



Original Article

Exploring Biosocial Barriers and Enablers to Weight Loss: A Qualitative Study of a 12-Week Workplace Program for Overweight and Obese Office Workers

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Abstract

Introduction: Although workplace weight management programs (WMPs) are increasingly implemented to address obesity, maintaining long-term behavior change remains a key challenge. This study explores the biosocial barriers and enablers influencing the perceptions, motivations, and experiences of overweight and obese Malaysian office workers in a 12-week WMP.

Methods: Three focus group discussions (FGDs) were conducted with 28 overweight and obese office workers (mixed gender). All data were analysed thematically using NVivo software.

Results: Seven themes emerged: (1) Psychological motivation to join WMP, (2) Anticipated social benefits, (3) Biosocial challenges in practice, (4) Subjective failure, (5) Enablers of positive change, (6) Role of support networks in sustaining change, and (7) Planned long-term lifestyle change. Participants were motivated by health concerns, self-improvement goals, and support from peers and family. Key enablers included structured guidance during the program, increased nutritional awareness, and positive social influence. However, participants reported persistent biosocial barriers, including sedentary work routines, social pressures around food, irregular eating habits, and stress-induced eating. Sustained behavior change was more likely when individuals developed consistent routines and intrinsic motivation.

Conclusion: Addressing both individual and environmental barriers, while enhancing enablers, can improve long-term adherence and outcomes. These insights can guide the development of more tailored, sustainable WMPs within organizational health promotion efforts.

Keywords: Health education, Diet therapy, Exercise therapy, Weight loss, Occupational health, Workplace

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Introduction

Obesity is a significant global public health challenge, associated with an increased risk of chronic diseases such as cardiovascular diseases, diabetes, and certain cancers.¹ Despite widespread recognition of its adverse health and economic impacts, obesity prevalence continues to rise globally, including in Malaysia. According to National Health and Morbidity Survey 2023, 54.4% of Malaysian adults are classified as overweight or obese.² Additionally, 45.5% of Malaysian adults reported weight gain during the pandemic,³ highlighting a growing need for effective and sustainable weight management strategies.

Working adults are at a higher risk of being overweight and obese, often attributed to factors such as long working hours, shift work, limited opportunities for physical activity, and high levels of occupational stress.⁴ In response, workplace weight management programs (WMPs) have emerged as a key strategy to combat obesity, aiming to

promote weight loss and improve overall health outcomes. While many WMPs have demonstrated their effectiveness in achieving weight loss and enhancing health, long-term adherence to healthy lifestyle behaviours remains challenging.⁵ The success of these programs largely depends on participants' understanding of program objectives and having realistic expectations regarding outcomes.⁶ For program developers and stakeholders, understanding participants' expectations is crucial for designing more tailored and effective interventions.

Evidence indicates that many participants enter WMPs with unrealistic expectations, such as anticipating weight loss exceeding 30% of their initial body weight.⁷ Such inflated expectations often result in dissatisfaction with outcomes and an increased likelihood of dropout. For instance, the risk of dropout rises by approximately 12% when participants' motivations are centered on rapid weight reduction.⁸ In contrast, participants who adopt



realistic goals, achieve modest weight loss, and experience broader health improvements—such as better sleep, or improved mental well-being—report greater satisfaction and sustained engagement.⁹

To design more impactful programs, it is crucial to understand the biosocial context influencing participants' weight loss effort, including their motivations, perceived barriers and factors that contribute to both success and setbacks. While previous studies have evaluated the outcomes of workplace interventions quantitatively, fewer have qualitatively explored the perspectives of participants themselves, particularly among overweight and obese Malaysian employees. This study addresses this gap by exploring the biosocial barriers and enablers faced by overweight and obese Malaysian office workers who participated in a 12-week workplace WMP. By examining their motivations, expectations, challenges, and successes, this study has the potential to inform the development of more effective WMPs. Furthermore, this research contributes to the growing body of knowledge on obesity interventions, offering a framework for improving long-term adherence in WMPs within workplace settings.

Methods

Participants' recruitment

Participants were recruited from a tailored WMP developed for office workers at Selangor State Development Corporation. The program aimed to enhance participants' lifestyle habits, physical health, and mental well-being. All office workers with a BMI exceeding 23 kg/m², classified as overweight or obese based on the World Health Organization's BMI cutoffs for Asians¹⁰ were invited. Over the 12 weeks, participants engaged in 36 sessions encompassing exercise training, dietary guidance, and body composition assessments to monitor their progress.

Following the intervention, 28 out of the 40 participants volunteered to participate in FGDs to share their experiences and insights. Three FGDs sessions were conducted after the intervention, each involving 8–10 mixed-gender participants. Inclusion criteria for the FGDs included successful program completion, being at least 18 years of age, and the ability to communicate in either Malay or English. Ethical approval for this study was obtained from Faculty of Science and Engineering Faculty Research Integrity and Research Ethics Committee at the university (Identification number: MHMH200324)

Interview protocol

The FGDs were facilitated by a trained researcher in nutrition and public health, who had no prior working relationship with participants. To minimise potential bias, the facilitator maintained reflexive notes throughout the process, documenting reflections for later consideration during data analysis. Discussion took place

in a private and quiet room to promote open dialogue and minimize distractions. At the beginning of each session, participants were briefed on the study's purpose. A semi-structured interview guide (Table 1), was used, adapted from previous qualitative studies on WMPs.¹¹ Each session lasted approximately 40 to 45 minutes, allowing participants sufficient time to share their perspectives in depth.

Data Analysis

All FGDs sessions were audio-recorded, transcribed verbatim, and analyzed using six-phase thematic analysis framework.¹² The process involved familiarization with the data, generating initial codes, identifying and reviewing themes, defining and naming themes, and producing a final report. Thematic coding was independently conducted by two researchers with expertise in qualitative methods. Discrepancies were discussed until consensus was reached. Field notes taken during and immediately after the FGDs were used to cross-check and contextualize emerging themes, providing data triangulation. NVivo® 10 software (QSR International, USA) was used to support data organization and facilitate systematic coding and theme development.

Results

Following thematic analysis, seven main themes were identified: (1) Psychological motivation to join WMP, (2) Anticipated social benefits, (3) Biosocial challenges in practice, (4) Subjective failure, (5) Enablers of positive change, (6) Role of support networks in sustaining change, and (7) Planned long-term lifestyle change.

Table 2 shows the sociodemographic characteristics of the FGDs participants. Of the 28 Malay participants, 60.7% were females and 39.3% were males (mean age: 35.21 ± 5.79 years; BMI: 31.7 ± 5.21 kg/m²). Majority of the participants (89.3%) were obese, while 10.7% were overweight. All reported weight reduction following the 12-week intervention, with an average weight loss of 5.76 ± 2.76 kg. Half of the participants held a degree. The majority of participants (82.1%) were married and belonged to the B40 income group (89.3%). While 53.6% were first-time participants in a WMP, 46.4% had prior experience with similar programs.

Theme 1: Psychosocial motivation to join WMP

Psychological motivation refers to the internal cognitive and emotional drivers that initiate and sustain behaviour change. Guided by self-determination theory, such motivations may arise from perceived health risks, self-improvement goals, or intrinsic enjoyment of activity, all of which can influence adherence and long-term success.¹³

More than half of the participants were experiencing their first WMP, while others had previously participated once or twice, reporting past weight loss ranging from 1 to

Table 1. FGDs interview guide

Questions
1. Introduce yourself (name, and from what department?)
2. Have you tried any WMP before? (If yes, how many times? Is it effective? How much did you lose weight?)
3. Before you enter this WMP, what did you expect to achieve through this program?
4. What motivates/triggers people/you to join the WMP?
5. What other support roles would you include in this program, if any, and why?
6. What did you wish your trainer had done, if any, to help you succeed?
7. The benefits of starting a program can vary from person to person. What are some things you thought might be helpful for you?
8. Have you ever felt embarrassed or unsupportive or had negative interactions because of your weight or when trying to join a WMP?
9. In your opinion, why do some people unsuccessfully reduce their weight? Why it is difficult for people living with obesity to engage in exercise or a healthy diet?
10. What are your thoughts about training and nutrition guidance as part of the program?
11. Do you have challenges in committing to this WMP? How did you handle setbacks or challenges?
12. If you could design your program to help people improve their health by changing their lifestyle, what would it look like?
13. How do you plan to stay healthy after this WMP?
14. Do you have any remarks, suggestions, and additions?

Table 2. Sociodemographic data of the participants for FGDs

Statement (Mean $\pm$ SD)	N (n = 28)	%
Work Status		
Employed - Full Time	28	100
Gender		
Male	11	39.3
Female	17	60.7
Age (35.21 $\pm$ 5.79)		
Less than 35 years old	15	53.6
More than 36 years old	13	46.4
Body Mass Index (BMI) (31.7 $\pm$ 5.21 kg/m²)		
Overweight	3	10.7
Obese	25	89.3
Changes of weight after intervention (kg)		
Weight loss (5.76 $\pm$ 2.76 kg)	28	100
Ethnicity		
Malay	28	100
Education Level		
Non-degree holder (eg. Pre-university, school)	14	50
Degree holder (eg. Degree, Master)	14	50
Monthly Salary		
B40 (<RM4849 $\approx$ USD 1143)	25	89.3
M40 (RM 4850 - RM 10959 $\approx$ USD 1144-2583)	3	10.7
Marital Status		
Single	5	17.9
Married	23	82.1
WMP experience		
More than once	13	46.4
Once	15	53.6

8 kilograms. Participants shared diverse motivations for joining, with primary goals focused on improving overall health, achieving weight loss, regaining fitness levels, and addressing age-related health concern.

“I feel like my weight is increasing. I joined this program intending to reduce my weight and to improve my overall

body health” (P6, P10,)

“My age is increasing, so I need to take care of my health, regain my fitness, and avoid obesity complications.” (P9, P24)

Some participants cited personal motivations such as enhancing fertility, improving mobility, preparing for outdoor activities, or seeking new experiences. These motivations reflected an interplay of biological (health concerns), psychological (self-esteem), and social (peer influence) factors.

“I wanted to get pregnant. My personal doctor told me to be more active to boost my fertility” (P3)

“I am planning to go hiking in the future. I want to prepare myself in terms of my mobility” (P16 & P18)

“As this is my first time joining a WMP, this new experience improves my stamina, which had declined with my age. I feel like it is time to adopt a healthy lifestyle to avoid any health problems” (P24)

Theme 2: Anticipated social benefits

Anticipated social benefits refer to the perceived positive social outcomes that individuals expect to gain from engaging in a behaviour. According to Social Support Theory, such benefits may include emotional encouragement, a sense of belonging, and strengthened relationships within one’s social network.¹⁴

Participants anticipated gaining practical knowledge, receiving structured support, and building healthier habits, while enjoying a fun, engaging experience with colleagues.

“I expect this program to make me feel happy and healthy because I get to meet and do this program with friends.” (P3)

“I joined other training exercises before, but without colleagues or friends. This time, I expect it to be fun because my colleagues are joining too. The more, the merrier.” (P7)

Beyond social interaction, participants hoped to gain practical knowledge about exercise and healthy eating habits.

"I have started my diet since last year. When I joined this program, I expect to gain new knowledge about exercise and healthy diet" (P10)

"Since the itinerary and activities for this program are exciting, and it helps to control our diet, I thought the WMP would be interesting." (P14)

These expectations highlight the importance of blending social support with educational and engaging activities in workplace wellness programs to boost participation and satisfaction.

Theme 3: Biosocial Challenges in practice

Biosocial challenges describe barriers arising from both biological factors (e.g., health status, fatigue) and social environments (e.g., workplace culture, peer influence) that hinder behaviour change in the workplace.⁴

Participants identified significant biosocial barriers to maintaining a healthy lifestyle during the intervention. A recurring issue was the sedentary nature of their office jobs, which required long hours of sitting with minimal movement.

"There are days that I am busy at work. Sometimes I skip meals and eat at night before I sleep. I don't have time to choose a healthy diet or exercise." (P26)

"We normally did not move much at the office, sitting at the computer in a very comfortable seat. That is why we gain weight." (P21)

Irregular meal schedules due to busy workdays and frequent availability of free food during office meetings further compounded the challenges.

"I can't control my diet as I always attend meetings with free food. I take the opportunity to eat." (P1)

Participants also faced peer pressure from colleagues who did not support their transition to healthier habits.

"Many of my friends at work are food lovers, so it was very hard to change." (P4)

Personal habits, preferences, and psychological factors were additional barriers. A preference for sweets, comfort with current body shape were cited as obstacles to success.

"I like to eat sweet things. I always eat sweet things. I can't control it." (P2 & P5)

"Some people are comfortable with their body shape and size and don't feel the need to eat healthily or exercise." (P14)

Stress was another significant challenge, with participants admitting to stress-eating as a coping mechanism, often turning to sugary or high-calorie foods.

"Sometimes, when I am stressed at work, I binge eat and become inactive." (P25)

Theme 4: Subjective failure

Subjective failure refers to an individual's personal perception of not meeting desired goals, often influenced by self-assessment, internal expectations, and external

circumstances.¹³ Participants identified several reasons for failing to achieve weight loss or fitness goals, with uncontrolled food intake and lack of discipline as the primary obstacles.

"Uncontrolled diet and ineffective exercise are why people fail to lose weight." (P4)

"The person is not disciplined to control food intake or commit to exercise. They also might not have a good support system." (P12)

Additional factors included lack of knowledge, laziness, reluctance to leave one's comfort zone, low metabolism, and giving up too easily.

"We need to know what our body needs and ensure we get proper guidance from certified coaches and nutritionists." (P3)

"Laziness, staying in the comfort zone, and giving up easily are major reasons people fail to lose weight." (P11)

The lack of a supportive environment at home or work also played a significant role.

"Sometimes, it is the people around us. Our friends did not support our healthy transition. At home, it is difficult to change routine, especially regarding food." (P18)

One participant further explained the challenge of sustaining change without external support

"Sometimes individuals try to control their diet and exercise to lose weight, but if they do it alone, they will stop halfway, and their goal becomes unachievable. I experienced this myself because there was no one to support me." (P3)

Theme 5: Enablers of positive change

Enablers of positive change refer to factors that facilitate the adoption and maintenance of healthier behaviors, such as personal achievements, knowledge acquisition, and environmental support.¹⁵ Participants identified various indicators of success after the intervention, including weight loss, reduced waist or hip circumference, improved stamina, and enhanced health markers such as lower blood glucose and cholesterol levels.

"I am now very proud of myself because my weight is less than 60 kg. I achieved my target." (P21)

"I can see my tummy getting smaller." (P24)

"My waist, hip, and chest circumference have reduced. I am quite happy." (P22)

"I was diagnosed with insulin resistance and high cholesterol. After 12 weeks in this program, my glucose and cholesterol levels went down." (P3)

Some participants also noted better sleep quality after adopting healthier diet.

"After receiving guidance on eating a balanced diet, I can rest better. Now, I can sleep early, and my sleep quality has improved." (P1)

Participants highlighted the knowledge they gained especially portion control was a key enable.

"I learned about the 'healthy plate' concept--a quarter

protein, a quarter carbohydrate, and half a plate of vegetables and fruits. This helps me control my food intake.” (P15)

“I learned about healthy food portions for my daily food intake. It was challenging, but with guidance from the nutritionist, I can now manage my portions better” (P11)

Overall, most participants expressed satisfaction with the program, noting its positive impact on their physical and mental health. This demonstrates how biological improvements (e.g., weight loss), psychological reinforcement (e.g., confidence), and social accountability act synergistically to promote positive change.

“Congratulations to the organizer. This program should be conducted consistently to address overweight and obese among office workers in our organization.” (P24)

Theme 6: Role of support networks in sustaining change

Support networks include family, friends, colleagues, and community connections that provide emotional, logistical, and motivational assistance for maintaining lifestyle changes.¹⁴ Many participants emphasized that support from friends, family, and workplace peers played a key role in sustaining their participation

“I got support from my friends here. My husband helps me a lot by supporting me and handling my kids” (P21 & P27)

“My husband always supports me during my training. My mom also supports me by cooking healthy meals for me” (P2)

Some participants emphasized their personal motivation and decision to join the program as a critical factor in their success.

“It is my own decision to join the program and become healthy. (P7 & P20)

Work colleagues and social media influencers also inspired participants to adopt healthier lifestyles.

“My officemate inspires me to join the WMP.” (P8)

“Besides support from my family, I was inspired by the social media influencers who successfully reduced their weight after joining similar programs” (P14)

Theme 7: Planned long term lifestyle changes

Planned long-term lifestyle change refers to intentional strategies aimed at maintaining health-promoting behaviors beyond the duration of a structured program.¹⁶ Participants shared various strategies to sustain a healthy lifestyle post-program. Many committed to continuing regular exercise, such as attending gym sessions and scheduling outdoor activities.

“I will consistently go to the gym in the evening after work and start prepping my healthy meal.” (P8)

“I am determined to create an exercise schedule, do outdoor activities on weekends, and practice a balanced diet to stay healthy.” (P24)

Participants recognized the importance of integrating

these habits into their daily routines to maintain the progress achieved after the intervention.

“I know I must keep doing this, not just sometimes. If I stop, I’ll go back to where I was before.” (P11)

Discussion

This qualitative study offers in-depth insights into the biosocial dynamics influencing weight management among overweight and obese office workers participating in a structured 12-week workplace intervention. Participants’ experiences revealed a complex interplay of biological, psychological, and social factors that acted as both barriers and enablers to sustained lifestyle changes. More than half of the participants were new to WMPs, suggesting the program’s potential to engage first-time participants. The program achieved an average weight loss of 5.76 kg, ranging from 1.8 kg to 10.9 kg. This variability demonstrating its overall effectiveness, while also reflecting individual variability such as metabolic differences, behavioural adherence, and levels of external support.

Participants were motivated not only by a desire to lose weight and improve general health but also by personal goals such as improving fertility or preparing for physically demanding activities. These motivations reflect the biosocial nature of health behaviour—where personal health aspirations intersect with biological conditions and social identities. The presence of friends and colleagues further emerged as a key motivator, with participants expressing enjoyment of the social dynamic, which amplified their motivation. This aligns with findings from Martinez et al who identified the positive impact of group-based programs on individual commitment and satisfaction.¹⁶ Participants also valued the program’s dual role as both an educational and behavioural intervention. They expressed the opportunity to gain knowledge about nutrition and fitness as well as an increase in self-efficacy as key enablers for change. These psychosocial factors were supported externally by family and peer encouragement, underlining the importance of multilevel social support systems.

Despite high engagement, participants reported numerous biosocial barriers to successful weight management within the office environments. A sedentary lifestyle, coupled with long working hours, irregular eating patterns, and skipped meals, emerged as significant challenges. This finding aligns with Ryde et al which emphasized workload as a major deterrent to adopting healthy behaviours.¹⁷ Workplace culture also posed challenges, with participants highlighting the availability of unhealthy foods during meetings and social pressure to indulge in such offerings. Peer influence, particularly from colleagues who did not support healthy changes, further complicated participants’ efforts to maintain healthier habits. Personal barriers, including cravings for

sweets, emotional eating, and comfort eating in response to stress, were also prevalent. Such emotional behaviours align with the “comfort food” hypothesis, which links stress to increased consumption of high-calorie foods.^{18,19}

A lack of discipline and knowledge about proper nutrition and exercise further hindered progress. Participants noted that improper diet management often negated the benefits of regular exercise, leading to frustration and perceived failure. Psychological barriers, such as laziness and resistance to change, also emerged as critical issues, consistent with findings by Cleo et al which emphasized the role of psychological factors in weight management efforts.²⁰

Despite these challenges, participants reported notable impact on physical health and mental well-being. In addition to weight loss, many noted reductions in waist and hip circumference, improved mobility, and better management of conditions such as high blood sugar and cholesterol levels. Our results are similar with previous study reported significant improvements after a community-based health programme in improving the weight and blood pressure.²¹

Beyond physical health, participants noted improvements in sleep quality, attributed to dietary changes learned during the program. This reflects the holistic benefits of the program, as better nutrition can lead to enhanced rest and overall well-being.²² Nutritional education was another key success factor, with participants gaining valuable knowledge about portion control and the “healthy plate” concept. These learnings foster long-term behavioural changes and equip participants to maintain healthy eating habits beyond the program.

Support systems, both internal and external, emerged as a critical factor in participants’ success. Emotional and logistical support from family, friends, and colleagues created a positive social environment that fostered accountability and motivation. This finding aligns with a study that emphasized the importance of support system in sustaining lifestyle changes.²³ Additionally, internal motivation was equally significant. Participants expressed that their personal determination to improve their health was a driving force behind their participation. This aligns with a systematic review that highlighted the interplay between external support and intrinsic motivation in achieving lifestyle changes.²⁴ The combination of external encouragement and internal drive enables participants to not only initiate but also sustain the behavioural changes necessary for long-term health improvements.

Participants emphasized that maintaining a healthy lifestyle requires more than just intermittent efforts; it demands consistency, commitment, and careful planning. A significant number of participants expressed a strong dedication to incorporating regular exercise into their routines and making long-term lifestyle changes, including both physical activity and healthy eating habits.

Many shared their intention to attend the gym regularly after work and combine this with meal preparation to ensure healthier food choices. This reflects a proactive approach, where time management and personal accountability are key to maintaining a balanced lifestyle.

Furthermore, the importance of a continuous, balanced diet was highlighted, demonstrating an understanding that physical activity alone is insufficient without proper nutritional support.²⁵ This recognition underscores the idea that achieving wellness goals is not just about exercise but also about nourishing the body with the right nutrients. Participants revealed their motivation to integrate health-promoting behaviors into their daily routines, showing a desire to adopt sustainable practices for long-term health.

These findings align with research emphasizing that consistency and routine are central to sustaining a healthy body weight and improving long-term well-being.²⁶ Participants expressed motivation not only to make short-term improvements but also to embed these behaviours into their daily routines. This holistic approach to health—balancing physical activity with mindful dietary choices—reflects a growing understanding that long-term health improvements require consistent efforts, planning, and the integration of healthy behaviours into everyday life.

However, several limitations must be acknowledged. Firstly, participants’ varying levels of education and understanding may have influenced their interpretation of interview prompts, potentially affecting the consistency of responses. Additionally, the sample consisted of Malay participants, limiting the generalizability of the findings across diverse ethnic and cultural groups. Furthermore, the study included both first-time participants and those with prior WMP experience, which may have contributed to a broad range of perspectives but could also dilute program-specific insights. Finally, social desirability bias may have affected some participants’ reflections during FGDs.

Conclusion

This study highlights the complex interplay of biosocial factors influencing weight loss efforts among overweight and obese office workers. While the workplace presents a valuable platform for promoting health behaviour change, sustained success is shaped by both individual-level motivations and broader social and environmental dynamics. Barriers such as peer influence, work-related time constraints, stress, and easy access to energy-dense foods can hinder healthy behaviours. Conversely, enablers such as peer and family support, improved nutritional knowledge, internal motivation, and structured guidance serve as crucial facilitators of change.

By identifying and addressing these biosocial barriers and enablers, workplace WMP can be more effectively

tailored to align with participants lived realities. Integrating personalized coaching, ongoing education, stress management, and peer-led support within workplace settings can foster a culture that encourages sustainable health behaviours. Additionally, organizational policies that prioritize employee well-being—such as flexible scheduling, access to nutritious food options, and opportunities for physical activity—can amplify these efforts. Future research should explore long-term impacts of such interventions and examine how biosocial factors evolve over time to better inform sustainable workplace wellness strategies.

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Competing Interests

The authors declared that they have no competing interests.

Ethical Approval

This study was approved by the Faculty of Science and Engineering Faculty Research Integrity and Research Ethics Committee at the University of Nottingham Malaysia (Approval ID: MHMH120623). All participants provided written informed consent before the interviews. Prior to conducting the interviews, participants were informed about the study's objectives and methods, and their privacy and anonymity were assured. The study was performed in line with the principles of the Helsinki Declaration.

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