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# ACTION Malaysia—perception and barriers to obesity management among people with obesity and healthcare professionals in Malaysia

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## Abstract

**Background** Timely weight loss conversations between healthcare professionals (HCPs) and people with obesity (PwO) can help in effective obesity management. The Awareness, Care, and Treatment in Obesity maNage-ment in the Asia Pacific region (ACTION APAC) studied the attitudes, perceptions, and behaviours toward obesity among PwO and HCPs in nine countries of South and Southeast Asia. The current study is a subgroup analysis based on the Malaysian population, known as ACTION Malaysia (ACTION-MY), and aims to explore the attitudes, perceptions, behaviours, and barriers to effective obesity management among both PwO and HCPs.

**Methodology** An online survey in dual languages (Malay and English) was conducted between April 2022 and May 2022 among 1001 adult PwO and 200 HCPs (general practitioners, endocrinologists, obstetricians/gynaecologists, cardiologists, and other appropriate specialities).

**Results** The findings highlighted significant gaps in obesity awareness, with 57% of PwO misclassifying their weight status as normal or overweight. While 68% of PwO valued discussing weight management with HCPs, success rates remained low. On average, patients made three weight loss attempts in adulthood, with 63% regaining weight even after maintaining weight loss for six months or more. Key barriers included insufficient exercise, motivation deficits, and poor hunger control. Although 88% of HCPs recognised obesity as a chronic disease affecting overall health, patient disinterest, limited awareness of treatment options, and time constraints hindered effective intervention. Despite 70% of PwO trusting HCPs' medication recommendations, only 10% received weight loss prescriptions.

**Conclusions** This study emphasises the need for enhanced communication between HCPs and PwO, along with comprehensive support that includes mental health services. Addressing the perception gap regarding weight management responsibility is crucial. The results suggest that culturally contextualised approaches to obesity management in Malaysia are essential. Our findings highlight the urgent need for developing treatment strategies and policies targeting identified barriers and establishing collaborative frameworks to enhance obesity management within Malaysia's healthcare system.

**Keywords** Attitude, Awareness, Behaviours, Healthcare professionals, Obesity, Perceptions, Weight loss

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## Background

Obesity is a rising global public health issue, posing a serious threat by substantially contributing to the non-communicable disease (NCD) burden, including type 2 diabetes, cardiovascular disease, dyslipidaemia, and hypertension [1–3]. Obesity and obesity-related comorbidities have also increased economic and healthcare burdens [4].

In South and Southeast Asia, the obesity prevalence is estimated to have doubled between 2010 and 2030 [5]. From 1996 to 2023, Malaysia witnessed an approximate fivefold rise in obesity prevalence from 4.4% to 21.8% [6, 7]. Recent data from Malaysia's National Health and Morbidity Survey (NHMS, 2023) shows a sharp rise in adult ( $\geq 18$  years old) overweight and obesity rates ( $\text{BMI} \geq 25.0 \text{ kg/m}^2$ ) from 44.5% in 2011 to 54.4% in 2023, alongside an increase in abdominal obesity from 45.4% to 54.5%. Notably, 2.5% of adults present with multiple metabolic disorders (diabetes, hypertension, hyperlipidaemia, and obesity), with one-third being physically inactive [7].

World Obesity Federation projects Malaysia's obesity rates ( $\text{BMI} \geq 30 \text{ kg/m}^2$ ) to reach 41% by 2035, driven by urbanization and lifestyle changes [8–10]. While the National Plan of Action for Nutrition of Malaysia (NPANM 2016–2025) aims to promote healthy behaviours [11], obesity awareness among patients and healthcare professionals (HCPs) remains poorly understood.

Although obesity is increasingly recognised as a complex chronic disease, people with obesity (PwO) still face challenges with weight management [12]. The availability of appropriate care for PwO remains limited, as HCPs often recognise the need for comprehensive management but fail to provide the care, they themselves deem necessary. The Awareness, Care, and Treatment in Obesity maNagement International Observation (ACTION-IO) and the ACTION Asia Pacific (APAC) studies examined obesity management across different regions [13, 14], but may not fully reflect Malaysia's unique cultural and healthcare context.

To address these gaps, the ACTION Malaysia (ACTION-MY) study was conducted to explore the attitudes, perceptions, behaviours, and barriers to effective obesity management among PwO and HCPs in Malaysia. It also aimed to gain insights into the psychosocial and cultural beliefs and healthcare infrastructure that significantly influence obesity management, which may help in tailoring better policies to tackle obesity as a chronic disease.

## Methodology

### Study Design

This study is a subgroup analysis of the Malaysian cohorts of the ACTION APAC cross-sectional, non-interventional, descriptive study. In Malaysia, the online survey was conducted in dual languages (Malay and English) between 14 April 2022 and 23 May 2022. A third-party vendor (KJT Group, Inc., Rochester, NY, USA) carried out the survey using pre-existing online databases/panels. The study received an exemption from the WCG Institutional Review Board, as it provided sufficient safeguards for subject privacy and ensured the confidentiality of data [14].

### Study Cohorts

Respondents (PwO and HCPs) were recruited to complete separate surveys after signing the informed consent. Eligible PwO were adult Malaysian residents ( $\geq 18$  years old) with a  $\text{BMI} \geq 25 \text{ kg/m}^2$  based on self-reported height and weight [15–17]. Pregnant women, PwO who participated in the previous study, those actively involved in intense fitness programmes, or those individuals who experienced substantial unintentional weight loss within the past six months were excluded from the study. Key inclusion criteria for HCPs were medical practitioners practising in Malaysia, including primary care physicians (PCPs) (internal medicine, family practice, or general practitioner), or specialists (endocrinologist, cardiologist, gastroenterologist, nutrition specialist, obstetrician/gynaecologist, aesthetics medicine obesity specialists) aged  $\geq 18$  years, practising for  $\geq 2$  years, having seen  $\geq 100$  patients (including  $\geq 10$  PwO) in the past month, and spending  $\geq 50\%$  of their practising time in direct patient care. An obesity specialist refers to a physician who treats patients for obesity or weight management in at least 50% of their cases. All HCPs who participated in prior studies or with linguistic barriers that hindered their ability to understand or cooperate with the study were excluded.

Sample size calculation was done to balance statistical power, cost, and probability of recruitment. The sample size for PwO was determined to ensure a 2%–3% margin of error around a 50% proportion estimate. This margin was calculated using a standard normal (Z) distribution, with  $z = 1.96$ , corresponding to a 95% confidence level. Selection bias was reduced by weighting the PwO data to match representative demographic targets for age, gender, household income, education, and region.

### Survey Design and Study Outcomes

The ACTION-IO study survey questions were modified according to the Asia Pacific region using insights from local scientific experts [13]. The survey data collected

from the PwO and HCPs included perceptions, behaviours, and awareness of obesity and its management, using two distinct questionnaires designed for each cohort. The topics covered in the PwO questionnaire were the overall health and well-being of PwO, obesity management, attitudes toward obesity and weight loss, the impact of obesity on socio-demographics, conversations between PwO and HCPs regarding weight loss issues, and sources of information from which they obtain knowledge about obesity and weight loss. Patients were classified into Class 1 obesity (defined as BMI 25–29.9 kg/m<sup>2</sup>), Class 2 (BMI 30–34.9 kg/m<sup>2</sup>), Class 3 (BMI 35–39.9 kg/m<sup>2</sup>), and Class 4 (BMI ≥ 40 kg/m<sup>2</sup>) obesity [15]. Data collected from the HCPs included demographics, practice settings, and obesity management in clinical settings. The survey responses were reported as frequencies and percentages, quantified via single and multiple-item selection. A 5-point Likert scale was also used to assess agreement (where 1 indicated “strongly disagree” and 5 indicated “strongly agree”), primarily for self-perception and social perception of PwO, weight stigma, attitudes about weight loss, and its barriers among both HCPs and PwO. However, the results focused solely on the responses of participants who agreed, specifically those who selected option 4 (agree) or option 5 (strongly agree).

### Data Collection

Data collection for both groups was done using an online survey programmed with Decipher Survey Software (Focus Vision Worldwide Inc., Stamford, CT, USA) and administered online, via telephone, or in person. All survey data were extracted from the ACTION APAC database for the Malaysia subgroup analysis. For the PwO sample to be nationally valid, it was classified based on age, family income, gender, residential setting, and level of education. The study was conducted in accordance with the Declaration of Helsinki and the European General Data Protection Regulation. All data were stored on secure servers. A modest compensation for participation was provided to the participants upon survey completion.

### Data analysis

De-identified data were analysed using various statistical software programs including SPSS (version 23.0, IBM, Armonk, NY, USA), Stata (version IC 14.2, StataCorp LLC, College Station, TX, USA), and Excel (version 365, Microsoft, Redmond, WA, USA). Descriptive statistics (means, frequencies) within respondent types were calculated using Q Research Software for Windows 23 (A Division of Displayer, Inc., New South Wales, Australia). Categorical data were presented as counts and percentages.

## Results

### Demographics

A total of 1001 PwO participated in the survey (mean age: 40.5 years; 51% men), with the majority (88%) classified as having Class 1 or 2 obesity (Table 1). Among the 200 HCPs who completed the survey (mean age: 39 years; 75% men), the average practice experience was 9.7 years, with 41% specialising in obesity (Table 1). Of these

**Table 1** Key demographics and characteristics of the study population

	PwO (N = 1001)	HCPs (N = 200)
<b>Age, years, mean</b>	40.5	39
<b>Male, n (%)</b>	510 (51)	150 (75)
<b>Female, n (%)</b>	491 (49)	50 (25)
<b>Obesity class, n (%)<sup>a</sup></b>		
Class 1 (BMI 25–29.9 kg/m <sup>2</sup> )	591 (59)	NA
Class 2 (BMI 30–34.9 kg/m <sup>2</sup> )	290 (29)	
Class 3 (BMI 35–39.9 kg/m <sup>2</sup> )	60 (6)	
Class 4 (BMI ≥ 40 kg/m <sup>2</sup> )	60 (6)	
<b>Types of comorbidities, n (%)<sup>b</sup></b>		
Hypertension	250 (25)	NA
Hypercholesterolaemia	240 (24)	
Depression/anxiety	130 (13)	
Eating disorder	120 (12)	
Type 2 diabetes	120 (12)	
Cardiovascular disease	110 (11)	
Stomach or intestinal problems	100 (10)	
Liver disease	90 (9)	
Pre-diabetes	70 (7)	
Metabolic syndrome	60 (6)	
<b>HCP category, n (%)</b>		
Internal medicine		48 (24)
General practice		42 (21)
Endocrinology/Diabetology		30 (15)
Cardiology		26 (13)
Gastroenterology		26 (13)
Nutrition specialist		14 (7)
Family practice		12 (6)
Obstetrics/Gynaecology		4 (2)
Aesthetics medicine		2 (1)
Bariatrics/Obesity medicine		NA
Orthopaedist		NA
<b>Obesity specialist</b>		
Yes		41 (82)
No		59 (118)

BMI Body mass index, HCPs Healthcare professionals, NA Not applicable, PwO People with obesity, WHO World Health Organisation

<sup>a</sup> BMI cut-offs are based on WHO Asia–Pacific region cut-off recommendations [15]

<sup>b</sup> Percentages do not add to 100 because respondents could select more than one condition

specialists, most (82%) considered themselves experts, and over half of them (67%) had undergone specialised training in obesity. Urban residency was more common in both groups (PwO: 50%, HCPs: 56%).

#### Understanding of obesity as a disease

Most PwO (71%) and HCPs (88%) recognised obesity as a chronic disease, with 76% of PwO and 84% of HCPs acknowledging its significant health impact (Table 2).

The majority of the PwO and HCPs considered obesity to be as serious or more serious than diabetes (74% vs. 77%), chronic obstructive pulmonary disease (73% vs. 79%), cancer (72% vs. 68%), or stroke (68% vs. 74%) (Fig. 1).

HCPs were more likely than PwO to recognise the health benefits of 5%-10% weight loss (93% vs. 77%), acknowledge the impact of healthcare system on maintaining healthy weight (91% vs. 68%), value the healthcare

system as a good resource for weight management (95% vs. 60%), and support multidisciplinary approaches (94% vs. 59%) (Table 2).

#### Perceptions and attitudes toward obesity

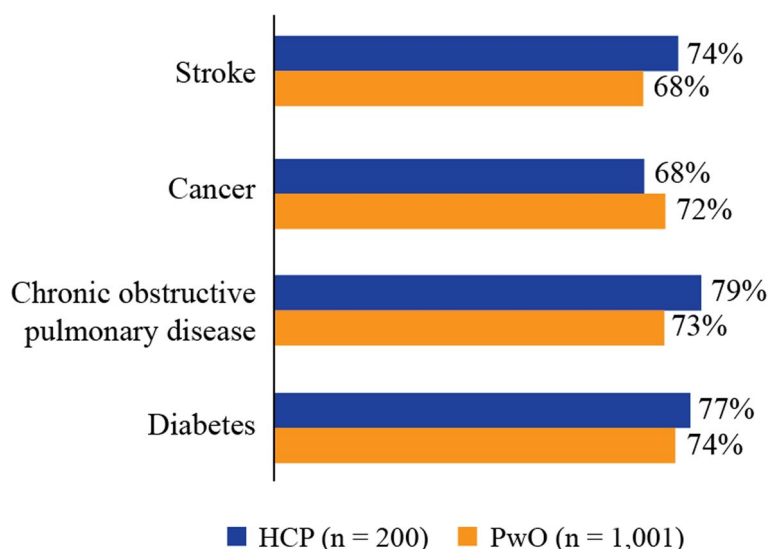
Although all participating PwO were obese based on their self-reported weights and heights, only 41% considered themselves obese or severely obese. More than half perceived themselves as either overweight (49%) or as having a normal or underweight status (9%) (Fig. 2).

Approximately 55% of PwO self-reported their overall health status as either fair or poor. In total, 71% of PwO were either taking or considering action to lose weight, with 6% committed to a weight loss plan, 23% planning to act within the next month, and 42% seriously contemplating weight loss. Only 28% of PwO had discussed a weight loss plan with their HCP in the past six months, mainly with obesity specialists (64%). Over the past five

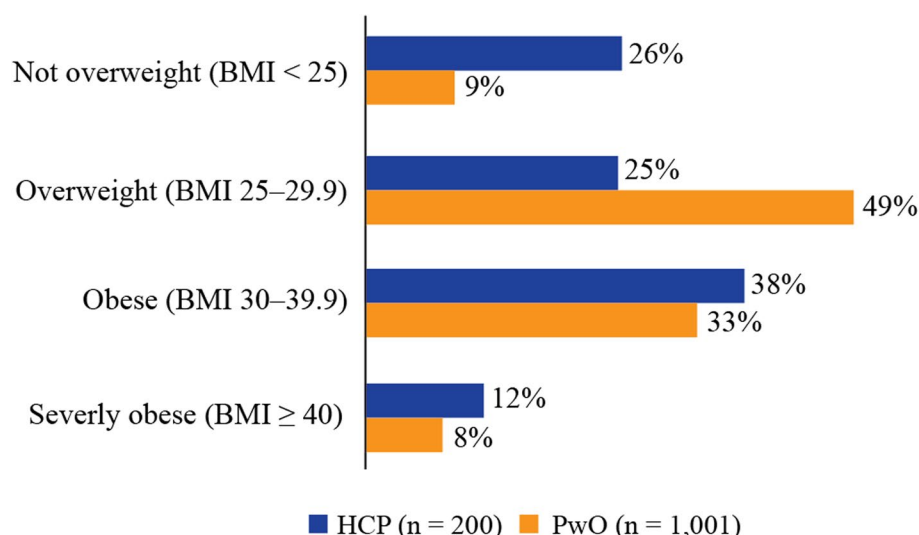
**Table 2** Understanding of obesity and healthcare system among PwO and HCPs

	PwO (n = 1001)	HCP (n = 200)
Obesity has an extreme impact on health	76%	84%
A loss of 5%–10% body weight would be extremely beneficial to my overall health	77%	93%
Obesity is a chronic disease	71%	88%
Maintaining a healthy weight is a priority for our country's healthcare system	68%	91%
The treatment of obesity should be a team effort between different healthcare professionals	59%	94%
I feel the healthcare system (doctor's offices, hospitals, etc.) is a good resource for those looking to lose weight	60%	95%
Cost of obesity therapy/treatment is a barrier to me (for patients) losing weight	60%	84%
My employer is an important partner in my efforts to manage my weight/Employers play an important role in managing patients' weight	45%	88%

HCPs Healthcare professionals, PwO People with obesity



**Fig. 1** Perceptions of the seriousness of obesity relative to other diseases among PwO and HCPs. HCPs: Healthcare professionals; PwO: People with obesity



**Fig. 2** Perceptions of weight among PwO and HCPs. BMI: Body mass index; HCPs: Healthcare professionals; PwO: People with obesity

years, only 35% of PwO had conversations about weight with an HCP, most frequently with dietitians (51%), obesity specialists (50%), or PCPs (43%) (Fig. 3A and B).

Around 50% of PwO reported an average of three previous weight loss attempts in their adult lives, with 44% making significant efforts but only 40% achieving success (Fig. 4A and B).

HCPs estimated that 50% of their patient population have obesity (Class 2: 21%, Class 3: 17%, and Class 4: 12%), 25% were overweight, and the rest had a normal BMI (Fig. 2). While 63% of HCPs supported patient lifestyle changes, 68% were motivated to assist with weight loss, and 62% felt obligated to support weight loss efforts, 44% expressed discomfort initiating weight-related discussions (Data available on request).

Most PwO reported starting their weight struggles at a mean age of 32 years (median: 30 years) and only began discussing excess weight with HCPs around age 38 years (median age: 36 years), indicating an average delay of 3 years in seeking obesity management (Supplementary Fig. 1A–C). A significant proportion of PwO (66%) and HCPs (42%) believed that obesity hindered romantic relationships. Similarly, 54% of PwO and 40% of HCPs believed that obesity hindered job prospects and employment opportunities (Fig. 5A). Additionally, both PwO and HCPs believed that obesity negatively affected how others perceived their athleticism (60% vs. 39%) and overall health (62% vs. 37%), respectively (Fig. 5B).

### Behavioural responses to obesity

Weight-related challenges affected 45% of PwO, with 47% feeling controlled by their weight and 57% reporting relapse to previous eating habits despite their best

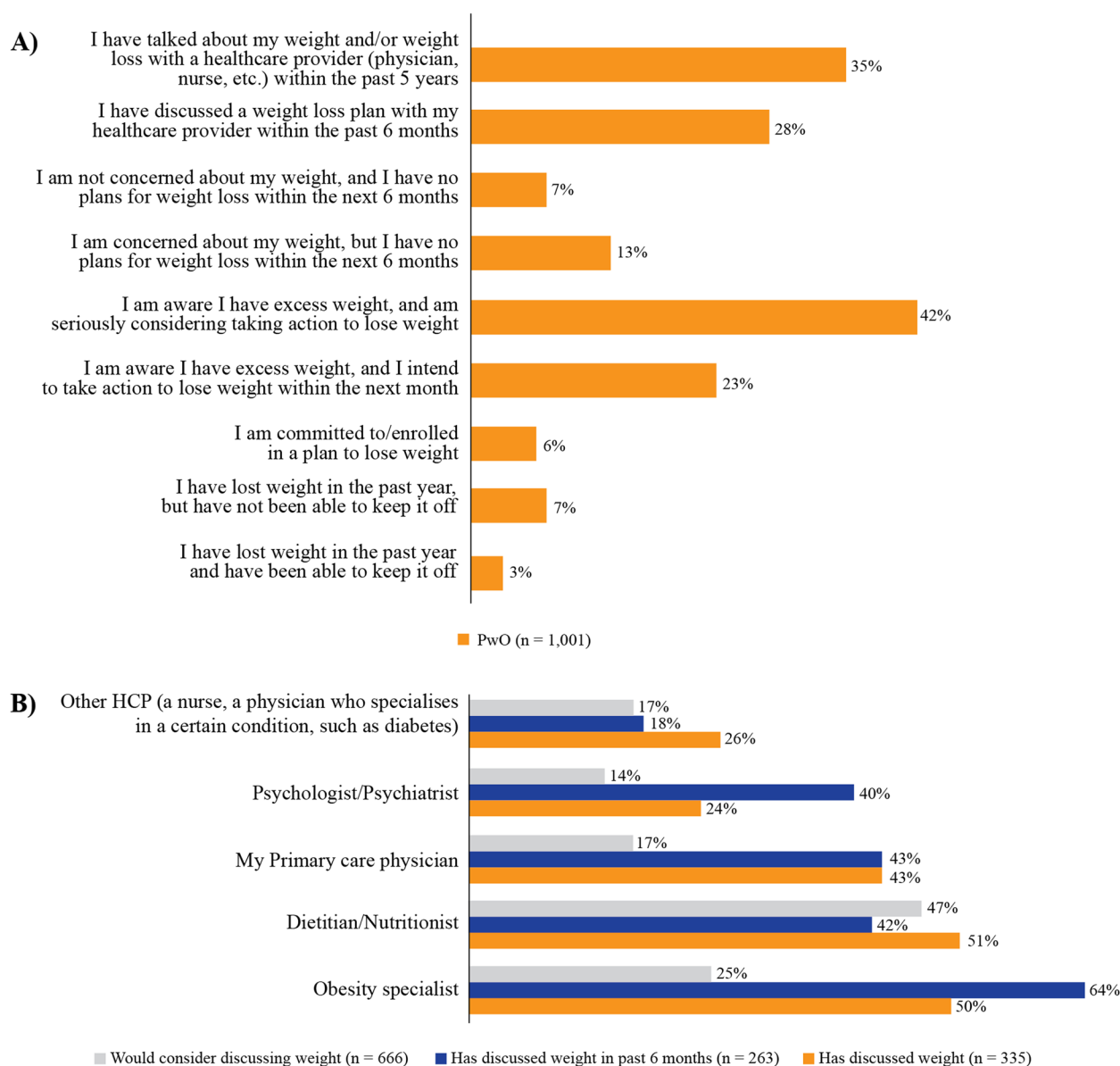
efforts (Supplementary Fig. 2). Both groups identified lack of exercise (PwO: 67%, HCPs: 78%) and motivation (PwO: 60%, HCPs: 72%) as primary barriers. While 71% of HCPs cited poor obesity understanding among PwO as a barrier, only 39% of PwO agreed (Fig. 6).

Treatment costs concerned both groups (PwO: 60%, HCPs: 84%) (Table 2), including medication/program expenses (55% vs. 61%) and limited healthcare coverage (47% vs. 58%) (Fig. 6).

Of PwO who discussed weight with their HCP, 70% received follow-up appointments (Supplementary Fig. 3). Weight regain was primarily attributed to non-compliance with eating plans (47%), followed by motivation difficulties (44%), challenges in maintaining changes (39%), and exercise discontinuation (38%) (Supplementary Fig. 4). Only 48% of PwO initiated weight management discussions with their HCPs.

While 61% of HCPs discussed weight with PwO and 60% initiated these conversations, 80% of HCPs and 60% of PwO felt comfortable with these discussions. Among PwO who had weight discussions, 78% reported positive experiences with 41% feeling motivated, 67% feeling heard, and 68% appreciating the initiation from HCPs. Of those who didn't discuss weight, 67% expected HCPs to understand their weight management challenges (Data available on request). Although 81% of HCPs documented obesity diagnoses and 61% informed patients, only 45% scheduled follow-ups (Supplementary Fig. 5–7). HCPs cited patient disinterest (36%), assumed patient awareness (38%), and absence of comorbidities (32%) as reasons for not discussing weight. PwO avoided weight discussions due to perceived personal responsibility (35%), financial





**Fig. 3** Attitudes toward weight loss and HCPs consulted for weight management by PwO. **A** Attitudes toward weight loss among PwO. **B** HCPs consulted for weight management discussions by PwO. HCP: Healthcare professional; PwO: People with obesity

constraints (31%), and anticipated weight regain (28%) (Table 3).

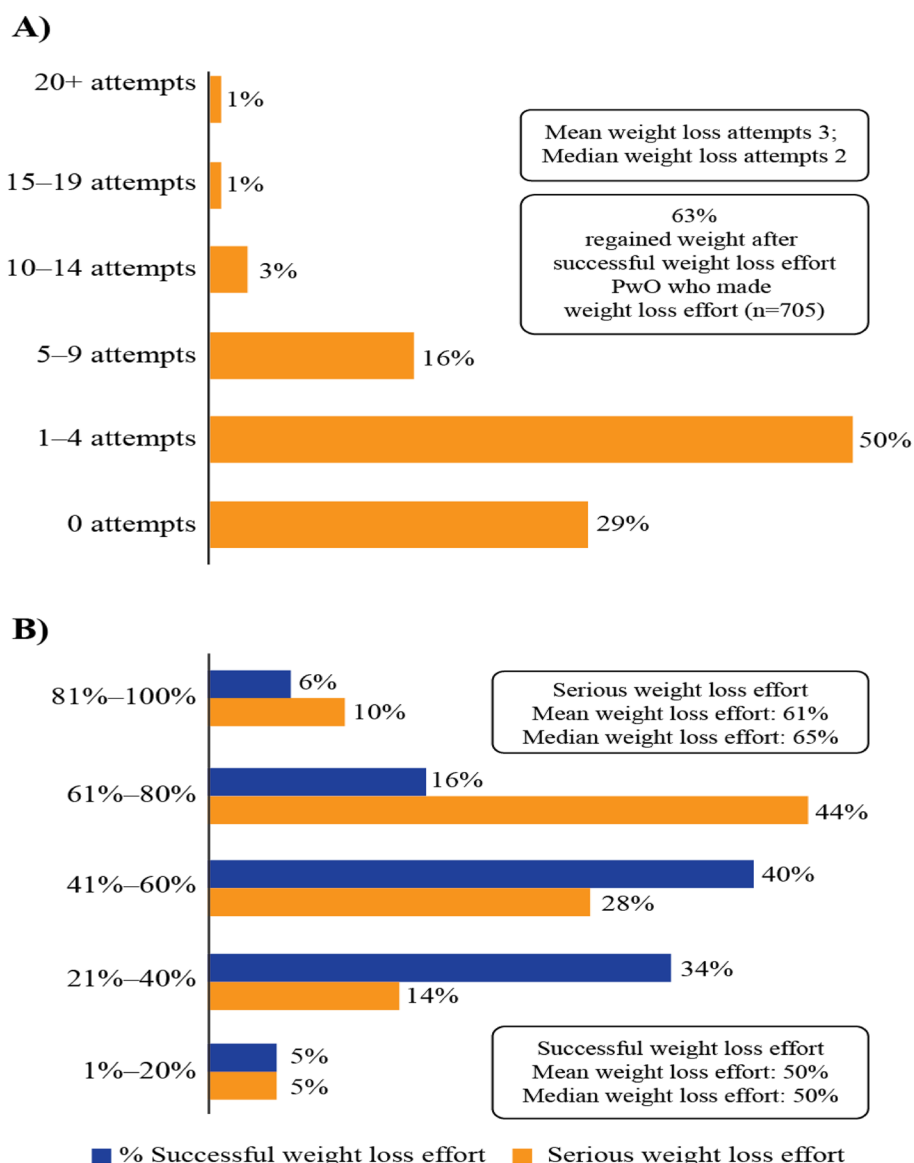
#### Attitudes and perceptions toward obesity management

While 71% of PwO viewed weight loss as their sole responsibility, only 53% were motivated to lose weight, and 21% were content with their current weight (Fig. 7).

Motivated PwO targeted a 19% weight reduction, primarily driven by physical/mental well-being improvement (33%) and lifestyle enhancement (32%). Regarding prescription medications, 51% of PwO trusted HCPs'

recommendations, 50% expressed interest in using them, 47% believed in their effectiveness, and 43% considered them superior to alternatives (Supplementary Fig. 8). In contrast, only 44% of HCPs believed weight loss was solely the patient's responsibility, with 64% perceiving their patients as motivated and 49% believing their patients were satisfied with their current weight (Fig. 7).

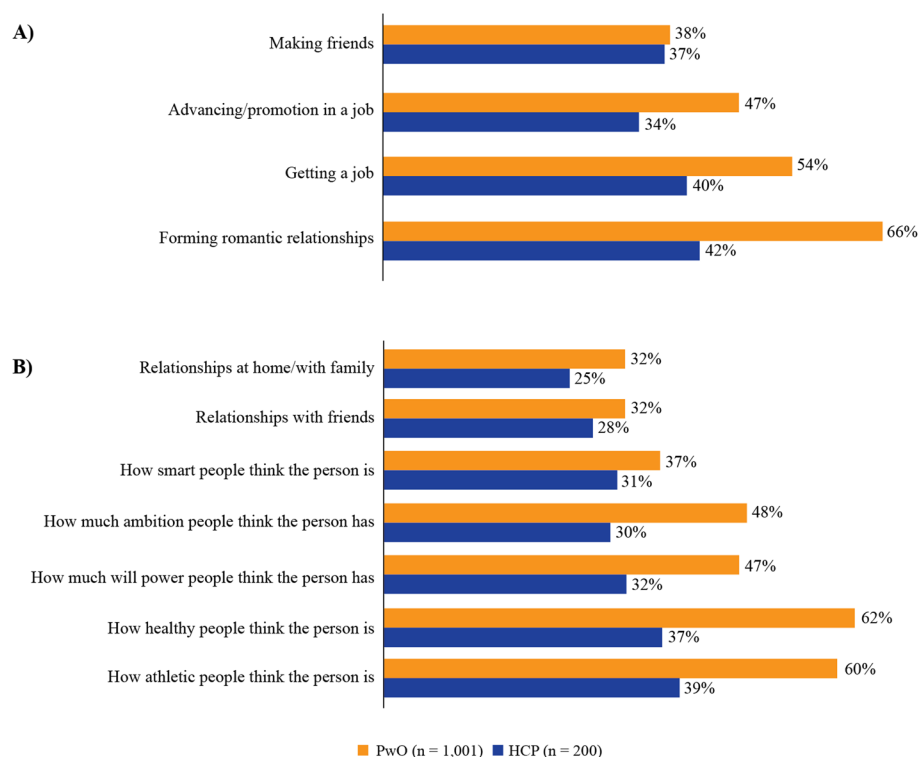
Healthcare professionals identified lifestyle improvement (42%) and increased energy levels (39%) as key weight management goals for PwO. While 69% of HCPs noted that PwO trusted them to recommend



**Fig. 4** Weight loss attempts and success rate. **A** PwO-reported weight loss attempts. **B** PwO who made serious weight loss efforts, % successful. PwO: People with obesity

anti-obesity medications, and 68% expressed concerns about potential side effects. Additionally, 94% of HCPs believed that obesity treatment should involve a multidisciplinary team approach (Table 2). The most commonly discussed weight management strategies included general healthy eating improvements (31% by HCPs vs. 12% by PwO) and specific diets or diet programmes (30% by HCPs vs. 12% by PwO) (Fig. 8A). Conversely, PwO viewed general healthy eating improvements (40%) and specific diets or diet programmes (38%) as the most effective methods for weight management (Fig. 8B).

Among PwO, 64% found diet or healthy eating effective, 48% regarded exercise as beneficial, and 46% considered medical treatment effective. Despite this, 69% preferred self-managing their weight loss over prescription medications. Both PwO (74%) and HCPs (70%) favoured diet and exercise over surgery for weight loss (Data available on request). HCPs most frequently discussed healthy eating (13%) and exercise tracking (13%), while they identified sleep quality management (49%) and general healthy eating improvements (37%) as the most effective strategies (Fig. 8A and B). The PwO commonly discussed dietary improvements and programmes



**Fig. 5** Weight stigma in PwO and HCPs. **A** Percentage of PwO and HCPs who believe that weight stigma impacts the mentioned tasks or goals. **B** Level of negative impact due to obesity. HCP: Healthcare professional; PwO: People with obesity

with their PCP (45%), while formal exercise discussions occurred mainly with obesity specialists (47%) or PCPs (44%). Although 45% of HCPs referred PwO to specialised obesity management programmes, only 8% informed PwO about their obesity diagnosis. Among PwO making serious weight loss efforts, only 7% succeeded, and of those who lost weight, 63% regained it after six months. Most HCPs (61%) believed mental health support was crucial for successful weight management (Data available on request).

## Discussion

The ACTION-MY study, a subgroup analysis of the ACTION APAC, provides valuable insights into the attitudes, perceptions, and barriers related to obesity among PwO and HCPs in Malaysia. The study highlights significant differences in their beliefs and attitudes regarding obesity and its management.

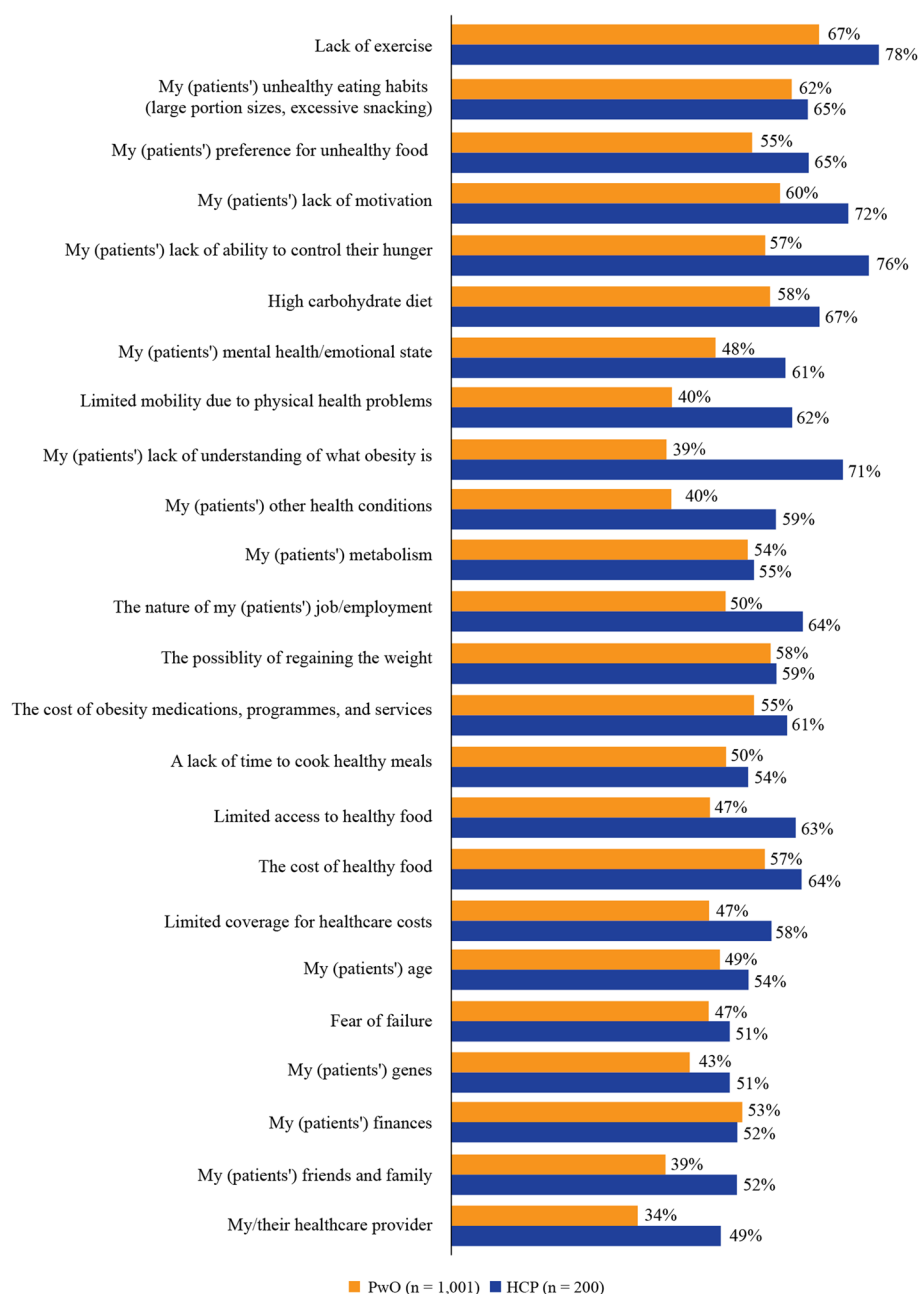
Our study revealed that while majority of the PwO (71%) and HCPs (88%) recognised obesity as a chronic disease, only 28% of PwO had discussed a weight loss management with an HCP in the past six months. This aligns with a cross-sectional Malaysian survey where 94% of HCPs acknowledged obesity as a chronic disease [18], but awareness alone did not translate into

action. Although 77% of PwO and 93% of HCPs agreed that a 5%–10% weight loss would yield health benefits, healthcare-seeking behaviour remained limited due to misconceptions and motivational barriers.

Despite all participating PwO being classified as such based on their BMI, only 41% self-identified as obese, with 21% satisfied with their weight. This misperception pattern is also seen in studies from Saudi Arabia, Japan, and Korea [19–21]. While many felt comfortable discussing weight loss, 48% reported negative emotions post-discussion, potentially impacting treatment-seeking behaviour and weight management program participation. Poor HCP interactions can discourage PwO from seeking future weight management help [22]. Although PwO typically appreciate discussing weight with HCPs, it is crucial that these conversations are free from stigma [23]. PwO prefer neutral language and clear, non-weight-centric guidance [23, 24].

In our study, 55% of PwO rated their health as fair/poor, with 44% making significant weight loss efforts but only 40% reported success. While 62% of HCPs felt responsible for supporting weight loss, 71% of PwO were within the first two stages of change (precontemplation and contemplation), with none in the action stage [25]. A limited understanding of obesity and





**Fig. 6** Weight loss barriers perceived by PwO and HCPs. HCPs: Healthcare professionals, PwO: People with obesity

inadequate clinical resources remain key barriers for PCPs [26].

In our study, 39% of PwO and 71% of HCPs identified knowledge gaps as a significant barrier. Obesity education for HCPs encompasses various areas, but many struggle with weight loss counselling likely due to insufficient training in exercise, nutrition, and clinical practice [27]. Although, 41% of HCPs met the study's definition of obesity specialists, only 67% had

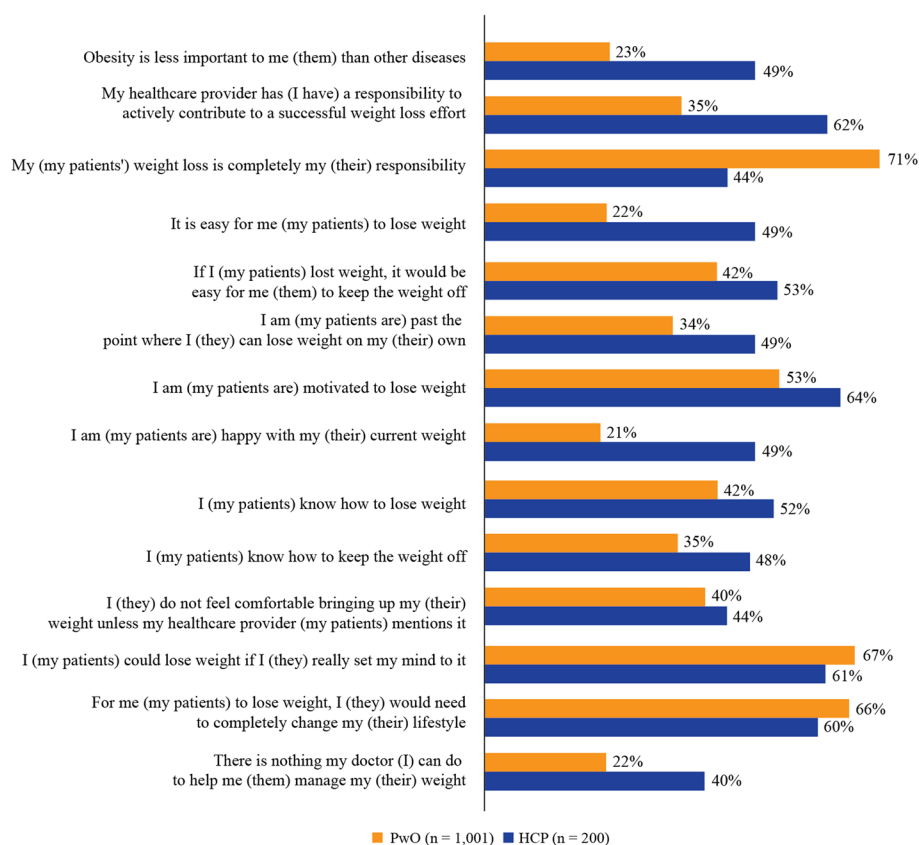
formal obesity training, highlighting the need for dedicated education and training to enhance expertise in this area. Our findings highlight gaps in obesity care, including discrepancies between HCP and PwO perspectives. Integrating obesity education into medical curricula is essential to equip clinicians with the necessary skills. Additionally, patient education on obesity and its long-term health risks should be prioritised [28].

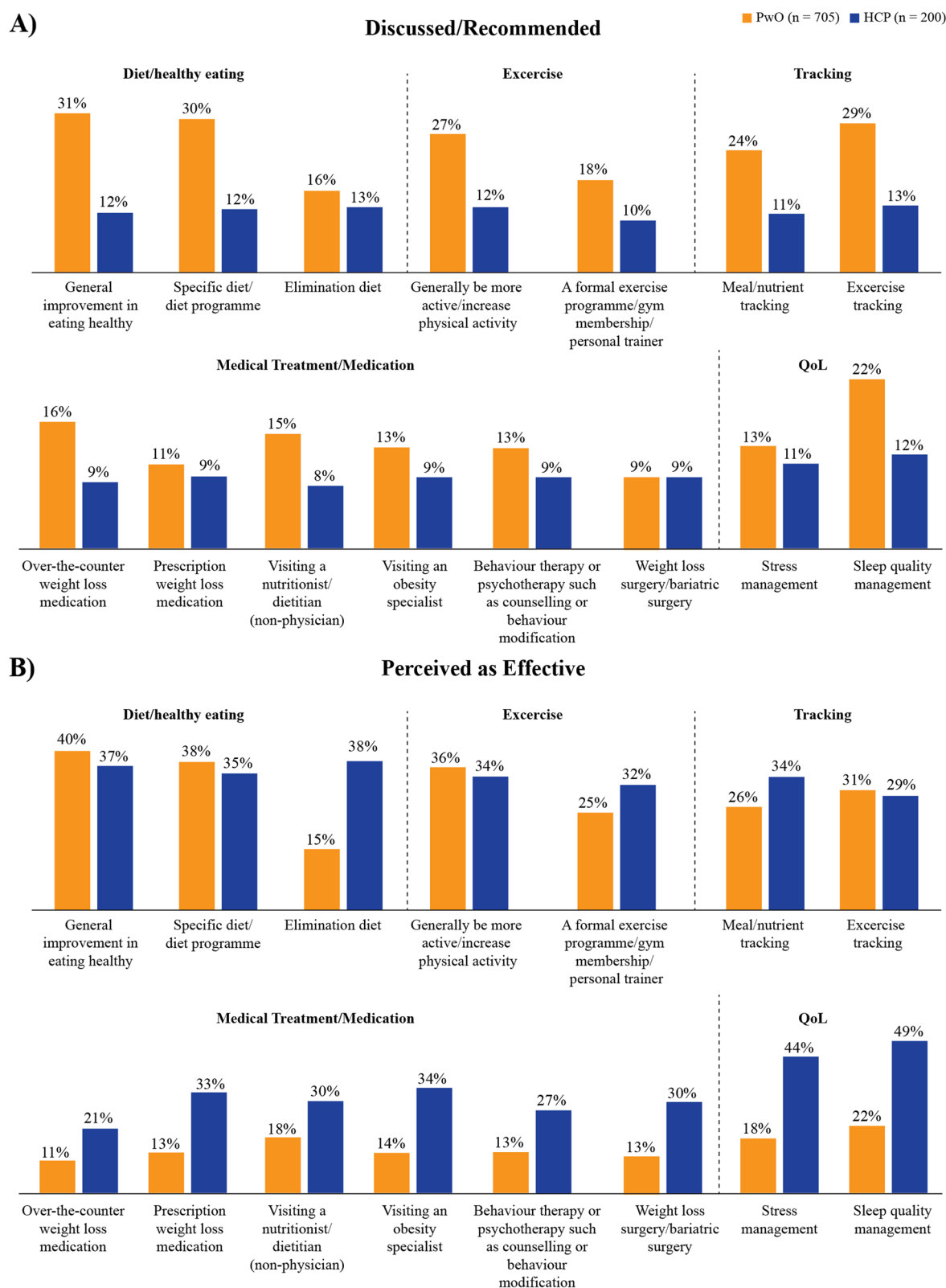
**Table 3** Reasons for not having weight discussions between PwO and HCPs

Reasons for not having weight discussions, %	PwO (n = 1001)	HCPs (n = 200)
I (patient) believe it is my responsibility to manage my (their) weight	35%	28%
I (patient) do not have the financial means to support a weight loss effort	31%	21%
Even if I (patient) were to lose weight, I (patient) would just regain it	28%	26%
I (patient) already know what I (patient) need to do to manage my (their) weight	27%	38%
I (patient) do not feel motivated to lose weight	25%	28%
I (patient) do not feel comfortable bringing it up	23%	22%
I (patient) do not believe I (they are) am able to lose weight	22%	29%
My healthcare provider does not have training to provide weight management services	21%	14%
There are more important health issues/concerns to discuss	20%	30%
My healthcare provider's/My office is not set up to treat patients with excess weight/obesity	17%	28%
I (patient) do not trust and/or do not have a close relationship with my (their) healthcare provider	17%	14%
I am (patient is) in good health and do not have weight-related health problems	16%	32%
I (patient) do not see my (their) weight as a significant medical issue	16%	19%
The appointment is not long enough/I am rushed	16%	36%
I (patient) do not think my (their) healthcare provider is interested in/concerned about my (their) weight	15%	21%
There is nothing I/my healthcare provider can do to help me manage my weight	15%	21%
I (patient) have had previous bad experience discussing weight with a healthcare provider	15%	26%
I (patient) am not interested in losing weight	10%	36%

Based upon the question to PwO, "Which of the following are/would be the top five reasons for which you might not discuss managing your weight with your healthcare provider?" and to HCPs, "What are the top 5 reasons for which you might not discuss obesity with a patient?" Respondents could select up to five answers in response to this question

HCPs Healthcare professionals, PwO People with obesity

**Fig. 7** Attitudes toward obesity and weight management. HCPs: Healthcare professionals, PwO: People with obesity



**Fig. 8** Weight management methods discussed/recommended and perceived as being effective by PwO and HCPs. **A** Weight management methods discussed with an HCP (reported by PwO) and recommended by HCPs. **B** Weight management methods perceived as effective by PwO and HCPs. HCPs: Healthcare professionals, PwO: People with obesity; QoL: Quality of life

The current study explored stigma and prejudice associated with obesity, addressing areas that not thoroughly examined in previous research. Weight stigma affected PwO's relationships, self-esteem, and willingness to seek care, contributing to mental health issues such as depression and eating disorders [29]. It also influenced HCPs' interactions, with stigma leading to fewer follow-ups and less proactive management. Therefore, inter-system collaboration within healthcare is crucial for effective mitigation of weight stigma [30]. These findings align with the results of the ACTION APAC and ACTION-IO studies [13, 14, 19–21].

The PwO's primarily seek weight loss for physical and mental well-being, with appearance, intermediate goals, fitness, and self-efficacy as key motivators [31]. Mental health support was emphasised by HCPs, with 61% highlighting its importance. Among PwO, 47% felt in control of their weight and 57% relapsed into previous eating habits. Achieving success requires continuous monitoring, personalised approaches, and comprehensive interventions addressing motivation and stigma [32, 33].

A notable discrepancy was observed between PwO and HCPs regarding the responsibility for weight loss. While 71% of PwO believed weight loss was solely their responsibility, only 44% of HCPs shared this view. This disparity is similar to ACTION APAC findings (63% vs. 41%) [14], but differs from the Japan and global ACTION-IO studies, where 30%–49% of HCPs considered weight loss solely the PwO's responsibility [13, 20]. This belief was one of the main reasons why PwO did not initiate weight management conversations with HCPs [13, 21], a trend also observed in the current study. Conversely, in Korea, Israel, and Saudi Arabia, a significantly lower number of HCPs (only 13%–24%) held this view [19, 21, 34], indicating regional variations in obesity perception and impact on PwO-HCP conversations.

The delay between the initial weight-related struggles of PwO and their first weight management conversation with an HCP is a possible obstacle to effective obesity care, as it often results in suboptimal weight management strategies [13, 14]. In other countries, PwO typically took 5–10 years before initiating weight loss discussions [19–21] whereas in the ACTION APAC study, the average delay was 2 years [14]. In Malaysia, PwO experienced an average delay of 3 years before engaging in such discussions with HCPs, which is notably longer than the overall ACTION APAC study average. While Malaysian PwO are willing to seek support from HCPs, barriers to weight loss discussions include misperceptions about obesity status, limited awareness of treatment options, costs, stigma, and inadequate insurance coverage [35–37]. Our study also

identified the high treatment costs and limited healthcare coverage as a significant barrier to weight loss efforts. Another concerning observation is that 40% of PwO did not view healthcare systems as weight management resources. A Malaysian study found that only 66% of HCPs considered healthcare systems valuable for PwO, potentially driving patients toward unreliable alternatives [18].

A significant majority (94%) of HCPs supported a multidisciplinary approach to treating obesity, compared to only 59% of PwO. This disparity indicates that while HCPs see the value of collaborative care involving various specialities, PwO may not share the same perspective or may have different experiences and expectations regarding this approach. Effective management requires a multifactorial approach, including lifestyle modifications, pharmacotherapy, and bariatric surgery as needed. Barriers to anti-obesity medications and bariatric surgery include concerns about side effects and lack of awareness. This is particularly important given the rising incidences of metabolic-associated diseases such as metabolic associated fatty liver disease (MAFLD), metabolic syndrome including diabetes, and hypertension among PwO in Malaysia. Recognising obesity as a 'treatable disease' is crucial for both PwO and HCPs [38, 39]. Both groups in this study also agreed that a collaborative approach involving PwO, their family members and friends, HCPs, and dietitians is essential for obesity management. Importantly, Malaysia defines obesity as BMI > 27.5 kg/m<sup>2</sup> [40], higher than APAC's  $\geq 25$  kg/m<sup>2</sup> [15] threshold, potentially leading to underdiagnosis and unawareness among Malaysians with obesity.

The Malaysian Clinical Practice Guideline (CPG) on obesity recommends a comprehensive individualised approach including dietary plans, exercise, medications, BMI monitoring, psychological support, bariatric surgery when indicated, and lifestyle-based prevention strategies [40]. It is crucial to further reinforce the CPG on obesity in Malaysia to enhance the effectiveness of obesity management strategies. Based on the findings of the ACTION-MY study, several policy implications should be considered. There is a critical need to prioritise obesity management as a public health imperative in Malaysia. Policies should focus on enhancing public awareness campaigns, providing sensitivity training for HCPs, and promoting the adoption of multidisciplinary care models. Additionally, expanding healthcare coverage for anti-obesity treatments and encouraging collaborative efforts among PwO, HCPs, family members, and other stakeholders are essential for achieving sustainable weight management outcomes and reducing the burden of obesity-related complications.

### Strengths and limitations of the study

This study, encompassing a cohort of PwO and HCPs (including PCPs and obesity specialists), is the first in Malaysia to concentrate on perspectives and attitudes toward obesity and its management. Additionally, the survey investigated stigma and prejudice associated with obesity, areas not previously explored in prior research.

However, this study may not accurately represent the opinions of all PwO and HCPs in Malaysia, particularly those in rural areas, as most respondents were from urban regions. Self-reported heights and weights of PwO might understate the actual BMI. The study's stratification groups did not include ethnicity, as it may not be clearly identifiable for all individuals, with some identifying with multiple ethnic groups.

Moreover, relying solely on BMI might underrepresent excess adiposity. Participants in the online survey may differ from those who did not engage, potentially introducing selection bias. To mitigate this, PwO data were adjusted to match representative demographic targets, including gender, age, education level, household income, and regional distribution for each country. This adjustment used data from sources such as the US Census Bureau, the International Data Base, the 2011 International Standard Classification of Education (ISCED), and other publicly accessible sources.

### Conclusions

Our study demonstrated that while both HCPs and PwO in Malaysia recognise obesity as a chronic disease with significant health impacts, there are substantial gaps in their understanding and management of this disease. These gaps may arise from misperceptions, lack of information about obesity, and insufficient communication between them. To enhance effective obesity management, a more collaborative approach is needed, focusing on reducing weight stigma, fostering empathetic communication strategies, and providing comprehensive long-term support that includes lifestyle modifications, medications and surgery if necessary. Future research should aim to evaluate and develop strategies to bridge these perception gaps, leading to more effective weight management initiatives.

### Abbreviations

ACTION	Awareness, Care, and Treatment in Obesity maNagement
APAC	Asia Pacific
BMI	Body mass index
CPG	Clinical practice guidelines
HCPs	Healthcare professionals
ISCED	International Standard Classification of Education
NHMS	National Health and Morbidity Survey
NPANM	National Plan of Action for Nutrition of Malaysia
NCD	Non-communicable disease
PCP	Primary care physician

PwO      People with obesity

### Supplementary Information

The online version contains supplementary material available at <https://doi.org/10.1186/s12889-025-22052-4>.

Supplementary Material 1. Survey questionnaire and responses from both people with obesity (PwO) and healthcare professionals (HCPs).

Supplementary Material 2: Supplementary Figure 1: A) Average delay in seeking treatment (number of years). B) Age when started struggling with weight. C) Age When First Discussed Weight with HCP. Supplementary Fig. 2: Perceived barriers to weight management among PwO. Supplementary Fig. 3: Follow-up appointment schedules among PwO: who discussed vs. have not discussed weight. Supplementary Fig. 4: Reasons for weight regain among PwO. Supplementary Fig. 5: Frequency of obesity diagnosis documentation in medical records by HCPs. Supplementary Fig. 6: Proportion of PwO informed of their diagnosis by HCPs. Supplementary Fig. 7: Proportion of PwO receiving follow-up appointments for weight discussions by HCPs. Supplementary Fig. 8: Attitudes toward prescription weight loss medications among PwO.

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### Authors' contributions

MDMEG and ZNH contributed to the design of the study. RAG contributed to drafting the manuscript. ZNH, RAG and MDMEG participated in the interpretation of the data and revision of the manuscript. ZNH, RAG and MDMEG reviewed and approved the final, submitted version.

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### Data availability

All data generated or analysed during this study are included in this published article.

### Declarations

#### Ethics approval and consent to participate

The WCG Institutional Review Board prospectively reviewed and approved the study. The study and data accumulation were in conformity with all country, federal, or state laws, informed consent was obtained from participants, and the study was in adherence to the tenet of the Declaration of Helsinki.

#### Consent for publication

Not applicable.

#### Competing interests

ZNH declares no conflict of interest. RAG declares no conflict of interest. MDMEG is an employee of Novo Nordisk Pharma (Malaysia).

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