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Perceptions of obesity among healthcare professionals in Malaysia: a subgroup analysis of the OPEN Models of Care survey

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Abstract

Background Obesity remains a major and growing public health challenge in Malaysia. This study examined obesity-related perceptions, attitudes, and care practices among Malaysian healthcare professionals (HCP) and decision-makers (HDM), within the multinational Obesity Policy Engagement Network (OPEN) Models of Care survey.

Methods This subgroup analysis involved 150 HCP and 53 HDM who responded to questions assessing recognition of obesity as a chronic disease, attitudes toward people with obesity (PwO), and views on system capacity and policy priorities. Responses were analyzed using descriptive statistics and reported as percentages.

Results Only 27% ($n=55$) of respondents recognized obesity as a chronic disease. Notably, 54% of HCP and 51% of HDM acknowledged holding biases against PwO. Although 65% of HCP and 60% of HDM agreed that PwO deserve equal respect, care, and treatment, over half of both groups believed obesity to be the patients' personal choice and responsibility. Only 56% of HCP and 45% of HDM considered existing obesity services to be adequate. Patient support groups were ranked least important in obesity policy development.

Conclusions The findings highlight persistent misconceptions, stigma, and fragmented perceptions among HCP and HDM in Malaysia. A coordinated, system-level approach that recognizes obesity as a chronic disease is essential to improving outcomes for PwO and shaping inclusive, evidence-based policies.

Keywords Attitude, Stigma, Perception, Bias, Obesity

Background

The global prevalence of overweight and obesity is projected to affect over 4 billion people by 2035, an estimated 54% rise from 2020 [1]. According to the National Health and Morbidity Surveys (NHMS), a similar trend is evident in Malaysia, with obesity rates rising fivefold over the past three decades, from 4.4% in 1996 to 21.8% in 2023 [2, 3]. In addition, the 2023 NHMS report revealed that more than half of Malaysian adults are either overweight or obese [3]. The findings are likely an underestimation, as there is increasing evidence advocating for a lower body mass index (BMI) cutoff to be used for Asian populations. This recommendation is due to the higher

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metabolic and cardiovascular risks observed among Asians with lower BMI, in comparison with Western populations [4–8].

Rapid urbanization, expanded food options and availability, and sedentary lifestyles have been identified as factors contributing to the rising prevalence of overweight and obesity in Malaysia [9]. There is also evidence associating the risk of overweight and obesity with sociodemographic characteristics such as ethnicity, marital status, and health literacy. Consistent with the 2023 NHMS report, individuals with underlying noncommunicable diseases such as hypertension and diabetes are more likely to be overweight [3, 4, 9]. Additionally, sociocultural values and norms, such as the unspoken expectation to accept food offered and avoid food wastage, are communal practices and are embedded dietary behaviors of Malaysians [10]. To effectively reduce the burden of overweight and obesity, public health nutritional interventions in Malaysia should adopt targeted, cost-effective, and equitable approaches by addressing these risk factors [9].

Obesity has far-reaching consequences, leading to poorer health outcomes for individuals,[11, 12] It also places a substantial and growing economic strain on healthcare systems and national economies [4]. There is increasing evidence of extensive associations between obesity and many metabolic, functional, and psychological complications. Metabolic complications include progression towards diabetes mellitus, hypertension, hypercholesterolemia, chronic kidney disease, fatty liver disease, and many more [13, 14]. Additionally, obesity is associated with several functional complications such as obstructive sleep apnea, [15, 16] increased risk of osteoarthritis, [17] and chronic back pain [18]. All of these significantly impair quality of life and daily activities. Individuals with obesity also often experience profound psychological implications, including depression, anxiety, eating disorders, and low self-esteem [19]. Additionally, one-third of all cancers of the breast, colon, endometrium, kidney, and esophagus are associated with overweight and lack of physical activity [20, 21].

Obesity has significant financial implications, for both individuals and society, which are often understated or ignored. The direct healthcare costs are contributed by the consequential chronic diseases, leading to more frequent medical visits, medications, and hospitalizations. The indirect costs include reduced productivity, increased absenteeism, and higher insurance premiums. Additionally, people with obesity (PwO) may be affected by lower earning potentials due to health complications. The total (direct and indirect) costs of obesity in Malaysia are the highest among its ASEAN neighbors. These costs are estimated to make up 10% to 19% of the overall national healthcare spending [4]. A loss of 6 to 11 productive years due to the disease further demonstrates the collective impact of obesity to the individual, society, and country [4].

The Malaysian clinical practice guidelines (CPG) on obesity, revised in 2023, highlighted the need for increased recognition of obesity as a complex disease. The local CPG also emphasized the importance of not solely attributing obesity to patients' lifestyles or dismissing it as the patients' own responsibility [22]. Additions to the revised CPG include an emphasis on the psychological aspects of the disease, as well as the available pharmacotherapeutic and surgical interventions appropriate for some patients. Prior local research on obesity includes the Awareness, Care, and Treatment in Obesity Management in Malaysia (ACTION Malaysia) study, a cross-sectional survey that analyzed the attitudes of healthcare professionals (HCP) and PwO towards obesity and its management [23]. This study, consistent with other international findings, [24] established the presence of weight bias among HCP. A substantial proportion of the respondents in the ACTION Malaysia study believed weight loss to be the sole responsibility of PwO, highlighting the poor recognition of obesity as a disease. The study, however, did not include healthcare decision-makers (HDM), whose perspectives are crucial for shaping effective health policies. Inclusion of HDM is important, because HDM play a central role in formulating strategies that enable primary preventive care, improve patient outcomes, and reduce healthcare costs. A better understanding of obesity trends would empower HDM to design sustainable public health initiatives, integrate multidisciplinary approaches, and address social determinants of health. These strategies are essential for achieving long-term improvements in population health and system efficiency.

The Models of Care survey is a cross-sectional survey conducted by the global Obesity Policy Engagement Network (OPEN) across eight countries globally [25]. The findings revealed that many HCP do not consider obesity a disease [25]. The majority of the participating countries exhibited a consistent response pattern. However, responses from Malaysia in some main areas appeared to be distinctly different. These discrepancies suggest plausible contextual, cultural, or systemic factors unique to the local setting, which may have influenced the observed responses. In view of this, we analyzed responses from the Malaysian cohort of the OPEN Models of Care survey to better understand local perspectives.

Methods

The study design of the OPEN survey, conducted between 3 June 2023 and 18 July 2023, has been published previously [25]. The online survey involved HCP and HDM from eight countries (Australia, Brazil, Canada, Germany,

Italy, Malaysia, Spain, Turkey) and utilized single-stage sampling of individuals. The sample size of 1,200 HCP was chosen to achieve an expected confidence interval of 2.82 at a 95% confidence level, while the sample size of 400 HDM was selected based on an expected confidence interval of 4.81 at the same confidence level. The online survey was localized in the eight participating countries' official and national languages: English, German, Italian, Malay, Portuguese, Spanish, and Turkish. HCP were included if they were a general practitioner, primary care physician, cardiologist, endocrinologist, or practice nurse with more than 10% of their patient population consisting of PwO. HDM were included if they confirmed working in the healthcare field, reported an integral role in the decision process for implementation of obesity care, and held a leadership position within their institution or policymaking group.

HCP and HDM were assessed on their categorization of obesity, misconceptions and biases against PwO, and awareness of local guidelines and barriers in existing obesity services. Additional questions were posed to HCP on their obesity training, their proactive engagement with patients, and their patients' understanding of the disease. HDM were further surveyed on factors influencing obesity-related policies and priority areas for funding.

Survey topics and questions were reviewed by international obesity experts. To ensure relevance and validity of topics and questions, further input was collected from the experts and incorporated into final questionnaires. A research consultancy organization (Censuswide Limited, United Kingdom) reviewed and refined the questionnaires to ensure clarity and to produce comprehensive and reliable results.

This study analyzes data from the Malaysian cohort of the OPEN Models of Care survey. Responses were summarized using basic statistical methods and reported as percentages. Full methodological details are available from the Global OPEN Survey [25].

Results

The Malaysian subgroup analysis included 203 respondents, of which 150 were HCP and 53 were HDM. The HCP included endocrinologists ($n = 37$), cardiologists ($n = 38$), general practitioners ($n = 37$), and practice nurses ($n = 38$). The HDM comprised commissioners ($n = 19$), heads of departments ($n = 17$), heads of hospitals or practice ($n = 10$), members of hospital or practice leadership team ($n = 6$), and a national health committee member ($n = 1$).

Attitude and perception

Only a third of the respondents categorized obesity as a chronic disease, with a similar proportion categorizing it as a circumstantial condition (26%) or a lifestyle condition (25%); the proportions were similar between HCP and HDM (Fig. 1).

The majority of HCP (87%) received less than 20 hours of training on obesity in their medical education, with a mean of 13 h. Considerable prejudice was observed towards PwO, with only 65% of HCP and 60% of HDM agreeing that PwO deserve the same respect, care, and treatment as those with other chronic diseases (Fig. 2). Over half of the respondents admitted to holding biases against PwO (HCP, 54%; HDM, 51%) (Fig. 2), while an even greater number of respondents noted biases in their colleagues' view of PwO (HCP, 63%; HDM, 58%) (Fig. 2).

Misconceptions on obesity management were equally prevalent amongst HCP and HDM. More than half of the respondents (HCP, 55%; HDM, 57%) agreed that obesity is a result of a personal and conscious decision to perform behaviors that increase the risk of obesity and that patients are responsible for managing obesity on their own (HCP, 56%; HDM, 57%) (Fig. 3).

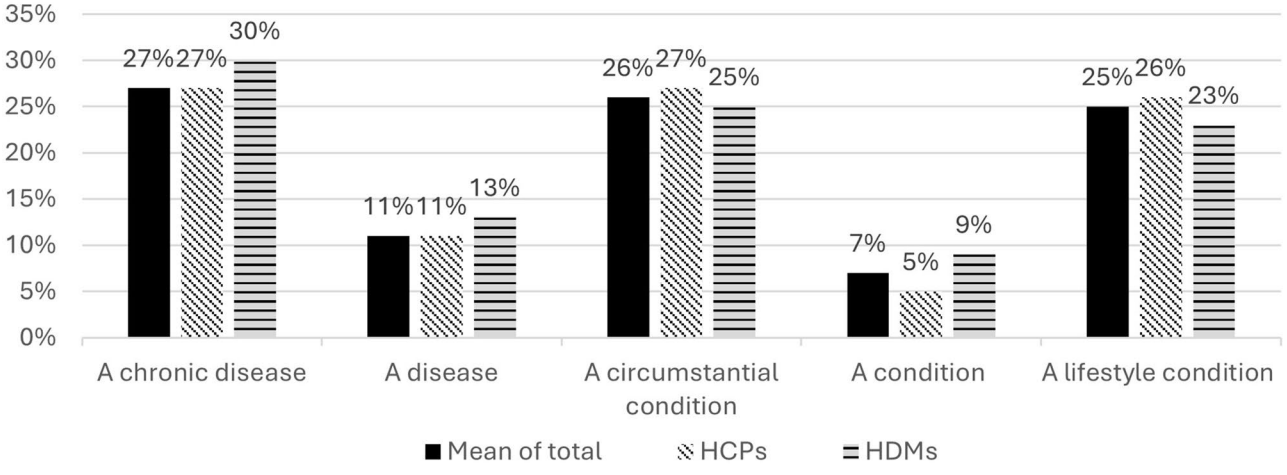

Fig. 1 Categorization of obesity by HCP and HDM in Malaysia. HCP, healthcare professionals; HDM, healthcare decision-makers

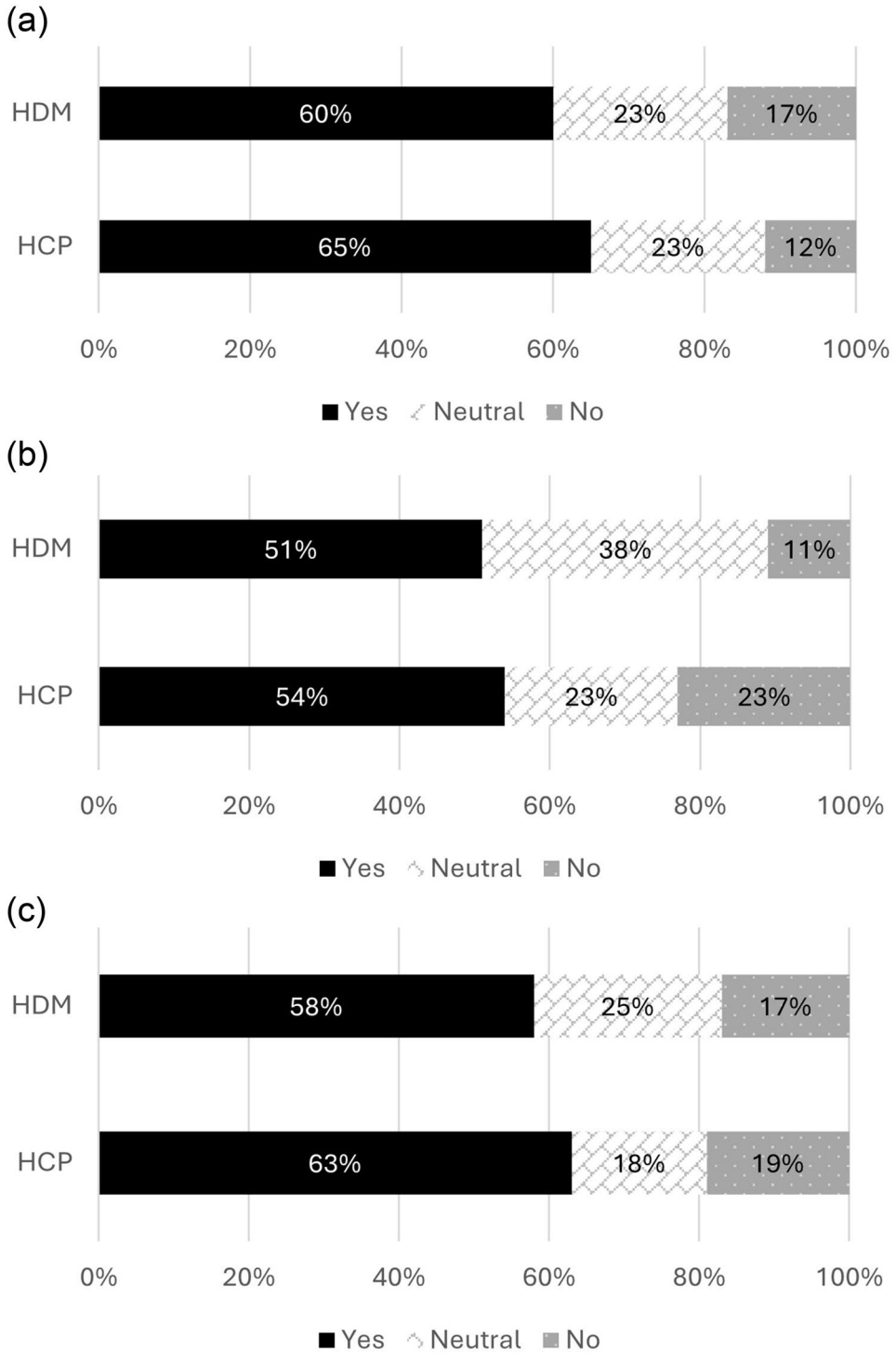

Fig. 2 Perceptions of respect and bias towards PwO. Levels of agreement with the following statements: (**A**) PwO deserve the same respect, care, and treatment as others; (**B**) I hold bias against PwO; (**C**) My colleagues hold bias against PwO. HCP, healthcare professionals; HDM, healthcare decision-makers; PwO, people with obesity

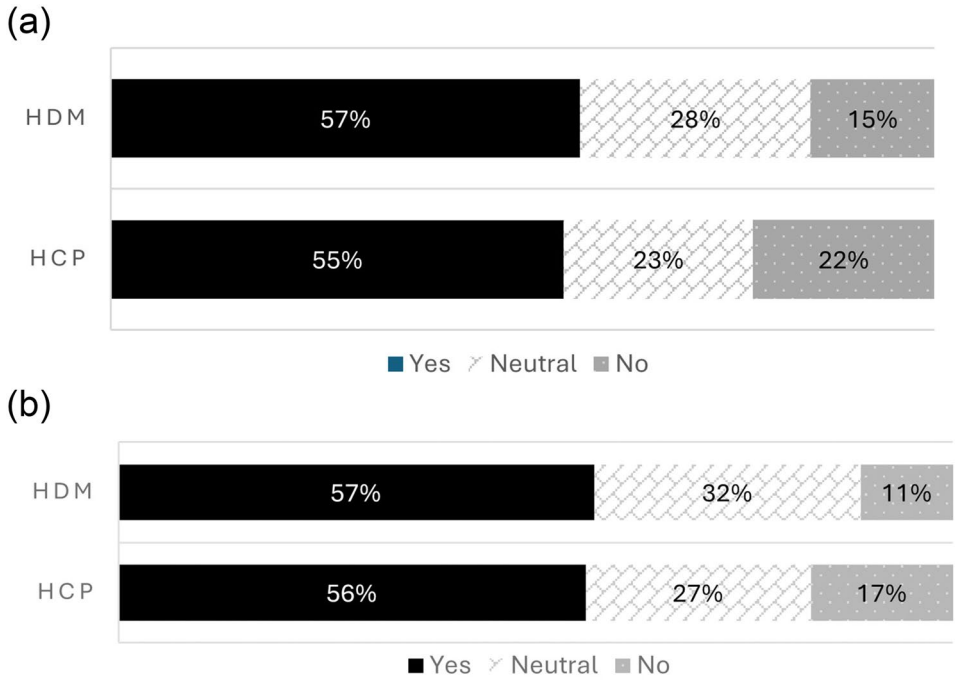

Fig. 3 Misconceptions towards PwO. Levels of agreement with the following statements: (**A**) Obesity is a conscious choice; (**B**) Managing obesity is one's own responsibility. HCP, healthcare professionals; HDM, healthcare decision-makers; PwO, people with obesity

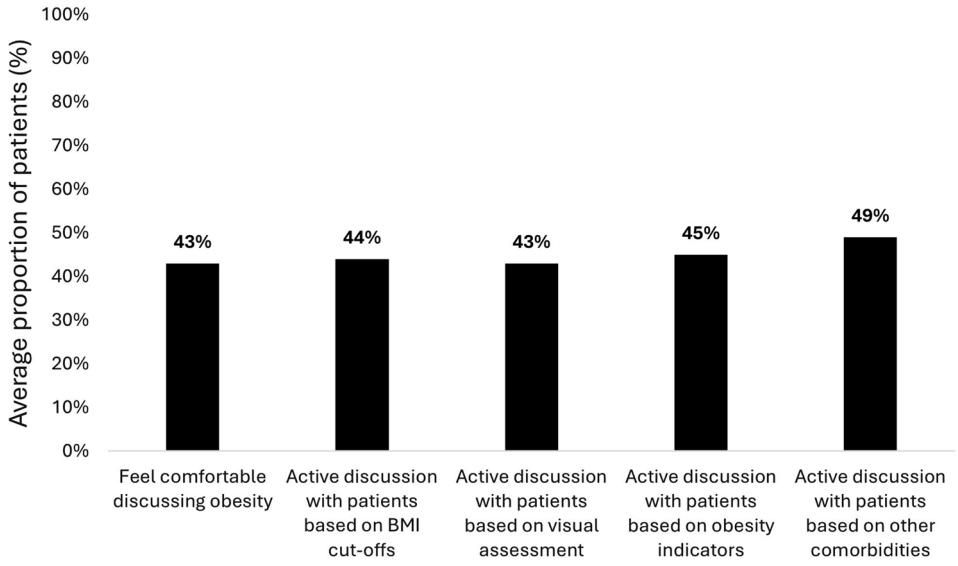

Fig. 4 HCP comfort level and willingness to actively discuss obesity. BMI, body mass index; HCP, healthcare professionals

Obesity management

HCP were only willing to discuss obesity in 45% of patients who showed signs of obesity (Fig. 4). They were more willing to discuss obesity with patients who had (or were at risk of having) comorbidities (49%) compared with those assessed on visual assessment alone (43%) (Fig. 4). HCP believed that 43% of their patients understood obesity to be a disease and estimated that only 45% asked for obesity treatments directly.

Questions on the management of obesity revealed misalignment between HCP and HDM on current care capacities. More than half (56%) of HCP agreed that existing resources are sufficient for treating PwO, while only 45% of HDM felt the same. Additionally, only 46% of HCP agreed that the current capacities of allied health staff are adequate, while 59% of HDM expressed the same view.

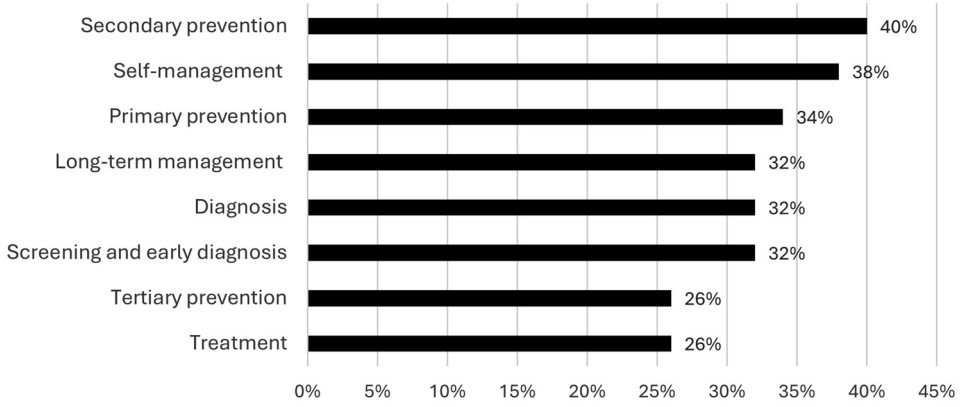

Fig. 5 Prioritization of funding allocations by HDM for obesity-related health measures. HDM, healthcare decision-makers

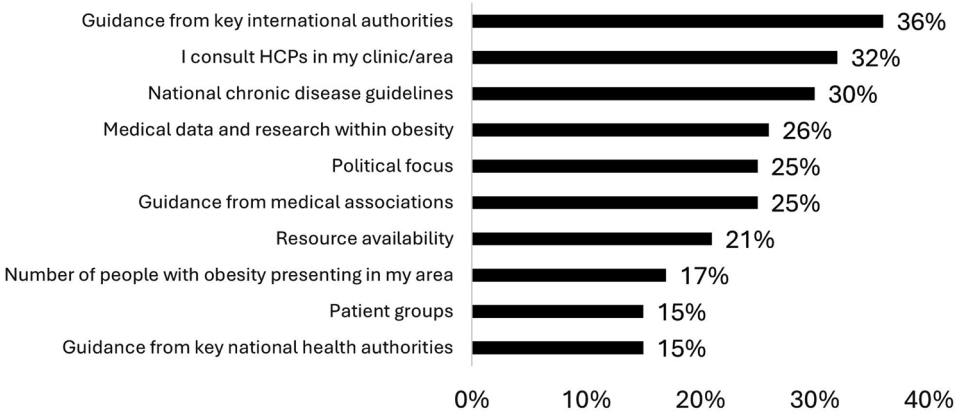

Fig. 6 Factors that influence the formation of obesity policies among HDM. HCP, healthcare professionals; HDM, healthcare decision-makers

Obesity-related healthcare policies

Both HCP and HDM affirmed that obesity care is a priority on the healthcare agenda (70% and 57%, respectively) and that obesity care needed more focus, funding, and attention (65% and 51%, respectively). HDM considered secondary prevention (i.e., counseling overweight or obese patient) to be the top priority for funding allocations (40%), followed by self-management (38%), and primary prevention programs (i.e., advising normal-weight people on weight management) (34%) (Fig. 5). Tertiary prevention and treatments appeared to be the least prioritized initiatives for funding allocations, with only 26% of HDM considering them to be key areas for funding (Fig. 5).

Despite high awareness about the local CPG for obesity among HCP (96%), only 53% are familiar with and have consulted the guidelines (Dixon JB & Ghani RA, unpublished data). Similarly, among HDM, only 23% reviewed the CPG regularly, while 32% rarely consulted it. Approximately one-third of both HCP and HDM found the current CPG to be inadequate (HCP, 35%; HDM, 34%).

International clinical guidelines were the main influencing factor of local obesity plans (36%), followed by local expert views (32%) and national chronic disease guidelines (30%) (Fig. 6). Guidance from national health authorities and patient groups appear to be of minimal influence, comprising 15% each (Fig. 6).

Discussion

The subgroup analysis of the Malaysian cohort of the Global OPEN Models of Care survey demonstrates concerning gaps in the understanding of obesity as a complex, chronic, and multifactorial disease. The OPEN survey is unique with the inclusion of HDM, which highlighted the gaps in current national policies regarding obesity management.

The relatively low proportion of Malaysian HCP and HDM who recognized obesity as a chronic disease may reflect a knowledge gap. Malaysian respondents reported receiving an average of 13 h of obesity-related training, which falls at the lower end of the international average (13–16 h) [25]. However, this alone may not fully account for the finding, as it contrasted with previous research, such as the ACTION Malaysia study, [23] in which 88% of HCP affirmed obesity as a chronic disease, and another local study reporting an even higher figure of 94%. [26]

We hypothesize that the difference may be attributed to variations in survey populations, contextual factors, modes of administration, and the depth or framing of survey questions. These factors should be considered when interpreting discrepancies with previous studies in the local context.

Within the global survey, Malaysia reported the highest proportion of respondents (17%) who disagreed with the statement that PwO deserve the same respect, care, and treatment as individuals with other chronic diseases [27]. This finding contrasted sharply with countries such as Turkey (2%) and Brazil (8%), where disagreement was minimal [27]. In Brazil, this more-positive attitude may be influenced by strong governmental efforts to combat obesity, including the allocation of grants and deployment of healthcare teams to high-prevalence areas, such as underserved rural communities and schools [28]. In Turkey, proactive policies targeting environmental and obesogenic factors – particularly among schoolchildren [29] – alongside a robust national media campaign [30] may have contributed to greater societal recognition of obesity as a chronic disease. These international comparisons provide important insights for Malaysia. These findings underscore a need for more strategic, system-wide initiatives that address stigma, promote public awareness, and integrate obesity care into broader health policy frameworks to better manage the country's growing obesity burden.

Another important concern emerging from the survey is the high level of bias held by Malaysian HCP and HDM against PwO. Notably, Malaysia was the only country in the survey to report such a high prevalence of bias, setting it apart from the other participating nations (Dixon JB & Ghani RA, unpublished data). A significant proportion of respondents also believed that obesity results from conscious lifestyle choices (55%) and is primarily the individual's responsibility (57%). These perceptions underscore the entrenched stigma faced by PwO in Malaysia. Compared to global figures, these beliefs were among the highest recorded in the survey, second only to Australia [27]. While culturally distinct, both countries share sociocultural influences that may contribute to heightened stigma, including the centrality of food in social identity [31] and the pervasive role of media in shaping body image ideals [32]. These findings emphasize the urgent need for targeted education and public awareness initiatives to address obesity-related stigma within healthcare and society at large.

Although awareness of the local CPG was high among HCP (96%) and HDM (97%), active utilization remained low, particularly among HDM (23%) (Dixon JB & Ghani RA, unpublished data). The low willingness to proactively discuss the disease with susceptible patients could be due to multiple factors, including patient disinterest, time constraints, and limited knowledge on obesity management [23]. The responses from HDM on sufficiency of current healthcare capacities reveal varying perceptions of the true workload in obesity care, particularly in the context of surgical or psychological interventions. Michtalik et al. reported that physician workload is often underestimated, which could lead to suboptimal patient care [33]. Additionally, Lau et al. highlighted the lack of time with patients to be an important factor in contributing to treatment inertia [34]. Similarly, a local study among public hospital physicians reported that excessive workload has negative short- and long-term implications on job performance [35]. Thus, this survey provides useful insights that could perhaps be considered by key policymakers and incorporated into national strategic planning for the management of obesity.

With regard to obesity-related management practices, this survey demonstrated that HDM in the country rank patient support groups as the least important factor in the formation of obesity plans and guidance. This is concerning, because patient advocacy groups have been identified as one of the key factors in ensuring the success of national obesity policies [36]. A stronger integration of patient advocacy groups into policy discussions would facilitate the development of more robust and effective initiatives. Similarly, the prioritization of secondary prevention over treatment and primary prevention is worrying, as this could mean missed opportunities in the early part of the progression of the disease [37]. Primary prevention strategies, such as the sugar-sweetened beverage tax introduced in Malaysia in 2019, have shown positive outcomes, with an estimated 9.25% reduction in SSB consumption [38]. Alternative approaches to regulating sugar-sweetened beverages include banning their advertisements and implementing a compulsory, ranked labeling system, as seen in neighboring Singapore [39].

Tertiary prevention is an equally important area to be prioritized, as it is imperative to mitigate the complications of obesity with appropriate intervention strategies. A systematic review and network meta-analysis showed significant weight loss with various obesity management medications, with an odds ratio between 3 and 10 for achieving at least a 5% weight loss compared to lifestyle modifications alone [40]. Additionally, the glucagon-like peptide-1 receptor agonist liraglutide was associated with a delay in the onset of type 2 diabetes mellitus [41]. Other tertiary prevention strategies such as bariatric surgery have provided similar evidence. In Malaysia, data from 106 obese patients who underwent bariatric surgery revealed significant improvements in glycated hemoglobin levels, blood pressure, and lipid profiles [42]. A prospective cohort study in Iran that involved individuals with severe obesity who underwent bariatric surgery exhibited strong relative risk reductions in

the development of diabetes (94%), hypertension (93%), and dyslipidemia (55%) compared with the non-surgical group [43]. These studies highlight the effectiveness of tertiary prevention strategies, including pharmacotherapy and bariatric surgery, in managing obesity and reducing the incidence of associated health conditions across different populations. Collectively, they further underscore the urgent need for HDM in Malaysia to shift their perspectives from the current misconceptions.

To the best of our knowledge, this is the first study in Malaysia to include the perceptions of HDM on the management of obesity. With input from over 200 respondents who possess substantial experience in obesity care, the survey offers valuable insights into existing gaps, unmet needs, and potential strategies to enhance obesity management in the country.

However, there were some limitations. The potential for response bias and misinterpretation of questions cannot be excluded, particularly given the complexity and length of the survey, which included multiple sub questions. These factors may have contributed to respondent fatigue and variability in responses. Future research, particularly using qualitative methods, may be useful to deepen understanding and further validate these findings.

Conclusions

This subgroup analysis from the global OPEN survey revealed a significant gap in the recognition of obesity as a disease among HCP and HDM in Malaysia. It also highlighted the persistent stigma and biases against PwO, reluctance to initiate discussion on obesity, and lack of emphasis on primary prevention and patient advocacy. Thus, there is an urgent need to address these challenges with a strategic, system-wide approach, beginning with a nationwide campaign on acknowledging obesity as a complex chronic disease, followed by renewed focus and coordinated efforts on intervention strategies from all relevant parties across the healthcare system. This should be complemented by collaborative, multidisciplinary clinician- and patient-education initiatives, inclusion of patient advocacy in national plans, and targeted interventions to reduce weight-related stigma.

Abbreviations

ACTION	Awareness, Care, and Treatment in Obesity Management
BMI	Body mass index
CPG	Clinical practice guidelines
HCP	Healthcare professionals
HDM	Healthcare decision-makers
MYOS	Malaysian Obesity Society
NHMS	National Health and Morbidity Surveys
OPEN	Obesity Policy Engagement Network
PwO	People with obesity

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Author contributions

RAG, FM, BNMY, and ZNH conceptualized and led the Malaysian analysis of the OPEN Models of Care survey. RAG and FM interpreted the data and provided expert insights on endocrinology and psychological aspects of obesity care. BNMY and ZNH contributed substantially to policy and nutrition-related perspectives. All authors read and approved the final manuscript.

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Data availability

No datasets were generated or analysed during the current study.

Declarations

Ethics approval and consent to participate

All responses were treated anonymously, in strict confidentiality and in line with the 2018 General Data Protection Regulation (GDPR). No personally identifiable information was linked to the results. All respondents were anonymous from the point of entering the survey.

Consent for publication

Not applicable.

Competing interests

The authors declare no competing interests.

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