Social Media Narratives on Menopause: An Online Experiment

Alison Osborne, Richard Brown, Elizabeth Sillence

Submitted to: Journal of Medical Internet Research
on: October 13, 2025

Table of Contents

Social Media Narratives on Menopause: An Online Experiment

Alison Osborne[1]; Richard Brown[1]; Elizabeth Sillence[1]

[1] Northumbria University Newcastle GB

Corresponding Author:
Elizabeth Sillence

Northumbria University
Northumbria University
Newcastle
GB

Abstract

Background: Social media is an increasingly prominent channel for communicating menopause information and experiences, yet the affective and behavioural consequences of different narrative framings remain unclear.

Objective: We examined how distress, normalising and transformative narratives influence women's immediate responses to menopause content online.

Methods: In an online experiment, UK women aged 40-83 who were perimenopausal or post-menopausal (N = 737) were randomly assigned to view four anonymised and standardised social media posts reflecting one of three narratives: normal, distress or transformative. Participants then reported affective reactions, expected behavioural responses, and perceptions of the posts. Ordinal logistic regression models tested demographic predictors and condition effects, controlling for demographic factors.

Results: Participants who viewed distress-framed posts reported greater levels of worry, confusion and anxiety, and reduced levels of reassurance, optimism and empowerment. Distress framing also increased perceived knowledge of menopause, despite participants feeling more negatively towards the posts. Neither distress nor transformative narratives influenced expected behavioural intentions to like, share, save, comment on, search for or discuss social media posts, compared to normal narratives. Post-menopausal status and older age were independently associated with less worry and anxiety. Participants rated distress and transformative posts as less representative of health professionals than normalising posts; transformative posts were also judged to be less representative of newspapers or TV.

Conclusions: Narrative framing shaped immediate affect but not intended engagement with menopause content. As public discussion expands, diverse, balanced narratives may help reduce stigma and temper the disproportionate salience of negative framing. This study advances understanding of how narrative framing shapes responses to health content online.

(JMIR Preprints 13/10/2025:85788)
DOI: https://doi.org/10.2196/preprints.85788

Preprint Settings

1) Would you like to publish your submitted manuscript as preprint?

✓ **Please make my preprint PDF available to anyone at any time (recommended).**
Please make my preprint PDF available only to logged-in users; I understand that my title and abstract will remain visible to all users.
Only make the preprint title and abstract visible.
No, I do not wish to publish my submitted manuscript as a preprint.

2) If accepted for publication in a JMIR journal, would you like the PDF to be visible to the public?

✓ **Yes, please make my accepted manuscript PDF available to anyone at any time (Recommended).**
Yes, but please make my accepted manuscript PDF available only to logged-in users; I understand that the title and abstract will remain v
Yes, but only make the title and abstract visible (see Important note, above). I understand that if I later pay to participate in <a href="http
No. Please do not make my accepted manuscript PDF available to anyone. I understand that if I later pay to participate in <a href="https:/

Original Manuscript

Social Media Narratives on Menopause: An Online Experiment

Alison Osborne[1], Richard Brown[1], and Elizabeth Sillence[1,2]

[1] Psychology Department at Northumbria University, Newcastle, United Kingdom

[2] Corresponding author. Email: elizabeth.sillence@northumbria.ac.uk

Address: Northumbria University, Northumbrerland Building, College Lane, Newcastle upon Tyne, United Kingdom, NE1 8SG.

Abstract

Background: Social media is an increasingly prominent channel for communicating menopause information and experiences, yet the affective and behavioural consequences of different narrative framings remain unclear. We examined how distress, normalising and transformative narratives influence women's immediate responses to menopause content online.

Methods: In an online experiment, UK women aged 40-83 who were perimenopausal or post-menopausal (N = 737) were randomly assigned to view four anonymised and standardised social media posts reflecting one of three narratives: *normal*, *distress* or *transformative*. Participants then reported affective reactions, expected behavioural responses, and perceptions of the posts. Ordinal logistic regression models tested demographic predictors and condition effects, controlling for demographic factors.

Results: Participants who viewed distress-framed posts reported greater levels of worry, confusion and anxiety, and reduced levels of reassurance, optimism and empowerment. Distress framing also increased perceived knowledge of menopause, despite participants feeling more negatively towards the posts. Neither distress nor transformative narratives influenced expected behavioural intentions to like, share, save, comment on, search for or discuss social media posts, compared to *normal* narratives. Post-menopausal status and older age were independently associated with less worry and anxiety. Participants rated distress and transformative posts as less representative of health professionals than normalising posts; transformative posts were also judged to be less representative of newspapers or TV.

Conclusions: Narrative framing shaped immediate affect but not intended engagement with menopause content. As public discussion expands, diverse, balanced narratives may help reduce stigma and temper the disproportionate salience of negative framing. This study advances understanding of how narrative framing shapes responses to health content online.

Introduction

Menopause usually occurs between the ages of 44 and 55 years of age, with around 1 in 100 women experiencing menopause prior to the age of 40 (Hardy et al., 2018). The age at which women experience menopause is highly variable and menopause can be induced as a result of surgery, serious illness, or medication (Hoga et al., 2015; Hunter et al., 2012). Consequently, in an ageing population, women spend more than a third of their life perimenopausal, menopausal or post-menopausal (Gold, 2011). Existing information available about the menopause transition can be conflicting, both around experiences and symptomology. Over the years, messaging around menopause has often been framed negatively by the media and subject to misinformation and stigma (Rowson et al., 2023). Earlier discourses around menopause proposed links to hysteria, mental health issues and female hormones (Bettany, 2024), and more recently the focus has moved towards menopause as a medical problem to be solved (Hickey et al., 2024). Several studies have indicated poor knowledge and awareness of the menopause transition in women (Duffy et al., 2011; Marnocha et al., 2011). Due to this lack of awareness, women are less likely to seek or receive the medical assistance they require (Koyuncu et al., 2018), and have often only proactively sought information about menopause through self-directed learning after their 30s (Munn et al., 2022).

Many people use the internet as their first place for seeking health information, compared to friends, family members, or health professionals (Jacobs et al., 2017). New technologies have changed the way we communicate and there is a growing abundance of online health information, however online health resources are often poorly regulated (Aleksova et al., 2017). In particular, social media has become a key tool for health communication with the ability to share information across geographical boundaries and create online communities (Egan, 2012). Health information on social media comes from a wide range of sources including celebrities, influencers, health professionals, charities, advocacy groups and the general public (Afful-Dadzie et al., 2023; Crook et al., 2016; Şahin et al., 2019). Consequently. individuals can engage with diverse perspectives on menopause which may influence their perceptions and emotional responses. There is a growing interest in how social media affects public perceptions of health, with an increase in the use of social media for health communication (e.g., Jacobs et al., 2017; Tennant et al., 2015). Engaging with social media can empower individuals by improving access to information about menopause, and increasing perceptions of control and participation in important medical decisions (Mansour et al., 2024; Weiss, 2023). However, the extent to which narratives online affect individuals' perceptions of menopause is not wholly understood. Research has shown that women have diverse emotional responses to

menopause, with many expressing a range of views from positive and accepting to negative and fearful (Tariq et al., 2023). These varied emotional responses highlight the importance of exploring how different social media narratives can impact women's views, offering insights into how these may either challenge or reinforce existing perceptions. de Salis et al. (2018) investigated experiences and perceptions of menopause among UK mothers, identifying three interdependent narratives: (1) *normality* - menopause as a normal, biological process distinct from self, identity, and social transitions; (2) *distress* - menopause as a struggle, provoking and expressing distress, and a time of identity loss and social upheaval; and (3) *transformation* - menopause as a time of liberation and positive change. These narrative types provide a useful framework for understanding how different social media narratives may impact individual perceptions of menopause.

Given the increasing role of social media in shaping public discourse, understanding how different narratives influence perceptions of menopause is crucial for effective public health communication. A recent literature review highlighted the paucity of research about social media in menopause messaging (Osborne & Sillence, 2025), consequently, this paper aims to understand how women respond to different social media narratives on menopause. The objectives of this study are as follows:

1. To assess the role of individual characteristics in shaping responses to different social media narratives about menopause;
2. To examine the impact of different narratives on affective responses to menopause posts;
3. To examine the impact of different narratives on behavioural responses to menopause posts;
4. To evaluate women's perceptions of different narratives and how representative they believe these are of views expressed by social media, traditional media, and health professionals.

Method

Design

The study employed a between-subjects online experimental design with three conditions. Each condition presented participants with a distinct set of four social media posts representing different perspectives of menopause. After viewing the content, all participants answered the same set of questions assessing their affective, behavioural, and perceptual responses to the presented posts. This study was granted ethical approval through Northumbria University's Ethics System (project number: 9647).

Participants

Participants were recruited through Prolific, an online platform for study recruitment. Pre-screening filters were used to recruit female UK residents aged 40 and above who were in perimenopause or post menopause. A sample of 749 participants completed the survey. Four participants were excluded from the analysis for reporting more than 20 years of post-16 education, suggesting a likely misunderstanding of the question. An additional eight were excluded for completing the survey in under 2.5 minutes, which was deemed by the research team to be insufficient time to adequately engage with and process the survey content. The final sample of 737 participants were randomly assigned to one of three experimental conditions: *normal* (n=248), *distress* (n=241), and *transformative* (n=248). Participants were compensated for participating in the study, in line with fair pay guidelines from Prolific and Northumbria University. Participants were aged between 40 and 83 years old (mean = 52.992, SD, 8.336). Of these, 385 (52%) reported being perimenopause and 352 (48%) post menopause. A breakdown of participant demographics by condition can be found in Table 1.

Table 1

Participant Demographics

	Normal Condition	**Distress Condition**	**Transformative Condition**	**Total**
Sample Size	248	241	248	737
Age (years)				
Range	40-83	40-75	40-78	40-83
Mean (SD)	52.976 (8.455)	53.386 (8.070)	52.625 (8.487)	52.992 (8.336)
Menopause				
Perimenopause (%)	130 (52.419)	117 (48.547)	138 (55.646)	385 (52.239)
Post Menopause (%)	118 (47.581)	124 (51.452)	110 (44.355)	352 (47.761)
Education post-16 (years)				
Range	0-20	0-20	0-18	0-20
Mean (SD)	5.516 (3.948)	5.083 (3.602)	5.149 (3.688)	5.251 (3.750)

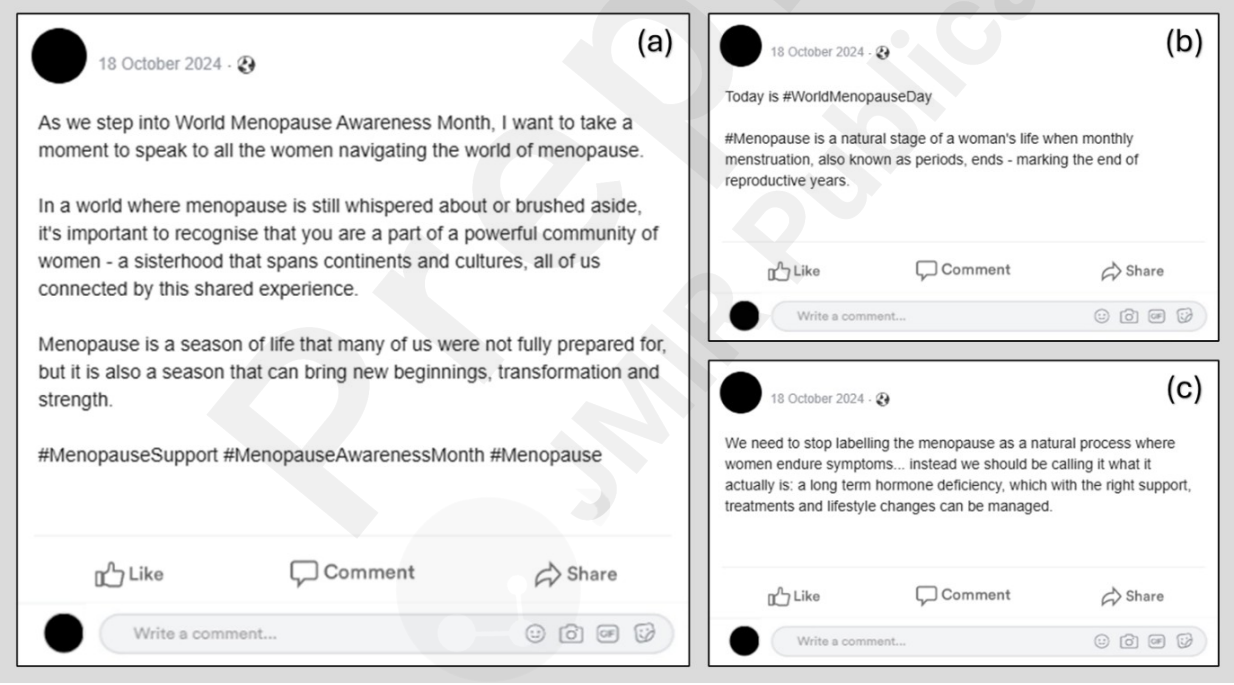
Participant Experience

Following screening, participants were presented with an online Qualtrics questionnaire. Participants first answered questions about their age, number of years in post-16 education, perceived knowledge

about menopause, Hormone Replacement Therapy (HRT) history, current feelings about menopause, and social media use. Participants were then randomly assigned to one of three conditions. These three conditions map onto the interdependent narratives of menopause identified by de Salis et al. (2018): *normal*, *distress* and *transformative*. For each condition, participants were presented with four social media posts that reflected the condition to which they were assigned. Posts were copied from Twitter/X, Instagram and Facebook from World Menopause Day 2024. All posts were publicly available at the time of creating the experiment materials, but were anonymised, redacted, and standardised to remove any potential platform or content creator effects. To ensure that participants had sufficient time to consider the presented posts, a 60 second timer prevented participants from progressing the survey. Participants were then asked to identify which message type (*normal*, *distressing*, or *transformative*) they believed the posts represented. Figure 1 provides examples of posts provided for each of the three conditions.

Figure 1

Example social media posts. (a) transformative condition (b) normal condition (c) distress conditions



After being presented with the social media posts about menopause, participants from each experimental condition were asked the same series of questions. Responses were provided using five-point Likert scales, including their emotional reactions to the posts (e.g. how worried, reassured, or optimistic they felt about menopause), their anticipated behavioural responses (e.g. liking, commenting on, or sharing the presented posts), and their perceptions of the posts (e.g. whether they

liked them, found them credible, and how representative they believed they were of views expressed by social media, traditional media, or health professionals).

Analysis

All statistical analyses were performed using R (R Core Team, 2021). The following packages were used for data processing, analysis and visualization: apaTables (Stanley, 2021), ggplot2 (Wickham, 2016), psych (Revelle, 2021), tidyverse (Wickham et al., 2020). Our full R script is available on the Open Science Framework (OSF; osf.io/dgwna). Ordinal logistic regression was used to investigate individual characteristics that predict affective and expected behavioural responses to menopause posts. Ordinal logistic regression models were also used to examine the impact of *distressing* and *transformative* narrative types on affective, behavioural, and perceptual responses to menopause posts, using the *normal* narrative type as the reference category. To mitigate the multiple comparisons problem, a statistical significance threshold of $p < 0.01$ was adopted.

Results

Overall, the majority (70%) of participants reported never having taken HRT, and most (80%) felt they were moderately, very, or extremely knowledgeable about menopause. Most participants (83%) reported at least daily engagement with social media.

Table 2

Experience of HRT, Menopause Knowledge, and Social Media Engagement.

	Normal Condition	**Distress Condition**	**Transformative Condition**	**Total**
Experience of HRT			54 (21.774)	137
Currently taking HRT (%)	45 (18.145)	38 (15.768)	25 (10.081)	(18.589)
Previously taken HRT (%)	25 (10.081)	31 (12.863)	169 (68.145)	81 (10.991)
Never taken HRT (%)	178 (71.774)	172 (71.369)		519 (70.421)
Knowledgeable about Menopause	6 (2.419)	2 (0.830)		
Not knowledgeable at all (%)	43 (17.339)	44 (18.257)	1 (0.403)	9 (1.221)
Slightly knowledgeable (%)	134 (54.032)	144 (59.751)	48 (19.355)	135
Moderately knowledgeable (%)	59 (23.790)	44 (18.257)	141 (56.855)	(18.318)
Very knowledgeable (%)	6 (2.419)	7 (2.905)	47 (18.952)	419

			11 (4.435)	(56.852)
Extremely knowledgeable (%)				150 (20.353)
				24 (3.256)
Social Media Engagement			12 (4.839)	20 (2.714)
Never (%)	6 (2.419)	2 (.830)	7 (2.823)	33 (4.478)
Less than weekly (%)	13 (5.242)	13 (5.394)	20 (8.065)	69 (9.362)
Weekly (%)	21 (8.468)	28 (11.618)	109 (43.952)	318
Daily (%)	109 (43.952)	100 (41.494)	100 (40.323)	(43.148)
Several times a day (%)	99 (39.919)	98 (40.664)		297 (40.299)

Demographic Effects

Participants that reported being post-menopause as opposed to perimenopause were significantly less likely to feel worried about menopause (b = -0.630, SE = 0.190, t = -3.322, p < .001), controlling for all other demographic characteristics. Independent of menopause status, older participants were significantly less likely to report feeling worried about menopause (b = -0.492, SE = 0.097, t = -5.051, p < .001), or anxious about menopause (b = -0.463, SE = 0.096, t = -4.817, p < .001) again, controlling for all other demographic characteristics. Education and social media use did not have any statistically significant effects on affective responses. Higher social media use was associated with an increased likelihood to 'like' a post (b = 0.224, SE = 0.069, t = 3.246, p = 0.001), save a post (b = 0.254, SE = 0.070, t = 3.614, p < .001), and comment on a post (b = 0.251, SE = 0.071, t = 3.561, p < .001). Education, age, and menopause status did not have a statistically significant effect on any expected behavioural responses to social media posts.

Effect of Experimental Condition on Affective Responses to Posts

Ordinal logistic regression models were used to examine how different framings of social media content about menopause influenced participants' affective responses. Controlling for age, education, and frequency of social media use, the models showed that being exposed to posts depicting menopause as *distressing* significantly influenced participants' reported emotional reactions. Specifically, compared to participants who viewed posts conveying menopause as *normal*, those who viewed *distress* posts were:

- More likely to feel worried about menopause (β = 0.910, SE = 0.170, *t* = 5.350, *p* < .001)

- Less likely to feel reassured (β = -0.970, SE = 0.167, t = -5.795, p < .001)
- More likely to feel confused (β = 0.818, SE = 0.170, t = 4.820, p < .001)
- Less likely to feel optimistic (β = -0.708, SE = 0.165, t = -4.289, p < .001)
- More likely to feel anxious (β = 0.817, SE = 0.168, t = 4.873, p < .001)
- Less likely to feel empowered (β = -0.540, SE = 0.162, t = -3.337, p < .001)
- More likely to feel knowledgeable (β = 0.564, SE = 0.163, t = 3.468, p < .001)

Being shown posts that conveyed menopause as a transformative experience did not have a statistically significant effect on affective responses compared to posts conveying menopause as a normal part of life (see Figure 2 below).

Figure 2

Affective Response to Posts, by Condition

Effect of Experimental Condition on Expected Behavioural Response to Posts

Neither the *distress* nor the *transformative* experimental conditions had statistically significant effects on any of the behavioural responses, when compared to the *normal* reference category. This suggests that, compared to being shown posts conveying menopause as a normal part of life, exposure to posts portraying menopause as either distressing or as a positive transformative experience did not meaningfully influence participants' likelihood to like, share, save, comment on, search for, or discuss related content (see Figure 3 below).

Figure 3

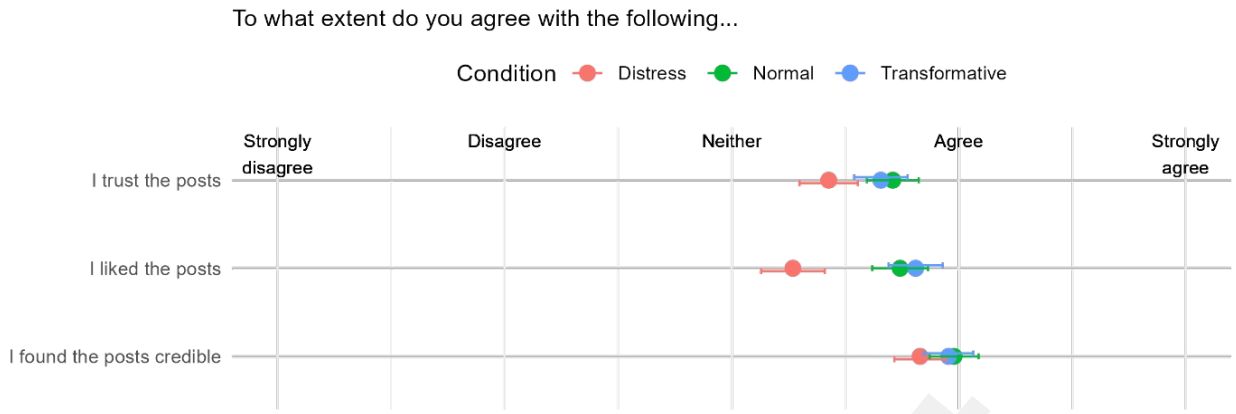
Expected Behavioural Response to Posts, by Condition

Effect of Experimental Condition on Perception of Posts

Experimental condition did not have an impact on participants' initial perceptions of the posts, with the exception that those presented with posts depicting menopause as distressing were significantly less likely to report liking the posts they saw (b = -0.864, SE = 0.171, t = -5.068, $p < .001$; see Figure 4 below).

Figure 4

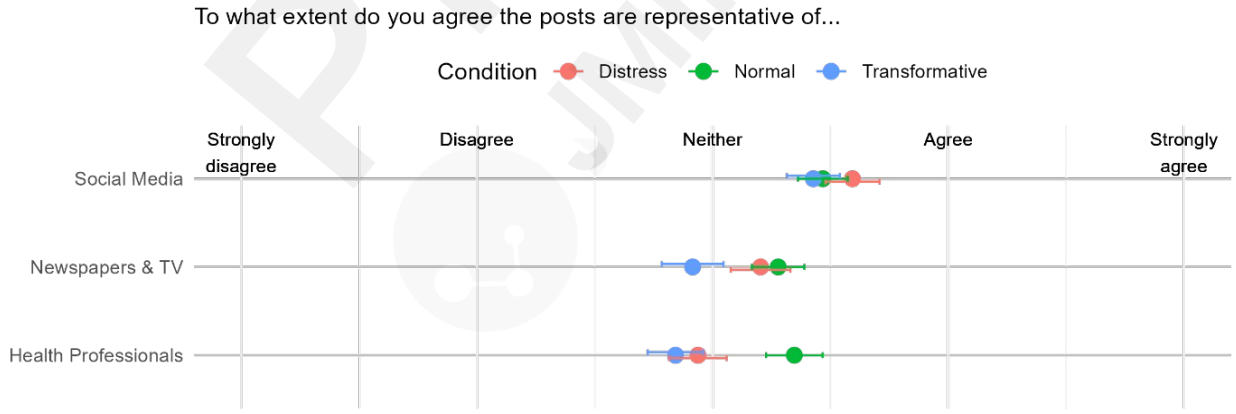
Perceptions of Posts, by Condition



There were no statistically significant effects of experimental condition on the extent to which participants felt the posts were representative of broader narratives found on social media. However, participants in the *transformative* condition were significantly less likely to agree that posts were representative of newspapers or TV, compared to those in the *normal* condition (b = -0.687, SE = 0.165, t = -4.152, $p < .001$). Participants from both the *distress* and *transformative* conditions were less likely to agree that the posts were representative of health professionals, compared to those who saw *normal* messages (*distress* condition: b = -0.806, SE = 0.168, t = -4.808, $p < .001$; and *transformative* condition: b = -0.968, SE = 0.167, t = -5.802, $p < .001$; see Figure 5 below).

Figure 5

Perceived Representativeness of Posts, by Condition



Discussion

Our findings show that how menopause is framed on social media can meaningfully influence women's immediate affective responses to online information. In an online experiment, participants who viewed posts portraying menopause as distressing reported greater levels of worry, confusion and anxiety, and lower levels of reassurance, optimism and empowerment. Notably, shifts in affect did not extend to behavioural intentions to engage with the content (e.g., liking or sharing posts). Below, we consider these findings in relation to individual differences (such as menopause status and age), comparisons with existing literature, and practical considerations for online communication of menopause information.

Menopause Status and Age Each Independently Influenced Worry and Anxiety

Participants who were post-menopause reported significantly less worry about menopause, and older participants were less likely to feel worried or anxious, even when controlling for menopause status. This finding suggests that age and menopausal stage make separate contributions to affective responses rather than one fully accounting for the other. It aligns with prior research that has shown that post-menopausal women typically hold more positive attitudes than premenopausal women (Marván et al., 2018; Tariq et al., 2023). Two thirds of post-menopausal women report feeling better or at least neutral about menopause after the transition compared with before (Aljumah et al., 2023). Perimenopausal women, by contrast, are more active information seekers online, being twice as likely to search on social media than post-menopausal women (Tariq et al., 2023). With lived experience to draw on, post-menopausal women may be able to reflect on and contextualise existing narratives about menopause, recognising nuances that speak to the individual nature of "local biologies" (Utz, 2011) through which expectations, knowledge and psychosocial factors shape experience. Evidence from lifespan research similarly indicates that older adults typically report less frequent worry, including about health (Gonçalves & Byrne, 2013). Together, these findings underscore the value of earlier, credible information to allay anticipatory anxiety and support women who have not yet begun menopause. Although many women delay information seeking until the onset of perimenopausal symptoms (Harper et al., 2022), providing accessible guidance earlier in the life course, for example in schools and at routine health checks and appointments (Sillence, Osborne, Claisse, et al., 2025), and adopting a more inclusive approach to menopause support and education (Harper et al., 2024) may help younger and perimenopausal women calibrate expectations and feel better equipped to navigate the transition.

Exposure to Distress-Framed Posts Increased Negative Emotional Responses

A key finding of this study is that framing social media posts about menopause in distressing terms increased negative affect. Compared with participants who viewed posts that described menopause as a normal experience, those exposed to distress-framed posts reported higher worry, confusion and anxiety, and lower reassurance, optimism and empowerment. These effects remained after controlling for age, education and social media use. This pattern suggests that distress-framed narratives of menopause might shift affect in the moment, potentially narrowing perceived coping resources and elevating negative emotion. By contrast, positioning menopause as a normal life stage appeared to create a more positive affective response to social media posts. This is consistent with work showing that understanding what to expect can shape appraisals of menopausal experiences (Buchanan et al., 2002), and that better knowledge is associated with more positive experiences (Cooper, 2018). Digital spaces have been shown to cultivate affective atmospheres that modulate user experience (Schneider Dallolio et al., 2025). Related research on emotional contagion shows that the emotional tone circulating in social feeds can shift users' subsequent emotions and expressions, underscoring how local online climates matter for how health narratives feel in the moment (Kramer et al., 2014). However, shifts in how content makes people feel do not necessarily translate into transmission behaviours such as liking or sharing, particularly when typical engagement cues are absent.

Experimental Condition Did Not Influence Intended Behavioural Responses

Framing menopause as distressing or transformative had no impact on intended behaviours towards online information, compared with framing it as a normal part of life. Despite strong effects on affect, neither distress nor transformative frames significantly changed intentions to like, share, save, comment, search, or discuss (vs. normal). Overall, reported behavioural intentions to engage with the social media posts were low across all narrative conditions. Retransmission rates for health content are often modest relative to other content types (Yang et al., 2018). Many people obtain what they need from online health sources without visible participation, a pattern of passive use often described as 'lurking' (Preece et al., 2004). For menopause in particular, information seeking frequently serves as sense-making and validation rather than public sharing (Emter & Chavula, 2025; Osborne & Sillence, 2025). Source and platform cues also shape willingness to act. Behavioural intentions vary with the identity of the source (Hu & Shyam Sundar, 2009), and trust judgements about the source predict intentions to act on health advice (Harris et al., 2011; Sheng & Simpson, 2015; Sillence et al., 2019). Tweets from health organisations are more likely to be retransmitted than those from non-

health organisations (Yang et al., 2018). Social signals can function as bandwagon cues, where popularity is read as credibility (Metzger et al., 2010), and these cues interact with message features to influence perceived credibility (Lee & Sundar, 2013). Our stimuli intentionally removed source identity and social proof, which likely dampened the reported expected behavioural intentions. Finally, translating online material into conversations with others is not always easy to achieve. For example, people are often reluctant to disclose to healthcare professionals that relevant health information came from the internet, sometimes attributing it to family or friends (Bussey & Sillence, 2017), and online inputs may be incorporated into health decision-making in more indirect, nuanced ways (Bussey & Sillence, 2019).

In addition to studying engagement behaviours like sharing and commenting, future research should investigate how narrative framings of social media messages influence health-related behavioural responses to menopause information. Meta-analytic work on fear appeals shows that effective behaviour change is more likely when messages that elicit fear or alarm, are accompanied by clear information about how best to respond (Tannenbaum et al., 2015; Witte & Allen, 2000). Messages signalling ‘what to do’ in response to information about menopause often include high-agency tasks such as seeking HRT treatment, booking GP appointments, or purchasing recommended services and products. Recommended actions are often amplified by celebrity-led narratives during the United Kingdom’s recent ‘menopausal turn,’ with reported surges in HRT demand and ongoing debate about medicalisation (Jermyn, 2024; Wise, 2022). Yet these routes are structurally constrained: access to general practice remains difficult and uneven, with persistent dissatisfaction about getting appointments despite record volumes (Wise, 2024). The time, effort and costs of navigating care constitutes a burden on individuals that can lead to intervention-generated inequalities when solutions rely heavily on individual agency (Linzer et al., 2022; Lorenc et al., 2013). It is important that researchers and public health communicators closely consider the ‘agentic demands’ placed on recipients of health information (Adams et al., 2016), and foreground feasible options alongside broader structural support so that widening online discourse about menopause does not centre around solutions that many cannot enact.

Distress-Framed Posts Increased Perceived Knowledge but Reduced Post Likability

Although participants were less likely to report liking distress-framed posts about menopause, they reported feeling more knowledgeable about menopause after viewing them, compared to those conveying menopause as a normal stage of life. A possible explanation for this is that it is consistent

with established negativity effects, where negative or threatening information is treated as more informative, even if it is viewed as undesirable or unpleasant (Baumeister et al., 2001). People preferentially attend to and remember threat-related material. In response to a given stimulus, negative emotions can enhance memory and be judged as more informative in certain circumstances compared to stimuli providing a more positive emotive response (Kensinger, 2009). Emotional-arousal accounts suggest that arousal sharpens competition for attention and memory, giving negative, high-priority cues an advantage for memory and processing of information. This can boost a sense of learning despite producing negative affect associated with the stimuli (Kensinger, 2009; Mather & Sutherland, 2011).

Distress- and Transformative-Framed Posts Were Viewed as Less Representative of Health Professionals

Compared to the *normal* condition, both distress and transformative posts were seen as less representative of health professionals, and transformative posts were also seen as less representative of newspapers or TV. The fact that distress narratives were seen as less representative of HCPs resonates with recent studies suggesting that women are not always taken seriously by health professionals when presenting with severe menopause symptoms (Sillence, Osborne, Kemp, et al., 2025). Recent media attention around celebrities' menopause experiences has opened up discussions around menopause particularly regarding symptoms and HRT, although there have been suggestions that these well publicised, negative accounts contribute to the medicalisation of what is usually a natural process (Opayemi, 2025). Empowerment-based narratives emphasise the importance of incorporating both medical and psychological dimensions into menopause management (Hickey et al., 2024), with some arguing that menopause should also be seen as an opportunity for growth, self-realisation and transformation (Vegni & Borghi). However, many women report feeling overlooked or invisible during menopause (Hayfield et al., 2024), and the absence of relatable experiences can foster a sense of isolation and invisibility (Opayemi, 2025). That transformative posts were seen as less representative of TV or media more broadly perhaps reflects a cultural expectation in which western cultures have tended to align menopause with ageing and fertility, whilst in other cultures where menopause is viewed more positively, symptoms are expressed less frequently (Syed Alwi et al., 2021) and messages around transformation and growth are more prominent (Kagawa-Singer et al., 2002).

Encouraging a diverse expression of menopause narratives online can better reflect the highly

individual nature of the transition, resonate with a wider range of lived experiences, and help reduce stigma and open discussion (de Salis et al., 2018; Orgad et al., 2024). However, our findings also suggest a need to be mindful of the affective costs of distress framings. This is not an argument for curating or suppressing accounts of menopause distress, but for acknowledging well-documented negativity effects, where people often treat negative information as more informative and remember it more strongly (Baumeister et al., 2001; Kensinger, 2009). In convoluted online environments, negatively framed content can also be privileged by diffusion dynamics: moral-emotional and negative language tends to travel further and faster on social platforms, increasing visibility relative to neutral or positive narratives (Brady et al., 2017; Watson et al., 2024). Recent qualitative research on peri/menopause messages received as anticipatory education found that participants tended to judge memorable messages as negative or ambivalent, suggesting cognitive biases favouring negative menopause information (Rubinsky et al.). Additionally, participation inequality on social media means many users consume but rarely post, potentially skewing what appears to be representative of 'ordinary' experiences (van Mierlo, 2014). Foregrounding distress-framed narratives of menopause may increase overall concerns, but only framing the transition as 'normal' or 'natural' risks dismissing women with severe and debilitating symptoms or who experience premature or surgically induced menopause (Cahn et al., 2022). The uniqueness of menopause, and the fact that women may adopt multiple normal, transformative, or distressing narratives to describe their experiences (de Salis et al., 2018), suggests a need for more nuanced menopause narratives across both online and traditional media.

Limitations

Posts were anonymised, redacted and standardised, and creator and platform cues were removed to reduce confounds. This removed the potential influence of features of social media posts such as the profile of the creator, current number of likes and interactions, or platform preferences. However, this also reduced the ecological validity of the stimuli because source identity and bandwagon cues often shape perceptions of credibility and willingness to engage with social media feeds (Lee & Sundar, 2013). Furthermore, behavioural outcomes were self-reported intentions rather than observed behaviours. Future work could incorporate trace data or follow-ups to capture enacted behaviours in response to viewing different social media narratives about menopause. Finally, our measures captured immediate reactions following a brief, controlled exposure to social media posts. More longitudinal designs are needed to test whether narrative-driven affective shifts accumulate or dissipate over time and potentially influence broader experiences and beliefs about menopause.

Conclusion

This study shows that how menopause is framed on social media influences perceptions and immediate affective responses to online health content. In an online experiment, distress-framed posts increased worry, confusion and anxiety and reduced reassurance, optimism and empowerment. Crucially, neither distress nor transformative narratives altered behavioural intentions to like, share, save, comment on, search for or discuss menopause posts. Overall, narrative tone shaped affective responses without shifting intended behaviours. Encouraging diverse menopause narratives can better reflect the breadth of women's experiences, reduce stigma, and promote open conversation. At the same time, negative framings may become disproportionately salient on social media, potentially distorting perceptions and beliefs. Future work should examine whether such framing effects endure, how they interact with source and platform cues, and whether more balanced narratives improve women's everyday experiences of menopause.

Funding: The authors declare financial support was received for the research, authorship, and publication of this article. This work was funded by EPSRC Centre for Digital Citizens (grant number EP/T022582/1).

Conflicts of Interest: None declared.

Data Availability: Our data and code are available on the Open Science Framework (OSF): osf.io/dgwna

References

Adams, J., Mytton, O., White, M., & Monsivais, P. (2016). Why Are Some Population Interventions for Diet and Obesity More Equitable and Effective Than Others? The Role of Individual Agency. *PLOS Medicine*, *13*(4), e1001990. https://doi.org/10.1371/journal.pmed.1001990

Afful-Dadzie, E., Afful-Dadzie, A., & Egala, S. B. (2023). Social media in health communication: A literature review of information quality. *Health Information Management Journal*, *52*(1), 3-17.

Aleksova, J., Kuczynska-Burggraf, M., Ranasinha, S., & Vincent, A. (2017). Information on early menopause: is the internet the place to search? *Climacteric*, *20*(3), 248-255. https://doi.org/10.1080/13697137.2017.1301920

Aljumah, R., Phillips, S., & Harper, J. C. (2023). An online survey of postmenopausal women to determine their attitudes and knowledge of the menopause. *Post Reprod Health*, *29*(2), 67-84. https://doi.org/10.1177/20533691231166543

Baumeister, R. F., Bratslavsky, E., Finkenauer, C., & Vohs, K. D. (2001). Bad is Stronger than Good. *Review of General Psychology*, *5*(4), 323-370. https://doi.org/10.1037/1089-2680.5.4.323

Bettany, S. (2024). The Pinkification of Menopause: The Silences and Omissions of the Menopause Market Gold-Rush. *Available at SSRN 4821252*.

Brady, W. J., Wills, J. A., Jost, J. T., Tucker, J. A., & Van Bavel, J. J. (2017). Emotion shapes the diffusion of moralized content in social networks. *Proceedings of the National Academy of Sciences*, *114*(28), 7313-7318. https://doi.org/10.1073/pnas.1618923114

Buchanan, M. C., Villagran, M. M., & Ragan, S. L. (2002). Women, menopause, and (Ms.)information: communication about the climacteric. *Health Commun*, *14*(1), 99-119. https://doi.org/10.1207/s15327027hc1401_5

Bussey, L., & Sillence, E. (2017). *(How) do People Negotiate Online Information into their Decision Making with Healthcare Professionals?* Proceedings of the 2017 International Conference on Digital Health, London, United Kingdom. https://doi.org/10.1145/3079452.3079495

Bussey, L. G., & Sillence, E. (2019). The role of internet resources in health decision-making: a qualitative study. *Digit Health*, *5*, 2055207619888073. https://doi.org/10.1177/2055207619888073

Cahn, N. R., Crawford, B. J., & Waldman, E. G. (2022). Managing and monitoring the menopausal body. *2022 University of Chicago Legal Forum 41*, *Virginia Public Law and Legal Theory Research Paper No. 2022-06*, 41. https://ssrn.com/abstract=3988196

Cooper, J. (2018). Examining factors that influence a woman's search for information about menopause using the socio-ecological model of health promotion. *Maturitas*, *116*, 73-78. https://doi.org/10.1016/j.maturitas.2018.07.013

Crook, B., Stephens, K. K., Pastorek, A. E., Mackert, M., & Donovan, E. E. (2016). Sharing health information and influencing behavioral intentions: The role of health literacy, information overload, and the Internet in the diffusion of healthy heart information. *Health communication*, *31*(1), 60-71.

de Salis, I., Owen-Smith, A., Donovan, J. L., & Lawlor, D. A. (2018). Experiencing menopause in the UK: the interrelated narratives of normality, distress, and transformation. *Journal of Women & Aging*, *30*(6), 520-540.

Duffy, O., Iversen, L., & Hannaford, P. C. (2011). The menopause 'It's somewhere between a taboo and a joke'. A focus group study. *Climacteric*, *14*(4), 497-505. https://doi.org/10.3109/13697137.2010.549974

Egan, J. (2012). Health benefits of social media: women's health Queensland wide. *Health Journey*, *2*, 4-5.

Emter, F., & Chavula, C. (2025). *Seeking Control: How Women Evaluate and Use Menopause Related Information* Proceedings of the 2025 ACM SIGIR Conference on Human

Information Interaction and Retrieval, https://doi.org/10.1145/3698204.3716455
Gold, E. B. (2011). The timing of the age at which natural menopause occurs. *Obstetrics and Gynecology Clinics*, *38*(3), 425-440. https://doi.org/10.1016/j.ogc.2011.05.002
Gonçalves, D. C., & Byrne, G. J. (2013). Who worries most? Worry prevalence and patterns across the lifespan. *Int J Geriatr Psychiatry*, *28*(1), 41-49. https://doi.org/10.1002/gps.3788
Hardy, C., Hunter, M. S., & Griffiths, A. (2018). Menopause and work: an overview of UK guidance. *Occupational Medicine*, *68*(9), 580-586. https://doi.org/10.1093/occmed/kqy134
Harper, J., Keay, N., Rowe, F., Alstyne, P. V., & Tariq, S. (2024). The time has come for a UK-wide menopause education and support programme: InTune. *Womens Health (Lond)*, *20*, 17455057241277535. https://doi.org/10.1177/17455057241277535
Harper, J. C., Phillips, S., Biswakarma, R., Yasmin, E., Saridogan, E., Radhakrishnan, S., M, C. D., & Talaulikar, V. (2022). An online survey of perimenopausal women to determine their attitudes and knowledge of the menopause. *Womens Health (Lond)*, *18*, 17455057221106890. https://doi.org/10.1177/17455057221106890
Harris, P. R., Sillence, E., & Briggs, P. (2011). Perceived threat and corroboration: key factors that improve a predictive model of trust in internet-based health information and advice. *J Med Internet Res*, *13*(3), e51. https://doi.org/10.2196/jmir.1821
Hayfield, N., Moore, H., & Terry, G. (2024). "Friends? Supported. Partner? Not so much …": Women's experiences of friendships, family, and relationships during perimenopause and menopause. *Feminism & Psychology*, *34*(3), 443-463. https://doi.org/10.1177/09593535241242563
Hickey, M., LaCroix, A. Z., Doust, J., Mishra, G. D., Sivakami, M., Garlick, D., & Hunter, M. S. (2024). An empowerment model for managing menopause. *The Lancet*, *403*(10430), 947-957.
Hoga, L., Rodolpho, J., Gonçalves, B., & Quirino, B. (2015). Women's experience of menopause: a systematic review of qualitative evidence. *JBI Evidence Synthesis*, *13*(8), 250-337. https://doi.org/10.11124/jbisrir-2015-1948
Hu, Y., & Shyam Sundar, S. (2009). Effects of Online Health Sources on Credibility and Behavioral Intentions. *Communication Research*, *37*(1), 105-132. https://doi.org/10.1177/0093650209351512
Hunter, M., Gentry-Maharaj, A., Ryan, A., Burnell, M., Lanceley, A., Fraser, L., Jacobs, I., & Menon, U. (2012). Prevalence, frequency and problem rating of hot flushes persist in older postmenopausal women: impact of age, body mass index, hysterectomy, hormone therapy use, lifestyle and mood in a cross-sectional cohort study of 10 418 British women aged 54–65. *BJOG: An International Journal of Obstetrics & Gynaecology*, *119*(1), 40-50. https://doi.org/10.1111/j.1471-0528.2011.03166.x
Jacobs, W., Amuta, A. O., & Jeon, K. C. (2017). Health information seeking in the digital age: An analysis of health information seeking behavior among US adults. *Cogent Social Sciences*, *3*(1), 1302785. https://doi.org/10.1080/23311886.2017.1302785
Jermyn, D. (2024). Whose menopause revolution? Investigating the UK's 'Davina effect' and the contemporary menopause market. *European Journal of Cultural Studies*, *28*(4), 1039-1057. https://doi.org/10.1177/13675494241287931
Kagawa-Singer, M., Wu, K., Kawanishi, Y., Greendale, G. A., Kim, S., Adler, S. R., & Wongvipat, N. (2002). Comparison of the Menopause and Midlife Transition between Japanese American and European American Women. *Medical Anthropology Quarterly*, *16*(1), 64-91. https://doi.org/https://doi.org/10.1525/maq.2002.16.1.64
Kensinger, E. A. (2009). Remembering the Details: Effects of Emotion. *Emot Rev*, *1*(2), 99-113. https://doi.org/10.1177/1754073908100432
Koyuncu, T., Unsal, A., & Arslantas, D. (2018). Evaluation of the effectiveness of health education on menopause symptoms and knowledge and attitude in terms of menopause. *Journal of*

epidemiology and global health, *8*(1-2), 8. https://doi.org/10.2991/j.jegh.2018.08.103

Kramer, A. D. I., Guillory, J. E., & Hancock, J. T. (2014). Experimental evidence of massive-scale emotional contagion through social networks. *Proceedings of the National Academy of Sciences*, *111*(24), 8788-8790. https://doi.org/10.1073/pnas.1320040111

Lee, J. Y., & Sundar, S. S. (2013). To Tweet or to Retweet? That Is the Question for Health Professionals on Twitter. *Health communication*, *28*(5), 509-524. https://doi.org/10.1080/10410236.2012.700391

Linzer, M., Rogers, E. A., & Eton, D. T. (2022). Reducing the Burden of Treatment: Addressing How Our Patients Feel About What We Ask of Them: A "Less Is More" Perspective. *Mayo Clin Proc*, *97*(5), 826-829. https://doi.org/10.1016/j.mayocp.2022.01.014

Lorenc, T., Petticrew, M., Welch, V., & Tugwell, P. (2013). What types of interventions generate inequalities? Evidence from systematic reviews. *J Epidemiol Community Health*, *67*(2), 190-193. https://doi.org/10.1136/jech-2012-201257

Mansour, D., Barber, K., Chalk, G., Noble, N., Digpal, A. A. S., Talaulikar, V., & Gray, S. (2024). The evolving perspective of menopause management in the United Kingdom. *Women's Health*, *20*, 17455057241288641.

Marnocha, S. K., Bergstrom, M., & Dempsey, L. F. (2011). The lived experience of perimenopause and menopause. *Contemporary nurse*, *37*(2), 229-240. https://doi.org/10.5172/conu.2011.37.2.229

Marván, M. L., Espinosa-Hernández, G., Martínez-Garduño, M. D., & Jasso, K. (2018). Attitudes toward menopause, sexual function and depressive symptoms in Mexican women. *J Psychosom Obstet Gynaecol*, *39*(2), 121-127. https://doi.org/10.1080/0167482x.2017.1308350

Mather, M., & Sutherland, M. R. (2011). Arousal-Biased Competition in Perception and Memory. *Perspectives on Psychological Science*, *6*(2), 114-133. https://doi.org/10.1177/1745691611400234

Metzger, M. J., Flanagin, A. J., & Medders, R. B. (2010). *Social and heuristic approaches to credibility evaluation online* [doi:10.1111/j.1460-2466.2010.01488.x]. Wiley-Blackwell Publishing Ltd.

Munn, C., Vaughan, L., Talaulikar, V., Davies, M. C., & Harper, J. C. (2022). Menopause knowledge and education in women under 40: Results from an online survey. *Women's Health*, *18*, 17455057221139660. https://doi.org/10.1177/17455057221139660

Opayemi, O. O. (2025). Menopausal transition, uncertainty, and women's identity construction: Understanding the influence of menopause talk with peers and healthcare providers. *Communication Quarterly*, *73*(2), 239-263. https://doi.org/10.1080/01463373.2025.2466422

Orgad, S., Gilchrist, K., & Rottenberg, C. (2024). How to tame your hormones: menopause rage in media discourse. *Feminist Media Studies*, 1-20. https://doi.org/10.1080/14680777.2024.2409970

Osborne, A. K., & Sillence, E. (2025). Accessing information on menopause transition and the role of digital health technologies: A narrative review. *Women & Health*, *65*(6), 508-521. https://doi.org/10.1080/03630242.2025.2523258

Preece, J., Nonnecke, B., & Andrews, D. (2004). The top five reasons for lurking: improving community experiences for everyone. *Computers in Human Behavior*, *20*(2), 201-223. https://doi.org/https://doi.org/10.1016/j.chb.2003.10.015

R Core Team. (2021). *R: A language and environment for statistical computing*. In R Foundation for Statistical Computing, Vienna R Foundation for Statistical Computing. https://www.R-project.org/

Revelle, W. (2021). *psych: procedures for personality and psychological research (version R package version 2.0. 12)*. https://cran.r-project.org/web/packages/psych/index.html

Rowson, T. S., Jaworska, S., & Gibas, I. (2023). Hot topic: Examining discursive representations of

menopause and work in the British media. *Gender, Work & Organization*, *30*(6), 1903-1921.
Rubinsky, V., Tolman, C., & Cooke-Jackson, A. “Just Deal With It:” Memorable Messages About Menopause as Anticipatory Education. *American Journal of Sexuality Education*, 1-26. https://doi.org/10.1080/15546128.2025.2531761
Şahin, A., Şahin, M., & Türkcü, F. M. (2019). YouTube as a source of information in retinopathy of prematurity. *Irish Journal of Medical Science (1971-)*, *188*, 613-617.
Schneider Dallolio, A., Abdalla, C. C., & Ferraz, S. B. (2025). Bytes of affect: unveiling the emergence of the responsible menopause consumer on social media. *Journal of Marketing Management*, *41*(3-4), 312-342. https://doi.org/10.1080/0267257X.2025.2463496
Sheng, X., & Simpson, P. M. (2015). Health care information seeking and seniors: determinants of Internet use. *Health Mark Q*, *32*(1), 96-112. https://doi.org/10.1080/07359683.2015.1000758
Sillence, E., Blythe, J. M., Briggs, P., & Moss, M. (2019). A Revised Model of Trust in Internet-Based Health Information and Advice: Cross-Sectional Questionnaire Study. *J Med Internet Res*, *21*(11), e11125. https://doi.org/10.2196/11125
Sillence, E., Osborne, A. K., Claisse, C., & Durrant, A. C. (2025). Understanding the challenges of using digital health technologies for menopause information. *Patient Education and Counseling*, 109375. https://doi.org/10.1016/j.pec.2025.109375
Sillence, E., Osborne, A. K., Kemp, E., & McKellar, K. (2025). Menopause apps: Personal health tracking, empowerment and epistemic injustice. *DIGITAL HEALTH*, *11*, 20552076251330782. https://doi.org/10.1177/20552076251330782
Stanley, D. (2021). *apaTables: Create American Psychological Association (APA) Style Tables. R package version 2.0.8*. https://cran.r-project.org/web/packages/apaTables/index.html
Syed Alwi, S. A. R., Brohi, I. B., & Awi, I. (2021). Perception of menopause among women of Sarawak, Malaysia. *BMC Womens Health*, *21*(1), 77. https://doi.org/10.1186/s12905-021-01230-7
Tannenbaum, M. B., Hepler, J., Zimmerman, R. S., Saul, L., Jacobs, S., Wilson, K., & Albarracín, D. (2015). Appealing to fear: A meta-analysis of fear appeal effectiveness and theories. *Psychol Bull*, *141*(6), 1178-1204. https://doi.org/10.1037/a0039729
Tariq, B., Phillips, S., Biswakarma, R., Talaulikar, V., & Harper, J. C. (2023). Women’s knowledge and attitudes to the menopause: a comparison of women over 40 who were in the perimenopause, post menopause and those not in the peri or post menopause. *BMC Women's Health*, *23*(1), 460.
Tennant, B., Stellefson, M., Dodd, V., Chaney, B., Chaney, D., Paige, S., & Alber, J. (2015). eHealth literacy and Web 2.0 health information seeking behaviors among baby boomers and older adults. *Journal of medical Internet research*, *17*(3), e70.
Utz, R. L. (2011). Like mother, (not) like daughter: The social construction of menopause and aging. *Journal of Aging Studies*, *25*(2), 143-154. https://doi.org/https://doi.org/10.1016/j.jaging.2010.08.019
van Mierlo, T. (2014). The 1% rule in four digital health social networks: an observational study. *J Med Internet Res*, *16*(2), e33. https://doi.org/10.2196/jmir.2966
Vegni, E., & Borghi, L. Psyche and menopause: embracing the (positive) flip side of the coin. *Climacteric*, 1-4. https://doi.org/10.1080/13697137.2025.2509854
Watson, J., van der Linden, S., Watson, M., & Stillwell, D. (2024). Negative online news articles are shared more to social media. *Scientific Reports*, *14*(1), 21592. https://doi.org/10.1038/s41598-024-71263-z
Weiss, R. (2023). Menopause and social media: Pros and cons for the general public. *Maturitas*, *174*, 67-68.
Wickham, H. (2016). *Package ‘ggplot2’: elegant graphics for data analysis*. https://cran.r-project.org/web/packages/ggplot2/index.html
Wickham, H., Averick, M., Bryan, J., Chang, W., McGowan, L., François, R., Grolemund, G., Hayes,

A., Henry, L., & Hester, J. (2020). *Welcome to the Tidyverse. J Open Source Software*. https://cran.r-project.org/web/packages/tidyverse/index.html

Wise, J. (2022). Why are there shortages of HRT and other drugs in the UK? *BMJ*, *377*, o1183. https://doi.org/10.1136/bmj.o1183

Wise, J. (2024). Satisfaction with GPs is high, but patients struggle to get appointments, survey shows. *BMJ*, *386*, q1547. https://doi.org/10.1136/bmj.q1547

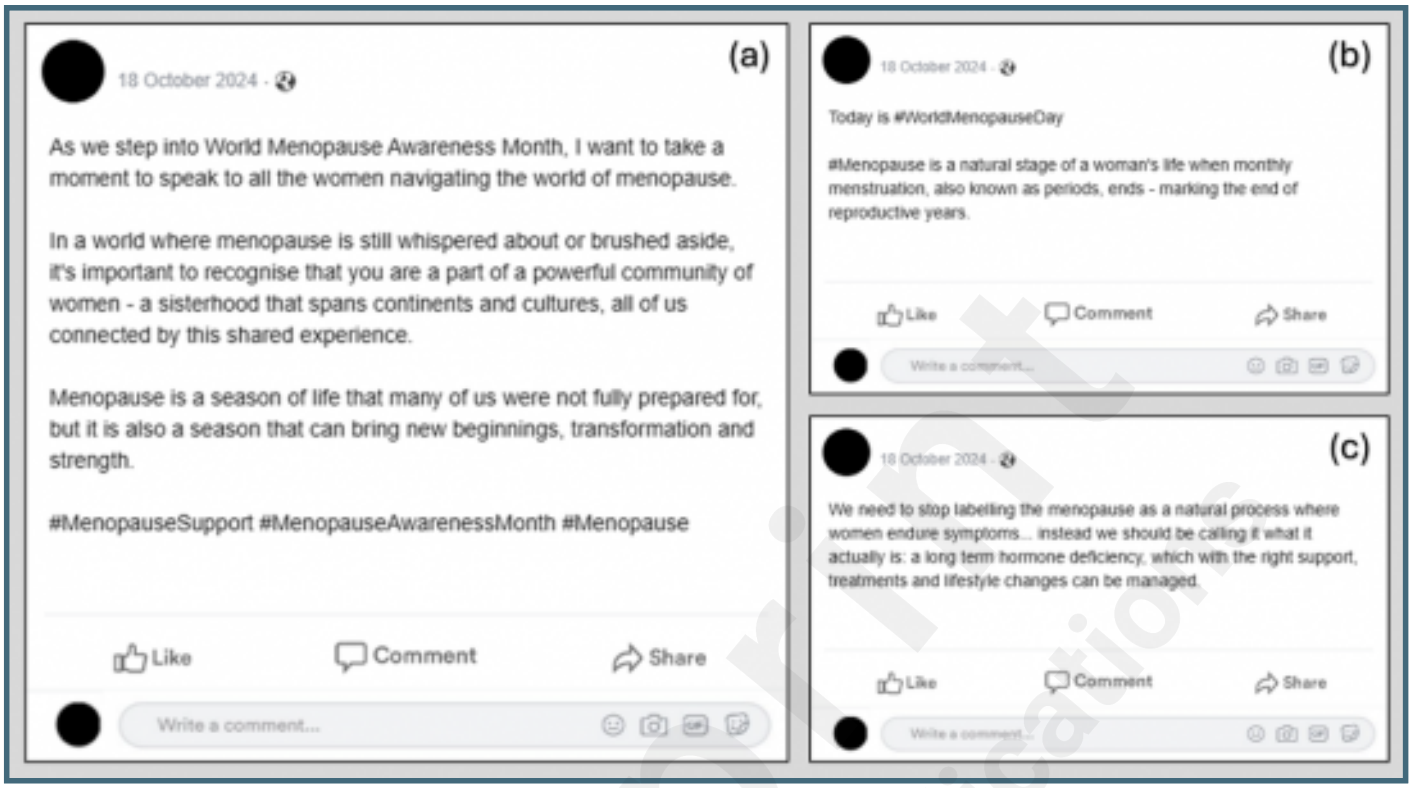
Witte, K., & Allen, M. (2000). A Meta-Analysis of Fear Appeals: Implications for Effective Public Health Campaigns. *Health Education & Behavior*, *27*(5), 591-615. https://doi.org/10.1177/109019810002700506

Yang, Q., Tufts, C., Ungar, L., Guntuku, S., & Merchant, R. (2018). To Retweet or Not to Retweet: Understanding What Features of Cardiovascular Tweets Influence Their Retransmission. *J Health Commun*, *23*(12), 1026-1035. https://doi.org/10.1080/10810730.2018.1540671

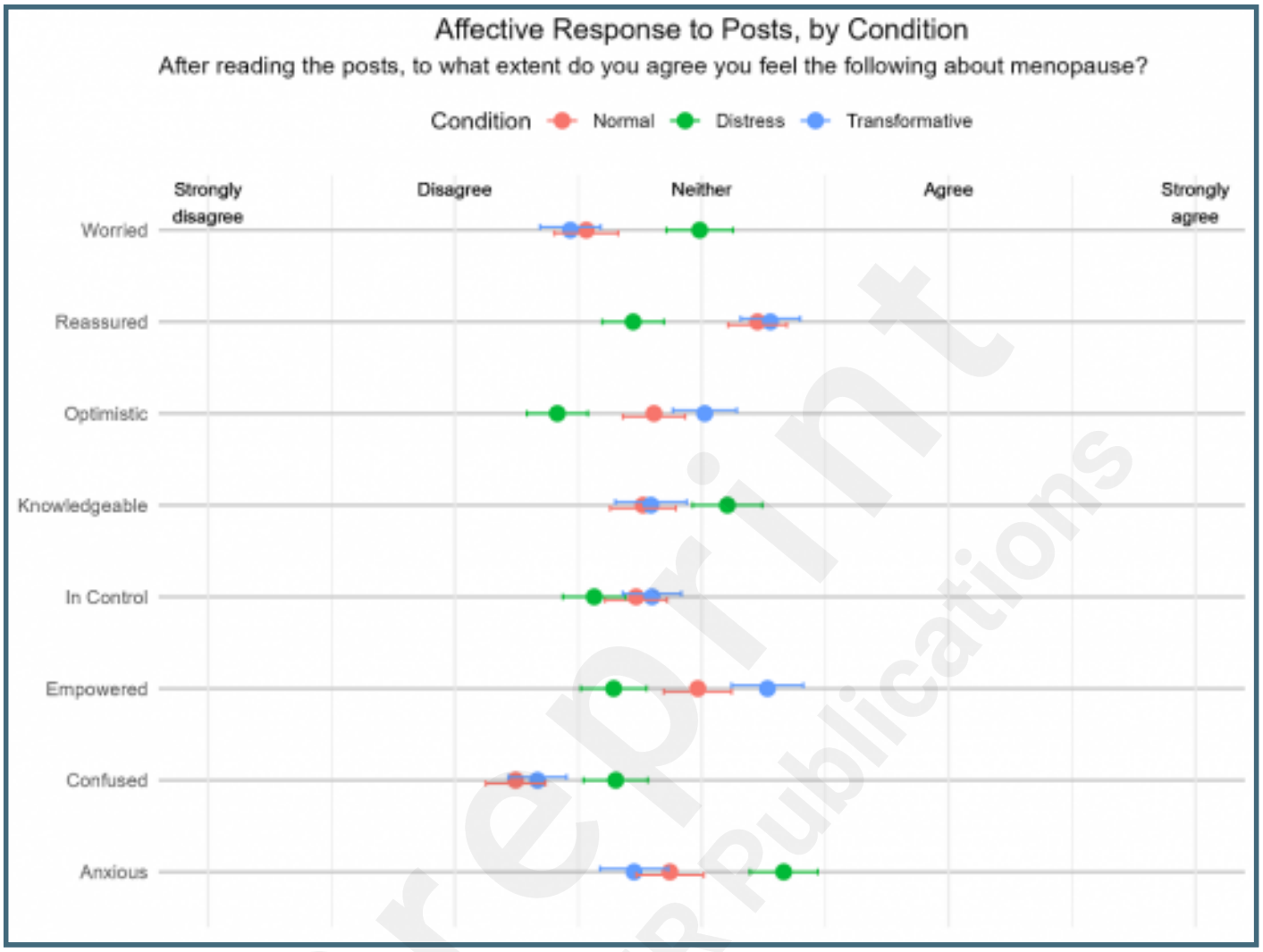
Supplementary Files

Figures

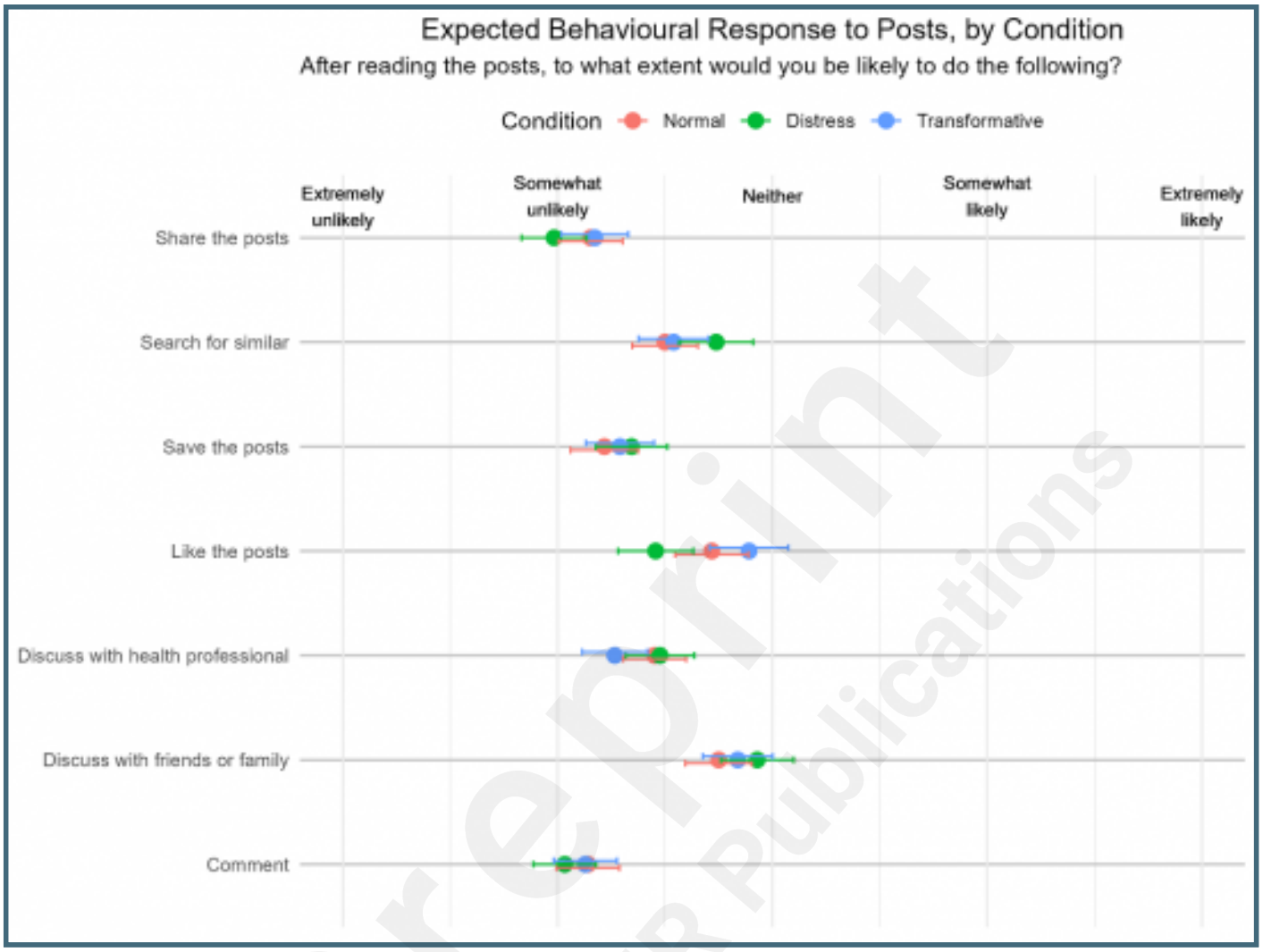
Example social media posts.



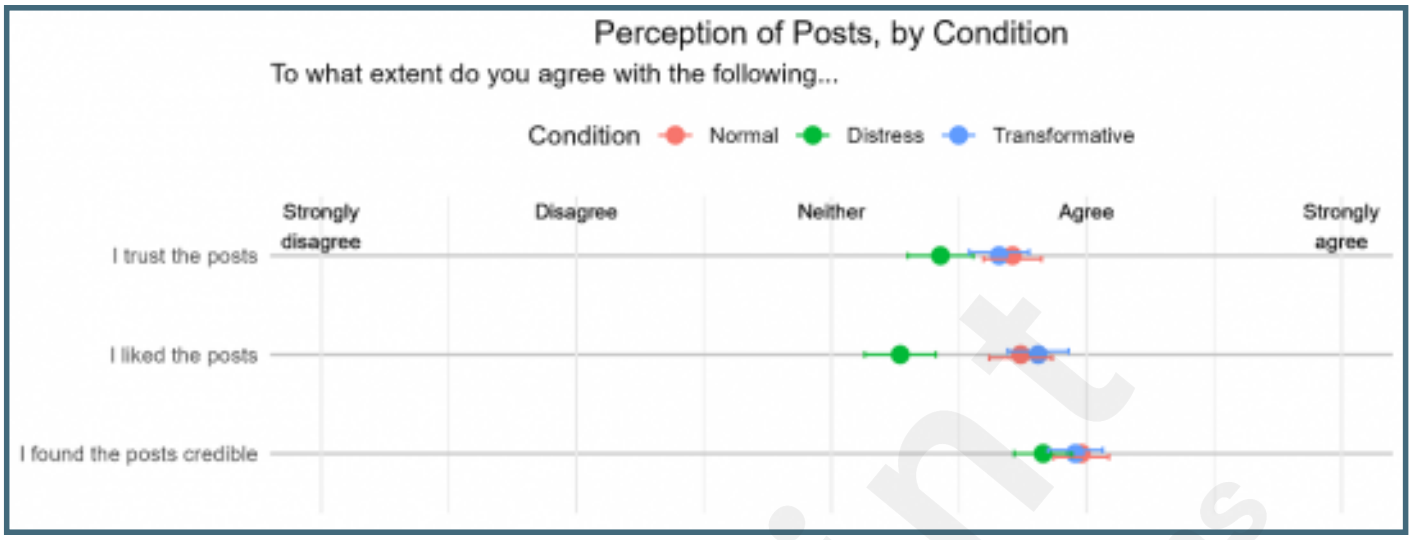
Affective Response to Posts, by Condition.



Expected Behavioural Response to Posts, by Condition.



Effect of Experimental Condition on Perception of Posts.



Perceived Representativeness of Posts, by Condition.