoms, symptom management, and the heterogeneity of experiences.

Entering unknown territory

Participants talked about their knowledge and understanding of menopause before listening to the podcast. Initial understanding varied due to multiple factors, such as participant age, previous communication with female family members or friends, and if they had experienced any symptoms associated with menopause. Regardless of initial understanding, the majority of participants felt that menopause was relatively unknown and unpredictable.

Generally, those who were younger, or had not yet experienced symptoms had limited knowledge about menopause, yet most were aware of the hallmark symptoms, such as hot flashes and night sweats. Many participants drew on knowledge from seeing family members experience menopause: ''I learned about hot flashes because my mom went through that'' (P30, 40, H, SU). However, participants noted that information learned in this way was not particularly detailed: ''I didn't have that like step by step of this is menopause, the only thing I think my mom taught me about it was, you're not going to like it'' (P20, 48, B, SY).

TABLE 3. *Table of themes*

Main theme	Subtheme	Example quotes
Journey of knowledge gain	Entering unknown territory: Whilst menopause was an inevitable part of life, participants had limited menopause-related knowledge, particularly related to the diversity of experiences.	''I didn't know that much to tell you the truth.'' (P17, 45, W, SY). ''The only thing I really knew about menopause was you get hot flashes, and you stop having your period.'' (P26, 40, H, SU). ''I think that everybody's journey is a lot different.'' (P5, 40, W, SU).
	Learning from other women: Women were motivated to engage with the podcast to develop their understanding of menopause from women who had experienced it. As a result, they felt more knowledgeable about all aspects of the menopause experience.	''I ran into the study right about the time when I was thinking about, hey, this is starting to happen to me, maybe I should learn some more.'' (P27, 51, W, SY). ''It seemed to me that I would be able to learn from other women's experiences.... so, I thought it would be good for me to hear some other women's experiences and perspective.'' (P4, 59, W, SY). ''I didn't know there was so many different ways to experience it on that personal level.'' (P2, 58, W, SM)
Reframing menopause	Opening up conversations: Against the backdrop of society viewing menopause as ''taboo,'' women described feeling more motivated to communicate with friends, family, and healthcare providers about menopause experiences.	''For some reason people just don't talk about it to family and friends. Don't ask me why but they just don't, it's like taboo or something'' (P9, 46, B, SY). ''I felt empowered. I did. I feel empowered now to share the information, but also to seek the information and to be able to speak about things to my doctor, whomever I choose that I want to do that with. I've learned that open dialect, open conversation, and learning and continuing to share and get other people's experiences are a positive thing, and I think that it's going to help.'' (P5, 40, W, SU). ''Yeah, just telling loved ones what I'm going through and what is causing it, validating to them that it is menopause.'' (P8, 54, O, SY).
	Finding optimism, solidarity, and empowerment: Participants re-evaluated their negative associations with menopause to gain new optimistic perspectives through feeling less alone and having a sense of belonging to a sisterhood of women.	''I think with anything thoughts have power and if we benefit negatively about it, it's going to be that much worse. So, I like to err on the side of positivity even though there is no cure for it, which I wish ideally there was, but we have to try for the most part to think positively.'' (P22, 52, H, SY). ''But it's just good to know that other people have had the same experiences, it just makes me feel a little less alone in what's going on.'' (P12, 60, W, SY). ''Knowing that there's a huge network of women... it's a life saver to be honest.'' (P13, 42, O, SY).
	Prioritizing self-care: Participants described the lifestyle changes that they were motivated to implement to manage the menopause transition and improve their overall physical and mental health.	''I would say I think just getting my sleep and eating health, like a well-balanced diet, like I didn't really realize that sleep could help.'' (P21, 59, W, SY). ''I've never been really that physically active, but the one thing that was, that I did take from all those women's podcast stories was that, OK, I might be over the hill, but maybe it's really time for me to really start getting physically active.'' (P16, 57, W, SY). ''I was planning to do like, yeah, search advice or something and I've started this morning, just right now.'' (P1, 40, O, SY).

By contrast, those with the greatest core knowledge before listening to the podcast tended to draw on their own experiences: ''I don't have the hot flashes now, thank God, because those are really absolutely awful'' (P6, 52, B, SN). A minority of participants had a deeper understanding resulting from additional knowledge resources such as an education in women's health or awareness through conditions that are potentially linked to developing menopause symptoms:

''I'm a breast cancer survivor, so I'm on the verge of menopause...I've been thinking about menopause for the past five years since I was diagnosed [with cancer]at the age of 35.'' (P1, 40, O, SY)

Whilst participants differed in their core knowledge, some discussed how awareness of symptoms did not necessarily equate to a deep understanding of menopause. Often, the more granular experiences of menopause, especially ''the down and dirty, nitty-gritty of it'' (P26, 40, H, SU), remained relatively unknown before listening to the podcast. The unknown of menopause was further complicated by acknowledgement that experiences of menopause are diverse and it may not be experienced as expected: ''None of us knows what it's going to be like until we experience it ourselves'' (P18, 42, W, SU). Listening to the podcasts heightened some participants' uncertainty about menopause due to the unpredictable nature of experiences, and consequently some of the participants felt

they had limited control and felt ''helpless'' (P17, 45, W, SY). However, others tried to embrace the unknown:

''My whole thing is I don't want to be subjective or assumptive about how my body's going to react or what my own personal experience is going to be. I'm just going to let it be what it's going to be and that's the end of it.'' (P14, 46, W, SU)

The notion of menopause being an unknown was repeatedly linked by participants to the inevitability of this stage of life: ''It's going to happen whether I want it to or not'' (P18, 42, W, SU). Some expanded upon this idea, to pair the inevitability of menopause with unpleasantness, whereas some women viewed approaching menopause with more neutrality as a ''part of the life cycle'' (P8, 54, O, SY). After listening to the podcast, participants described a new appreciation that menopause was an experience shared by all women: ''It happens to every woman, if we live long enough to enjoy the menopausal experience'' (P21, 59, W, SY). The stories on ''menopause: unmuted'' helped to provide some ''peace of mind'' (P27, 51, W, SY) by presenting common experiences: ''No matter what your culture or your class or your ethnicity is ... don't be afraid of it'' (P19, 59, W, SY).

Learning from other women

Participants described a variety of reasons for participating in the research and engaging with the podcast on menopause, including to further expand and deepen their understanding. This was felt to be particularly important due to a perceived ''dearth'' (P6, 52, B, SN) of available information. Women who had not experienced menopause symptoms, or who were beginning the menopause transition, were motivated to better prepare and equip themselves: ''Making sure I put myself in the best possible position to move forward'' (P26, 40, H, SU).

Participants who were starting to experience symptoms wanted to gain clarity by understanding if their experiences were signs of menopause. As a result, participants developed a more comprehensive and ''true understanding'' (P5, 40, W, SU) of the symptoms that could potentially be attributed to menopause. This new understanding shifted the focus from hot flashes onto the multitude of other symptoms. Specifically, there were two symptoms that were consistently highlighted as being surprising to women. The first was the psychological changes that women may experience: ''Learning about how emotional people get, dealing with anger or rage, that was really illuminating'' (P30, 40, H, SU). The second was vaginal atrophy and how this may affect women's sexual activity:

''Me and my partner experienced some problems the earlier part of this year because it was, the sex was very painful for me. Now, I just thought it was because he was well endowed. . .I was just attributing it to that not, not knowing that it was because of us going through menopause and experiencing vaginal dryness.'' (P10, 57, B, SY)

In addition to learning about different symptoms, participants wanted to learn strategies from other women for managing their symptoms and therefore ''proactive'' (P22, 52, H, SY) advice was appealing. After listening to the podcast, several participants described coping strategies that they could integrate into their lifestyles: ''the water on the wrists, the fans...there were a few different situations that I didn't know about'' (P8, 54, O, SY). Where new strategies were learned, participants were particularly attuned to lifestyle approaches: ''Finding out the exercise was great to know, that that was a great remedy. Definitely happy about that, because just to know ... that's holistic'' (P28, 41, B, SU). However, a minority of participants reported limited knowledge gain in relation to coping strategies: suggesting there was ''a little bit, but not enough'' (P3, 41, W, SY).

In addition to wanting to increase their knowledge, the way in which participants wanted to learn new information was key. Real women sharing their personal and unfiltered stories was a motivator for listening, reflecting participants' desire to hear a range of diverse stories from experts-by-experience: ''who better to get it from than somebody who's gone through it, somebody who's had experiences?'' (P14, 46, W, SU). Moreover, women wanted to be a part of an environment where discussing these topics was normalized.

After listening to the podcast, almost all participants felt more informed about the different ways that menopause is experienced and acknowledged the individuality in terms of symptoms, age of onset, medically induced routes to menopause, and strategies to cope with this stage of life. Increased knowledge of the heterogeneity of menopause was described in positive ways: ''Knowing the wide, various range of things that people can go through definitely helped'' (P26, 40, H, SU).

Additionally, many participants described perceived increases in their help-seeking behaviors, encouraging them to find answers to their remaining menopause questions. This took the form of online research, searching for other menopause-related podcasts, and talking to healthcare providers. Thus, developing a full understanding of menopause was viewed as a journey, rather than a destination: ''I want to hear more podcasts. I want to be engaged in it instead of just stuck in neutral. . .Well before I wasn't even engaging, I just knew it was out there.'' (P2, 58, W, SM).

Reframing menopause

The theme of reframing menopause captures the perceived impact of the podcast, including increased communication around menopause and the experienced psychological shifts. Participants felt more optimistic about menopause, like they were part of a community, and were more motivated to integrate lifestyle changes to better cope with menopausal symptoms.

Opening up conversations

Menopause was generally seen as a ''taboo'' (P29, 40, B, SN) topic within society, connected to ''stigma'' (P14, 46, W, SU) and ''shame'' (P6, 52, B, SN). For many women, this stigma had a negative impact on their willingness to discuss menopause with others. Most participants in the current sample were ''uncomfortable'' (P22, 52, H, SY) discussing menopause, unless it was with someone they trusted: ''I have

one girlfriend that we freely talk about it and we're both comfortable sharing'' (P8, 54, O, SY). Others simply found that menopause did not come up in conversations with friends and participants generally described minimal communication with healthcare providers regarding menopause.

As a result, women often felt alone, managing their experiences and symptoms in isolation: ''Menopause is a condition; I call it suffering in silence because who the heck wants to talk about it?'' (P2, 58, W, SM). Therefore, the podcast provided a platform for women to share their experiences and open up avenues of conversation. Listening to the women on the podcast helped to mitigate some of the stigma and encouraged participants to talk to their friends, families, partners, and healthcare providers: ''You don't feel so maybe ashamed to talk about your own experience when you hear other people validating and speaking on their experiences'' (P22, 52, H, SY).

The personal stories featured on the podcast emphasized the importance of social support throughout the menopause period. After listening to the podcasts, most participants articulated an overall sense of feeling unmuted and more vocal in their menopause communication. They voiced a newfound perspective that ''communication is key'' (P10, 57, B, SY). Participants wanted to talk to others to better support themselves, but also share their own experiences to support other women: ''I've learned that open dialect, open conversation, and learning and continuing to share and get other people's experiences are a positive thing'' (P5, 40, W, SU). A particularly noteworthy theme to emerge within communication practices centered around mothers communicating more openly with their daughters about menopause and vice versa: ''I'm going to let my daughter know about the painful sex, about the vaginal dryness, about the mood swings. I'm going to let her know all aspects of it, so that she can be aware'' (P10, 57, B, SY).

In addition to talking to family and friends, some participants also reported feeling more willing to engage in discussions around menopause with healthcare providers. After listening to the podcast, a minority of participants reported scheduling appointments with healthcare providers, with the intention of becoming more informed about their symptoms: ''I booked the appointment because I listened to the podcasts and there was so many different things that just, I need to address and talk with her about'' (P25, 47, W, SY).

Finding optimism, solidarity, and empowerment

Many participants connected the onset of menopause as a ''reminder'' (P22, 52, H, SY) that they were getting older. A connection made by many participants was that menopause signaled an end to a life phase, with a few participants using metaphors of death:

''You're getting older, your eggs are drying up, it's a negative.... I'm from Africa so there's a saying about, if you have menopause it's, you're like a dead tree, you're useless basically, nothing fruitful about you, nothing pretty about you, you're dead basically.'' (P13, 42, O, SY)

Many participants spoke about how their negative associations with aging were heightened by societal perspectives where older women were ''discounted'' and were ''not being noticed as much'' (P12, 60, W, SY). The perception that menopause can be an isolating and lonely experience threads through these views: ''When you're old, nobody wants to bother with you'' (P7, 49, H, SY).

Many participants described how these perceptions of menopause shifted after listening to the podcast. Some participants reflected on gaining new perspectives, including feeling ''hope'' (P18, 42, W, SU) and reaffirmation of their value: ''we're not crazy but that it's just a life cycle and we're still valid humans'' (P8, 54, O, SY). Rather than focusing on the negative perceptions of aging signaled by menopause, some participants reinterpreted the perception of ending to reflect the strength of women and ability of the ''amazing'' (P10, 57, B, SY) female body. Therefore, some participants saw menopause as evidence of their body's natural ability to grow and develop. This view was connected to how the stories were presented: ''A lot of them were confident. . .this is what happened to me, this is how I handled it and I'm a woman, hear me roar, I'm proud of myself'' (P2, 58, W, SM). This helped some participants to reframe menopause into a more positive experience, interpreting it as ''a beautiful thing'' (P28, 41, B, SU).

Moreover, alongside the increased acceptance of the menopause transition, many participants also experienced a shift in their perceptions of isolation, feeling ''a sense of belonging'' (P4, 59, W, SY). However, it must be noted that a minority did not feel represented in the podcast—''our whole [LGBTIQ+] community was left out'' (P16, 57, W, SY). For the majority of participants who did feel represented, they felt comforted by hearing other women's stories: ''It made me feel like I wasn't such a freak, that other people were going through it too'' (P17, 45, W, SY). This new sense of menopause as a shared experience amongst women, a sisterhood, was especially impactful for participants with limited communication and support around menopause. Participants felt an intimate connection with the women who shared their stories on the podcast, leading to some of the participants referring to the women on the podcasts as if they were ''talking to a girlfriend'' (P10, 57, B, SY) or they were part of the same ''all-women group therapy'' (P15, 59, W, SY). This next stage of womanhood, menopause, was thought of as being ''part of the club'' (P27, 51, W, SY) or in ''that boat'' (P3, 41, W, SY) with other women.

Prioritizing self-care

Based on participants' knowledge of menopause-related symptoms after listening to the podcast, participants reported increases in their motivation to live healthier lives to help mitigate the effects of menopause. In particular, participants recognized the importance of taking up exercise and the value of low-intensity exercise, such as walking, yoga, and swimming. This also included varying the type of exercise that participants engaged in, for example incorporating strength training into exercise routines as ''the best way to maintain muscle mass'' (P1, 40, O, SY). Exercise was valued as a holistic approach to help manage menopause symptoms but was also

acknowledged as having broader benefits for a range of physical and mental health issues:

''That's not medication. It's something anyone can do, and it's healthy all around, and to know that that's a great remedy for all the symptoms. So, yeah, I learnt that, and I'll definitely be taking that into account'' (P28, 41, B, SU)

Furthermore, some participants cited changes to their dietary habits, focusing on ''cutting down on sugar'' (P17, 45, W, SY), adopting a ''well-balanced diet'' (P21, 59, W, SY), and staying hydrated. Meanwhile, other participants described specific diets that they had adopted before listening to the podcast: ''with the weight gain and I'm constantly working on diets and different things, suggestions that friends and family give me as far as weight loss, so I'm always working on that'' (P8, 54, O, SY). For these participants, they felt positive that their chosen approaches were recommended through the podcast, and therefore felt encouraged and motivated to continue.

In addition to physical health and dietary changes, participants also reflected more broadly about self-care and being ''mindful'' (P27, 51, W, SY) about making time for themselves. Participants described meditation, massages, and ensuring that they got enough ''rest'' (P24, 43, A, SU) as avenues of self-care, which they wanted to make time for. Other participants were not focused on specific self-care activities and, instead, committed to trying to be more in tune with their body.

Despite the wide range of lifestyle changes that participants described engaging in or wanting to engage in, these were not viewed as a panacea to alleviate all menopause symptoms. Instead, participants adopted a realistic mindset, recognizing that there was no cure or quick-fix to help women to manage the menopause transition: ''It's not like you can really take a pill for it'' (P2, 58, W, SM). Rather, women spoke of the value of integrating a range of different healthy habits into their lifestyle to ''deal with it the best [they] can'' (P17, 45, W, SY):

''I guess because there is no magic cure, there's no magic one thing that really takes away all these symptoms. It's a matter of eating better, keeping active, and a lot of other things that help.'' (P22, 52, H, SY)

DISCUSSION

To our knowledge, this is the first study to explore the impact of listening to a podcast about menopause. It suggests that the podcast was well received and seen as a valuable resource to develop individuals' knowledge and understanding around menopause. Irrespective of the broad range of demographic characteristics of the participants, all reported increases in knowledge and understanding. Those who were yet to experience menopause appeared to gain the most knowledge and, in doing so, they felt more empowered to make changes to better prepare themselves. Participants who had already experienced menopause symptoms felt the podcast helped to normalize their experiences and made them feel less alone. Across both groups, validation from the women's stories was central to reducing the stigma associated with menopause, which enabled participants to feel less isolated and facilitated a sense of connection with other women. This new understanding increased confidence and motivation to communicate more openly with friends, family, and healthcare providers about menopause and inspired women to make positive changes in their own lives.

After listening to the podcast, all participants identified some knowledge gain, whether this related to symptoms, symptom management, heterogeneity in the ways that menopause is experienced, or alternative views of menopause. As found elsewhere, participants were least familiar with symptoms relating to psychological changes and vaginal atrophy[16,17,49] and commonly reported a reluctance to discuss symptoms with healthcare providers.[50] In the current study, women reported increased confidence in discussing these types of symptoms with healthcare providers. This suggests that listening to a podcast that shares relatable, real life experiences has similar benefits to other methods previously explored to support communication with healthcare providers about menopause, such as the use of written information[51] and discussion guides.[16]

Prior to listening to the podcasts, menopause was framed by women as a taboo life experience, with some participants using metaphors of death, reflecting the prevailing stigmatization of menopause.[19] Therefore, as with previous research, menopause was seen as a threat to womens' identities by confirming their ageing.[52] The medium of relatable women's stories, together with increased awareness and understanding around menopause, enabled participants to reflect on their perceptions of menopause. The apparent success of the podcast in destigmatizing menopause mirrors findings from a previous study in the UK exploring the value of podcasts for reducing stigma in other health-related areas.[37] In the current study, the podcast enabled participants to reframe menopause and gain a sense of agency over their transition. Some participants described associations with hope and transformative liberation, which has also been reported elsewhere.[53,54] These more positive mindsets may mitigate the impact of menopause symptoms; positive attitudes have been associated with fewer symptoms.[55,56] Therefore, changing perceptions and attitudes may help to improve health outcomes and quality of life.

The sense of support and community that women experienced from listening to the podcast was a notable finding. The podcast as a platform for women to openly and honestly share their experiences of menopause in a story-telling format enabled participants to feel part of the conversation and make an intimate connection with the women. This aligns with broader research into the effects of storytelling, where the stories of others who have been through similar experiences provided emotional support, promoted feelings of empowerment, and reduced feelings of loneliness.[57,58] Taken together, participants held a deep-seated appreciation of the community of women that they now felt a part of, which has been shown to positively impact menopause symptoms in international literature.[59,60] These findings are consistent with feminist social science theories that state that menopause is

less about specific bodily experiences and more about how these experiences become meaningful through relationships with others.[54]

In addition to the psychological and perceptual changes that participants experienced in menopause knowledge and kinship with others, participants also described behavioral changes that they had adopted or planned to implement after listening to the podcast. Behavior change theory describes these changes as a process of six stages; precontemplation (no intention to change), contemplation (aware a problem exists but no commitment to take action), preparation (intent on taking action), action (active modification of behavior), maintenance (sustained changed), and relapse (falling back into old habits).[61]

The findings suggest that the podcast helped participants who were yet to experience menopause symptoms progress from the precontemplation stage to a later stage in the model. For some, there was progression into the contemplation stage, where individuals discussed preparatory actions for the transition into menopause. Other participants appeared to progress further, where actions had already taken place, such as joining a gym, increasing physical activity, or adopting a new diet. Encouraging behavior change for individuals to adopt healthier lifestyles has important implications for menopause symptom management, as both physical activity and diet are associated with positive health outcomes throughout the menopause transition.[8,62] Thus, listening to a health-related educational podcast may motivate listeners to implement positive lifestyle changes that are advantageous for symptom management.

From the above findings and discussion of this study, there are several implications for future research and practice. Given the potential for sharing knowledge and engendering support and channels for further communication, there is clear value in disseminating podcasts about menopause to a wider audience. This includes reaching a younger audience, as pre-/perimenopausal women in the current study had low levels of knowledge, and therefore have the most potential to gain a deeper understanding. Additionally, some participants felt that it would be beneficial to distribute the podcast to healthcare providers to enhance their understanding of menopause from the rich stories of women's personal journeys. This aligns with research findings indicating that many healthcare providers report lacking knowledge and confidence in communicating with women about menopause.[63,64]

Additionally, the benefits of presenting information about lesser discussed and more stigmatized topics as stories in a podcast format should be further explored. Real women sharing their personal and unfiltered stories was a motivator for participating in the study and listening to the podcast, reflecting participants' desire to hear a range of diverse stories from experts-by-experience. This method may be useful for presenting narratives of health conditions that are infrequently discussed or stigmatized, to increase knowledge and help individuals feel less isolated. This may extend to educational story-telling podcasts focusing on other areas of women's health, such as miscarriage.[65,66]

Finally, participants self-reported behavior changes after listening to the podcast, from increasing communication with their healthcare provider to increasing their participation in physical activity. This demonstrates potential for podcasts of this kind to have a positive impact on health management, including the uptake of preventive behaviors. However, further experimental study designs and follow-ups should explore the extent such behavioral changes are implemented and maintained over a longer period of time.

Strengths and limitations

There were strengths with the rigorous study design (with guidance from experts in the field of health literacy in designing the eligibility screener and interview guide) and analysis processes. This study used multiple perspectives in the creation of the interview guide, and analyst triangulation through having multiple researchers complete the transcript coding, to increase the credibility of the findings.[67] The researchers who completed the analysis (A.E., P.S., T.C.) were experienced in thematic analysis and met regularly to discuss the outcomes of analysis stages, increasing the trustworthiness of the findings.

Another strength was the size and diversity of the sample. Thirty participants are considered at the upper end of qualitative guidelines and enabled data saturation.[68,69] There was diversity in our sample, in terms of age, stage of menopause, symptoms, and race/ethnicity. The proportion of participants who identified as White (53.3%) was considerably lower than the overall US population (76.3%).[70] Previous research has suggested that race/ethnicity may impact upon women's experiences of menopause[71,72], however the overrepresentation of these communities in the current sample demonstrates that a diverse range of participants saw benefits from listening to the podcast.

Despite the size and racial/ethnic diversity of the sample, the majority of women were college-educated and self-reported adequate health literacy skills. It is known that both of these factors play a pivotal role in health outcomes.[8,73] Therefore, future research should seek to further diversify the sample population. Additionally, the sample was self-selected and may reflect a response bias toward those more motivated to engage with health information and participate in research. Lastly, participation required access to the internet to listen to the podcast episodes. Whilst the majority of the US population has access to the Internet, 14% of the population were excluded from taking part due to the digital requirements of the study.[74]

CONCLUSION

The current study has demonstrated that listening to a menopause-related podcast, specifically one that shares diverse stories from experts-by-experience, has the potential to increase women's knowledge and understanding, and normalize menopause symptoms and experiences. Having listened to the series, women described feeling empowered to make changes in their lives, including adopting preventive behaviors and having menopause-related conversations with friends,

family, and healthcare providers. More specifically, sharing stories in this way helped women feel less alone by creating a sense of community. Importantly, the current research demonstrated that this specific podcast format was an acceptable and effective method of communicating health information to a diverse sample of women. Further research would be needed to investigate if these benefits last over time, and whether intentions to change behavior are realized.

REFERENCES

1. El Khoudary SR. Age at menopause onset and risk of cardiovascular disease around the world. *Maturitas* 2020;141:33-38.
2. Shifren JL, Gass MLS. The North American Menopause Society recommendations for clinical care of midlife women. *Menopause* 2014;21:1038-1062.
3. El Khoudary SR, Greendale G, Crawford SL, et al. The menopause transition and women's health at midlife: a progress report from the Study of Women's Health Across the Nation (SWAN). *Menopause* 2019;26: 1213-1227.
4. Avis NE, Colvin A, Bromberger JT, et al. Change in health-related quality of life over the menopausal transition in a multiethnic cohort of middle-aged women: Study of Women's Health Across the Nation (SWAN). *Menopause* 2009;16:860-869.
5. Ayers B, Hunter MS. Health-related quality of life of women with menopausal hot flushes and night sweats. *Climacteric* 2013;16:235-239.
6. Hess R, Thurston RC, Hays RD, et al. The impact of menopause on health-related quality of life: results from the STRIDE longitudinal study. *Qual Life Res* 2012;21:535-544.
7. Whiteley J, Dibonaventura MD, Wagner JS, Alvir J, Shah S. The impact of menopausal symptoms on quality of life, productivity, and economic outcomes. *J Women's Heal* 2013;22:983-990.
8. Williams RE, Levine KB, Kalilani L, Lewis J, Clark RV. Menopause-specific questionnaire assessment in US population-based study shows negative impact on health-related quality of life. *Maturitas* 2009;62:153-159.
9. Zhao D, Liu C, Feng X, Hou F, Xu X, Li P. Menopausal symptoms in different substages of perimenopause and their relationships with social support and resilience. *Menopause* 2019;26:233-239.
10. Im EO, Lee B, Chee W, Dormire S, Brown A. A national multiethnic online forum study on menopausal symptom experience. *Nurs Res* 2010;59:26-33.
11. Koch PB, Mansfield PK. Facing the unknown: social support during the menopausal transition. *Women Therapy* 2004;27:179-194.
12. Utz RL. Like mother, (not) like daughter: the social construction of menopause and aging. *J Aging Stud* 2011;25:143-154.
13. Williams RE, Kalilani L, DiBenedetti DB, Zhou X, Fehnel SE, Clark RV. Healthcare seeking and treatment for menopausal symptoms in the United States. *Maturitas* 2007;58:348-358.
14. Portman DJ, Gass MLS, Kingsberg S, et al. Genitourinary syndrome of menopause: new terminology for vulvovaginal atrophy from the international society for the study of women's sexual health and The North American Menopause Society. *Menopause* 2014;21:1063-1068.
15. Krychman M, Graham S, Bernick B, Mirkin S, Kingsberg SA. The Women's EMPOWER Survey: women's knowledge and awareness of treatment options for vulvar and vaginal atrophy remains inadequate. *J Sex Med* 2017;14:425-433.
16. Bailey SC, Andrews EN, Halton CC, Wolf MS. Evaluation of a discussion guide to promote patient understanding of menopause and informed treatment decision-making. *J Women's Heal* 2020;00:1-7.
17. Walter CA. The psychosocial meaning of menopause: women's experiences. *J Women Aging* 2000;12:117-131.
18. Posner J. It's all in your head: feminist and medical models of menopause (strange bedfellows). *Sex Roles* 1979;5:179-190.
19. Krajewski S. Advertising menopause: you have been framed. *Continuum* 2019;33:137-148.
20. Newhart MR. Menopause matters: the implications of menopause research for studies of midlife health. *Heal Sociol Rev* 2013;22:365-376.
21. Jacobs W, Amuta AO, Jeon KC. Health information seeking in the digital age: an analysis of health information seeking behavior among US adults. *Cogent Soc Sci* 2017;3:1.
22. Rowlands G, Protheroe J, Winkley J, Richardson M, Seed PT, Rudd R. A mismatch between population health literacy and the complexity of health information: an observational study. *Br J Gen Pract* 2015;65:e379-e386.
23. Rudd RE, Anderson JE, Oppenheimer S, Nath C. Health literacy: An update of medical and public health literature. In: review of adult learning and literacy. *Lawrence Erlbaum Associates* 2007;175-203.
24. Charbonneau DH. Readability of menopause web sites: a cross-sectional study. *J Women Aging* 2012;24:280-291.
25. Charbonneau DH. Health literacy and the readability of written information for hormone therapies. *J Midwifery Women's Heal* 2013;58:265-270.
26. Krawczyk A, Lau E, Perez S, Delisle V, Amsel R, Rosberger Z. How to inform: Comparing written and video education interventions to increase human papillomavirus knowledge and vaccination intentions in young adults. *J Am Coll Heal* 2012;60:316-322.
27. Ross L, Ashford AD, Bleechinton SJ, Dark T, Erwin DO. Applicability of a Video Intervention to Increase Informed Decision Making for Prostate Specific Antigen (PSA) Testing among African-American men with Different Levels of Health Literacy. *J Natl Med Assoc* 2010;102:228-236.
28. Armstrong AW, Idriss NZ, Kim RH. Effects of video-based, online education on behavioral and knowledge outcomes in sunscreen use: A randomized controlled trial. *Patient Educ Couns* 2011;83:273-277.
29. Sprague D, Pixley C. Podcasts in education: let their voices be heard. *Comput Sch* 2008;25:226-234.
30. Tavales S, Skevoulis S. Podcasts: changing the face of e-learning. *Softw Eng Res* 2006;721-726.
31. Statista. U.S. Podcasting Industry - Statistics & Facts. 2020. Available at: https://www.statista.com/topics/3170/podcasting/. Accessed October 1, 2020.
32. Statista. Leading reasons for listening to podcasts in the United States as of February 2019. 2020. Available at: https://www.statista.com/statistics/610691/main-reasons-listening-to-podcasts-us/. Accessed October 1, 2020.
33. Bangia D, Palmer-Keenan DM. Grocery store podcast about omega-3 fatty acids influences shopping behaviors: a pilot study. *J Nutr Educ Behav* 2014;46:616-620.
34. Labrosse L, Albrecht JA. Pilot intervention with adolescents to increase knowledge and consumption of folate-rich foods based on the Health Belief Model. *Int J Consum Stud* 2013;37:271-278.
35. Turner-McGrievy GM, Campbell MK, Tate DF, Truesdale KP, Bowling MJ, Crosby L. Pounds off digitally study. A randomized podcasting weight-loss intervention. *Am J Prev Med* 2009;37:263-269.
36. Turner-McGrievy G, Kalyanaraman S, Campbell MK. Delivering health information via podcast or web: media effects on psychosocial and physiological responses. *Health Commun* 2013;28:101-109.
37. French P, Hutton P, Barratt S, et al. Provision of online normalising information to reduce stigma associated with psychosis: can an audio podcast challenge negative appraisals of psychotic experiences? *Psychosis* 2011;3:52-62.
38. Edison Research & Triton Digital. The Infinite Dial 2020. 2020. Available at: https://www.edisonresearch.com/the-infinite-dial-2020/. Accessed November 17, 2020.
39. Roche AM. Making better use of qualitative research: illustrations from medical education research. *Health Educ J* 1991;50:131-137.
40. Ivey J. The value of qualitative research methods. *Pediatr Nurs* 2012;38:319-320.
41. Patton MQ. *Qualitative Research & Evaluation Methods: Integrating Theory and Practice*. New York: SAGE; 2015.
42. Chew LD, Griffin JM, Partin MR, et al. Validation of screening questions for limited health literacy in a large VA outpatient population. *J Gen Intern Med* 2008;23:561-566.
43. Morse JM. Data were saturated. *Qual Health Res* 2015;25:587-588.
44. Barnett-Page E, Thomas J. Methods for the synthesis of qualitative research: a critical review. *BMC Med Res Methodol* 2009;9:59.
45. Bhaskar R. *Enlightened Common Sense: The Philosophy of Critical Realism*. Milton Park, Abingdon-on-Thames, UK: Routledge; 2016.
46. Price L, Martin L. Introduction to the special issue: applied critical realism in the social sciences. *J Crit Realis* 2018;17:89-96.
47. Braun V, Clarke V. Using thematic analysis in psychology. *Qual Res Psychol* 2006;3:77-101.
48. Shaw P, Edwards A, Halton C, et al. Communication of menopause health information through a podcast: A qualitative exploration of connecting through shared stories. [in Prep.]
49. Simon JA, Davis SR, Althof SE, et al. Sexual well-being after menopause: an international menopause society white paper. *Climacteric* 2018;21: 415-427.

50. Kingsberg SA, Wysocki S, Magnus L, Krychman ML. Vulvar and vaginal atrophy in postmenopausal women: Findings from the REVIVE (REal women's VIews of treatment options for menopausal vaginal changEs) survey. *J Sex Med* 2013;10:1790-1799.
51. Rothert ML, Holmes-Rovner M, Rovner D, et al. An educational intervention as decision support for menopausal women. *Res Nurs Health* 1997;20:377-387.
52. Chrisler JC. Leaks, lumps, and lines: stigma and women's bodies. *Psychol Women Q* 2011;35:202-214.
53. de Salis I, Owen-Smith A, Donovan JL, Lawlor D. Experiencing menopause in the UK: the interrelated narratives of normality, distress, and transformation. *J Women Aging* 2018;30:520-540.
54. Lazar A, Su N, Bardzell J, Bardzell S. Parting the red sea: Sociotechnical systems and lived experiences of menopause. *Proc 2019 CHI Conf Hum Factors Comput Syst* 2019;480:1-16.
55. Ayers B, Forshaw M, Hunter MS. The impact of attitudes towards the menopause on women's symptom experience: a systematic review. *Maturitas* 2010;65:28-36.
56. Avis NE, McKinlay SM. A longitudinal analysis of women's attitudes toward the menopause: results from the Massachusetts Women's Health Study. *Maturitas* 1991;13:65-79.
57. Pitts V. Illness and Internet empowerment: writing and reading breast cancer in cyberspace. *Health (Irvine Calif)* 2004;8:33-59.
58. Rozmovits L, Ziebland S. What do patients with prostate or breast cancer want from an Internet site? A qualitative study of information needs. *Patient Educ Couns* 2004;53:57-64.
59. Rotem M, Kushnir T, Levine R, Ehrenfeld M. A psycho-educational program for improving women's attitudes and coping with menopause symptoms. *J Obstet Gynecol Neonatal Nurs* 2005;34:233-240.
60. Shafaie FS, Mirghafourvand M, Jafari M, et al. Effect of education through support -group on early symptoms of menopause: a randomized controlled trial. *J Caring Sci* 2014;3:247-256.
61. Prochaska JO, DiClemente CC. Stages and processes of self-change of smoking: toward an integrative model of change. *J Consult Clin Psychol* 1983;51:390-395.
62. Daley A, MacArthur C, Stokes-Lampard H, McManus R, Wilson S, Mutrie N. Exercise participation, body mass index, and health-related quality of life in women of menopausal age. *Br J Gen Pract* 2007;57:130-135.
63. Christianson MS, Ducie JA, Altman K, Khafagy AM, Shen W. Menopause education: needs assessment of American obstetrics and gynecology residents. *Menopause* 2013;20:1120-1125.
64. Vesco KK, Beadle K, Stoneburner A, Bulkley J, Leo MC, Clark AL. Clinician knowledge, attitudes, and barriers to management of vulvovaginal atrophy: variations in primary care and gynecology. *Menopause* 2019;26:265-272.
65. Bellhouse C, Temple-Smith MJ, Bilardi JE. It's just one of those things people don't seem to talk about...'' women's experiences of social support following miscarriage: a qualitative study. *BMC Womens Health* 2018; 18:1-9.
66. Bommaraju A, Kavanaugh ML, Hou MY, Bessett D. Situating stigma in stratified reproduction: abortion stigma and miscarriage stigma as barriers to reproductive healthcare. *Sex Reprod Healthc* 2016;10:62-69.
67. Patton MQ. Enhancing the quality and credibility of qualitative analysis. *Health Serv Res* 1999;34 (5 pt 2):1189-1208.
68. Green J, Thorogood N. *Qualitative Methodology and Health Research*. New York: SAGE; 2004.
69. Ritchie J. The applications of qualitative methods to social research. In: *Qualitative Research Practice: A Guide for Social Science Students and Researchers*. New York: SAGE; 2003:26-46.
70. United States Census. Key Facts and Figures. Published 2019. Available at: https://www.census.gov/quickfacts/fact/table/US/PST045219. Accessed January 9, 2020.
71. Avis NE, Brockwell S, Colvin A. A universal menopausal syndrome? *Am J Med* 2005;118 (SUPPL. 12B):37-46.
72. Im EO, Lee B, Chee W, Brown A, Dormire S. Menopausal symptoms among four major ethnic groups in the United States. *West J Nurs Res* 2010;32:540-565.
73. Berkman ND, Sheridan SL, Donahue KE, Halpern DJ, Crotty K. Low health literacy and health outcomes: an updated systematic review. *Ann Intern Med* 2011;155:97-107.
74. Statista. Internet user penetration in the United States from 2015 to 2025. 2020. Available at: https://www.statista.com/statistics/590800/internet-usage-reach-usa/. Accessed January 9, 2021.