Original Article

Development and validation of comprehensive evaluation tool for weight management at menopausal transition and early menopause stage

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ABSTRACT

Objective: To develop and validate a comprehensive questionnaire to evaluate risk factors, perceptions, and practices for weight management in women at menopausal transition and early menopause stage. **Methodology:** A mixed-method study was conducted in two phases. In the first phase, the questionnaire was developed by literature review and focused group discussions with the target population and experts. In the second phase, content and face validity were established by expert evaluation and cognitive interviews with the target population. The developed questionnaire was crosssectionally administered in 215 women and responses were used to determine the construct validity by factor analysis and reliability by evaluating internal consistency. **Results:** The finalized questionnaire consisted of two sections; section A included sociodemographic characteristics, anthropometric measures, and menopausal status with symptom severity, while section B contained 32-items focusing on readiness to initiate weight loss, perceptions and practices related to lifestyle behaviors, built environment, and social support. The Cronbach's α value of the questionnaire is 0.79 with good internal consistency. **Conclusion:** The developed questionnaire is a valid and reliable tool to assess weight-related risk factors, perceptions, and practices in middle-aged women, which can potentially be used by doctors and other healthcare practitioners to customize weight management advice in women at menopausal transition and early menopause.

KEYWORDS: *Menopausal transition, obesity, questionnaire, risk factors, weight management*

INTRODUCTION

Weight management among midlife women is vital to maintain menopausal, metabolic, musculoskeletal, and mental health. These women consult doctors of different specialties such as family physicians, gynecologists, internists, or orthopedics for several other health-related issues faced in their day-to-day life, where they first encounter supplementary weight management advice.[1,2] Often, this weight-related advice is generic and rarely addresses the interplay of several midlife-related risk factors such as aging, menopausal symptoms, emotional volatility, low motivation, competing responsibilities, and lack of social support to meet the desirable weight loss outcome.[3] Evidence suggests that an in-depth understanding of etiological factors through initial assessment is an imperative step for recommending sustainable weight management advice in midlife women. Among these factors, menopausal health and current lifestyle practices such as eating, exercise, and sleep patterns are factors of prime concern for recommending women-centric advice to manage weight

in midlife. In current literature, multiple assessment methods such as self-developed questionnaires, comprehensive lists of valid questionnaires, and/or recall methods have been used to assess the contribution of menopausal health and current lifestyle practices in weight gain.[4,5] Few studies have used self-developed questionnaires for preliminary assessment only, as they suffer from fundamental limitations like lack of validity and reliability.[6] Other valid and reliable methods such as comprehensive lists of valid questionnaires and recall methods are resource-intensive, time-consuming, and complex to interpret in a resource-constrained clinical setting.[7,8] We aimed to develop and validate an easy-to-administer comprehensive evaluation tool to assess women-centric risk factors for weight gain, weight-related perceptions, and practices of middle-aged women.

METHODOLOGY

Study design

This is a mixed-method study conducted in two phases: (i) development of the questionnaire and (ii) validation of developed questionnaire using standardized methodology.[9,10] The first phase focuses on developing the questionnaire by generating items from literature review and focus group discussions with experts and the target population. In the second phase, the validity and reliability of the developed questionnaire were established using four steps in a sequential manner: expert evaluation to determine content validity, cognitive interviewing to establish face validity, factor analysis to evaluate construct validity, and internal consistency to evaluate reliability. For the purpose of this study, menopausal transition was defined as the phase immediately before and up to 1 year after the final menstrual period, which can range from 2 to 10 years in midlife women. Early menopause was defined as up to 5 years after the final menstrual period.[11]

The study was approved by the Institutional Ethics Committee and informed consent was taken from the participants at the time of recruitment in different phases of the study.

Phase 1: Questionnaire development

In the first phase, two steps were undertaken for the purpose of generating items for developing the questionnaire: (i) systematic review of relevant literature on the given topic and (ii) focus group discussions with subject matter experts and target groups.

First, the research team identified the relevant keywords for literature review through discussion

and preliminary search of index terms. The following keyword string was generated: (Obese * OR "Weight gain" OR Overweight) AND (Menopaus * OR Postmenopausal OR Perimenopausal OR "Middle age") AND ("Risk Factor" OR Determinants OR Predictors OR "Behavioral Factors" OR "Psychological Factors") AND (Questionnaire OR Scale) and was searched on PubMed and Wiley. A total of 27 studies were identified through title and abstract screening. Finally, after reading the full-text articles (independently by SC and AM), 36 items were generated for the questionnaire.

Second, the research team planned focus group discussions for item generation.[12-14] Initially, five focus groups discussions were conducted among women at menopausal transition and early menopause, and subsequently one focus group discussion was held with experts. In five discussions, a total of 25 women from different socio-economic and cultural groups were invited. The discussions were conducted till an exhaustive list of 45 items was generated on risk factors, perceptions, attitudes, and practices related to appropriate weight management. Following that, one discussion was planned with experts (*n* = 7) from clinical specialties (Nutrition, Gynecology, Endocrinology, Medicine, Psychology) related to weight management in midlife women. In addition to existing items, this discussion contributed 14 new items to the questionnaire.

Finally, all the generated items were developed into questions. The research team focused on generating close-ended questions in simple language, addressed in the first person, for clarity and understanding. Each item represented a single concept. Double meaning and negatively framed items were avoided. Special attention was also given to the appropriate sequencing of the questions. The items were arranged into the preidentified domains: Menopausal status and symptom severity, readiness to initiate weight loss, perception, and practices related to diet, activity and sleep behavior, and social support.

Phase 2: Validation of developed questionnaire

The validation of the developed questionnaire was established in three steps: expert evaluation, cognitive interviewing, and factor analysis for evaluating content, face, and construct validity.[15-17]

In the first step, a discussion was planned with the subject matter experts (*n* = 7) to establish the content validity of the developed questionnaire. Each item was rated and discussed in detail on the parameters: relevance, clarity, and simplicity. For the purpose of quantitative analysis, Item Wise-Content Validity

Index (I-CVI) was determined based on the number of experts rating the items considering items as relevant, clear, and simple (rating items as 3/4 on a 4-point Likert scale) in comparison to the total number of experts. I-CVI can range from 0 to 1. The items with a rating of <0.70 were eliminated, 0.70–0.79 were modified and 0.79 were accepted without modification. A total of 7 items were removed on the basis of I-CVI calculations.[18] For qualitative assessment, experts' suggestions on framing and sequencing, rewording, rephrasing, and elimination of words in required items were incorporated. In accordance with their suggestions, three items were reframed, five items were reworded and six repetitive items were removed. The remaining items had a 5-point Likert scale rating, assuming equal distance between the responses.

After incorporating the expert's suggestions, the questionnaire was administered via cognitive interviewing technique in the target population for establishing face validity. The interview schedule was planned to understand whether the midlife women were able to comprehend the questionnaire items clearly as intended by the research team. Ten women were recruited via the purposive sampling technique. These women were asked to fill out the questionnaire and rate the items as clear (1) and unclear (0). The unclear items were read out aloud by the interviewer and the participants were probed to verbalize their thoughts on these items. Participant's suggestions included: rewording, limited use of technical terms, using layman language, and formatting of instructions for the existing items. In accordance with the suggestions, two items were reworded, four items were rephrased and three items were removed.

In the third step, the construct validity of the questionnaire was established using factor analysis. The sample size was calculated for establishing the latent construct of the questionnaire on the basis of the rule of thumb of minimum of five participants per scale item.[19] For this purpose, the final questionnaire was administered on a convenience sample of 215 women recruited through the purposive sampling technique. Midlife women between the age of 43–55 years without any chronic and/or end-stage organ disease, and who can read and understand Hindi and English were recruited for this study. At the time of recruitment, these women were briefed about the purpose, objective and their role in the study, and informed consent was taken. The questionnaire was administered via an interview schedule. For the purpose of convenience, the responses were directly noted in the web-based survey designed on Google Forms by the investigator.

The responses were analyzed using exploratory factor analysis to establish the subdomain structure of the questionnaire using SPSS (version 25, IBM Corp, Armonk, NY, USA, 2017). The sampling adequacy of the dataset was assessed using Kaiser-Mayer-Olkin (KMO) measure, a value of more than 0.5 showed that the dataset was suitable for factor analysis. The Barlett's sphericity test assesses the significance of all correlations in the correlation matrix, with a value of <0.05 indicating the dataset suitable for factor analysis.[20] Factor analysis reduces the dimensionality of a large number of items into fewer factors. Exploratory factor analysis with orthogonal rotation (varimax) was used to assess the factors in our dataset.[21] The reliable factors were identified using an Eigenvalue (i.e., variability between items of a single factor) of 1.[22,23]

Reliability

The reliability was established by internal consistency. The internal consistency assesses the extent to which items measure the same thing. The internal consistency was measured using Cronbach's α, a value of more than 0.7 is considered acceptable.[24]

RESULTS

The final valid and reliable questionnaire has two sections and is freely available for use [Box 1]. Section A consists of sociodemographic profile, anthropometric parameters, and 8-items on menopausal status with symptom severity. The menopausal symptom severity was rated on a 5-point Likert scale ranging from none (0) to very severe (4). A composite menopausal symptom severity score was obtained for all the symptoms to identify overall menopausal symptom severity status. Section B consists of a total of 32-items on readiness to initiate weight loss, perceptions, and practices related to lifestyle-related behaviors, built environment, and social support. The administration time of the questionnaire in an interview schedule is 12–15 min. The responses were marked on a 5-point Likert scale, assuming equal distance between the response options. The most favorable response was rated as the highest score (5) and the least favorable response was rated as the lowest score (1).[1]

Sociodemographic characteristics of the participants

The demographic details of 215 midlife aged women are given in Table 1. The mean age was 47.7 ± 4.2 years, with slightly more than half of the participants within the age category of 43–47 years (53.9%). Three-fourths of women were homemakers (76.74%) residing in metropolitan areas (60.47%) and cities (32.5%). The sample had an almost similar proportion of women

Box 1: Validated and reliable questionnaire

Menopause is a natural life event marked by the final menstrual period. Menopausal transition is a phase that leads to menopause, usually experienced at the age of 43-55 years. This questionnaire has been developed to assess the interplay of the presence and severity of menopausal changes, weight-related perceptions, and lifestyle practices including eating habits, physical activity and sleep pattern among women going through the menopausal transition

Section A: Sociodemographic profile

1. Name: 2. Age: 3. Phone number:

4. House address:

5. Marital status: Single □ Married □ Widow □ Divorced □ Separated □

6. Education: Profession or honours□ Graduate□ Intermediate or diploma□ High school□ Middle school certificate□ Primary school certificate□ Illiterate□

7. Education of the head of family: Profession or honours□ Graduate□ Intermediate or diploma□ High school certificate□ Middle school certificate□ Primary school certificate□ lliterate□

8. Occupation: Unemployed□ Housewife□ During COVID, working from home□ Going to work as usual□Any other, please specify

9. Occupation of the head of family: Legislators□ Senior officials and managers□ Professionals□ Technicians and associate professionals□ Clerks□ Skilled workers, shop and market sales workers□ Skilled agricultural and fishery workers□ Craft and related trade workers□ Plant and machine operators and assemblers□ Elementary occupation/unemployed□

10. Total monthly income of the family ≥199,862□ 99,931-199,861□ 74,756-99,930□ 49,962-74,755□ 29,973-49,961□ 10,002-29,972□ ≤10,001□

11. Medical history (any chronic illness with which you are suffering)

Diabetes□ Hypertension□ Heart diseases□ Hypothyroidism□ Arthritis□ Depression□ Cancer□ Any other: _____

12. History of operations

13. Current menstrual status

   I am having regular periods (each cycle occurs every 21-35 days)□

   I am having irregular periods, but I have not gone 12 months in a row without periods□

   My periods were stopped but now having periods as I am taking hormones□

   My periods have completely stopped□

14. Status of menopause

Normal periods□ Using hormone replacement therapy□ Surgical (removal of ovaries/uterus)□ Natural stopping of periods with age□

Menopausal symptoms

During menopausal transition stage, women experience menopausal (item 1 and 2), physical (item 3-5), and psychological (item 6-8) symptoms. Please indicate the extent to which you are bothered by any of these symptoms

Name of symptoms\severity	None	Mild	Moderate	Severe	Very severe
1. Irregular periods (heavy bleeding, blood clotting)					
2. Hot flushes (excessive sweating)					
3. Physical discomfort (fatigue, heaviness of body, body pain, swelling)					
4. Heart discomfort (heart racing, skipping of a beat)					
5. Joint and muscular discomfort (pain in joints, rheumatoid complaints)					
6. Emotional volatility (feeling nervous, inner tension, aggression, depression)					

Anthropometric profile

Weight: Height:

Section B: Lifestyle related behaviour

1B. Which statement (in your opinion) does define your body weight status?

   (i) Prefer not to comment

   (ii) My weight is slightly less

   (iii) My weight is about right

   (iv) My weight is slightly more

   (v) My weight is significantly more

2B. In the past, how many focussed attempts did you make to lose or maintain appropriate weight?

   (i) One attempt every year

   (ii) None

   (iii) 1-2 attempts

Contd...

Box 1: Contd...

Section B: Lifestyle related behaviour

  (iv) 3-4 attempts

  (v) 5-6 attempts

3B. What has been the usual outcome of the weight loss attempts that you have made in the past?

  (i) Not applicable

  (ii) Mostly unsuccessful

  (iii) Initially successful (initial weight loss followed by regain)

  (iv) Minimal success in losing weight (considerable weight loss followed by some weight regain)

  (v) Mostly successful (considerable weight loss with no weight regain)

4B. With the onset of the perimenopausal phase, weight gain experienced by the women can be controlled by appropriate lifestyle measures

  (i) Definitely

  (ii) Probably

  (iii) Can't say

  (iv) Probably not

  (v) Definitely not

5B. How do you intend to initiate lifestyle intervention methods (diet, exercise, etc) to keep your body weight appropriate?

  (i) Eager to initiate

  (ii) Somewhat eager to initiate

  (iii) Undecided

  (iv) Somewhat not eager to initiate

  (v) Not eager to initiate

6B. Balanced diet consists of the right proportion of whole wheat, pulses, legumes, eggs, nuts, fruits and vegetables. How often do you consume a balanced diet?

  (i) Not routinely

  (ii) 1-2 times per week

  (iii) 3-4 times a week

  (iv) 5-6 times a week

  (v) Daily

7B. How often do you consume 2-3 servings of protein-rich foods (dairy, legumes, nuts, and chicken)?

  (i) Not routinely

  (ii) 1-2 times per week

  (iii) 3-4 times a week

  (iv) 5-6 times a week

  (v) Daily

8B. How often do you snack on foods high in calories, fat, sugar, and salt?

  (i) Not routinely

  (ii) 1-2 times per week

  (iii) 3-4 times a week

  (iv) 5-6 times a week

  (v) Daily

9B. I believe mood swings and stress in my everyday life leads to_____

  (i) Increase in my food intake

  (ii) Somewhat increase in my food intake

  (iii) No change

  (iv) Somewhat decrease in my food intake

  (v) Decrease in my food intake

Contd...

Box 1: Contd...

Section B: Lifestyle related behaviour

10B. How frequently do you eat out at a canteen, restaurant, or at social gatherings?

  (i) Not routinely

  (ii) One to two times every month

  (iii) One to two times every fortnight

  (iv) One to two times every week

  (v) Almost daily

11B. Reasons associated with inability to follow a healthy dietary pattern

Please select a response that appropriately defines the extent to which these factors impact your daily efforts to maintain a healthy diet

Reasons	Strongly Agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
1. My food intake has increased during the perimenopausal phase.					
2. I tend to overeat due to food cravings.					
3. I often disengage from healthy eating patterns around my periods.					
4. My involvement with work and family responsibilities leaves me with less time to focus on healthy eating.					
5. I feel healthy food products are either not readily available or costly.					
6. I find myself eating out of anxiousness, boredom or restlessness.					
7. I eat my favourite foods to make me feel better.					
8. I tend to eat energy-dense food during festive and/or religious fasting.					
9. My friends and family often offer me foods rich in fat, sugar and salt while eating out or at social gatherings.					

12B. Participation in a moderate aerobic exercise (walking, jogging, swimming, and cycling) for about 150 min/week is recommended to maintain optimum health. How closely do you match your weekly physical activity level with the recommendations?

  (i) 100%

  (ii) 75%

  (iii) 50%

  (iv) 25%

  (v) Not applicable

13B. I spend………. (duration in hours) of a day on sedentary activities (sitting, desk job, using phone, watching TV)?

  (i) <2 hour

  (ii) 2-4 hour

  (iii) 4-6 hour

  (iv) 6-8 hour

  (v)> 8 hour

14B. I feel doing household activities (alone) contributes to an adequate amount of physical activity in a day to maintain a healthy weight for my age group.

  (i) Strongly agree

  (ii) Agree

  (iii) Neither agree nor disagree

  (iv) Disagree

  (v) Strongly disagree

15B. Reasons associated with inability to follow a physically active routine

Physically active lifestyle includes participation in exercise, household chores, commuting and leisure related activities. Please select a response that appropriately defines the extent to which these factors impact your daily efforts to maintain a physically active lifestyle.

Factors	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
1. My involvement with personal and professional commitments leaves me with less time for dedicated physical activity.					

Contd...

Box 1: Contd...

Factors	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
2. I find it difficult to engage in physical activities due to joint pain/body pain/excessive tiredness.					
3. I find it difficult to engage in physical activities around my periods.					
4. My friends and family members show little interest in maintaining an active lifestyle.					
5. I don't have access to parks, fitness centres and gyms.					

16B. On average, I am able to get a sleep of ………… hour in the night

  (i) <6 hour

  (ii) 6-8 hour

  (iii) >8 hour

  17B. I would rate my quality of sleep as…………….

  (i) Excellent

  (ii) Very good

  (iii) Good

  (iv) Poor

  (v) Very poor

18. B: Reasons associated with an inability to follow sleep pattern

Please select the appropriate response to the following factors according to the extent to which these factors contribute to disturbed sleep patterns

Factors	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
1. I face restlessness and discomfort during the night due to sweating and hot flashes leading to disturbed sleep.					
2. I face difficulty in falling asleep due to stress and anxiety.					
3. Mismatched sleep routines of family members negatively affect my sleep pattern as well.					

representing different stages of menopause marked by: regular periods (34.8%), irregular periods (33.4%) and stopping of periods (31.63%) as per the Stages of Reproductive Aging Workshop Criteria.[25] The mean body mass index was 28.58 ± 4.19 kg/m², with more than three-fourths of women in the obese category (81.86%).

Construct validity of the questionnaire

Factor analysis via principal component analysis and varimax rotation was undertaken to find the reduced factors. Eigenvalue and scree plot was used to identify tenable factors. Considering eigenvalue >1, we found a 11 factor solution explaining 62.13% of the total variance (KMO = 0.699, Bartlett's test of sphericity $P < 0.001$). The loading of items on different factors is shown in Supplementary Table 1. Two items, i.e., q14 and q17 (difficulty in following healthy eating patterns due to mismatched eating habits of family and skipping meals to lose weight) were removed during factor analysis as they did not load on the factor loading axis.

Reliability of the questionnaire

The questionnaire was found to have a good internal consistency with Cronbach's alpha value of 0.79.

DISCUSSION

We have developed a comprehensive evaluation tool for initial screening of midlife women to recommend appropriate weight management measures. The questionnaire enables a quick assessment of three important risk factors of weight gain in midlife women: (i) menopausal health decided as per the regularity of menstrual cycles and severity of menopausal symptoms, (ii) lifestyle-related behaviors such as eating, activity and sleep habits and (iii) midlife specific barriers in maintaining healthy lifestyle.

The developed questionnaire has several unique features. The questionnaire assesses readiness to lose weight in midlife women. According to the 5As framework for weight management, it is critical to understand women's readiness to initiate weight reduction measures to plan the next steps for managing weight.[26] Oftentimes, women who are eager to participate in weight loss

Table 1: Sociodemographic characteristics of participants

Characteristics	*Value (n= 215)
Age (years)	47.7±4.2
43-47	116 (53.95)
48-51	55 (25.58)
52-55	44 (20.47)
Education	
Primary education	54 (25.12)
High school or diploma	62 (28.84)
Graduate	99 (46.04)
Residence	
Metropolitan	130 (60.47)
City	70 (32.5)
Rural	15 (6.97)
Marital status	
Married	192 (89.30)
Single	1 (0.47)
Others	22 (10.2)
Occupation	
Homemaker	165 (76.74)
Working	50 (23.26)
Menstrual status	
Regular menstrual cycle	75 (34.88)
Irregular menstrual cycle	72 (33.40)
No menstrual cycle	68 (31.63)
Self-reported weight (kg)	70.8±10.41
Self-reported height (cm)	157.61±6.29
Self-reported BMI (kg/m^2)	28.58±4.19
Normal weight (18.5-22.9 kg/m^2)	12 (5.58)
Overweight (23-24.9 kg/m^2)	27 (12.56)
Obese I (25-29.9 kg/m^2)	110 (51.16)
Obese II (>30 kg/m^2)	66 (30.70)

*Values are presented as mean±SD or frequency (%). BMI: Body mass index, SD: Standard deviation

programs have different weight-related perceptions in comparison to their counterparts.[27,28] The questionnaire gathers information on a woman's perception of her own body weight, experiences related to previous weight loss attempts, and the need to uptake lifestyle modification for managing excessive weight. An understanding of these experiences is important to predict if the woman will make a focused attempt at losing weight and stick to management advice, especially when faced with challenges in her weight loss journey.[29] The questionnaire also aims to identify midlife specific barriers faced at home (mismatched eating pattern, religious fasting, and participation in household chores), work (lack of time, distress), and social (lack of social support, social eating, and access to parks) settings that hinders maintaining day-to-day lifestyle in a way that supports weight loss.[30-32]

In current literature, certain studies have assessed weight gain during the menopausal transition in midlife women. Most studies administered mainly three assessment methods: (i) self-developed surveys, (ii) list of valid and reliable questionnaires and (iii) recall methods for dietary intake and activity. Self-developed surveys are multidimensional and quick to administer, but lack validity and reliability.[6] In order to produce valid and reliable data, studies administered lists of validated questionnaires such as Depression, Anxiety and Stress Scale-21 to measure distress, Body Shape Questionnaire to measure body image issues, and Woman's Health Questionnaire for menopausal quality of life.[33,34] Often these questionnaires are administered in combination with recall methods such as 24-h recall and Global Physical Activity Assessment Questionnaire for assessing dietary and activity status.[5,35] Both these assessment methods possess a high participation burden and require expertise for administration. This limits the application of available questionnaires by doctors from different specialties for assessing women presenting with obesity at their outpatient departments, especially in resource-constrained settings.

The application of the questionnaire is manifold. The questionnaire is a concise, easy-to-use, freely available tool for doctors from various specialties for a quick and comprehensive baseline assessment. The questionnaire can be administered by clinicians and allied healthcare professionals, where referral to a dedicated weight management team including dietitians, exercise physiologists, and psychologists for in-depth assessment of these women might not be feasible. The information generated by the questionnaire can be used to generate empirically based, effective women-centric interventions for recommending meaningful, practical, and sustainable weight loss solutions.

Although, it should be noted that the validity and reliability of the questionnaire were established based primarily on responses from the women in the age category of 43–55 years, which depicts a part of the midlife period. In further studies, authors would try to incorporate women between the age categories of 40–65 years to include the varied perspective across the sample population.

CONCLUSION

In summary, this newly developed valid and reliable questionnaire enables the comprehensive examination of women-centric risk factors of weight gain and lifestyle practices related to its management in association with menopausal health among midlife women. This questionnaire has a relatively low participant burden and can be administered across diverse socioeconomic groups within the midlife women population. Furthermore, the questionnaire will enable future cross-sectional or

longitudinal assessment of lifestyle-related practices and other weight-related parameters in a large cohort of midlife women. The generated evidence can be used to customize current weight management protocols to better suit the stage of the life cycle and lifestyle of midlife women for successful and sustainable weight loss outcomes.

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Conflicts of interest
There are no conflicts of interest.

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Questions\factors	1	2	3	4	5	6	7	8	9	10	11
Q11 (increased food intake)	0.722										
Q12 (food cravings)	0.712										
Q18 (distress eating)	0.626										
Q19 (comfort eating)	0.621										
Q13 (eating habits during periods)	0.610										
Q34 (mismatched sleep pattern)		0.687									
Q29 (access to parks and gyms)		0.653									
Q28 (social activity norms)		0.509									
Q25 (lack of time and physical activity)		0.506									
Q15 (lack of time and healthy eating)		0.425									
Q2 (previous weight loss attempts)			0.777								
Q3 (previous success during weight loss attempts)			−0.709								
Q1 (perception of weight loss)			−0.627								
Q5 (willingness to initiate weight loss)			−0.510								
Q26 (inability for physical activity)				0.755							
Q27 (Physical activity during periods)				0.725							
Q22 (daily physical activity)				0.439							
Q6 (balanced diet consumption)					0.798						
Q7 (adequate protein intake)					0.687						
Q4 (lifestyle and weight management)					0.461						
Q32 (hot flashes and sleep)						0.759					
Q33 (distress and sleep)						0.738					
Q20 (festive and religious fasting)							0.842				
Q21 (eating out)							0.835				
Q8 (snacking)								0.696			
Q10 (HFSS foods* intake)								0.620			
Q23 (sedentariness)									−0.730	−0.73	
Q24 (importance of physical activity)									0.446		
Q30 (sleep)										0.830	
Q31 (quality of sleep)										0.656	
Q9 (emotional eating)											0.720
Q16 (food availability)											−0.537

*Value (*n*=215), Factors 1: Challenges in corrective eating, 2: Reasons affecting activity and sleep, 3: Perception regarding weight and willingness to initiate weight loss, 4: Challenges in physical activity, 5: Balanced diet, 7: Social support in healthy eating, 8: HFSS food consumption, 9: Sedentariness, 10: Sleep, 11: Challenges in healthy eating. HFSS: High fat salt and sugar foods