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ARTICLE

Exploring weight management beliefs during the menopausal transition (ME-WEL project): A qualitative comparative study based on Health Belief Model

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Abstract

Objectives: While most women experience weight gain during the menopausal transition, a subset successfully maintains a healthy weight. This study explores the determinants influencing different weight experiences during the menopausal transition, using the Health Belief Model (HBM).

Design: Qualitative design.

Methods: Semi-structured individual interviews with 62 Portuguese post-menopausal women were performed. Among them, 31 women maintained a normal weight from pre-menopause to post-menopause, with a variation not exceeding 5% of pre-menopausal weight, while another 31 women transitioned from normal weight in pre-menopause to overweight or obesity in post-menopause, with an increase above 7% of pre-menopausal weight. Deductive-dominant content analysis and multiple correspondence analysis were performed.

Results: Prominent differences exist between the Unhealthy Weight Gain Group (UWG-G) and the Healthy Weight Maintenance Group (HWM-G). The UWG-G lacks perceived susceptibility in pre-menopause and perceives obesity as stigmatizing. They prioritize immediate changes as benefits, while the HWM-G focuses on self-concept. Both groups face barriers like food cravings and weight loss challenges in middle-aged. For cues to action, the UWG-G emphasizes social support and self-care resources, while the HWM-G emphasizes age progression and healthy behaviour adherence. The HWM-G presents higher self-efficacy.

Conclusion: This study confirms the suitability of the HBM in understanding weight management beliefs among

post-menopausal women, highlighting differences between women who maintain a healthy weight and those who experience weight gain during this life phase. This facilitates identifying key determinants (perceived susceptibility, perceived severity, perceived benefits, perceived barriers, cues to action and self-efficacy) crucial for future interventions in weight management.

KEYWORDS

Health Belief Model, menopausal transition, obesity, post-menopausal women, weight gain, weight management

Statement of contribution

What is already known on this subject?

- Weight gain and the development of obesity are prevalent issues among menopausal women, influenced by several factors.
- While some women can maintain a healthy weight during this phase, many feel unprepared to manage these changes.
- The Health Belief Model is a common framework to understand weight-related behaviours.

What does this study add?

- Differences in beliefs exist between women who gain weight and those who maintain a healthy weight during the menopausal transition.
- There is a necessity for prevention efforts and credible information dissemination during pre-menopause.
- Future interventions should specifically address and focus on perceived barriers among women who experience weight gain.

INTRODUCTION

During the menopausal transition, spanning from 5 to 10 years before and after a woman's final menstrual period, weight gain becomes a prevalent concern leading to obesity (Harlow et al., 2012; Simangunsong et al., 2021). Post-menopausal women exhibit higher obesity rates than pre-menopausal peers, posing a significant health issue (Bibi et al., 2021; Knight et al., 2021). They face heightened risks of chronic conditions (e.g., cardiovascular disease, diabetes, musculoskeletal disorders) and higher mortality risk exacerbated by reduced oestrogen production (Cushman et al., 2021; Knight et al., 2021). Women with overweight or obesity tend to experience more severe menopausal symptoms (Fenton, 2021).

Understanding weight changes and obesity development during menopausal transition is unclear (Bibi et al., 2021). Factors like ageing, hormonal changes, genetics, medical conditions, environmental and socio-economic factors and lifestyle behaviours may contribute (Chopra et al., 2019; Conti et al., 2020; Fenton, 2021; Knight et al., 2021; Simangunsong et al., 2021). On the contrary, some women maintain a healthy weight during the menopausal transition and post-menopause (Fenton, 2021; Leitão et al., 2023), but more research is needed on lifestyle and health beliefs impacts.

Adopting a healthy lifestyle can manage weight during menopause, potentially impacting weight loss, BMI, body composition and health-related status (Cheng et al., 2018; Chopra et al., 2019; Simangunsong et al., 2021). This includes healthy eating, physical activity/exercise and if necessary, behavioural therapy and/or medical intervention (Chopra et al., 2019). However, most women feel unprepared for menopause, lacking awareness of weight gain prevention and healthy habits (Marlatt et al., 2018; Simangunsong et al., 2021). Alarmingly, awareness of heart disease as the leading cause of death in women has declined among most women groups, except those aged 65 and older (Cushman et al., 2021).

The Health Belief Model (HBM) is a widely used framework for understanding and promoting behavioural changes like weight gain among women (James et al., 2012; Sharifi et al., 2017). It comprises six concepts: (1) perceived susceptibility (beliefs about individual disease risk); (2) perceived severity (beliefs about disease severity/consequences); (3) perceived benefits (beliefs about behaviour benefits); (4) perceived barriers (beliefs about obstacles/costs of behaviour); (5) self-efficacy (confidence in ability to behaviour performance); and (6) cues to action (strategies/prompts to activate readiness and behaviour engagement; Janz et al., 2002). These beliefs influence behaviours, making their identification crucial, especially in high-risk populations like menopausal women. According to the literature, some of these beliefs can either facilitate (e.g., high perceived benefits, high self-efficacy) or hinder (e.g., high perceived barriers, low self-efficacy, lack of perceived susceptibility/severity) the maintenance of healthy lifestyle habits in post-menopausal women (Kim & Yang, 2020).

While women in menopausal transition show interest in weight management programmes, success rates in maintaining weight loss are generally low (Greaves et al., 2017; James et al., 2012). Active involvement of women in research and intervention development enhances programme effectiveness (Marlatt et al., 2018). Qualitative studies are crucial, as beliefs about weight management cannot be effectively assessed and quantified through surveys, especially considering the multifaceted factors influencing overweight and obesity during menopause (Janz et al., 2002; Jeffery et al., 2009).

Given the limited studies in this field and the inability to generalize qualitative analysis across different populations (Farrell et al., 2021; James et al., 2012), this study intends to compare health beliefs regarding obesity and weight management during menopause using a qualitative approach. It explores (i) beliefs behind unsuccessful weight management in menopausal women who gained weight during the menopausal transition and (ii) beliefs behind successful weight management in menopausal women who successfully maintained a healthy weight, based on the HBM.

METHODS

Participants

This study involved 62 Portuguese post-menopausal women (31 women who maintained a healthy weight and 31 women who experienced weight gain during the menopausal transition), through non-probabilistic convenience sampling. Inclusion criteria comprised (1) female sex, (2) Portuguese nationality, (3) age between 45 and 65 years, (4) post-menopausal status (absence of menstruation for 12 consecutive months; Harlow et al., 2012) and (5) falling into one of the following weight categories: (i) *Healthy weight maintenance*: participants maintained a healthy weight ($18.5\,kg/m^2 \leq$ Body Mass Index [BMI] $\leq 24.9\,kg/m^2$) from pre-menopause to post-menopause, with weight variation not exceeding 5% of pre-menopausal weight; or (ii) *Unhealthy weight gain*: women experienced a weight increase (above 7% of pre-menopausal weight) from a healthy pre-menopause range to overweight or obesity (BMI $\geq 25\,kg/m^2$) in their current post-menopausal status.

Exclusion criteria included (i) specific weight-affecting diseases like hyper- or hypothyroidism, (ii) pre-menopause (regular menstrual cycles) or peri-menopause status (menstrual irregularities that persist until 1 year after amenorrhea; Harlow et al., 2012); (iii) maintaining weight but not within a healthy BMI range (e.g., maintaining weight but having a BMI $\geq 25\,km/m^2$); (iv) weight increase without transitioning

from a healthy BMI to overweight or obesity (e.g., increasing from overweight to obesity or from underweight to normal weight).

Measures

This cross-sectional, exploratory and comparative study employed a qualitative methodology to explore and compare weight management health beliefs of post-menopausal women during the menopausal transition. Women completed an initial questionnaire covering socio-demographic, health-related, weight-related and lifestyle factors. Since the menopausal stage was part of the inclusion and exclusion criteria, a menopause-related questionnaire based on the Stages of Reproductive Aging Workshop (e.g., 'In the past 12 months, have you experienced an irregular menstrual cycle, meaning you have not had your menstruation for 60 consecutive days or more?'; Harlow et al., 2012) was used to determine the women's menopausal stage (pre-, peri- or post-menopausal). All data were self-reported.

Semi-structured interviews based on the HBM were conducted to explore perceived susceptibility, perceived severity, perceived benefits, perceived barriers, cues to action and self-efficacy. Two interview protocols were tailored for each weight group, aiming for the same goal but adjusting contexts to each group's experiences. For instance, regarding perceived benefits, the UWG-G was prompted to consider potential benefits if they had adopted healthy behaviours during the menopausal transition or presently. Conversely, the HWM-G reflected on the benefits of adopting healthy behaviours during the menopausal transition and currently (Appendices A and B).

Procedure

Participant recruitment occurred during the first phase of the ME-WEL project (an online survey on menopause and weight management) from May to December 2020. Some results have been published (Leitão et al., 2024). Women expressing interest were invited to interviews, requiring contact information. Eligible participants were contacted and the study's primary objectives and participation conditions were explained. The final sample consisted of 62 women, with 31 experiencing weight gain and 31 maintaining their healthy weight during the menopausal transition. The recruitment process is detailed in Figure 1.

Before interviews, study objectives were explained and informed consent was obtained, including recording permission. Due to the pandemic, interviews were conducted via telephone ($n = 43$) or online platforms like Zoom or Skype ($n = 19$) between October and November 2020. Interviews occurred in a quiet, private space with closed doors to minimize noise disruptions. Times were scheduled for participant convenience. UWG-G interviews ranged from 13 to 40 min (*mean and standard deviation* 23.0 ± 7.6 min), and HWM-G interviews lasted 11 to 52 min (22.1 ± 9.9 min). The first author (ML), supervised by the last author (FP), conducted all interviews. The research team transcribed audio recordings (capturing verbal and non-verbal content—e.g., laughs) between January and March 2021. Transcriptions were reviewed thoroughly by ML in April and May 2021, each interview was assigned a unique alphanumeric code to preserve anonymity. The data coding process underwent a comprehensive review by ML and FP. ML coded independently, refining codes with FP. FRPL and JM reviewed all categories and subcategories.

Data analyses

The analyses were performed using the Directed Content Analysis approach (Hsieh & Shannon, 2005), with MAXQDA 2020 software from May 2021 to April 2022. The aim was to provide conceptual support and expand an existing theoretical framework, specifically HBM. Primary variables (HBM

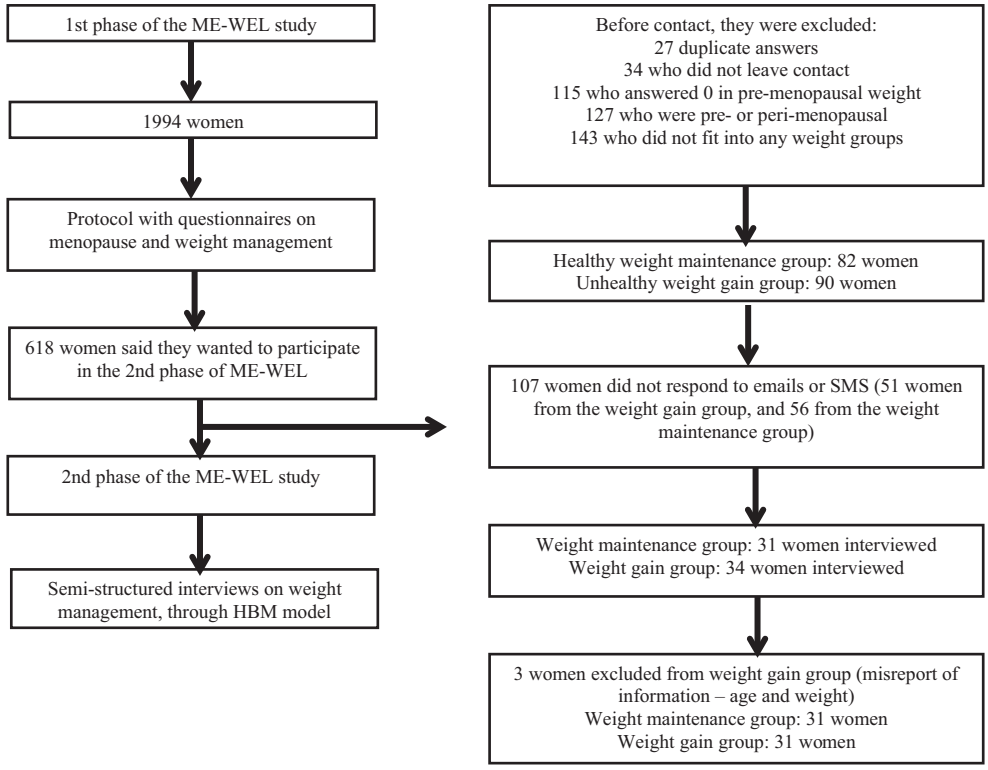

FIGURE 1 The recruitment process of participants.

dimensions) were identified, and potential subcategories were assigned. Content not aligning with existing categories formed new primary categories. This approach enables theoretical expansion while ensuring independence from an unreliable perspective (Hsieh & Shannon, 2005).

Interview content was interpreted to identify the main constructs (HBM constructs) and coded accordingly. Emergent subcategories explained specific attributes of the main category through a theory-driven approach. Table 2 provides subcategory definitions and references.

Quantitative analyses employed Multiple Correspondence Analysis (MCA), a common multivariate statistical technique in behavioural research. Only subcategories endorsed by ≥10% of the sample (≥ three participants) were considered. This criterion was applied because (i) the limited sample size underscores the significance of opinions from small percentages; larger samples could magnify this 10% threshold, (ii) consensus on ideal repetition frequency varies, and this decision is best left to the researcher's decision and (iii) previous studies supporting 10% as a robust (Nickerson et al., 2014; Ryan & Bernard, 2003).

MCA explores relationships among multiple categorical variables (presence or absence) across individual responses, generating factorial dimensions with high explanatory power compared to individual variables (Greenacre & Blasius, 2006). Given the limited literature available on qualitative studies, this analysis helps clarify potential profiles of interconnected characteristics among menopausal women who have either maintained or lost weight. Conducting in IBM SPSS Statistics version 29.0 (IBM SPSS Statistics Version 29.0; IBM Corp, Armonk, NY), MCA ensured each dimension explained ≥5% of total variance and had an eigenvalue ≥1. Cronbach's alpha ($a \geq .7$) was considered (Johnson & Wichern, 2007). Conformity among raters in qualitative content analysis is crucial for code consistency and analysis quality (Burla et al., 2008). To assess agreement, an independent researcher coded six interviews. Cohen's kappa coefficient assessed agreement, with above .40 indicating moderate agreement (Cohen, 1960).

RESULTS

Participants characteristics

Table 1 displays the socio-demographic, health, weight and lifestyle characteristics of the UWG-G (women who gained weight during menopausal transition), and the HWM-G (women who maintained a healthy weight). UWG-G had an average current BMI of $28.2 \pm 2.3\,kg/m^2$ and in pre-menopause of $22.6 \pm 1.5\,kg/m^2$. They reached menopause at 48.3 ± 4.3 years. In HWM-G, the current average BMI was $21.7 \pm 1.9\,kg/m^2$, and in pre-menopause of $21.4 \pm 1.9\,kg/m^2$. For these women, menopause occurred at 48.6 ± 4.5 years. Notably, 74.2% of UWG-G ($n = 23$) reported attempting weight loss, while 29% ($n = 8$) of HWM-G did.

Qualitative analysis

During qualitative analysis, 64 subcodes (encompassing 1294 coded segments) were identified in UWG-G: perceived susceptibility (11 subcodes, 255 coded segments), perceived severity (19 subcodes, 388 coded segments), perceived benefits (9 subcodes, 103 coded segments), perceived barriers (18 subcodes, 444 coded segments), cues to action (5 subcodes, 60 coded segments) and self-efficacy (2 subcodes, 44 coded segments). In HWM-G, six codes were generated, resulting in 46 subcodes (encompassing 891 coded segments): perceived susceptibility (9 subcodes, 184 coded segments), perceived severity (7 subcodes, 126 coded segments), perceived benefits (14 subcodes, 380 coded segments), perceived barriers (8 subcodes, 79 coded segments), cues to action (6 subcodes, 66 coded segments) and self-efficacy (2 subcodes, 56 coded segments). Table 2 details participant mentions, frequencies and percentages for each subcategory.

Multiple correspondence analysis and intercoder reliability

Each subcategory identified in over 10% of the sample, coded as nominal variables for absence or presence, was analysed separately for UWG-G and HWM-G. This differentiation was essential due to (i) the multiplicity of subcategories that emerged within each HBM dimension and (ii) the group's different weight experiences. Five models per group focused on the five HBM dimensions were generated, excluding self-efficacy due to its binary nature, representing the presence or absence of self-efficacy. Women's responses determined this classification; expressions of lack of confidence were categorized as 'absence' (e.g., 'I feel zero [confidence] because I don't believe in my ability to be disciplined'—64 years; BMI = 33.7), while those showing some confidence were labelled 'presence' (e.g., 'I still, I can [lose weight]'—55 years; BMI = 27.3).

Factor loadings ranged from .000 to .697 and *a* values ranged from .230 to .760. Eigenvalues ranged from 1.242 to 3.522, inertia from .102 to .415 and dimensions variances from 10.220 to 36.645 (Table 2). Utilizing the codification developed from the preceding qualitative analysis, the assessment of Cohen's kappa reliability indicator revealed a moderate agreement ($\varkappa = .47$) between the analyses of both researchers.

HBM models

All models are detailed below. For additional information, including the definition and an example of each subcategory, see Table 2.

TABLE 1 Characterization of the participants for both weight groups: unhealthy weight gain group ($n = 31$) and healthy weight maintenance group ($n = 31$).

	Unhealthy weight gain ($n = 31$)		Healthy weight maintenance ($n = 31$)	
	n	**%**	***n***	**%**
Age (mean ± standard deviation)	54.8 ± 4.7 years		54.1 ± 5.5 years	
Relationship status				
In a relationship, cohabiting	19	61.3	20	64.5
In a relationship, not cohabiting	4	12.9	3	9.7
Single	8	25.8	8	25.8
Parity				
Yes	25	80.6	25	80.6
No	6	19.4	6	19.4
Highest education level obtained				
Middle school	–	–	1	3.2
High school	12	38.7	13	42
Bachelor	11	35.5	11	35.5
Master	7	22.6	5	16.1
Doctorate	1	3.2	1	3.2
Professional status				
Active	24	77.4	23	74.2
Inactive (e.g., retired)	7	22.6	8	25.8
Annual household income				
<10,000€	3	9.7	3	9.7
10,001€–20,000€	6	19.4	14	45.2
20,001€–37,500€	15	48.4	7	22.6
37,501€–70,000€	4	12.9	7	22.6
>70,000€	3	9.7	–	–
Recent disease				
Yes	11	35.5	4	12.9
No	20	64.5	27	87.1
Recent psychological problem				
Yes	9	29	4	12.9
No	22	71	27	87.1
Physical activity/exercise				
Yes	22	71	23	74.2
No	9	29	8	25.8
Family history of obesity				
Yes	10	32.3	8	25.8
No	21	67.7	23	74.2
Partner's BMI				
Normal weight	12	52.2	17	73.9
Overweight	10	43.5	6	26.1
Obesity	1	4.3	–	–
Obesity in the past				
Yes	4	12.9	3	9.7
No	27	87.1	28	90.3

TABLE 2 Results from the multiple correspondence analysis (MCA) for both weight groups: Unhealthy weight gain group ($n = 31$) and Healthy weight maintenance group ($n = 31$).

Categories and subcategories names	Subcategory definition	Example	Dimension 1	Dimension 2	Dimension 3	Average	Subcategories frequencies (n) and percentages (%)	
			Mobility, psychological distress and lack of perceived susceptibility before menopause (information absent)	Physical health and lack of perceived susceptibility before menopause (general)	–	–	n[a] (NM)[b]	%[c]
Two-dimensional model of perceived susceptibility to developing certain diseases, considering the weight gain during the menopausal transition, in UWG-G								
Absence of perceived susceptibility before menopause (general)	Before menopause, weight gain is not perceived as posing a threat to health (Kracht et al., 2022; Marlatt et al., 2018)	'I felt good and even thought that (…) maybe what happened to other people wouldn't happen to me because it wasn't happening yet ah (…) and I felt good, yes, without, without, without difficulties'; 56Y, BMI = 28.5	.036	**.078**	–	.057	26 (79)	83.9
Absence of perceived susceptibility before menopause, due to the lack of information	Before menopause, weight gain is not perceived as posing a threat to health, due to a lack of information regarding menopause and its associated changes in weight (Kracht et al., 2022; Marlatt et al., 2018)	'I think there should have been a warning before we go through menopause.' Maybe if I had been warned 'watch out, because if you gain weight now, it will be very difficult to lose it later'. 'Maybe I would have paid more attention'; 55Y; BMI = 27.3	**.441**	.039	–	.240	11 (26)	35.5
Impact of physical activity/exercise on health and/or on the development of diseases	Perception of physical activity/exercise as a protective factor against the development of certain diseases (McGuire et al., 2016)	'…If we still gain weight, imagine if we didn't [do physical exercise] (laughs) (…) if we didn't do anything, we would be currently rolling over'; 56Y; BMI = 26	.278	.285	–	.282	5 (5)	16.1
Impact of food choices on health and/or the development of diseases	Perception of food choices as a protective or risk factor in the development of certain diseases (Dressler & Smith, 2013)	'I often find myself giving in to the temptation of indulging in carbohydrates that have a detrimental effect on my health, and unfortunately, I end up consuming them'; 59Y; BMI = 27	.141	**.214**	–	.177	15 (27)	48.4
Overall health	Weight gain poses/can pose a threat to overall health (including both physical and psychological health; Ghorbani-Dehbalaei et al., 2021)	'And for health, it is not good, in general'; 54Y; BMI = 29.8	.039	**.477**	–	.258	18 (32)	58.1
Physical health	Weight gain poses/can pose a threat to the development of physical health problems (without specifying a precise disease; Ghorbani-Dehbalaei et al., 2021)	'(…) it is a phase in which we are already, we are already in the aging process. And getting fat doesn't help at all (laughs) it doesn't help at all, no, it doesn't help your physical health'; 56Y; BMI = 26	.001	**.417**	–	.209	23 (33)	74.2
Mobility	Weight gain poses/can pose a threat to potential loss or decline in mobility (Espírito-Santo et al., 2021)	'It is more in that sense, the sense of mobility that I am afraid of being overweight'; 52Y; BMI = 25.2	**.463**	.060	–	.262	4 (6)	12.9

TABLE 2 (Continued)

Categories and subcategories names	Subcategory definition	Example	Dimension 1	Dimension 2	Dimension 3	Average	Subcategories frequencies (*n*) and percentages (%)	
Two-dimensional model of perceived susceptibility to developing certain diseases, considering the weight gain during the menopausal transition, in UWG-G			**Mobility, psychological distress and lack of perceived susceptibility before menopause (information absent)**	**Physical health and lack of perceived susceptibility before menopause (general)**	–	–	***n*[a] (NM)[b]**	**%[c]**
Musculoskeletal diseases	Weight gain poses/can pose a threat to the development of musculoskeletal disease (e.g., osteoporosis; Espírito-Santo et al., 2021)	'I may not have much knowledge about medicine. But I believe that when we are overweight, we tend to experience several issues, even if they are not specific diseases. For example, back problems, knee problems, all this is influenced by weight gain'; 59Y; BMI = 26.9	**.319**	.000	–	.160	4 (5)	12.9
Other non-communicable diseases	Weight gain poses/can pose a threat to the development of other non-communicable diseases (e.g., cancer; Okop et al., 2016)	'Because it dramatically increases the … ah, the probability of having a, a stroke or a heart attack'; 52Y; BMI = 27	.200	**.299**	–	.250	16 (20)	51.6
Family history	Weight gain poses/can pose a threat to health, particularly due to the presence of family history or antecedents of disease (Kashfi et al., 2016; Okop et al., 2016)	'It's just that I think that… it's almost like… for me it's almost like smoking, there's no difference at all. (…) Especially since there is a history of strokes on my father's side'; 55Y; BMI = 27.3	.015	**.032**	–	.024	8 (10)	25.8
Psychological health	Weight gain poses/can pose a threat to psychological health (Fenton, 2021; Simangunsong et al., 2021)	'And it doesn't even contribute to the health, to the psychological health'; 56Y; BMI = 26	**.457**	.017	–	.237	6 (9)	19.4
Eigenvalue			2.390	1.920	–	2.155	–	–
Inertia			.217	.175	–	.196	–	–
% Variance			21.730	17.456	–	19.593	–	–
Cronbach's alpha			.640	.527	–	–	–	–
Two-dimensional model of PERCEIVED SUSCEPTIBILITY to developing certain diseases, considering the weight maintenance during the menopausal transition, in HWM-G			**Unhealthy behaviours and overall health**	**Physical health and loss of mobility**	–	**Average**	***n*[a] (NM)[b]**	**%[c]**
Absence of perceived susceptibility before menopause	Before menopause, weight gain is not perceived as posing a threat to health (Kracht et al., 2022; Marlatt et al., 2018)	'Previously, I didn't pay much attention to those details and, well… As I mentioned, when a person is healthy, don't, don't pay attention to those restrictions, which nobody should abuse'; 61Y; BMI = 23.8	**.418**	.032	–	.225	4 (5)	12.9

(Continues)

TABLE 2 (Continued)

Categories and subcategories names	Subcategory definition	Example	Dimension 1	Dimension 2	Dimension 3	Average	Subcategories frequencies (*n*) and percentages (%)	
			Mobility, psychological distress and lack of perceived susceptibility before menopause (information absent)	Physical health and lack of perceived susceptibility before menopause (general)	–	–	*n*[a] (NM)[b]	%[c]
Two-dimensional model of perceived susceptibility to developing certain diseases, considering the weight gain during the menopausal transition, in UWG-G								
Impact of food choices on health and/or the development of diseases	Perception of food choices as a protective or risk factor in the development of certain diseases (Dressler & Smith, 2013)	'First, there's the association with, with the diet. If we consume processed foods, if we consume ah, sugars, it's all bad. So, obviously, if I'm overweight, it's because I've had an unhealthy diet'; 50Y; BMI = 24.1	**.442**	.010	–	.226	21 (44)	67.7
Impact of physical activity/exercise on health and/or the development of diseases	Perception of physical activity/exercise as a protective factor against the development of certain diseases (McGuire et al., 2016)	'I, I, I, so I'm actively engaged in the field of physical exercise, and I strongly believe that regular exercise is highly beneficial in preventing various diseases… numerous ones'; 46Y; BMI = 23.4	**.219**	.013	–	.116	12 (19)	38.7
Overall health	Weight maintenance poses/can pose as a protective factor against overall health risks (encompassing both physical and psychological health; Ghorbani-Dehbalaei et al., 2021)	'I'm aware that… by maintaining my weight, I can initially achieve better overall health'; 58Y; BMI = 21.9	**.344**	.001	–	.173	23 (41)	74.2
Physical health (general)	Weight maintenance poses/can pose a protective factor against overall physical health risks (Ghorbani-Dehbalaei et al., 2021)	'I believe that, in that case [weight gain], it would, it would have been much more difficult to face any illness. I underwent back surgery, and if I wasn't skinny, it would have been more challenging'; 50Y; BMI = 22.9	.060	**.589**	–	.324	10 (14)	32.3
Musculoskeletal diseases	Weight maintenance poses/can pose as a protective factor against the development of musculoskeletal diseases (e.g., osteoporosis; Espírito-Santo et al., 2021)	'And it's also for the joint's issues. If a person is overweight, I believe the current problem I have in my, my joints, I think would be even worse…'; 46Y; BMI = 20.1	.036	**.273**	–	.154	5 (6)	16.1
Other non-communicable diseases	Weight maintenance poses/can pose as a protective factor against the development of other non-communicable diseases (e.g., cancer; Okop et al., 2016)	'(…) It's common sense… that the, the excessive weight, the excessive weight also contributes to… ah… cardiovascular diseases and… and other, other diseases, diabetes…'; 53Y; BMI = 19.4	**.348**	.097	–	.223	20 (28)	64.5

TABLE 2 (Continued)

Categories and subcategories names	Subcategory definition	Example	Dimension 1	Dimension 2	Dimension 3	Average	Subcategories frequencies (*n*) and percentages (%)	
Two-dimensional model of perceived susceptibility to developing certain diseases, considering the weight gain during the menopausal transition, in UWG-G			**Mobility, psychological distress and lack of perceived susceptibility before menopause (information absent)**	**Physical health and lack of perceived susceptibility before menopause (general)**	–	–	*n*[a] (NM)[b]	%[c]
Mobility	Weight maintenance poses/can pose as a protective factor against the loss or decline in mobility (Espírito-Santo et al., 2021)	'Currently, fortunately, I don't face any difficulties. However, I am aware that as the years go by, if I don't do anything, it could potentially happen and so yes…'; 57Y; BMI = 21.1	.006	**.501**	–	.254	11 (14)	35.5
Psychological health	Weight maintenance poses/can pose a protective factor against overall psychological health risks (Fenton, 2021; Simangunsong et al., 2021)	'(…) I believe it influences the sense that if I were to gain a significant amount of weight, it would make me feel depressed'; 64Y; BMI = 24.2	**.033**	.000	–	.016	9 (13)	29
Eigenvalue			1.906	1.516	–	1.711	–	–
Inertia			.212	.168	–	.190	–	–
% Variance			21.182	16.845	–	19.014	–	–
Cronbach's alpha			.535	.383	–	–	–	–
Three-dimensional model of PERCEIVED SEVERITY regarding the seriousness of weight gain and obesity and its negative consequences, in UWG-G			**Negative physical consequences, isolation, and social/partner stigmatization**	**Negative self-concept, psychological distress, and mobility difficulties**	**Body image dissatisfaction and avoidance, and family/ professional stigmatization**	**Average**	*n*[a] (NM)[b]	%[c]
Negative psychological consequences (general)	Psychological consequences (without specification) resulting from weight gain in menopause (Fenton, 2021).	'(…) because of the extra weight, ah (…) it had a severe psychological impact; 47Y; BMI = 31.6'	.000	**.347**	.015	.121	9 (12)	29
Negative physical consequences (general)	Physical consequences (without specification) resulting from weight gain, in menopause (Farrell et al., 2021)	'It's very serious! It's very serious… physically'; 47Y; BMI = 31.6	**.529**	.062	.000	.197	7 (8)	22.6
Development or worsening of diseases	Development or exacerbation of specific diseases due to weight gain in menopause (Farrell et al., 2021)	'Because I have Crohn's disease, psoriasis, and I believe that my condition worsened due to the weight'; 59Y; BMI = 27	**.247**	.136	.025	.136	5 (8)	16.1

(Continues)

TABLE 2 (Continued)

Categories and subcategories names	Subcategory definition	Example	Dimension 1	Dimension 2	Dimension 3	Average	Subcategories frequencies (*n*) and percentages (%)	
Two-dimensional model of perceived susceptibility to developing certain diseases, considering the weight gain during the menopausal transition, in UWG-G			**Mobility, psychological distress and lack of perceived susceptibility before menopause (information absent)**	**Physical health and lack of perceived susceptibility before menopause (general)**	–	–	*n*[a] (NM)[b]	%[c]
Negative changes in the musculoskeletal system	Negative changes in the musculoskeletal system caused by weight gain during the menopausal transition (Espírito-Santo et al., 2021)	'(…) The fact that I'm overweight doesn't help in the part of, of, of my joints, of my problems that I have in my joints, in my bones, I have problems in, in my legs, in my knees'; 59Y; BMI = 27	**.347**	.128	.002	.159	11 (18)	35.5
Negative changes in physiological markers	Negative changes in physiological health indicators (e.g., heart rate), resulting from weight gain in menopausal transition (Santos et al., 2021)	'High blood pressure, high blood pressure'; 64Y; BMI = 34.1	**.176**	.067	.073	.105	18 (42)	58.1
Negative changes in biochemical markers	Negative changes in biochemical health indicators (e.g., LDL cholesterol), due to weight gain during the menopausal transition (Santos et al., 2021)	'Ah, and, and as a result, I ended up with high triglycerides, high cholesterol'; 47Y; BMI = 29.1	**.365**	.002	.002	.123	5 (6)	16.1
Difficulty in mobility/ locomotion	Difficulties with mobility/locomotion, caused by weight gain during the menopausal transition (Espírito-Santo et al., 2021)	'Then it becomes harder for me to walk.'; 49Y; BMI = 29.6	.057	**.366**	.085	.169	20 (37)	64.5
Pain/physical discomfort	Pain and/or physical discomfort caused by weight gain during the menopausal transition (El-Khoudary et al., 2019; Hajesmaeel-Gohari et al., 2021)	'I have pain in my feet, I have pain in my knees'; 53Y; BMI = 27.9	**.122**	.002	.015	.047	6 (12)	19.4
Lack of motivation	Lack of motivation (e.g., to engage in activities), due to weight gain in menopause (Gilchrist et al., 2020; Okop et al., 2016)	'Ah…I didn't feel like doing anything anymore'; 64Y; BMI = 34.1	**.272**	.091	.255	.206	4 (6)	12.9
Disinvestment/social isolation	Disinvestment in relations or/and social isolation, because of weight gain in menopausal transition (Gilchrist et al., 2020; Urdapilleta et al., 2019)	'Ah (…) sometimes I don't even feel like being with people'; 56Y; BMI = 28.5	**.194**	.009	.078	.094	6 (15)	19.4
Spontaneous negative self-concept (general)	A spontaneous negative self-concept, resulting from weight gain in menopause (Gilchrist et al., 2020)	'Everything about me, everything that is me, and this weight is negative'; 53Y; BMI = 32.3	.199	**.350**	.011	.187	10 (15)	32.3

TABLE 2 (Continued)

Categories and subcategories names	Subcategory definition	Example	Dimension 1	Dimension 2	Dimension 3	Average	Subcategories frequencies (*n*) and percentages (%)	
			Mobility, psychological distress and lack of perceived susceptibility before menopause (information absent)	Physical health and lack of perceived susceptibility before menopause (general)	–	–	*n*[a] (NM)[b]	%[c]
Two-dimensional model of perceived susceptibility to developing certain diseases, considering the weight gain during the menopausal transition, in UWG-G								
Body image changes	Body image changes (e.g., increase the abdominal fat) resulting from weight gain in the menopausal transition (Ginsberg et al., 2015)	'It [weight gain] brings about a different type of consequence in the, in the physical appearance, in the, in the morphology. The way you gain fat, ah, it's different. I never had a stomach before, I never had… and now I do. So, there is a way of, of gaining fat that is not the same'; 61Y; BMI = 26.2	.017	**.431**	.007	.152	13 (18)	41.9
Body image dissatisfaction	Body image dissatisfaction caused by weight gain in menopausal transition (Ginsberg et al., 2015)	'I can't bear to see myself in the mirror'; 54Y; BMI = 29.8	.000	.015	**.087**	.034	28 (79)	90.3
Body image avoidance coping	Body image avoidance behaviours (e.g., not buying clothes; buying large clothes), due to weight gain in menopause (Urdapilleta et al., 2019)	'Ah… It's wearing loose-fitting clothes to go unnoticed; 47Y; BMI = 31.6'	.028	.015	**.440**	.161	10 (14)	32.3
Negative self-esteem	Negative self-esteem caused by weight gain in menopausal transition (Ginsberg et al., 2015)	'(…) My self-esteem plummeted'; 58Y; BMI = 26.3	.100	**.168**	.045	.104	17 (28)	54.8
Social stigmatization experience	Experiences of social stigmatization, either direct (direct interactions with someone) or indirect (subjective experiences without personal interaction), due to weight gain in the menopausal transition (Lewis et al., 2011)	'Because I always felt a disapproving gaze, ah, ah (…)' 'ah, but why have you gained weight?' '(…) I don't know… Those conversations happen'; 56Y; BMI = 28.5	**.362**	.038	.048	.149	15 (28)	48.4
Family stigmatization experience	Experiences of stigmatization within the family, either direct (with family members) or indirect (without family interaction), due to weight gain in menopausal transition (Lewis et al., 2011)	'And my father is still alive, and he says: "Oh my daughter, you are too fat, you are too fat, my daughter"(…)'; 64Y; BMI = 33.7	.019	.018	**.375**	.137	4 (14)	12.9

(Continues)

TABLE 2 (Continued)

Categories and subcategories names	Subcategory definition	Example	Dimension 1	Dimension 2	Dimension 3	Average	Subcategories frequencies (*n*) and percentages (%)	
Two-dimensional model of perceived susceptibility to developing certain diseases, considering the weight gain during the menopausal transition, in UWG-G			**Mobility, psychological distress and lack of perceived susceptibility before menopause (information absent)**	**Physical health and lack of perceived susceptibility before menopause (general)**	–	–	***n*[a] (NM)[b]**	**%[c]**
Couple stigmatization experience	Experiences of stigmatization within a romantic relationship, either direct (with the partner) or indirect (without interaction with partner), due to weight gain during the menopausal transition (Lewis et al., 2011)	'The person I was with… That I was dating, although we didn't live together, made me feel like I still needed to lose more weight (…)'; 55Y; BMI = 29.4	**.486**	.000	.165	.217	11 (19)	35.5
Professional stigmatization experience	Indirect experiences of stigmatization in a professional context (without direct interaction), due to weight gain in menopausal transition (Lewis et al., 2011)	'I feel like they even observe the way I dress; they don't comment, but they have their thoughts'; 50Y; BMI = 26	.000	.091	**.258**	.116	4 (9)	12.9
Eigenvalue			3.522	2.338	1.987	2.615	–	–
Inertia			.185	.123	.105	.138	–	–
% Variance			18.535	12.304	10.456	13.765	–	–
Cronbach's alpha			.756	.604	.524	–	–	–
Three-dimensional model of PERCEIVED SEVERITY regarding obesity and its' negative consequences, in HWM-G			**Negative impact on the couple's relationship and body**	**Negative impact on psychological health and self-esteem**	**Negative impact on mobility and pain/physical discomfort**	**Average**	***n*[a] (NM)[b]**	**%[c]**
Negative impact on the couple's relationship	Obesity perceived as a severe condition based on its negative impact on the couple's relationship (e.g., sexual life; Schmidt et al., 2023)	'That could also have an influence on sexual life'; 53Y; BMI = 19.4	**.354**	.072	.101	.176	5 (9)	16.1
Negative impact on body image	Obesity perceived as a severe condition based on its negative impact on body image (Ginsberg et al., 2015)	'When I see those [overweight] girls wearing slim-fitting dresses, all I can see is the bulges, the cellulite, and all those imperfections'; 54Y; BMI = 22.9	**.104**	.040	.048	.064	21 (39)	67.7

TABLE 2 (Continued)

Categories and subcategories names	Subcategory definition	Example	Dimension 1	Dimension 2	Dimension 3	Average	Subcategories frequencies (*n*) and percentages (%)	
			Mobility, psychological distress and lack of perceived susceptibility before menopause (information absent)	Physical health and lack of perceived susceptibility before menopause (general)	–	–	*n*[a] (NM)[b]	%[c]
Two-dimensional model of perceived susceptibility to developing certain diseases, considering the weight gain during the menopausal transition, in UWG-G								
Negative impact on self-esteem	Obesity perceived as a severe condition due to its negative impact on self-esteem (Ginsberg et al., 2015)	'I believe that, as a woman, [overweight/obesity] can significantly impact our self-esteem. Even though I haven't experienced it myself, I can imagine how it affects women who have gained weight in menopause'; 50Y; BMI = 24.2	.132	**.617**	.010	.253	9 (11)	29
Pain/physical discomfort	Obesity perceived as a severe condition due to the pain and/or physical discomfort associated (El-Khoudary et al., 2019; Hajesmaeel-Gohari et al., 2021)	'(…) Even when I gained weight… That's what I was telling you… My knees hurt; my feet hurt'; 57Y; BMI = 23.4	.079	.025	**.515**	.206	3 (3)	9.7
Difficulty in mobility/ locomotion	Obesity perceived as a severe condition due to the difficulties in mobility/locomotion (Espírito-Santo et al., 2021)	'They [women with obesity/overweight] don't go for walks, ah…well, they can't keep up. Basic things, I don't know… I, what I notice that they're unable to do the things that I can'; 48Y; BMI = 20.5	.160	.035	**.559**	.252	12 (23)	38.7
Negative impact on biochemical/ physiological markers	Obesity perceived as a severe condition due to the changes it brings to biochemical and physiological markers (Santos et al., 2021)	'Ah… cholesterol, high blood pressure'; 58Y; BMI = 20.3	**.517**	.161	.000	.226	8 (13)	25.8
Negative impact on psychological health	Obesity perceived as a severe condition due to its negative impact on psychological health (Fenton, 2021)	'But I felt significantly worse during a period when, … I had an unhealthier diet. And I experienced a notable decline, particularly in psychological well-being! The impact was more prominent on my psychological state than on my physical health, ah… it affected my strength to make decisions and… I believe it had a significant influence overall'; 53Y; BMI = 18.7	.256	**.473**	.009	.246	13 (18)	41.9
Eigenvalue			1.602	1.424	1.242	1.423	–	–
Inertia			.229	.203	.177	.203	–	–
% Variance			22.885	20.347	17.749	20.327	–	–
Cronbach's alpha			.438	.348	.228	–	–	–

(Continues)

TABLE 2 (Continued)

Categories and subcategories names	Subcategory definition	Example	Dimension 1	Dimension 2	Dimension 3	Average	Subcategories frequencies (*n*) and percentages (%)	
Two-dimensional model of perceived susceptibility to developing certain diseases, considering the weight gain during the menopausal transition, in UWG-G			**Mobility, psychological distress and lack of perceived susceptibility before menopause (information absent)**	**Physical health and lack of perceived susceptibility before menopause (general)**	–	–	*n*[a] (NM)[b]	%[c]
Three-dimensional model of PERCEIVED BENEFITS of a healthy lifestyle (encompassing healthy eating and physical activity/exercise practices), in UWG-G			**Body image and health**	**Valuing immediate changes and support**	**Self-esteem and mobility**	**Average**	*n*[a] (NM)[b]	%[c]
Improvements at a personal level (general)	Adopting healthy behaviours leads to personal level improvements, without specification (Tay et al., 2023)	'It's really on an individual level'; 64Y; BMI = 33.7	**.326**	.007	.120	.151	3 (4)	9.7
Perceived value of immediate changes	Adopting healthy behaviours leads to immediate (albeit small) changes, which are valued (Kelly et al., 2016)	'As soon as I see even a slight change, ah, I become excited and start following a diet'; 64Y; BMI = 34.1	.163	**.431**	.011	.202	5 (7)	16.1
Improvements in self-esteem	Adopting healthy behaviours leads to an improvement in self-esteem (James et al., 2012)	'Look, I think that losing weight is directly related to self-esteem, I think this helps a lot'; 59Y; BMI = 26.9	.007	.016	**.697**	.240	9 (10)	29
Improvements in body image	Adopting healthy behaviours leads to improvements in body image (James et al., 2012; Kim & Yang, 2020)	'(…) the comfort you feel with your body when, when you feel that you are more toned, slimmer… obviously, there is no one who doesn't like to look in the mirror and see the person they were a few years ago'; 50Y; BMI = 26	**.299**	.127	.003	.143	8 (9)	25.8
Improvements in overall health	Adopting healthy behaviours leads to improvements in overall health (James et al., 2012)	'And then it also brings me health benefits'; 63Y; BMI = 27.2	**.665**	.019	.005	.230	18 (25)	58.1
Improvements in cardiovascular capacity	Adopting healthy behaviours leads to improvements in cardiovascular capacity (James et al., 2012; Santos et al., 2021)	'I feel it in the decrease of tiredness, in the willingness to do more physical exercise'; 56Y; BMI = 28.5	**.297**	.095	.085	.159	9 (13)	29
Improvements in mobility/locomotion	Adopting healthy behaviours leads to improvements in mobility/locomotion (Espírito-Santo et al., 2021; James et al., 2012)	'And that even gave me another mobility that I [currently] don't have'; 64Y; BMI = 33.7	.165	.073	**.287**	.175	13 (13)	41.9

TABLE 2 (Continued)

Categories and subcategories names	Subcategory definition	Example	Dimension 1	Dimension 2	Dimension 3	Average	Subcategories frequencies (*n*) and percentages (%)	
Two-dimensional model of perceived susceptibility to developing certain diseases, considering the weight gain during the menopausal transition, in UWG-G			**Mobility, psychological distress and lack of perceived susceptibility before menopause (information absent)**	**Physical health and lack of perceived susceptibility before menopause (general)**	–	–	*n*[a] (NM)[b]	%[c]
Improvements in psychological health	Adopting healthy behaviours leads to improvements in psychological health (Kim & Yang, 2020)	'(…) When somebody tells me about depression medication, I say, "go for walk", because I did medication and I was a zombie (…) Then when I got kind of sad again and I started walking, I got better'; 55Y; BMI = 27.3	**.413**	.166	.041	.207	10 (17)	32.3
Informal social support increase	Adopting healthy behaviours leads to an increase in informal social support (e.g., complements, recognition), professional and/or family relationships (Kim & Yang, 2020)	'Therefore, the general reinforcement that the person receives from, from… An applause from family, friends, helps us and, and that's it. It contributes to our well-being'; 59Y; BMI = 26.5	.124	**.499**	.008	.210	4 (5)	12.9
Eigenvalue			2.459	1.433	1.258	1.716	–	–
Inertia			.273	.159	.140	.191	–	–
% Variance			27.323	15.920	13.972	19.072	–	–
Cronbach's alpha			.668	.340	.230	–	–	–
Three-dimensional model of PERCEIVED BENEFITS of maintaining a healthy weight during the menopausal transition, in HWM-G			**Self-concept, interpersonal rewards, and health markers**	**Easiness with clothes, professional gains, and overall health**	**Well-being, diseases/pain management, and mobility**	**Average**	*n*[a] (NM)[b]	%[c]
Well-being	Maintaining a healthy weight during menopause leads to a positive impact on well-being (Kelly et al., 2016)	'(…) feeling psychologically good, even at the stage when I (…) went through menopause…'; 64Y; BMI = 18.5	.001	.014	**.171**	.062	24 (73)	77.4
Ability to wear all types of clothes	Maintaining a healthy weight during menopause leads to the ability to wear all the clothes one likes and/or has in the closet (James et al., 2012)	'I wear what I like and what I want. Well, I go to the store and in 5 minutes everything fits me (…)'; 53Y; BMI = 18.7	.154	**.373**	.066	.197	14 (31)	45.2
Body Image satisfaction	Maintaining a healthy weight during menopause leads to satisfaction with body image (Ginsberg et al., 2015; James et al., 2012)	'I feel beautiful, I feel elegant, and that helps a lot!'; 57Y; BMI = 23.4	**.522**	.012	.110	.215	23 (61)	74.2

(Continues)

TABLE 2 (Continued)

Categories and subcategories names	Subcategory definition	Example	Dimension 1	Dimension 2	Dimension 3	Average	Subcategories frequencies (*n*) and percentages (%)	
Two-dimensional model of perceived susceptibility to developing certain diseases, considering the weight gain during the menopausal transition, in UWG-G			**Mobility, psychological distress and lack of perceived susceptibility before menopause (information absent)**	**Physical health and lack of perceived susceptibility before menopause (general)**	–	–	*n*[a] (NM)[b]	%[c]
Positive impact on overall health	Maintaining a healthy weight during menopause leads to a positive impact on overall health (James et al., 2012)	'It did… it brought me benefits for, for, for health'; 53Y; BMI = 19.4	.159	**.335**	.070	.188	9 (18)	29
No worsening and/or improvement in diseases	Maintaining a healthy weight during menopause leads to improvements in, or prevention of the worsening of, certain diseases (James et al., 2012)	'Even in this [abdominal fat], I have improved a lot, and fortunately, I can control my stomach with this [healthy weight maintenance]'; 57Y; BMI = 23.4	.174	.156	**.219**	.183	5 (15)	16.1
Reduced manifestation of menopausal symptoms	Maintaining a healthy weight during menopause leads to a reduction in the manifestation (presence or severity degree) of menopausal symptoms (Fenton, 2021)	'I'm managing quite well. I haven't had too many problems with hot flashes. I've only had one mild thing'; 59Y; BMI = 22.9	.002	**.314**	.140	.152	6 (9)	19.4
Improvements in pain and/or physical discomfort	Maintaining a healthy weight during menopause leads to improvements in pain levels and/or physical discomfort (James et al., 2012)	'And I feel that now with the physical exercise, I'm not so bad, I'm not so bad anymore, I don't have pain… at least the pain is gone,'; 45Y; BMI = 23.2	.088	.005	**.404**	.166	5 (10)	16.1
Improvement in biochemical and/or physiological markers	Maintaining a healthy weight during menopause leads to improvements in biochemical (e.g., glycemia) and/or physiological markers (e.g., respiratory rate); (Santos et al., 2021)	'I have no high cholesterol, no uric acid, no nothing'; 48Y; BMI = 20.5	**.245**	.001	.081	.109	12 (19)	38.7
Positive impact on mobility/functionality	Maintaining a healthy weight during menopause leads to a positive impact on mobility/functionality (Espírito-Santo et al., 2021)	'(…) The lighter I am, the more agile I become. Not only in terms of mobility…'; 50Y; BMI = 21.5	.037	.091	**.316**	.148	22 (49)	71
Improvements in self-esteem	Maintaining a healthy weight during menopause leads to improvements in self-esteem (James et al., 2012)	'By maintaining my weight ah… our self-esteem is on top'; 64Y; BMI = 18.5	**.140**	.081	.058	.093	16 (29)	51.6
Positive impact at the professional level	Maintaining a healthy weight during menopause leads to a positive impact on one's professional life (Conti et al., 2020)	'Absolutely, in the job I have, I see that weight really does count for a lot'; 54Y; BMI = 19.3	.111	**.469**	.032	.204	6 (9)	19.4

TABLE 2 (Continued)

Categories and subcategories names	Subcategory definition	Example	Dimension 1	Dimension 2	Dimension 3	Average	Subcategories frequencies (*n*) and percentages (%)	
Two-dimensional model of perceived susceptibility to developing certain diseases, considering the weight gain during the menopausal transition, in UWG-G			**Mobility, psychological distress and lack of perceived susceptibility before menopause (information absent)**	**Physical health and lack of perceived susceptibility before menopause (general)**	–	–	***n*[a] (NM)[b]**	**%[c]**
Positive impact on social life	Maintaining a healthy weight during menopause leads to a positive impact on social life (James et al., 2012)	'(…) in social terms, our image, our society (…) it is fundamental and that's why social interaction is much better when you maintain ah…an ideal weight'; 54Y; BMI = 24.7	**.322**	.000	.030	.117	10 (13)	32.3
Positive feedback and reactions from the others	Maintaining a healthy weight during menopause leads to receiving positive feedback and reactions from others (Kim & Yang, 2020)	'Because then it's the comments we hear "Oh, no way you can do that at your age! At 60years old? Oh, no way!"'; 59Y; BMI = 22.9	**.516**	.007	.179	.234	9 (22)	29
Positive impact on couple and sexual relationships	Maintaining a healthy weight during menopause leads to a positive impact on couple and sexual relationships (Schmidt et al., 2023)	'(…) my husband for example appreciated that I was thin (…) and it positively impacted our relationship'; 65Y; BMI = 19.6	**.222**	.097	.001	.107	10 (22)	32.3
Eigenvalue			2.694	1.956	1.876	2.176	–	–
Inertia			.192	.140	.134	.155	–	–
% Variance			19.242	13.974	13.403	15.540	–	–
Cronbach's alpha			.677	.526	.503	–	–	–
Three-dimensional model of PERCEIVED BARRIERS that have hindered the maintenance of a healthy weight during the menopausal transition, in UWG-G			**Resignation, disordered eating, interpersonal and stressful events**	**Lack of knowledge and Low tolerance to unpleasant physical sensations**	**External factors, low support, and pleasure in eating**	**Average**	***n*[a] (NM)[b]**	**%[c]**
Difficulty in losing weight during middle age/menopause	An increased difficulty in losing weight at this stage of life (middle-age/menopause), is a barrier to maintaining a healthy weight in menopause (Kracht et al., 2022)	'Now I weigh 85kg, and it has become a challenging battle for me because losing weight during menopause is extremely difficult'; 47Y; BMI = 31.6	.019	**.333**	.001	.118	19 (56)	61.3
High cost of dietary/healthy food	The high cost associated with certain dietary/healthy food is a barrier to maintaining a healthy weight in menopause (Borazjani et al., 2022; Kelly et al., 2016)	'(…) I think that following a diet… the way I would like, which I know I could do, ah… requires money. Diets don't come cheap'; 55Y; BMI = 29.4	**.670**	.034	.009	.238	3 (5)	9.7

(Continues)

TABLE 2 (Continued)

Categories and subcategories names	Subcategory definition	Example	Dimension 1	Dimension 2	Dimension 3	Average	Subcategories frequencies (*n*) and percentages (%)	
			Mobility, psychological distress and lack of perceived susceptibility before menopause (information absent)	Physical health and lack of perceived susceptibility before menopause (general)	–	–	*n*[a] (NM)[b]	%[c]
Two-dimensional model of perceived susceptibility to developing certain diseases, considering the weight gain during the menopausal transition, in UWG-G								
Resignation to weight gain	The resignation (i.e., the acceptance of the process of weight gain) are a barrier to maintaining a healthy weight in menopause (Borazjani et al., 2022)	'I think it's more about making accommodations… A lack of effort to… It's like "ah that's just the way it is"'; 64Y; BMI = 34.1	**.442**	.147	.005	.198	6 (16)	19.4
Lack of motivation in the weight management process	The lack of motivation regarding the weight management process (for healthy eating and/or physical activity/exercise) is a barrier to maintaining a healthy weight in menopause (James et al., 2012; Kelly et al., 2016)	'For instance, I could follow the diet recommended by the nutritionist who is guiding me! But I simply don't feel motivated to do so!'; 47Y; BMI = 31.6	**.335**	.044	.087	.155	14 (48)	45.2
Not seeing quick results	The lack of quick body shape/weight-related changes (when engaging in healthier weight management behaviours), is a barrier to maintaining a healthy weight in menopause (Byrne et al., 2003)	'There are days, for example, when I do everything right and stick to a healthy diet. Like yesterday, I ate well, went to the gym, and expected losing half a kilo, but I only lost 200 grams. It can be discouraging, like "ah, it's not even worth it"; 47Y; BMI = 29.1'	.045	**.122**	.001	.056	7 (13)	22.6
Lack of social support in the weight management process	The lack of social support (e.g., lack of encouragement from others) is a barrier to maintaining a healthy weight in menopause (James et al., 2012)	'It would be easier if there were overweight family members who wanted to lose weight. The company, I believe, helps a lot'; 56Y; BMI = 26.7	.168	.013	**.392**	.191	4 (4)	12.9
Lack of knowledge regarding weight management	The lack of knowledge about weight management is a barrier to maintaining a healthy weight in menopause (Kelly et al., 2016)	'Right now, I don't know what works because I don't know what to do anymore…'; 53Y; BMI = 27.9	.024	**.273**	.135	.144	13 (26)	41.9
Increased appetite	Increased appetite during the menopausal transition is a barrier to maintaining a healthy weight in menopause (Duval et al., 2013)	'I've never been a big eater. I always ate very little (…) and now I feel the need to eat more. In the past, I didn't have this problem, I think I could even be fed on air'; 50Y; BMI = 26	.001	**.116**	.112	.076	12 (19)	38.7

TABLE 2 (Continued)

Categories and subcategories names	Subcategory definition	Example	Dimension 1	Dimension 2	Dimension 3	Average	Subcategories frequencies (*n*) and percentages (%)	
Two-dimensional model of perceived susceptibility to developing certain diseases, considering the weight gain during the menopausal transition, in UWG-G			**Mobility, psychological distress and lack of perceived susceptibility before menopause (information absent)**	**Physical health and lack of perceived susceptibility before menopause (general)**	–	–	*n*[a] (NM)[b]	%[c]
Disordered eating behaviours	Disordered eating behaviours, specifically emotional eating and/or cravings, are a barrier to maintaining a healthy weight in menopause (Byrne et al., 2003; Duval et al., 2013)	'(…) when we start to have cravings for sweets and cravings for things that we shouldn't, especially at night, ah, it becomes more difficult to manage [the cravings]'; 55Y; BMI = 29.4	**.253**	.061	.190	.205	14 (35)	45.2
Pleasure in eating	The pleasure associated with eating (which may be something that the person has always experienced or may have emerged during this stage of life), is a barrier to maintaining a healthy weight in menopause (Duval et al., 2013)	'Because I really enjoy eating, and I have a hearty appetite (laughs)'; 52Y; BMI = 27.9	.001	.009	**.055**	.022	10 (16)	32.3
Difficulty in adhering to a diet	The difficulty of adhering to diets, both in the beginning and/or in the long term, is a barrier to maintaining a healthy weight in menopause (Borazjani et al., 2022)	'It's, it's, it's very easy for people to talk about diets, but don't mess with me, because for me, eating the same thing every day is unbearable'; 55Y; BMI = 29.4	**.377**	.148	.001	.175	15 (35)	48.4
Unpleasant sensations in the weight management process	Unpleasant sensations after health problems (e.g., digestive problems), medication intake (e.g., antidepressants), and/or physical activity/exercise (e.g., pain during the physical activity/exercise) is a barrier to maintaining a healthy weight in menopause (Borazjani et al., 2022)	'I tried to swim, but I couldn't. When I do physical exercise and I have a lot of pain in my body, so I couldn't do it'; 59Y; BMI = 26.9	.003	**.495**	.000	.166	19 (44)	61.3
Professional life characteristics in the weight management process	Professional life characteristics (e.g., being unemployed) is a barrier to maintaining a healthy weight in menopause (Borazjani et al., 2022; Conti et al., 2020)	'And it really was working from morning to night! Ah, I would come home on the weekend, and I "died", and, and now I'm here (laughs)'; 52Y; BMI = 27.9	.045	.000	**.101**	.049	11 (25)	35.5
Stressful life events in the weight management process	Stressful life events (e.g., unemployment, relationships) is a barrier to maintaining a healthy weight in menopause (Borazjani et al., 2022)	'Ah, my divorce, and the separation from my son who went to university at that time'; 64Y; BMI = 33.7	**.307**	.074	.000	.127	13 (33)	41.9

(Continues)

TABLE 2 (Continued)

Categories and subcategories names	Subcategory definition	Example	Dimension 1	Dimension 2	Dimension 3	Average	Subcategories frequencies (*n*) and percentages (%)	
Two-dimensional model of perceived susceptibility to developing certain diseases, considering the weight gain during the menopausal transition, in UWG-G			**Mobility, psychological distress and lack of perceived susceptibility before menopause (information absent)**	**Physical health and lack of perceived susceptibility before menopause (general)**	–	–	***n*** [a] **(NM)** [b]	**%** [c]
Interpersonal environment in the weight management process	Family and/or social (i.e., interpersonal) roles/events (e.g., having or not having children; social events) are a barrier to maintaining a healthy weight in menopause (Kelly et al., 2016)	'This weight issue has a lot to do with my son's success (…) And suddenly we change the habits we have, he thinks I'm completely crazy. His diet mainly consists of proteins and carbohydrates'; 64Y; BMI = 33.7	**.387**	.111	.011	.170	9 (18)	29
Pandemic effects on the weight management process	The pandemic phase is a barrier to maintaining a healthy weight in menopause (Belgen-Kaygısız et al., 2020)	'I used to take a 9km walk every day, but the pandemic came and disrupted everything. So, I stopped doing the 9km walk'; 58Y; BMI = 26.3	.092	.009	**.450**	.184	18 (38)	58.1
Access (to facilities and resources) and safety for physical activity/ exercise	The lack of access to facilities and resources (e.g., limited gym accessibility) and/or safety (e.g., neighbourhood safety) are a barrier to maintaining a healthy weight in menopause (Kelly et al., 2016)	'Moreover, going out alone at night [for a walk] is also complicated'; 63Y; BMI = 27.2	**.243**	.015	.005	.088	3 (7)	9.7
Weather conditions for physical activity/ exercise	Unfavourable weather conditions (e.g., rain) are a barrier to maintaining a healthy weight in menopause (Kelly et al., 2016)	'Because I usually come home a little late uh, and then it's cold or raining'; 53Y; BMI = 32.3	.033	.083	**.284**	.133	5 (6)	16.1
Eigenvalue			3.446	2.088	1.840	2.458	–	–
Inertia			.191	.116	.102	.137	–	–
% Variance			19.143	11.602	10.220	13.655	–	–
Cronbach's alpha			.752	.552	.483	–	–	–
Two-dimensional model of PERCEIVED BARRIERS to maintaining a healthy weight during the menopausal transition, in HWM-G			**Cravings, interpersonal and external influences, unpleasant physical sensations, and age-related difficulties**	**Food availability and lack of motivation**	–	**Average**	***n*** [a] **(NM)** [b]	**%** [c]
Difficulty in losing weight during middle-age/menopause	An increased difficulty in losing weight at this stage of life (middle-age/ menopause), is a barrier to maintaining a healthy weight in menopause (Kracht et al., 2022)	'Sometimes even 1kg bothers me but… you can't lose 1kg quickly when you reach this age, so it becomes even more important to maintain your weight'; 50Y; BMI = 21.9	**.500**	.197	–	.348	12 (20)	38.7

TABLE 2 (Continued)

Categories and subcategories names	Subcategory definition	Example	Dimension 1	Dimension 2	Dimension 3	Average	Subcategories frequencies (*n*) and percentages (%)	
			Mobility, psychological distress and lack of perceived susceptibility before menopause (information absent)	Physical health and lack of perceived susceptibility before menopause (general)	–	–	*n*[a] (NM)[b]	%[c]
Two-dimensional model of perceived susceptibility to developing certain diseases, considering the weight gain during the menopausal transition, in UWG-G								
Staying at home with food availability	Being at home and having easy access to food is a barrier to maintaining a healthy weight in menopause (Kelly et al., 2016)	'Because I know why… I've gained 3kg, and I know, that it's because I'm at home, with the fridge being very close'; 50Y; BMI = 21.5	.016	**.369**	–	.192	3 (6)	9.7
Food cravings	The longing for certain foods in this specific phase (e.g., an increased desire for sugary foods), is a barrier to maintaining a healthy weight in menopause (Byrne et al., 2003; Duval et al., 2013)	'For example, being in a place and realizing that you start eating things like… a desire for sweets, for example, which I never had before. I was never someone with a sweet tooth'; 48Y; BMI = 20.5	**.582**	.001	–	.292	6 (8)	19.4
Influence of others in meal structuring	The influence of others in meal structuring is a barrier to maintaining a healthy weight in menopause (Kelly et al., 2016)	'(…) There was a time when I had… I had some difficulty in saying "Look, no, I don't want to eat this (…)"; 53Y; BMI = 18.7'	**.050**	.019	–	.035	3 (4)	9.7
Everyday life experiences in the weight management process	Everyday life experiences (e.g., challenging professional life, stress levels) are a barrier to maintaining a healthy weight in menopause (Borazjani et al., 2022)	'This weight, well, my current 54–56 kilos (…) also depends on the level of stress a person is currently experiencing'; 54Y; BMI = 22.9	**.236**	.221	–	.229	6 (10)	19.4
Unpleasant sensations in the weight management process	Unpleasant sensations subsequent to health problems (e.g., back problems), and/or physical activity/exercise (e.g., feeling uncomfortable in the gym) is a barrier to maintaining a healthy weight in menopause (Borazjani et al., 2022)	'I also had tendonitis, due to a sports accident (laughs), which didn't help much'; 57Y; BMI = 21.6	**.134**	.039	–	.086	5 (8)	16.1
Lack of motivation for physical activity/ exercise	The lack of motivation for physical activity/exercise is a barrier to maintaining a healthy weight in menopause (James et al., 2012; Kelly et al., 2016)	'(…) because there are times when I also feel lazy and don't feel like walking'; 58Y; BMI = 23.7	.044	**.487**	–	.266	5 (8)	16.1

(Continues)

TABLE 2 (Continued)

Categories and subcategories names	Subcategory definition	Example	Dimension 1	Dimension 2	Dimension 3	Average	Subcategories frequencies (*n*) and percentages (%)	
Two-dimensional model of perceived susceptibility to developing certain diseases, considering the weight gain during the menopausal transition, in UWG-G			**Mobility, psychological distress and lack of perceived susceptibility before menopause (information absent)**	**Physical health and lack of perceived susceptibility before menopause (general)**	**–**	**–**	***n*** [a] **(NM)** [b]	**%** [c]
Pandemic effects on physical activity/ exercise	The pandemic phase is a barrier to maintaining a healthy weight in menopause (Belgen-Kaygısız et al., 2020)	'(…) [Exercise] Which was interrupted because I can't go to the gym now. Since the start of this pandemic, I haven't been able to go to the gym.'; 46Y; BMI = 20.1	**.250**	.216	–	.233	7 (15)	22.6
Eigenvalue			1.812	1.550	–	1.681	–	–
Inertia			.227	.194	–	.210	–	–
% Variance			22.651	19.381	–	21.016	–	–
Cronbach's alpha			.512	.406	–	–	–	–
Two-dimensional model of CUES TO ACTION related to weight loss at this stage, in UWG-G			**Health family history and support**	**Disease, body dissatisfaction, and self-care availability**	–	**Average**	***n*** [a] **(NM)** [b]	**%** [c]
Health problems of family members	The health problems of some family members emerge as a cue for weight loss (James et al., 2012)	'A year ago, when this menopause thing was still relatively recent, my husband had a heart attack, and it prompted me to make some changes in my diet as well'; 52Y; BMI = 27	**.730**	.117	–	.424	4 (10)	12.9
Availability for self-care	Having availability (e.g., in terms of time, and emotional capacity) for self-care emerges as a cue for weight loss (Kim & Yang, 2020)	'(…) Maybe I have a little bit more time for myself now, because work is still intense, but since the youngest daughter went to college and, and left home, it's just me and my husband. I think I might have gained some extra time to take care of myself'; 52Y; BMI = 27	.310	**.403**	–	.357	4 (5)	12.9
Informal social support	Having peer support (e.g., a friend to go to the gym with) emerges as a cue for weight loss (Kelly et al., 2016)	'I also had the support of my husband. He has been dieting with me, maybe not as strictly, but he has also been losing weight, and it's a great help, a great incentive'; 58Y; BMI = 26.3	**.577**	.312	–	.445	4 (6)	12.9
Symptoms exacerbation/ medication increase	The desire to improve the exacerbation of some symptoms or reduce medication intake emerges as a cue for weight loss (James et al., 2012)	'Essentially, high cholesterol levels, the fact that I have pulmonary emphysema'; 57Y; BMI = 32	.204	**.599**	–	.401	3 (12)	9.7

TABLE 2 (Continued)

Categories and subcategories names	Subcategory definition	Example	Dimension 1	Dimension 2	Dimension 3	Average	Subcategories frequencies (*n*) and percentages (%)	
Two-dimensional model of perceived susceptibility to developing certain diseases, considering the weight gain during the menopausal transition, in UWG-G			**Mobility, psychological distress and lack of perceived susceptibility before menopause (information absent)**	**Physical health and lack of perceived susceptibility before menopause (general)**	–	–	***n*** [a] **(NM)** [b]	**%** [c]
Body image dissatisfaction	Body image dissatisfaction coupled with the desire to improve it emerges as a cue for weight loss (James et al., 2012)	'Maybe it was seeing myself in the mirror, looking at pictures from the summer that made me realize something needed to be done'; 51Y; BMI = 26.4	.011	**.016**	–	.014	7 (11)	22.6
Eigenvalue			1.832	1.448	–	1.640	–	–
Inertia			.415	.204	–	.310	–	–
% Variance			36.645	28.953	–	32.799	–	–
Cronbach's alpha			.568	.387	–	–	–	–
Two-dimensional model of CUES TO ACTION regarding weight maintenance during the menopausal transition, in HWM-G			**Age progression and unhealthy behaviours**	**Interpersonal influence, disease, and self-image dissatisfaction**	**–**	**Average**	***n*** [a] **(NM)** [b]	**%** [c]
The role of both others and oneself in healthy habits	The role of both others and oneself (as a role model) in cultivating healthy habits emerged as a cue for maintaining a healthy weight in menopause (James et al., 2012; Kelly et al., 2016)	'What motivated me more was, ah… Trying to provide my daughter with a balanced diet. So, in terms of family, basically…'; 54Y; BMI = 24.7	.307	**.497**	–	.402	11 (22)	35.5
Unhealthy behaviours	The presence of unhealthy behaviours and an increase in awareness of the importance of healthy behaviours (e.g., being more conscious about the type of food intake and its consequences) emerged as a cue for maintaining a healthy weight in menopause (Kelly et al., 2016)	'(…) I realized the importance of reading labels and noticed that I was consuming excessive sugar or gluten'; 57Y; BMI = 23.4	**.648**	.002	–	.325	5 (7)	16.1

(Continues)

TABLE 2 (Continued)

Categories and subcategories names	Subcategory definition	Example	Dimension 1	Dimension 2	Dimension 3	Average	Subcategories frequencies (*n*) and percentages (%)	
Two-dimensional model of perceived susceptibility to developing certain diseases, considering the weight gain during the menopausal transition, in UWG-G			**Mobility, psychological distress and lack of perceived susceptibility before menopause (information absent)**	**Physical health and lack of perceived susceptibility before menopause (general)**	–	–	*n*[a] (NM)[b]	%[c]
Awareness of possible weight gain in menopause	An increase in awareness of the possible weight gain during menopause (e.g., observing that other women tend to gain weight at this stage of life) emerged as a cue for maintaining a healthy weight in menopause (Simangunsong et al., 2021)	'(…) I continued with my normal life, but unconsciously, I started internalizing the idea that "most women gain weight, so let's see if I can avoid that". I realized that I had to put in some effort in that regard'; 64Y; BMI = 24.2	.028	**.557**	–	.293	4 (8)	12.9
Dissatisfaction with self-image	The desire to improve the self-image emerged as a cue for maintaining a healthy weight in menopause (James et al., 2012)	'I don't like seeing myself overweight. Body image is very important to me, in every aspect'; 58Y; BMI = 23.7	.001	**.059**	–	.030	6 (13)	19.4
Symptoms exacerbation	The desire to improve the exacerbation of some symptoms emerged as a cue for maintaining a healthy weight during menopause (James et al., 2012)	'Is (…) is to be healthy, is, is, is to be healthy. Let's say, is my concern with health'; 58Y; BMI = 21.9	.302	**.328**	–	.315	8 (11)	25.8
Awareness of age progression	An increase in awareness of age progression and its potential consequences (e.g., harder to lose weight when older) emerged as a cue for maintaining a healthy weight in menopause (Kelly et al., 2016)	'And I've come to realize that I've reached an age where if I didn't take action, it would become much harder to reverse the effects'; 60Y; BMI = 24.1	**.354**	.000	–	.177	3 (5)	9.7
Eigenvalue			1.640	1.443	–	1.542	–	–
Inertia			.273	.241	–	.257	–	–
% Variance			27.335	24.052	–	25.694	–	–
Cronbach's alpha			.468	.368	–	–	–	–

Note: The bold values indicate the most significant factorial weights for each variable, obtained through Multiple Correspondence Analysis.

Abbreviations: BMI, body mass index (kg/m^2); LDL, low-density lipoprotein; Y, years (age).

[a]*n* = participants who mentioned the subcategory, considering the total sample (*n* = 31).

[b]N = total number of times the subcategory was mentioned.

[c]% = percentage of participants who mentioned the subcategory.

Perceived susceptibility model for Unhealthy Weight Gain Group (UWG-G)

Dimension 1: Mobility, psychological distress and lack of perceived susceptibility before menopause (information absent)

Before menopause, women lacked awareness of their susceptibility to weight gain as a possible outcome associated with menopause, primarily due to insufficient information. However, after transitioning into the post-menopausal stage and experiencing weight gain, these women acknowledge their increased vulnerability to certain diseases, particularly those impacting mobility, musculoskeletal diseases and psychological well-being.

Dimension 2: Physical health and lack of perceived susceptibility before menopause (general)

Despite a general lack of perceived susceptibility before menopause, in post-menopause, these women recognized the significant roles of a healthy diet and physical activity/exercise in preventing non-communicable diseases (NCDs), like cancer and diabetes mellitus. Furthermore, they felt vulnerable regarding their overall health (especially their physical health), due to their weight, particularly emphasizing susceptibility to non-communicable diseases. They also cite family history as a significant factor potentially exacerbating their risk of developing these conditions.

Perceived susceptibility model for Healthy Weight Maintenance Group (HWM-G)

Dimension 1: Unhealthy behaviours and overall health

While some women exhibited low perceived susceptibility before menopause, in post-menopause, they connected unhealthy habits (eating and exercising) to potential declines in their overall health, specifically in psychological health and the development of NCDs.

Dimension 2: Physical health and loss of mobility

This group acknowledged potential physical health issues, particularly loss of mobility and/or musculoskeletal diseases if they did not maintain a healthy weight both during and after the menopausal transition.

Perceived severity model for Unhealthy Weight Gain Group (UWG-G)

Dimension 1: Negative physical consequences, isolation and social/partner stigmatization

Dimension 1 was primarily associated with physical concerns and stigmatization. The UWG-G perceived overweight/obesity as severe, especially due to negative physical consequences, such as musculoskeletal issues, some disease development/worsening, negative changes in physiological and biochemical markers (e.g., elevated heart rate and cholesterol) and pain and physical discomfort. These women also expressed a lack of motivation for various activities and experienced disinvestment/social isolation. Moreover, they felt stigmatized in social and couple contexts.

Dimension 2: Negative self-concept, psychological distress and mobility difficulties

This dimension encompassed various psychological constructs, like negative self-concept, low self-esteem and psychological distress stemming from weight gain and overweight/obesity development. Furthermore, women emphasized changes in body image and mobility difficulties.

Dimension 3: Body image dissatisfaction and avoidance, and family/professional stigmatization

In this dimension, women often experienced body image dissatisfaction and engaged in avoidance behaviours like wearing baggy clothes. Additionally, they felt stigmatization from both family and professional environments.

Perceived severity model for Healthy Maintenance Group (HWM-G)

Dimension 1: Negative impact on the couple's relationship and body
Women who maintained a healthy weight during the menopausal transition perceived obesity as a serious issue affecting romantic relationships, body image and health indicators, including biochemical/physiological markers.

Dimension 2: Negative impact on psychological health and self-esteem
Women who perceived obesity as a severe issue often associated it with low psychological health and self-esteem.

Dimension 3: Negative impact on mobility and pain/physical discomfort
Women with a healthy weight perceived the impact of obesity severity on mobility and physical pain/discomfort during menopause.

Perceived benefits model for Unhealthy Weight Gain Group (UWG-G)

Dimension 1: Body image and health
Women believed that adopting a healthy lifestyle (healthy eating and regular physical activity/exercise) could lead to personal improvements in various aspects, including body image, overall health, psychological health and cardiovascular capacity.

Dimension 2: Valuing immediate changes and support
Women perceived the value of immediate changes and enhanced informal social support as benefits of a healthy lifestyle.

Dimension 3: Self-esteem and mobility
Women believed that adopting a healthy lifestyle could enhance self-esteem and mobility.

Perceived benefits model for Healthy Maintenance Group (HWM-G)

Dimension 1: Self-concept, interpersonal rewards and health markers
In this dimension, women valued the benefits related to self-image, interpersonal rewards and health markers. Specifically, maintaining a healthy weight during the menopausal transition yields benefits such as improved body image, heightened self-esteem, better health markers (biochemical and/or physiological markers), enhanced social and sexual aspects of life and positive feedback and reactions from peers.

Dimension 2: Easiness with clothes, professional gains and overall health
Maintaining a healthy weight during the menopausal transition brought benefits such as ease with clothing (the ability to wear diverse types of clothes and maintain the habitual clothing style), overall health improvements (including the reduction of menopausal symptoms) and professional gains.

Dimension 3: Well-being, diseases/pain management and mobility
Maintaining a healthy weight during menopause offered benefits specifically in terms of health aspects, which in turn impacted overall well-being. These women mentioned, more specifically, benefits such as no worsening and/or improvement in diseases, improvements in pain and/or physical discomfort, a positive impact on mobility/functionality and well-being.

Perceived barriers model for Unhealthy Weight Gain Group (UWG-G)

Dimension 1: Resignation, disordered eating, interpersonal and stressful events

Women correlated the challenge of maintaining a healthy weight with various psychological factors, such as a lack of motivation and resignation. Additionally, difficulties adhering to a diet, disordered eating behaviours (emotional eating and cravings), and environmental factors, like interpersonal environment, the high cost of dietary/healthy foods and access/safety for physical activity/exercise, were identified as barriers to weight management. This dimension was closely linked to stressful life events and psychological processes that may be associated and compensated for with dysfunctional coping strategies, such as disordered eating behaviours.

Dimension 2: Lack of knowledge and low tolerance to unpleasant physical sensations

The lack of information on weight management and unpleasant sensations (related to health issues, medication intake and/or physical activity/exercise), coupled with the difficulty of losing weight during middle-aged/menopause, constituted significant barriers to weight management. This dimension also highlighted that not seeing quick results and experiencing increased appetite during menopause were additional barriers.

Dimension 3: External factors, low support and pleasure in eating

The pleasure of eating, certain social/personal aspects, like lack of social support and challenges in one's professional life and other external factors, such as pandemic effects and weather conditions for physical activity/exercise practice were perceived as associated barriers to effective weight management.

Perceived barriers model for Healthy Maintenance Group (HWM-G)

Dimension 1: Cravings, interpersonal and external influences, unpleasant physical sensations and age-related difficulties

Difficulty in losing weight during middle-age/menopause, food cravings, the impact of the pandemic on physical activity/exercise and unpleasant sensations were perceived and correlated barriers in this dimension. Additionally, the influence of others in meal structuring and everyday life experiences was also identified.

Dimension 2: Food availability and lack of motivation

Women who maintained a healthy weight identified staying at home with food available and a lack of motivation for physical activity/exercise as weight management barriers. It is pertinent to mention that these interviews occurred during the pandemic and lockdown, periods when food availability was notably heightened.

Cues to action model for Unhealthy Weight Gain Group (UWG-G)

Dimension 1: Health family history and support

During the interviews, participants in the UWG-G faced challenges identifying cues for change, with most struggling to pinpoint any specific cues (e.g., '(…) to stop smoking, there is a click, a switch of mind. And then you stop the behaviour. I love smoking, but I don't smoke. So that's what I'm looking for, what is it, what would be my click to lose weight'; 64 years, BMI = 34.1). Nevertheless, this group identified weight gain as a health threat, especially due to family history as a potential cue for behaviour change. Also, they believe that increased social support could serve as a cue for action.

Dimension 2: Disease, body dissatisfaction and self-care availability
Focused on more internal influences, self-care availability (including time and emotional capacity), dissatisfaction with body image and symptoms exacerbation/medication increase could act (or have acted in a past weight loss attempt) as cues for weight decrease.

Cues to action model for Healthy Maintenance Group (HWM-G)

Dimension 1: Age progression and unhealthy behaviours
These women recognized the presence of unhealthy behaviours and the progression of age as cues for maintaining a healthy weight during the menopausal transition.

Dimension 2: Interpersonal influence, disease and self-image dissatisfaction
The HWM-G emphasized being role and/or the influence of others on behaviour as significant cues for change. Also, dissatisfaction with self-image, symptoms exacerbation and awareness of possible weight gain in menopause acted as weight maintenance cues.

Self-efficacy

In the UWG-G, 21 women (67.7%) demonstrated self-efficacy, while 26 women (83.9%) exhibited it on HWM-G.

DISCUSSION

Since women spend up to a third of their lives in the post-menopausal stage and face challenges such as obesity, attaining a comprehensive understanding of their weight experiences and the underlying beliefs associated with them is crucial (Chiu et al., 2020; Kracht et al., 2022). Thus, this study introduced and compared 10 models based on the psychological determinants of the HBM linked to the experience of weight gain (UWG-G) and the maintenance of a healthy weight (HWM-G) during the menopausal transition.

Perceived susceptibility

Both groups exhibited perceived susceptibility, associating overweight/obesity with potential health complications (e.g., musculoskeletal diseases) and negative psychological health. However, UWG-G acknowledged vulnerability to obesity and NCDs due to their unhealthy weight and family history (Bibi et al., 2021; James et al., 2012; Jeffery et al., 2009; Okop et al., 2016). Both groups recognized vulnerability to mobility limitations associated with weight gain/obesity. Mobility issues are common among middle-aged women, with joint/muscle pain being the most frequently searched topic related to menopause (El-Khoudary et al., 2019; Hajesmaeel-Gohari et al., 2021).

Before menopause, lacking perceived susceptibility was also found and expressions differed significantly between both groups, with only five mentions in HWM-G and 105 in UWG-G. This suggests HWM-G may have higher health literacy, established healthy habits and/or made daily adjustments (e.g., adopting healthy lifestyle habits, including specific weight management strategies; Ghorbani-Dehbalaei et al., 2021; Kim & Yang, 2020; Lally & Gardner, 2013). In contrast, UWG-G may have lacked information, as some studies indicated that women often feel unprepared for menopause, lacking support and information, particularly from the medical community, about healthy behaviours (Hosseini et al., 2017; Kracht et al., 2022; Marlatt et al., 2018; Simangunsong et al., 2021).

Providing reliable, context-specific information is important, especially addressing the lack of perceived susceptibility in a risk group (UWG-G) before menopause, as highlighted in this study. To achieve this, it is essential to foster synergies between health-related communities and local organizations (e.g., community centres; Kelly et al., 2016). Since some literature reports that menopausal women feel they receive limited information or support from medical professionals, it is important to equip healthcare professionals with the knowledge necessary to deliver appropriate care to menopausal women (Kracht et al., 2022), particularly from a biopsychosocial perspective and with a focus on preventive care in pre-menopausal women. According to the authors, communities can also play an important role in reaching this specific population by using places frequently visited by women (e.g., schools, workplaces) to share information to increase their susceptibility (e.g., outdoor posters with specific information designed to prompt engagement, through QR codes). Nonetheless, behavioural change interventions should focus on specific populations (e.g., middle-aged women) and issues (e.g., low perceived susceptibility) and be tailored to cultural characteristics, individual needs and available resources (e.g., accessibility, financial constraints; Kelly et al., 2016; Kracht et al., 2022).

Perceived severity

The dimensions found in HWM-G reflected perceptions possibly rooted in past experiences of weight gain (three women reported a history of past obesity) or/and awareness of obesity's severity. These perceptions are homogenously organized, with severity and consequences related to body and romantic relationships appearing in the first dimension, psychological phenomena in the second and physical ones in the third.

In contrast to some studies where women with overweight/obesity downplay obesity's impact (Okop et al., 2016), women in UWG-G perceived significant consequences associated with weight gain/obesity during menopausal transition and post-menopause. UWG-G manifested a distinct organization of dimensions (severity/consequences), pointing to particular risk profiles. For instance, women who felt isolated and stigmatized by social and romantic partners and expressed low motivation, tend to experience physical consequences. The second dimension emphasized negative spontaneous self-concept and low self-esteem related to changes in body image and mobility difficulties. Lastly, the third dimension revealed dissatisfaction with body image associated with stigmatization in family and professional settings, leading to avoidance strategies (which were not observed in HWM-G).

These three dimensions suggest a possible connection between self-concept (encompassing physical perceptions tied to appearance and body functioning), negative emotions related to the body (e.g., shame, lack of motivation) and dysfunctional coping strategies (wearing loose clothing and social isolation), which can affect relationship quality and satisfaction, and overall health, in line with literature (Farrell et al., 2021; Gilchrist et al., 2020; Obara-Gołębiowska, 2016; Schmidt et al., 2023; Urdapilleta et al., 2019). Also, differences in BMI between partners were associated with lower relationship satisfaction and increased conflict (Schmidt et al., 2023). In this study, 12 partners of UWG-G women had normal weight, while 11 had overweight/obesity; conversely, in HWM-G, 17 partners had normal weight and 6 had overweight. This is particularly important as recent research has shown an interdependence of weight and behaviours within couples (Gorin et al., 2018). These findings establish several profiles identified in this study, specifically in women who developed overweight/obesity (e.g., women who present body image dissatisfaction and felt stigmatization from both family and professional environments, are more likely to use dysfunctional behaviours like wearing baggy clothes) that might be useful in identifying women at risk for certain weight groups.

Perceived benefits

The HWM-G identified more perceived benefits of weight management than the UWG-G (14 vs. 9 benefits dimensions, respectively), consistent with research suggesting that women are more likely to engage in perceived beneficial behaviours (Sharifi et al., 2017). Both groups highlighted aspects related to health, self-esteem and body image. These health-related benefits resonate across most dimensions within this construct, emphasizing health as a central benefit for menopausal women, aligning with the perceived susceptibility dimension (both groups showing enhanced susceptibility to diseases). Additionally, body image concerns are common among menopausal women and are linked to self-esteem, which plays an important role in the quality of life and the adoption of healthier behaviours (Chopra et al., 2019; Fenton, 2021; Greaves et al., 2017; James et al., 2012). This emphasizes the need for interventions addressing self-esteem and body image concerns in middle-aged women. Our findings showed that body image dissatisfaction was mentioned 79 times in UWG-G compared to 39 times in HWM-G (in perceived severity). Conversely, improvements in body image were noted as a benefit 9 times in UWG-G and 61 times in HWM-G. Similar trends were observed for self-esteem: UWG-G mentioned the severity of self-esteem 28 times (compared to 11 mentions in HWM-G), with improvements noted as a benefit in 10 mentions in UWG-G and 29 mentions in HWM-G. Furthermore, HWM-G emphasized benefits such as self-concept, ease with clothes, professional gains and positive reactions from others, aspects often perceived as consequences of overweight/obesity in UWG-G. Notably, some aspects, such as clothing choices, can influence how others assess women's competence, particularly in professional settings (Conti et al., 2020).

This suggests a possible association between beliefs (health-related perceived susceptibility), behaviours (diet, physical activity/exercise) and outcomes (health-related perceived benefits, especially among those successfully maintaining a healthy weight), supported by previous literature (Schwarzer, 2016). UWG-G may face challenges in effectively implementing behaviours due to more identified barriers (as discussed below) and fewer benefits from healthy weight management at this life stage. 'This insight could guide future interventions in weight management for middle-aged women and enhance awareness of preventive measures in pre-menopausal women. Such interventions could provide knowledge about the likelihood of weight gain during menopause and promote the development of healthy behaviours before weight gain occurs, such as following a healthy diet, engaging in physical activity/exercise, or practicing psychological self-care behaviours (Leitão et al., 2024; Simangunsong et al., 2021)'.

Additionally, UWG-G identified 'not seeing quick results' as a barrier to weight management, emphasizing the need to address unrealistic expectations in obesity treatment and setting realistic goals, particularly in this population (El-Khoudary et al., 2019; Kelly et al., 2016; Kim & Yang, 2020; Kracht et al., 2022). The emphasis on 'immediate changes' by UWG-G may lead to unsustainable strategies over the long term, such as rigid restrictions (Vorlet & Carrard, 2023). These expectations, coupled with a lack of knowledge, can conflict with the functional tolerance for a slower pace of weight change during middle-aged.

Perceived barriers

Compared to the UWG-G, the HWM-G identified fewer barriers (18 vs. 8, respectively), with most categories in the HWM-G having between three and five mentions. Studies indicated that more perceived barriers are associated with poorer weight management performance (James et al., 2012; Kashfi et al., 2016; Sharifi et al., 2017). Notably, 16 HWM-G women reported no barriers to weight maintenance during the menopausal transition, suggesting efficient management of internal and external barriers, possibly through automated behaviours like effortful inhibition (Gorin et al., 2023; Leitão et al., 2024; Nielsen, 2017). However, this conclusion requires further substantiation, and future research is needed to understand why these women perceived few or no barriers (hypotheses include impulsivity control,

habit formation, or associative learning; Michie et al., 2011). To achieve this, it is recommended that future studies further explore these variables outside the HBM framework to understand which characteristics, cognitive competencies (e.g., associative learning), behavioural competencies (e.g., habit formation), or emotional regulation skills (e.g., impulse control) these women possess that may facilitate the maintenance of a healthy weight.

Both groups expressed difficulty in losing weight during this phase (however, 56 mentions in UWG-G vs. 20 mentions in HWM-G). Menopausal women face unique challenges like menopausal symptoms, which can contribute to this perceived difficulty (Chopra et al., 2019; Knight et al., 2021; Kracht et al., 2022). UWG-G identified barriers like resignation and lack of motivation, which can intertwine with emotional states (anxiety, depressive mood) and challenges of this life phase disrupting routines and impeding weight management efforts (Chiu et al., 2020; Chopra et al., 2019; El-Khoudary et al., 2019; Kracht et al., 2022). In this study, nine UWG-G women reported psychological problems (compared to four in HWM-G), potentially contributing to dysfunctional eating behaviours (Vorlet & Carrard, 2023), aligned with physical hunger. Food-related aspects featured prominently across all dimensions in the Perceived Barriers models, underscoring the impact of the menopausal transition on eating behaviours and complicating adherence to diet plans (Chopra et al., 2019; Conti et al., 2020; Vorlet & Carrard, 2023). In the HWM-G, eating behaviours emerged in both dimensions, emphasizing cravings influenced by interpersonal context (similar to UWG-G) and food availability affected by environmental factors (e.g., everyday life experiences and pandemic effects, comparable to stressful events in the UWG-G).

External factors posed significant barriers for both groups, consistent with previous studies, affecting physical activity/exercise, especially among post-menopausal women (Belgen-Kaygısız et al., 2020; Kelly et al., 2016). Nevertheless, women endeavoured to sustain their exercise routines, particularly those who strongly believed in the health benefits of exercise (Belgen-Kaygısız et al., 2020; McGuire et al., 2016). In this study, most women of HWM-G ($n = 23$) regularly exercised, suggesting they might have implemented strategies to overcome these barriers (e.g., regulation-rule setting; Leitão et al., 2023). Additionally, both groups acknowledged the influence of others in meal structuring and food environments, highlighting the role of social support in motivating and promoting adherence to healthy weight maintenance practices (Greaves et al., 2017).

Cues to action

Both groups identified cues related to health and body image, however, the UWG-G also mentioned family members´ health issues, as identified in perceived susceptibility. A physically active lifestyle impacts psychological health and body image, even among older women (Varkevisser et al., 2019). Satisfaction with body image and its maintenance, and health plays a preponderant role in this dimension (and in most HBM dimensions), consistent with other studies (Chang & Kim, 2022; Chiu et al., 2020; Vorlet & Carrard, 2023). However, excessive preoccupation with body image can lead to negative behaviours, including constant weight monitoring, anxiety, restrictive diets, eating disorders and social isolation, identified as consequences or barriers to weight management by the UWG women in this study. Additionally, these women mentioned that availability for self-care is a cue for weight-related behaviour change. Indeed, during menopause, many women neglect self-care, prioritizing their family's well-being, which hinders engagement in healthy behaviours (Chopra et al., 2019; Kim & Yang, 2020).

Both groups emphasize the importance of informal support for weight management, albeit in different ways. The UWG-G highlights the crucial role of family/friends as a source of information and support (e.g., providing resources and guidance) for healthy eating and physical activity/exercise (Greaves et al., 2017; Kashfi et al., 2016). In contrast, HWM-G primarily aims to be a role model for others, especially for their children. This underscores the importance of addressing health beliefs and motivational factors (mainly internal ones) for behavioural change. A systematic review found that demographic determinants (e.g., age, sex) were not predictive of maintaining weight loss; instead, behavioural

(e.g., self-monitoring) and cognitive determinants (e.g., self-efficacy) played crucial roles (Varkevisser et al., 2019).

Self-efficacy

The self-efficacy dimension was assessed as either present or absent. Notably, more women in the HWM-G exhibited self-efficacy ($n = 26$) compared to those in the UWG-G ($n = 21$). Self-efficacy significantly influenced the modification or maintenance of healthy behaviours, particularly concerning physical activity/exercise and weight control (Hosseini et al., 2017; Urdapilleta et al., 2019; Varkevisser et al., 2019). Individuals with a healthy weight often perceive obesity as more manageable than those who are overweight (Spyreli et al., 2022), intertwining self-efficacy with self-esteem and well-being (Urdapilleta et al., 2019). This aligns with this study's findings, where the UWG-G exhibited lower self-esteem due to weight gain ($n = 17$), mentioned as a perceived consequence of this occurrence. In contrast, the HWM-G reported an improved sense of well-being ($n = 24$) as a perceived benefit, with this benefit exclusively mentioned by this group. Low perceived self-efficacy can impact mood (Conti et al., 2020), and may lead to compensatory eating behaviours, as analysed under perceived barriers (in UWG-G). Individuals with higher self-efficacy are typically more resilient when encountering barriers (McGuire et al., 2016). Given the limited and inconclusive literature on psychological, cognitive and social determinants in obesity and weight management (Varkevisser et al., 2019), focusing on self-efficacy among middle-aged women is imperative, given its positive association with preventive behaviours (Hosseini et al., 2017; Kashfi et al., 2016; Varkevisser et al., 2019).

Lastly, it is important to note that inter-rater reliability indicated a moderate agreement between the coders, which may be attributed to several factors. These include the emergence of numerous subcodes within each dimension of the HBM and/or the possibility that the other researcher may not be as familiar with this specific subject. Nonetheless, it is important to note that other qualitative studies on menopause have also reported lower kappa values (Pimenta et al., 2019). However, it is important to recognize that moderate agreement reflects a moderately shared framework, which could potentially align in other qualitative studies with samples of similar characteristics.

Strengths, limitations and future directions

This study has several limitations that warrant consideration. First, self-reported weight and height may introduce BMI calculation inaccuracies, though some evidence supports weight self-report reliability (Krukowski & Ross, 2020). Second, low alpha values were observed in several dimensions, though it is common in exploratory studies and can be acceptable due to (i) the limited number of questions, (ii) weak item inter-relationships, or (iii) non-homogeneous constructs (Johnson & Wichern, 2007). Third, online interviews, while common, may have information-sharing impact, as well as technological issues (which were not encountered during these interviews) and/or sample bias due to participants' lack of access to or proficiency with digital tools (some participants reported a lack of competencies in programmes like Zoom); nonetheless, alternatives like conducting interviews via video calls on WhatsApp or simply by telephone were readily employed in line with the study of Lobe et al. (2022). Lastly, it is important to recognize that the HBM does not account for behaviours that are performed for non-health-related reasons, such as social acceptability.

The study's strengths lie in its two distinct post-menopausal groups with different weight experiences (gain or maintenance), offering valuable insights into beliefs associated with weight and overweight/obesity development during this stage. Future research should strive to include women who underwent weight loss during the menopausal transition. The present study faced limitations in recruiting this demographic, with only three eligible participants out of 618, which were not recruited. A comprehensive approach considering physiological (e.g., biological/genetics), internal (e.g., attitudes, personal values)

and external factors (e.g., environment, access to health care and health information and social support; Kim & Yang, 2020; Okop et al., 2016) would be important. Future studies/interventions should also account for individual characteristics (e.g., women's preferences, self-efficacy, social support), and potential physical limitations that hinder the adoption of health behaviours. Additionally, the importance of effective cognitive-behavioural weight management strategies (e.g., realistic goal setting) should be emphasized. Promoting and disseminating knowledge about menopause and its consequences among pre-menopausal women (before the menopausal transition) is equally important. Continuous efforts are essential to prevent weight gain during menopause and promote a healthy lifestyle, acknowledging the dynamic nature of weight management (Simangunsong et al., 2021; Spyreli et al., 2022).

Practical implications

Important practical implications can be drawn from these findings. First, health systems, communities and workplaces must work in synergy, particularly in informing and developing knowledge regarding menopause, supported by health professionals and health management through a preventive approach to empower women in prevention and seeking help. This study explores psychological risk variables that differ between women who maintain a healthy weight and those who gain weight. It is important to provide reliable information to build useful knowledge, from a multidisciplinary perspective (e.g., medical and psychological care), where the multiple needs, including psychological dimensions, should be addressed, as these seem to have a direct impact on behaviour.

Efforts should focus on preparing for menopause, particularly the potential weight gain during middle age, before this weight gain occurs and before transitioning into perimenopause. Thus, it is especially important to collaborate with pre-menopausal women, as certain beliefs (e.g., high perceived susceptibility and benefits) identified in this phase can play a crucial role in preventing weight gain and the potential development of related health conditions.

Moreover, in behavioural change intervention programmes for women with overweight/obesity, it is important to address specific beliefs, such as perceived susceptibility, barriers and self-efficacy, which can influence the ability to maintain a healthy weight, as well as, unrealistic beliefs (such as 'not seeing quick results' as barriers and 'the value of immediate change' as benefits), which, according to this study, seem to be associated with women who have gained weight during the menopausal transition. Strengthening social support within this specific group—such as through support groups—along with enhancing motivation and identifying cues for change, may also be important.

CONCLUSIONS

This study provides insights into beliefs linked to weight experiences (maintenance or gain) during the menopausal transition. Both groups, the UWG-G and the HWM-G had perceived susceptibility in post-menopause. However, UWG-G during pre-menopause lacked weight gain knowledge. Severity perceptions varied; UWG-G emphasized stigmatization, health difficulties and negative self-concept, while HWM-G focused on body image, health and the couple's relationship. UWG-G highlighted internal and behavioural barriers to weight management, whereas HWM-G considered external factors and interpersonal influences. Both groups recognized the benefits of healthy behaviours, however, UWG-G has more external cues than HWM-G. Lastly, the HWM-G had a higher number of women with self-efficacy compared to the UWG-G. Menopausal weight management is intricate. The UWG-G recognized the benefits of adopting healthy behaviours but faced implementation challenges due to, among others, numerous barriers. Despite recognizing the need for change (perceived susceptibility and severity), they lacked self-efficacy and cues to action. This indicates that addressing menopausal weight gain involves recognizing it as not solely a result of biological processes but also as a product of psychological and behavioural factors.

Lastly, this study confirms the applicability of the HBM, demonstrating its sustainability as a model for understanding weight management in post-menopausal women. It successfully identifies differences between women who experience weight gain and those who maintain a healthy weight during this stage.

AUTHOR CONTRIBUTIONS

Mafalda Leitão: Conceptualization; writing – original draft; methodology; formal analysis. **Faustino R. Pérez-López:** Writing – review and editing. **João Marôco:** Formal analysis; writing – review and editing. **Filipa Pimenta:** Writing – review and editing; methodology; formal analysis; supervision; conceptualization.

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DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

ETHICAL APPROVAL

The ME-WEL project was conducted following the Declaration of Helsinki and received approval from the Ethics Committee of Ispa–Instituto Universitário (ref. D/024/01/2020), ensuring adherence to ethical guidelines by the standards of the Portuguese Psychologist Association (2011) and the American Psychological Association (2003). All participants provided informed consent, including for audio recording, before taking part in this study.

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APPENDIX A

Interview protocol for the Unhealthy Weight Gain Group (UWG-G)

Perceived susceptibility

1. Do you think that the increase in weight from pre-menopause to post-menopause has influenced your risk of developing certain diseases? Why?
2. Do you think that the increase in weight from pre-menopause to post-menopause has influenced your risk of experiencing a decline in psychological health or functionality*? Why?

Perceived severity

3. How serious do you consider it to be for you to experience obesity during or after the transition to menopause? Why?
4. Do you believe that the weight gain during this stage had any negative consequences?*

* If so, has the weight gain during this stage had any consequences for you personally? (e.g., impacting how you feel, your mobility, your physical health, your finances?)

Additionally, has it had any negative consequences for your relationship with your partner and your sexual functioning?

Has it had any negative consequences in the way you interact with others (e.g., friends, family)?

And has it had any negative consequences for your professional level or your involvement in extracurricular activities (e.g., housekeeping, supporting your family)?

Perceived barriers

5. What barriers / obstacles / difficulties did you encounter during the menopausal transition that hindered you from maintaining the healthy weight you had in pre-menopause? *

* If the participant does not mention any specific barriers: (On a personal, intimate-sexual, social, or professional level /extra-professional activities)

Cues to action

6. What do you think would be necessary (what could act as a trigger or a turning point) to initiate behaviours that would enable you to reduce your weight (and attain a weight similar to pre-menopause)?

Self-efficacy

7. When you had a healthy weight, during pre-menopause, how confident were you in your ability to sustain that healthy weight?
8. Now, in post-menopause, and with your current weight, how confident do you feel about your ability to adopt behaviours that will help you achieve the healthy weight you had during pre-menopause? *

* If the self-efficacy has changed: (It appears that your confidence in your ability to manage your weight has changed. Why?)

Perceived benefits

9. Do you believe that adopting weight management behaviours (e.g., healthy eating or physical activity/exercise) from pre- to post-menopause or presently could provide benefits for you? *

* If the participant does not elaborate:

If so, it could have brought or could bring benefits to you personally (e.g., in terms of you feel, your mobility, your physical health, your finances?)

It could have brought or could bring benefits to your relationship with your partner and your sexual functioning?

It could have brought or could bring benefits in the way you interact with others (e.g., friends, family)?

It could have brought or could bring benefits to your professional level or your involvement in extracurricular activities (e.g., housekeeping, supporting your family)?

APPENDIX B

Interview protocol for the Healthy Weight Maintenance Group (HWM-G)

Perceived susceptibility

1. Do you think that maintaining a healthy weight from pre-menopause to post-menopause has influenced your risk of developing certain diseases? Why?
2. Do you think that maintaining a healthy weight from pre-menopause to post-menopause has influenced your risk of experiencing a decline in psychological health or functionality*? Why?

Perceived severity

3. In your opinion, how significant do you believe it would have been to experience obesity during or after the transition to menopause? Why?

Perceived barriers

4. What were the barriers/obstacles/difficulties you faced in this process of maintaining a healthy weight during the menopausal transition (from pre- to post-menopause)? *

* If the participant does not mention any specific barriers: (On a personal, intimate-sexual, social, or professional level /extra-professional activities)

Cues to action

5. What was the trigger or click that prompted you to adopt behaviours that allowed you to maintain a healthy weight during menopausal transition? *

* If the participant does not understand: (What happened within you or around you that motivated you to take actions leading to maintaining this healthy weight? What factors or motivations influenced your decision?)

Self-efficacy

6. How confident do you feel in your ability to sustain this healthy weight?

Perceived benefits

9. Do you believe that maintaining a healthy weight from pre- to post-menopause has brought you any benefits? *

* If the participant does not elaborate:

If so, it could have brought or could bring benefits to you personally (e.g., in terms of you feel, your mobility, your physical health, your finances?)

It could have brought or could bring benefits to your relationship with your partner and your sexual functioning?

It could have brought or could bring benefits in the way you interact with others (e.g., friends, family)?

It could have brought or could bring benefits to your professional level or your involvement in extra-curricular activities (e.g., housekeeping, supporting your family)?