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EMPIRICAL RESEARCH - QUALITATIVE

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Exploring digital interventions to facilitate coping and discomfort for nurses experiencing the menopause in the workplace: An international qualitative study

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Abstract

Introduction: The global nursing workforce is predominantly female, with a large proportion working in the 45–55 age group. Menopause is a transition for all women, and; therefore needs recognition as it can impact work performance and consequently staff turnover.

Background: Women will go through the menopause, but not all women are affected. The menopause transition presents a range of signs and symptoms both physical and psychological which can impact the quality of life and individuals' work/life balance. The nursing workforce is predominantly women that will work through the menopause transition.

Objectives: The study explored perspectives on digital health interventions as strategies to support menopausal women and to understand the requirements for designing health interventions for support in the workplace.

Design: A qualitative explorative design.

Settings: Nurses working in a range of clinical settings in England, Finland, Denmark, New Zealand, Australia and USA.

Methods: Nurses ($n=48$) participated in focus groups from six different countries from February 2020–June 2022 during the pandemic from a range of acute, primary care and education settings. Nurses were invited to participate to share their experiences. Thematic analysis was used.

Results: All participants were able to describe the physical symptoms of menopause, with some cultural and possible hemisphere differences; more noticeable was the psychological burden of menopause and fatigue that is not always recognized. Four themes were identified: Managing symptoms in the workplace; Recognition in the workplace; Menopause interventions; and Expectation versus the invisible reality. These themes revealed information that can be translated for implementation into digital health interventions.

Conclusions: Managers of nursing female staff in the menopausal age range need greater awareness, and menopause education should involve everyone. Finally, our results demonstrate design attributes suitable for inclusion in digital health strategies that are aligned with likely alleviation of some of the discomforts of menopause.
Patient or public contribution: No patient or public contribution.

KEYWORDS
collaborative research, digital health, focus group, menopause, nurse, qualitative research, workplace

1 | INTRODUCTION

Menopause has long been a taboo topic, not openly discussed in general, or in the workplace (Beck et al., 2020; Schaedel & Ryder, 2022). While some have argued the need to normalize menopause (Hickey et al., 2022); others have argued that women have not been heard in their discourse about menopause (Hardy et al., 2018). Menopause symptoms can lead to distressing and uncomfortable symptoms affecting the quality of life resulting in some women choosing to leave their jobs (Hardy et al., 2018).

World Health Organization (WHO; 2007) defines menopause as the end of menstruation and the cessation of a women's reproduction capacity. The loss of ovarian follicular activity results in hormonal changes in the female body triggering physical and emotional symptoms. Menopause is seen as a transition in a woman's life which includes three stages: perimenopause, menopause and postmenopause (Hobson, 2020). This transition can start up to 5 years prior to the last menstruation and is completed after 12 months without menstruation (Rees et al., 2022).

Menopause typically occurs in midlife with an average age of between 51 and 52 years. In the UK 51 years over an age range of 39–59 years (Royal College of Nursing, 2020a), Denmark 51 years (Denmark Statistics [DST], 2020), USA 52 years (US Department of Health & Human Services, 2021), Finland 51 years (Tiitinen, 2020); Australia 51 years (Australian Bureau of Statistics, 2017) and New Zealand 51.5 years recognizing symptoms between 42 and 56 years (Women's Health Action, 2022).

Globally 657 million women are aged 45–59, and around half contribute to the labour market working through the menopause transition (Rees et al., 2022). This means that women will spend approximately one-third of their lives with menopause (Lobo & Gompel, 2022). Women make up the largest proportion of the international health workforce, with the largest representation in the nursing profession (Boniol et al., 2019). Noticeably women in the workforce adopt more roles in the caring professions (nursing, teaching and care work) with 79% of UK jobs in health and social care held by women (Devine & Foley, 2020); and in nursing the Royal College of Nursing (2020b) report 89.3% female registered nurses as opposed to 10.7% of men.

In Finland, 83.1% of women aged 45–55 years are working; 67.6% are women aged 56–65 years and of the 71,514 nurses in 2018, 90% were women (Tiitinen, 2020). In 2017 Denmark 87.8% of women aged 45–54 were working, and 71.5% were aged 55–64. Furthermore, the average age of women retiring in Denmark is 64.5 years, with 72,164 nurses working in 2019 and 14% were more than 60 years of age (DST, 2020).

Australian Bureau of Statistics (2017) reports three-quarters of women in the workforce are 45–54 years; and two-thirds are in the 55–59 year bracket, dropping to less than half (46.7%) for 60–64 years then declines as more women retire. In the nursing and midwifery workforce, 9 in 10 are women and 2 in 5 (39%) are aged 50 or over (Australian Institute of Health and Welfare, 2016). The mean age of registered nurses in New Zealand has been rising steadily, and 40% are now aged 50 or over (Nursing Council of New Zealand, 2010).

In the USA over 77% of women in the workforce are aged 45–54 years with 56% of women aged 55–64 years still working but this decreases to <20% after the age of 65. Women account for 75% of workers in education and health services (US Bureau of Labor Statistics, 2021). Currently, 88.9% of all USA nurses are women with an average age of 52 (National Council of State Boards of Nursing, 2021).

Menopause research typically concentrates on physical symptoms and the UK NICE (2015) guidelines describe these as a range of vasomotor symptoms (hot flushes and sweats),

What does this paper contribute to the wider global clinical community?

- Identifies a desire by nurses for supportive strategies that enable talk, track, and treat modalities to alleviate menopausal discomforts
- Increases awareness about the diverse range and scope of menopausal experiences for women through open dialogue within health institutions, nursing profession, and wider society
- Identifies the need for a diverse holistic approach to menopause discomfort alleviation
- Supportive measures should include both digital and non-digital health and wellbeing interventions to alleviate menopausal discomforts.

musculoskeletal symptoms (joint and muscle pain), urogenital symptoms (vaginal dryness) and list psychological symptoms including low mood, anxiety, decreased sex drive and memory issues. Poorly managed menopausal symptoms can lead to absence from work with women aged 45+ years being in the highest rates of sickness absence (Bazeley et al., 2022). There is limited focus on the woman's emotional well-being and strategies to alleviate the discomfort of menopausal symptoms particularly in the workplace compounded with a lack of understanding of menopause crosses professions like teaching, nursing, medicine and other service industries dominated by women (Brewis et al., 2017; Hill, 2020).

Notably, a major gap in the literature exists with no research studies reporting digital mental health interventions designed or trialled with specific aims to support women in menopause (Cronin et al., 2021). Women feel unable to discuss their experiences of menopause (Hickey et al., 2022; Royal College of Nursing, 2020b). Cronin et al. (2021) examined literature over the past 10 years including grey literature and online self-help pages finding few health-related services to support women. Instead, women turn to social media for social support, e.g. Facebook (Cronin, 2017), or Instagram (Arseneau et al., 2021), however, the quality of the information exchanged in these forums is variable, often based on misinformation. Søgaard Neilsen and Wilson (2019) work suggests a strong uptake of digital technologies in midlife women. This indicates the need for evidenced based practical and relevant menopause support in the workplace and the potential for digital intervention solutions, and as such, warranted further investigation.

2 | METHODS

2.1 | Aim

To explore and discuss the suitability of digital health interventions as strategies to facilitate coping and alleviate discomfort in menopausal women; and examine how digital health strategies could be incorporated as support and health interventions to support women in the nursing workplace.

2.2 | Study design

A qualitative explorative design underpinned by hermeneutic phenomenology allowed for descriptive data to be collected on nurses' experiences of menopause and the suitability of digital health interventions to provide support in the workplace (Smith et al., 2009). Focus groups using a semi-structured interview schedule provided a convenient way to collect data and capitalize on communication between participants (Krueger & Casey, 2009).

2.3 | Recruitment and sample

Inclusion criteria included women aged 45 years and older and working as a registered nurse in any healthcare setting (hospital, clinic, community post, education or management) who were recruited using a flyer advertisement distributed in organization's email, and on social media platforms such as Facebook Groups and Twitter. Nurses responded by contacting the research team directly and were provided with further information about the research. After receipt of informed consent, eligible nurses were accepted into the study and invited to participate in focus groups face to face or using Zoom (a video conferencing platform) hosted by each participating university at a convenient time away from the workplace. Nurses were recruited from local workforces from the East of England in the UK; Newcastle area in Australia; Pirkanmaa area in Finland; Central region area of New Zealand, Jutland and Funen in Denmark and the south-east region of the United States (Figure 1).

The global coronavirus pandemic significantly impacted the research and nursing community across the world and the timescale of the project (February 2020–January 2022). It started in February 2020 leading to a myriad of uncertainties and the research team having to adapt to the new ways of working. It also had a major impact on accessing the sample, recruitment and collecting the data. For example, in the UK arm of the project data collecting was hampered on numerous occasions due to COVID with restrictions leading the team to explore other avenues of reaching nurses across healthcare settings but this resulted in a noticeable lack of acute nurses' participation. In Australia ethical permissions were lengthy and similarly to the UK both recruitment and data collection were difficult and hampered by COVID restrictions. In Finland, the research was carried out as soon as permission was received from the hospital. Denmark's nursing workforce was overloaded by managing COVID and managing the new healthcare changes. While in New Zealand, amid restrictions, data were eventually collected face to face. Lastly, the US was granted permission to conduct the study, but reaching out to nurses proved immensely difficult due to the relentless waves of COVID. It was anecdotally noted that nurses were mentally and physically exhausted which served as a barrier to participation in the US arm of the study.

2.4 | Data collection

The focus groups and interviews were conducted by a member of the research team in their respective countries either face to face or using an online video platform e.g., zoom sequentially as per Table 2. This facilitated participation in a variety of workplace settings including home. The participants were each invited to state their age, nurse registration, length of service and where they worked, and after this, an interview schedule was followed (Table 1). These

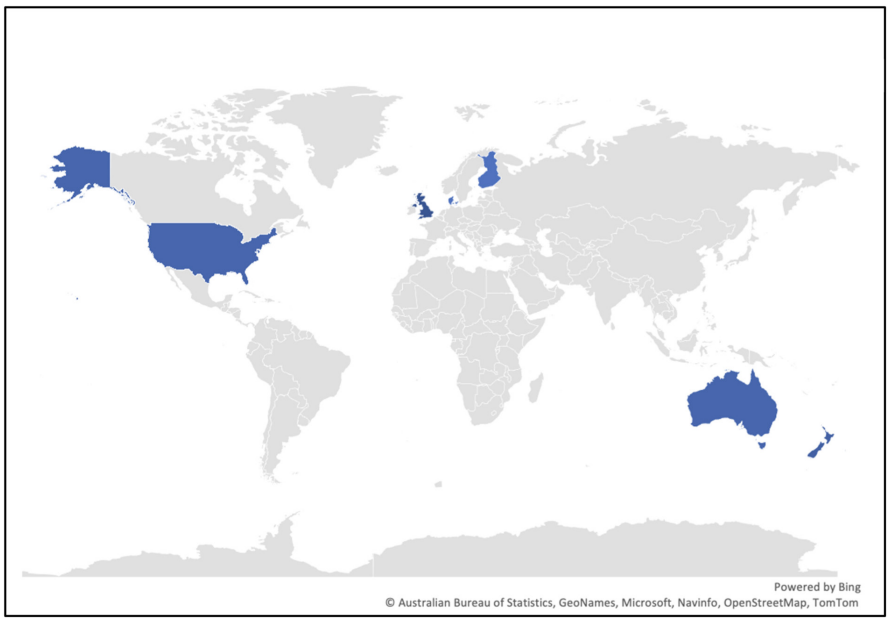

FIGURE 1 Recruitment of participants.

TABLE 1 Interview schedule.

- What is your understanding of menopause? Would you like, or think you will need help or support? How? What form?
- Do you think digital health therapies or strategies have a place at work or as part of a workplace package of support and information to employees?
- What digital health formats, platforms or resources do you think could be helpful or useful?
- What types of digital activities and electronic devices would suit your information and support needs? Do you have access to the private use of digital devices (e.g., smart phone, laptop, and notebook) that you would feel comfortable using for accessing digital health information or therapeutics?
- Can you suggest any disadvantage or advantages about a digital health package or intervention address menopause that you think would be useful for us to think about further?

lasted from 60 to 75 min and were digitally recorded and transcribed verbatim.

2.5 | Translating data

The focus groups were implemented in the native language of the participants (English, Finnish, Danish) and members of the research team (M.K., J.M.) were experienced translators of research data. Few studies report transparently the translation process; the background of the translators, the lengthy translating process and reliance on the translation of data but an understanding of the cultural perspectives and nuisances aligned to the study research question (Van Nes et al., 2010). The team were aware that differences in languages could generate challenges and cause a loss of meaning affecting the trustworthiness of the study (Ho et al., 2019). The translation from one language to another could be further influenced by cultural differences on the meaning construction of menopause. The researchers translated the focus groups questions, conducted the focus groups in the native language and sensitively translated the narrative. Data were shared and immersed contributing an in-depth understanding of participants' experiences of menopause.

2.6 | Data analysis

The transcribed data were initially collected using The Framework Method (Gale et al., 2013) and then narratives were thematically analysed using Braun and Clarke's (2022) coding process. In the first phase of thematic analysis, data were transcribed and organized into an excel spreadsheet by each investigator using the framework matrix. Following the initial data coding and categorisation each site undertook further analysis of the narrative data. The remaining stages of thematic analysis and familiarization involved constant checking and rechecking of the data, then as a group meeting and reviewing each country's data in the same way to discuss, combine and recheck themes whilst coming to a shared agreement. Researcher positioning as an all-female nurse team was mitigated by reflexive practice and participant checking of data to ensure objectivity of the analysis.

2.7 | Rigour and ethical approval

The final sample reflects the research design where each member of the research team maintained rigour and a transparent audit trail to ensure accurateness. The Consolidated Criteria for Reporting Qualitative Research (COREQ; Tong et al., 2007) was completed. Ethical approval was granted from the University of Essex (Ref: ETH1920-0103) followed by reciprocal permissions from each site.

3 | RESULTS

3.1 | Participants

The data were collected through focus groups ($n=11$) and interviews ($n=7$ where nurses could not join a focus group in USA) using the same scripted focus group guide for each country with a total of 48 participants from February 2020 and in sequence for each country as they onboarded the study until January 2022. Table 2 presents the number of participants, focus groups and biographical information of participants.

3.2 | Findings

Following data analysis four themes were identified: *managing symptoms in the workplace*, *recognition in the workplace*, *menopause interventions* and *expectation* versus *the invisible reality* each with sub-themes presented in Table 3.

3.3 | Theme 1 managing symptoms in the workplace

Theme one revealed the real-world experiences of balancing physical and emotional discomforts associated with menopause.

3.3.1 | Sub-theme 1.1 "I get so embarrassed"

There was an overarching familiarity in the way the physical symptoms of menopause were described (Bazeley et al., 2022) including the use of metaphor such as a "roller coaster" or flashing like a "Belisha Beacon". The emotional distress of menopause symptoms was described by participant's sense of embarrassment impacting emotional well-being in the workplace:

> The embarrassment of the hot flushes. If you're in a meeting and suddenly, you're like a Belisha beacon

TABLE 2 Participants.

Country	No of participants (No of focus groups)	Age range (years)	No of years qualified	Type of nursing registration	Job role
United Kingdom	11 (3)	37–57	9–36	11 RN	Primary care Community Specialist Diabetes Nurse 2 Covid 19 (hot) Clinic 1 General Practice Nurse 4 Learning and development manager—1 University lecturer—3
Finland	6 (2)	45–53	3–27	RN 4 APN 2	Tertiary care at University hospital 6 Eye outpatient clinic ANP Nurse manager Outpatient clinic Neurological ward; APN
Australia	8 (2)	47–58	10–30		Nurse education 1 Acute hospital 2 Acute mental health 1 Community mental health 5
Denmark	6 (2)	51–64	9–30	RN	District nurse 1 Psychiatric nurse 1 Medical nurse 2 Surgical nurse 1 Medical/surgical 1
New Zealand	9 (2)	46–52	10–30		Nurse education 1 Acute hospital 2 Acute mental health 1 Community mental health 5
USA	8 (7)	48–60	29–31	RN 5 APRN 3	Nurse education 3 Acute hospital 3 Labor/delivery nurse 1 Healthcare Industry 1

TABLE 3 Themes and sub-themes.

Managing symptoms in the workplace	Recognition in the workplace	Menopause interventions	Expectation versus the invisible reality
"I get so embarrassed"	"I cannot get my shit together"	Non-digital interventions—"Connecting, Accessing, Tracking, Content"	"It's that period of adjustment" & "I do not think I was prepared for it"
"I tried it—it did not work"	"Nobody wants to hear it"	Digital interventions—Connecting, Accessing, Tracking, Content"	"I do not want to hear it. It's not a supportive environment"
"Hot flushes, mood changes and periods all over the place"	"It is not OK to be vulnerable at work"		"Moaning for years … what's wrong with you?"

glowing (and hoping) for people not to draw attention to it (UKFG2P4)

I was really struggling to cope; the whole emotional roller coaster was hard to cope with (UKFG1P3)

I would be constantly hot, or cold, and just changing constantly, and having a full-on hot flush during patient reviews, ..., just annoying like I'd be to having to strip off layers of clothing in front of patients. I guess it was you know uncomfortable and inconvenient, I guess maybe a little embarrassing (AUFG2P3)

I get so embarrassed... It is uncomfortable if you sit beside a patient and have a conversation... I feel so embarrassed about it (DKFG2P1)

3.3.2 | Sub-theme 1.2 "I tried that – it didn't work"

Participants discussed treatment options to manage symptoms. This decision was often balanced against whether they could access treatment and whether the medical professional would be able to advise them on the best course of action. This was further affected by access to healthcare services in different countries.

I was at that point where I was having some symptoms, but I thought, oh no I'm fine I can manage these. But now I'm two years down the track and thinking yeah shit no I don't want to do this anymore; I want to, you know, I want to enjoy my life and be happy. I'm at that point now where I might take that on board HRT option (AUFG4P8)

From beginning to middle to the end. ... it was just awful and then everybody says just take a pill. "Get HRT" I had HRT, and I didn't find it helping so I stopped (UKFG2P3)

Using ibuprofen and just starting on HRT—have currently got HRT but felt I should start using it as there is nothing else (NZFG2P2)

3.3.3 | Sub-theme 1.3 "Hot flushes, mood changes and periods all over the place"

The participants discussed a range of physical and cognitive symptoms that challenged their working lives affecting sleep, memory, temperature and activity levels (NICE, 2015). Participants worked in different clinical settings and agreed they needed to adapt with coping strategies to better manage their symptoms in the workplace.

So, the quilts on. The quilts off ... some days I go on like a Can-Can (dancing) girl (UKFG3P1)

I feel like an idiot. It's like a fog, I can't process anything (UKFG1P2)

Trying to find dry sheets (NZFG2P4)

Those hot flushes are coming suddenly ... and night sweats and mood changes. They come quite suddenly... and first have an effect to sleeping (FIFG1SH4)

I just know that what we experience, the sweating, the night flashes, hot flashes ... I wish there was something people could do about it. You know, it's just it's waking up in the middle of the night, you are throwing all the covers off you (USAFG2P3)

The sweating of course, when you work, and you have to wipe sweat off the forehead and you stand over a patient and you have to look down into a wound and you have to remove some beads as it drips from your forehead (DKFG2P4)

3.4 | Theme 2: Recognition in the workplace

Theme 2 described the challenges women experienced conducting the work of a nurse in their workplaces associated with the combined experience of menopause symptoms. Participants shared their devised workarounds and micro strategies to manage their circumstances.

3.4.1 | Sub-theme 2.1 "I can't get my shit together"

The transition of menopause affected participants physically and mentally with the emotional turmoil impacting work performance and extending into homelife. Participants described fast-paced clinical environments and worried about making mistakes which in turn caused them anxiety about patient care. They expressed concern over cognitive symptoms and performance at work moulding their career progression including either opting to reduce hours or leave the profession all together.

...it's days like that one, I think is it just my emotional roller coaster. Or do I really need to take stock and rethink my career? (AUFG3P4)

The brain fog... I find that troubling and it makes it hard for me to do my work .... developing that anxiety, it's just kind of feels like a snowballing recipe for disaster (AUFG4P8)

I have gotten more disorganised "I can't get my shit together (NZFG2P2)

...quite often... if I'm really struggling, when I've got patient and I just have to excuse myself (UKFG3P2)

I think it has been really challenging to sit and must ... teach patients or ... talk to relatives, I have some very serious conversations often about, end-of- life issues. Then you sit talking, you suddenly feel the sweat, well, running down your forehead or off your temples (DKFG1P2).

Oh, I just pray that my heavy day is not on a day that I must travel, like every month. I'm like, you know exactly where you are on, you know, the day that... My first day is a lighter day than my second day. I'm, I'm just like praying it's not (USAFG5P6)

3.4.2 | Sub-theme 2.2 "Nobody wants to hear it"

Participants describe the use of a variety of coping strategies and workarounds to manage at work and alleviate menopausal symptoms but found it difficult when no one wants to listen. Micro strategies included personal fans, understanding diet and triggers, wearing thin clothes and layers and bringing extra pads for heavy bleeding, managing shift patterns and talking to peers to manage work-life/menopause balance. In terms of cognition prompts, lists aided memory and incorporating exercise helped to manage symptoms of stress and anxiety. The privacy of the discourse is noteworthy with a reluctance to speak about the intimacy of coping, because of a perception that the discourse is either unacceptable or undesirable in the work setting.

We've all got our workstations set up; you can bring in a little fan if you want to (AUFG1P1)

Just being a bit healthier like I'm trying not to eat too close to bedtime, trying to reduce alcohol. And then just wearing layers of clothes (AUFG2P3).

...making lists to keep track of things (NZFG2P4).

Our boss who is male dashes out when we are talking about it but is very supportive—we tell him it is ladies' stuff (NZFG2P1).

... trying to think of the first letter ... If you can keep prompting yourself with it, you can recognise the first letter, (then) you can tend to get through itl (remember; UKFG3 P1)

I'm trying to wear thin clothes and layers (UKFG3P2)

... the anxiety that it triggers. It is the one (thing) you do not talk about; you deal with it a lot alone. Or talk to a close one (DKFG1P1)

... what I do now, is sometimes I'll put two tampons in and a pad because I always leak through. Uh, or I, I've been buying these ultra-big ones (USAFG5P6)

3.4.3 | Sub-theme 2.3 'It is not OK to be vulnerable at work'

Workplaces are variable in terms of understanding menopause at work and it can be difficult with a male manager, or if your colleagues are younger. Other life milestones receive more positive sentiment recognition, such as during pregnancy and breastfeeding. Women in this study (as did others) desired some destigmatized recognition at work of their life stage, and for others to have an awareness about menopause. Without awareness, women felt uncertain of the validity of their own experiences, often questioning themselves and their concerns.

We are lucky we work with a male colleague who is open when we are talking about menopause (NZFG2P1)

Working with millennial nurses who don't understand hot flushes and then they turn down the air conditioning because they are cold (NZFG1P2)

There's no understanding... I think it's almost boohooed... you just get on with it, that sort of thing, is what I've been told. But maybe it's just me? (UKFG2P4)

I'm thinking, if your manager is a male for example, they're not going to know, are they? (UKFG1P1)

I feel it was difficult to talk about it ... (DKFG1P2)

You make time for bathroom time. You always must look good... you have to be the right body shape... We're not very forthcoming with [menopause]. It's not OK to be vulnerable at work... it's not OK to be vulnerable in our country. It's not OK..." (USAFG5P6)

3.5 | Theme 3 interventions for living with menopause

This theme identifies characteristics that can assist in the design of digital solutions and non-digital supports for women in menopause.

Sub-themes: *connection*, *access*, *tracking and content* indicate that participants prefer to select from a range of interventions available across different formats to meet their unique needs.

3.5.1 | Sub-theme 3.1: Connections Want to talk about it

Connections were explained as getting peer support, but also concrete help from a partner with practical domestic life tasks.

> I get my husband to deal with the home front and go to the supermarket(NZFG2P1)

Using digital interventions included using apps and discussion forums for synchronous or asynchronous conversations to learn from others, not feel isolated or alone, and to interact with others who are likely to identify with real world experiences about menopause:

> What about having a link nurse? So, you have a nurse designated to finding your information out and send emails out, and updates on menopause, new guidance … things like that. (UKFG2P3)

> …it doesn't have to be just for nurses. But if there was a forum where we could be… feel safe, and allowed to be vulnerable, but still it was trustworthy. Yeah, I would use it (USAFG5P6).

> I think a chat room would be good. I find with blogs, you're interested at first, and then … I get disinterested (when) just reading things. Whereas I think interaction like talking to people, I would be more likely to stay in that group, than I would be on a like a chat … like a Facebook chat or something like that (AUFG1P1)

> It would be good with an app for nurses …. then you might feel more like you have something in common, and you can compare work and symptoms and what you do in the different situations when you are busy (DKFG2P4)

3.5.2 | Theme 3.2 access Just having information

In this context access means a community of support and a place to meet where it is a possible to discuss or receive information such as leaflets, guidebooks, information about symptom management.

> I think it'd be nice to have some place to be able go in and just air our opinions (UKFG2P3)

Digital solutions e.g., smart-phones, wearables, trackers, smart-tablets have become an integral part of daily life; and participants expressed the desire to access a wide variety of interventions through digital hardware and software, commenting I always have my phone with me. As such the participants noted that their proximity to a smart phone meant having portable access at any time and (if desired) anonymously, to a private and secure platform with evidence-based information to manage symptoms as highly desirable and convenient. Including their personal smartphone technology, they had high levels of accessibility to other devices and platforms including apps, intranet, computers that are easy to use. They felt very strongly that their preferences were to contain no advertisements in any of the materials with access in any format.

> I guess advantages would be that you could access them [apps] anonymously. And you could access them in your own time (AUFG2P3).

> You can have a choice to put it in there, but also there's evidence-based data I would see – imagine! The anecdotal stuff is important but if there was a forum where we could… feel safe and allowed to be vulnerable, but still it was trustworthy. Yeah, I would use (USAFGP6)

> Then you might feel more like you have something in common, and you can compare work and symptoms, and what you do in the different situations when you are busy and how to tackle it" (DKF2P4).

3.5.3 | Theme 3.3: Tracking "Keeping track"

Tracking could happen by using paper and pen options, for example, about symptoms or sleep.

> How many times did I get up, what I did I have to eat the day before, and that kind of thing (USAFG3P4).

> "I ask my husband. I'm like… I'll be bleeding and I'll be like, "I thought I just had my period." And he's like, "Yeah you did." And I didn't write it down because I keep forgetting and … I don't know why (USAFG5P6)

From a digital perspective participants, expressed the desire to track diverse measures including symptoms, exercise, diet, menstrual cycle, sleep and moods to identify potential trends and give feedback to assist with making decisions on lifestyle changes and possible interventions. There was some discussion about using wearable and other digital tools to automatically track and share

biometrics (e.g., heart rate, temperature, sleep pattern) directly into a mobile app.

> In the past I had used a period tracker that had been helpful. Perhaps something like that might be helpful to track hot flushes and restless legs (NZFG1P1)

> I think tracking symptoms. I think... a simple tracker. They say that while you're menstruating, you're supposed to keep a schedule of your menstrual cycle. I just know that that always sounds like another thing to add to my schedule (USAFGP2).

> I'm not into games either really, but I think something that would be interactive ... it might be just around you know some of the symptoms and how it's sort of on the screen or interactive or how you list what your symptoms ... you could map what your mood or emotions might be too, because that can help with yourself regulation as well with how you are (AUFGP2).

3.5.4 | Sub-theme 3.4: Content "What's going to help me relieve my hot flashes?"

Interventions and activities were identified that included exercise such as walking, jogging, biking, fitness or weights; diet and alternative therapies such as acupuncture.

> I do my steps as well now and I bought a bike (UKFG2P1)

Participants sought evidence-based information on menopause and described a time-consuming search process with minimal results. They stated they needed digital tools to include evidence-based information for quick, easy access and information that is trustworthy. It was acknowledged that digital interventions would need to be culturally sensitive, with a range of tailored resources using podcasts, videos, virtual reality, mindfulness and blogs from experts.

> Digital therapies should be culturally sensitive and cater for mixed comprehension levels. Very light videos might be, you know, a helpful way to get that across to people that maybe can't read or look at the written word in huge detail (AUFG2P2)

> I think a chat room would be good ... Whereas I think interaction like talking to people, I would be more likely to stay in that group, than I would be on a like a chat like a Facebook chat or something like that (OZFG1P1)

> It's a bit like My Diabetes App and My COPD app, you can click on it and it's really simple and patients can just click and they can get interactive information that they need or do bits if they want to or not to bits (UKFG1P3)

> It might not be a bad idea if in fact, you could locate, uhm, either, you know, endocrinologist or gyn. Maybe physicians who specialize in menopause issues...So even if there's an, you know, online access to ask the expert a question or something to that effect. I've seen apps where you can ask the expert or something like that so. Or even a virtual expert...Then if you need help, you know there's a number or an expert or something, yeah. (USAFG4P5)

3.6 | Theme 4 "Expectations versus the invisible reality"

The final theme highlighted the "invisibility" participants felt as women who were going through menopause and described the unexpected factors that made them feel invisible. These factors related to the following sub-themes (1) "It's that period of adjustment .... I don't think I was prepared for it" (2) "I don't want to hear it...it's not a supportive environment and (3) "Moaning for years.... What's wrong with you".

3.6.1 | Sub-theme 4.1 "Invisibility as a woman"

Although menopause was viewed by most participants as a natural and positive life stage, the loss of identity they experienced through menopausal phases contributed to participants reporting a feeling of a sense of "invisibility as a woman". One example of an emotional aspect of invisibility was described as no longer able to become pregnant, and this was noted by one of the Australian participants:

> I just started to feel a bit sad that maybe childbearing is almost done (AUFG2P2).

This sentiment was echoed by one of the New Zealand participants where they felt that going through perimenopause was difficult as they were unable to have children and found this quite confronting and upsetting. The gradual loss of periods and no longer being capable of pregnancy is described in the literature as perimenopause. It signals the last chances to bear children, and women experienced a sense of identity loss at this time, including a sense of diminished womanhood, grief and loss. Invisibility was particularly pertinent where one participant noted:

> This invisibility that I think women feel generally at times in society, but particularly as we get older, I think that this just cements that we don't know enough about it, not something we talk about perhaps not even something we're encouraged to talk about. Other than amongst your friends or family with you know sisters or mums (AUFG4P8)

Alongside this sense of invisibility was the tension nurses felt at being expected to know about menopause:

> I don't know if I really think you need to be prepared, but I as a nurse, you know it's coming. You know it's going to be there, it's just a matter of knowing how long it'll last, and even that, when you've looked it up, there's not really a definite answer to that (USAFG1P1)

> I talk to mums everyday about everything to do with their bodies and their bleeding, babies and everything … there are so many variations on how it is for premenopausal women, like maybe we don't really understand enough (AUFG4P7)

This sense of invisibility was also evident where the expectations of knowledge on menopause had little resemblance to the lived experiences of the participants.

Participants reflected on the lack of dialogue from their own mothers on experiences of menopause. For some, there was a sense that participants mothers wanted to keep that stage of their lives invisible, thus guarding personal experiences left daughter participants feeling unprepared. For others, where mothers and sisters experienced menopause with minimal symptoms, participants felt their discomforts left them with a negative sense of being different and worried that something was wrong with them because their experience was different.

3.6.2 | Sub-theme 4.2 "I don't think I was prepared for it"

Participants sensed that they needed to be prepared about menopause, and what it meant, but the realization that experiences were unique to each person resulted in a deep frustration that they were not prepared. The narrative indicated participants saw themselves on a continuum of adjustment, and preparedness, revolving around menopause. Participants from across the countries agreed that many women were unprepared and there was a lack of knowledge about the menopausal life phases:

> It's a time of your life when you stop ovulating, your body is producing less of the hormones that you have done all the way through your life to keep you fertile. It's that period of adjustment. When your periods stop (UKFG3P1)

> I don't really know much about it but am entering the age group where it is occurring, and pretty much when it is discussed is usually when women are experiencing horrible symptoms (NZFGP2)

> I have just thought about it in the most basic and simple of terms and that is, the cessation of my periods every month, and I knew that there were things that kind of went alongside it but my actual experience of it, I was quite unprepared for (UKFG1P2)

> No, I don't think I was prepared for it, no, no, no (USAFG2P3)

This lack of general knowledge and feeling unprepared also led onto stories about the unexpected physical symptoms. Common threads from the participants personal stories denoted the sense of unpredictability that happens with menopause, and the variability of symptoms that are different for each woman. This sense of unpredictability differed from the expectations participants had of how menopause would occur:

> I hadn't anticipated, I thought my periods were going to become fewer and fewer and fewer, and I would have symptoms that would run alongside it (UKFG1P2)

> The cessation of menses was a surprise. And it was like sudden. I mean it just completely ceased (AUFG2P3)

> When it tends to wake me up and I often wonder: Am I having the hot flushes, is it the hot flushes (that have) woken me up? Or have I woken up, and now I'm generating a hot flash, so, that's difficult (UKFG3P1)

> … how will it be? I have heard and read, that some might have quite strong (symptoms), so how will it be for me? Will it be so, or in moderate, or are they coming, there is such… uncertainty. How long will they last? In a way, kind of, of mystery trip in a woman's life has come, or will come, so … (FIFG1P2)

The physical effects of menopause were expressed by some participants as not what they expected, rather far worse than they initially thought:

> Nothing! I just don't feel anything prepares for it… I might have a completely different experience;

> I try and explain it to people. It's quite difficult (UKFG2P6)

> Unfortunately, there's other side effects that come along with that. Some people sail through menopause. I've had people say to me, their periods just stop. They never had a symptom! And yet, I've had lots of other conversations with women, where they've had horrendous symptoms of menopause (UKFG3P1)

> Some people have no symptoms, but others experience "…horrors" and everything in between (NZFG1P3)

The actual length of time related to being menopausal was concerning to women as the expectation of the time they thought it would take did not match what they had experienced. Several participants indicated their expectation was that menopause would be a relatively short 1 or 2 years at most, whereas the reality was that nobody could tell them, and for some it went on much longer than they ever expected:

> I think a lot of us think that it's going to be quick, you know, might be a few months, or a couple of years, but actually it can go on for a long time (UKFG2P6)

> It could possibly be for a couple of years, is that what it could take? A bit of a lengthy time to know when it starts and when it finishes, and you've still got to do life, and live life…. (AUFG2P2)

> Well, I could say that this is probably helpful that people know that there's no timeframe. It's not like "Okay you're gonna go through it for a year and you'll be past it" … (USAFG2P3)

3.6.3 | Sub-theme 4.3 "I don't want to hear it…. it's not a supportive environment"

Lack of empathy and understanding from colleagues, and their workplace were common as participants reported talking about the lived experience of menopause. The expectation that people would be more empathetic appeared not to be the case with the reality that people did not want to hear about menopause, were not interested or lacked insight.

An expectation that there would be empathy was not the reality for many of the nurses with discussion around colleagues being judgemental, or lacking insight. Being tired because you had a sick child was seen as socially acceptable in the workplace, however, tiredness related to disrupted sleep from menopausal night sweats and hot flushes was socially unacceptable conversation in the workplace, lacking acknowledgement or validity:

> You can say I was up with my kid last night; they were sick, and people are 'Oh, OK' and its admissible. But you know when you're like, "Okay I didn't hardly sleep at all. I had the hot flashes" Everyone is like "I don't want to hear it". No not at all. I don't think they [employers]… it's like there's one thing to talk about it, but that is something I have found among nurses (USAFG1P2)

> I think I'm afraid I cannot… live up to the demands that are made… (DKFG2-P2)

This lack of empathy and understanding also impacted on the physical space nurses were working, particularly around ambient air temperature. Being able to have some control over the heating or cooling of air conditioning was a source of stress for some participants as it exacerbated their hot flushes:

> If I could just change my own thermostat within my office. So those are kind of barriers. I do believe it would be nice to have a little bit more awareness of (it) you know… because it doesn't seem like men seem to be aware. I've worked a lot throughout the past few years with men…some of them have more sensitivity to it, and others are like, you know, it's like they don't even see that you have sweat dripping off you (USAFG6P7)

The lived experiences of the participants differed from what they expected to happen and when it came to their treating healthcare providers, participants acknowledged frustration at the lack of awareness these healthcare providers demonstrated:

> I think, the most frustrating part was when I would get to healthcare providers. The first thing they would ask is "oh, do you exercise?" And at the time I was teaching group exercises, like I'm an avid exerciser. That was frustrating because, you know the first response I always got was, "Do you exercise?" and "Yes that does not help me" (USAFG3P4)

3.6.4 | Sub-theme 4.4 "Moaning for years … What's wrong with you?"

Participants reflections about their mother's menopause were indicated in several interviews. Menopause was mentioned to them by their mothers but without detail, lacking depth of explanation. Whilst in the previous sub-theme's participant responses were similar

across the countries, in this sub-theme participants from different countries responded differently. A common reflection through the UK participants was the sense that mothers often moaned but were not specific in what they were moaning about:

> "Mum always moaned about that" this has been going on for years, my moods are terrible, and really irritating, up and down, but she never talked about any of the rest of it that came with it (UKFG1P3)

UK participants expected that they would follow a similar pattern to that of their mothers:

> My mum had gone through them by the time she was 50, and she said that she had it for about 2 or 3 years, so in my head, I thought and as I was getting nearer that age, I thought it's going to happen to me soon, it's going to come to me soon (UKFG1P1)

> I know that my mum had a nightmare with it, so that means I'm going to have a nightmare with it (UKFG2P6)

In the USA participants talked about how their experiences differed from their female siblings, or their mother's, experiences with menopause. The common thread was that often their mother or sister did not experience the symptoms to the same degree and therefore they felt there was a lack of understanding:

> [Mum] said "What's wrong with you? And I would be like sweating and having these hot flashes and such, "I never experienced that". I'm like I have no idea where I get this from. She never had that problem. And then my sister … she was the same way, "What's wrong with you" And I'm like these are hot flashes, "Oh Lord have mercy" It was like it was foreign to them (USAFG2P3)

> I chatted with my siblings, neither one of them had hot flashes, they eased through menopause without any issues at all. My mother was menopausal in her 40's had no issues at all. It hit me like a ton of bricks with the hot flashes… You know my base was my mother and my sister. They supposedly say the trajectory of your family, or female family members, is some indication (USAFG4P5)

For participants in Australia who started perimenopause and menopause earlier than their mothers there was a sense of surprise:

> I felt a bit younger [at 46 her menses abruptly ceased] than I was expecting it to happen really. I remember my mum … I remember her going into hospital a couple of times and you know, having a hysterectomy and things. I remember her being quite irritable, but that's about it. Yeah. But I think she was in her 50s, so I think I just felt a bit surprised (AUFG2P3)

Other participants in Australia and New Zealand recollected advice from their mothers or observing similar patterns of menopause symptoms:

> I was talking to my mum yesterday saying I was doing this group. And, she was saying, oh when you go through menopause, you'll know about it because you'll be bleeding buckets and you'll need to stock up on the pads (AUFG4P7)

> My mum has gone through it and has a great GP, Mum had similar hot flushes (NZFG1P1)

4 | DISCUSSION

The international nurse narratives share a diverse range of the menopause lived experience including its impact on capacity in the workplace and how this permeates into their personal lives. The study explored the suitability of digital health interventions as possible strategies to facilitate coping and alleviate discomfort in menopausal women; and explored how digital health strategies might be incorporated to support women in the nursing workplace. Participants articulated their experiences of common physical symptoms of menopause (NICE, 2015), but also additional symptoms related to cognition and mental health, with many reporting this played havoc with both daily personal and professional life (Schaedel et al., 2021). Symptoms reported around the world were similar, but there was variability in support and diversity of coping strategies which may be culturally and contextually affected based on access to services and openness about experiences of menopause. This concurs with Holloway's (2022) paper on interventions in primary care for perimenopause and menopause indicating the duration and differences between women.

Participants were experienced nurses coming from a range of different nursing speciality backgrounds, who have worked up to, and beyond, 30 years' service. Our participants indicated that their ages and onset of menopausal symptoms ranged between 45 and 55 years of age. Our findings concur with Beck et al. (2020) where menopause narratives appear to be medicalised, yet findings in our study indicated that women have perimenopausal symptoms earlier than previously described in the literature, and post-menopausal symptoms that is not acknowledged.

Like many of their mothers and older sisters before them, there remains a profound quietness and invisibility about menopause (Boniol et al., 2019). The perpetuation of invisibility for women during this life stage is played out in both professional and personal lives and settings (Beck et al., 2020). This leaves many women unsure

of how to situate themselves in the menopause discourse, uncertain about what to anticipate during perimenopause and menopause, and unprepared for the practical navigation and management of symptoms and discourse. Many find themselves without support and isolated in their discomfort. The invisibility of their experiences echoed by the lack of social narrative or public awareness of a female life course that is absented in its proximity to societal default maleness (Criado Perez, 2019). Menopause, an entirely female life experience, struggles to resonate in a society where patriarchal privilege continues to frame the medical and health institutions where nurses work despite the high number of women in the nursing profession. The structural influences associated with institutions remain steadfastly masculine (Wilson et al., 2020), making it extremely difficult for women to navigate and perpetuating silences regarding menopause discourse, validation and affirmation of the life phase.

There is a need for greater awareness of menopausal symptoms in the workplace. Participants in the study reported how menopause symptoms had an "impact on performance" at work; how they must think ahead and plan their day using a range of "*coping strategies*" to manage a myriad of complex physical, mental and cognitive symptoms; and how this is compounded by "lack of understanding" from colleagues and managers at workplace. Our study concurs that it is in the work environment that women report their greatest struggle with managing their symptoms, often feeling embarrassed, afraid to seek help or share their experience, and concerned about how colleagues may treat them especially managers in the workplace (Hardy et al., 2018).

The narrative from this study revealed a range of physical menopausal symptoms but showed cognition affected by fatigue, poor memory, reduced concentration and anxiety, where participants reported lower confidence, a level of presentism, lengthy absences and in cases some choosing to reduce hours or simply choosing to leave their career resulting in a loss of talent, experience and knowledge (Bazeley et al., 2022).

There is a level of ambivalence by healthcare practitioners and levels of intervention variable with medical responses tending to be slow and often ineffective. These nurse participants seem unable to progress their own health needs. The insidious onset complicated access to appropriate and timely interventions. Nurses in this study reported worrying that they were somehow different, with something not right, moaning, vulnerable, forgetful, tired and isolated. Never sure when the next wave of distressing or uncomfortable symptoms might surge again, nor what might be done to prevent, or resolve them. They hoped for someone to listen, understand, share awareness and offer compassion, but found it largely absent. An irony exists where despite a large female peri-menopausal/menopausal nursing population (Boniol et al., 2019), an absence of awareness exists, with scant discourse and compassion. It is apparent that the nursing profession, and their health institutions, know little about menopause and are largely unable to support nurses impacted by it. This circumstance may be explained by applying a feminist theoretical lens to the phenomena where women and their oppressive conditioning leads to the oppression of conditions that are particular to women (Ashton & McKenna, 2020). For example, denoted in their high representation in caring professions such as nursing, and where their bodies which do not conform to the default male treatment models pertaining to the medical sciences (Criado Perez, 2019; Wilson et al., 2020).

The global consensus on menopause in the workplace recommends an inclusive work environment facilitating menopause-friendly environments free from agism or sexism (Rees et al., 2022). This could be achieved by offering awareness training to all staff and encouraging open dialogue about menopause to reduce existing stigma (Beck et al., 2020). Employees must speak up about the support needed to minimize adverse impact and enhance role performance (Hardy et al., 2017). Cronin et al. (2021) conducted a literature review exploring the extent of suitable evidenced-based digital health interventions and discovered a substantive gap suggesting that this matter has not previously attracted the interest of researchers. Participants in our study felt digital health applications would be useful and indicated that further research is required to assemble reliable information and design acceptable and accessible solutions, combined with layered support to safely talk about, track and treat their symptoms.

This study has explored how nurses perceive menopause and the strategies they put in place to cope with symptoms. Promotion of menopause awareness, support, flexibility and reasonable adjustment in workplaces may contribute to mitigation of resignations and reductions of experienced nurses in projected global nursing workforce shortages (Bonoil, 2019).

4.1 | Strengths and limitations

The research design provided a forum for discussion around menopause and gave extraordinary insight of nurses working through COVID but there were challenges in participation and data collection in Australia and USA with each wave of the pandemic. The minimum inclusion age was 45 years and based on clinical definitions and on reflection limited the study as many women appear to be experiencing perimenopausal symptoms much earlier (Holloway, 2022). Our deliberate selection of qualitative study methods limits the generalisability of the findings, and differences in access to health services across countries. Recruitment of nurses is a limitation, but strength exists in findings from six different countries. Although we have a robust translation process, some nuances of language may still be missed.

4.2 | Recommendations

Our study suggests three specific recommendations to support the alleviation of discomforts of menopause as experienced by professional nurses:

1. Alleviation of menopausal discomforts interventions should enable talk, track and treat modalities.
2. Open dialogue is required within health institutions, the nursing profession and across wider society to increase a baseline of awareness about the diverse range and scope of menopausal experiences for women.
3. A diverse holistic approach to menopause discomfort alleviation is required and this should include digital and non-digital health and well-being interventions.

5 | CONCLUSION

Improving women's well-being and the ability to remain at work should be a priority, creating an open, supportive and inclusive culture regarding menopause. Participants reported the effect of menopausal symptoms and worried about the impact on workplace performance and patient care. Many encountered extreme pressures before and during the pandemic and working in extreme conditions, e.g., wearing plastic personal protective equipment (PPE) exacerbated symptoms like hot flushes. Discriminative agism and/or sexism may cause nurses reduce hours or leave the workforce because of menopausal symptoms. Modification strategies can support nurses and as a first step it is imperative that open dialogue about menopause is achieved to support nurses and relieve the burden they currently experience. The authors recognize that these findings are likely to be transferable to other female dominated workforces where access to the same resources and person-centred tailored support could be made available. Finally, our results demonstrate design attributes suitable for inclusion in digital and non-digital health strategies for nurses that are aligned with likely alleviation of some of the discomforts of menopause.

AUTHOR CONTRIBUTIONS

CC, RW: Made substantial contributions to conception and design, or acquisition of data, or analysis and interpretation of data. CC, RW, JM, KH, MK, GB, JC: Involved in drafting the manuscript or revising it critically for important intellectual content. CC, RW, JM, KH, MK, GB, JC: Given final approval of the version to be published. Each author should have participated sufficiently in the work to take public responsibility for appropriate portions of the content. CC, RW: Agreed to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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Research data are not shared.

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