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RESEARCH ARTICLE

Public attitudes towards responsibilities and actions to curb obesity in South Africa: Second South African Human Development Pulse Survey

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Background: The obesity epidemic is a major global public health concern. Despite high food insecurity, South Africa is one of the most obesity-burdened nations in Africa. Additionally, non-communicable diseases (NCDs) are increasing in this region, with obesity presenting as a key modifiable risk factor contributing to this burden.
Methodology: This extensive, nationally representative study assessed the prevalence of overweight and obesity confirmed by healthcare professionals among South African adults (aged 18 years and older). Various socioeconomic and demographic correlates were explored while investigating public attitudes, support for action, and nutritional knowledge related to obesity.
Results: In the total sample, 3.2% reported being told by a healthcare professional that they were overweight or obese, with females at a higher rate (3.5%). Regarding responsibility for addressing overweight/obesity, more respondents with low dietary recommendation knowledge (DRK) felt that none of the suggestions made were responsible (by +12.5%) compared with those with higher knowledge. Overweight/obese individuals cited 'gyms and leisure centres', 'healthcare professionals', and all categories listed as responsible. Both males and females favoured 'gyms and leisure centres' (19.1% vs.19.7%) and 'healthcare professionals' (17.7% vs 17.1%), with urban respondents showing slightly more support for most suggestions than rural respondents (by $\geq$ 0.4%). When asked about actions to reduce overweight/obesity, those with low knowledge expressed neutral views to all actions ($\geq$ 38.9%) but opposed 'banning adverts for high-fat foods' (41.4%), unlike those with moderate or high DRK.
Conclusion: Lower public support was found for implementing or increasing taxes to reduce obesity-related burdens. There is a need for evidence-based interventions that include nutrition education targeting vulnerable groups, such as those who are overweight or obese.

Keywords: overweight, obesity, support for action, nationally representative survey, South Africa, adults

Introduction

The obesity epidemic poses a great public health concern worldwide.[1] Despite the higher levels of food insecurity, South Africa (SA) remains one of the top nations for overweight and obesity in Africa.[2] In 2016, according to a national survey, 33% of men and 68% of women in SA were classified as overweight/obese.[3] Equally important within the South African context is the growing trend of non-communicable diseases (NCDs),[4] where obesity is not only a commonly described NCD, but a major modifiable risk factor known to significantly contribute to the disease burden within this setting.[5]

Although the causes of this adiposity cascade are multifactorial and may include environmental, biological, epigenetic, or even cultural factors;[6] put simply, the consumption of obesogenic or energy-dense foods coupled with insufficient physical activity and a sedentary lifestyle are the major causes known to increase the prevalence of this burden.[7] Furthermore, nutritional knowledge and attitudes are also important determinants of the overweight/obesity crisis.[8] Healthcare systems in SA are faced with a massive economic burden.[9] This falls on not only individuals and their families, but on governments in the form of healthcare costs and productivity losses resulting from obesity-related conditions and the subsequent complications.[10–13] For this reason, media attention and undirected programmes have been heightened.[14] However, in light of the financial constraints within healthcare systems, regulatory measures and public health efforts need to be upscaled and preventative strategies need to be supported.

Interventions and actions have the greatest impact in reducing obesity by addressing the obesogenic nature of the environment. Dietary knowledge coupled with understanding the importance of healthy food habits is necessary to change and improve eating behaviours.[15] A better understanding of region- and demographic-specific factors may, in part, add value in developing initiatives to reduce disease incidence and lighten the burden thereof. This large-scale, nationally representative study, therefore, assessed the prevalence of overweight/obesity confirmed by a healthcare professional

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(HCP) among South African adults, explored various socioeconomic and demographic correlates, and investigated public attitudes, support for action and nutrition knowledge on obesity. Research within this scope is essential to understand the context-specific risk factors and social determinants of obesity in order to implement the necessary interventions effectively, especially in resource-constrained provinces, where multiple health issues coincide.

Methodology

Study design

This cross-sectional study made use of data from the South African Human Development Pulse Survey by the Department of Science and Innovation (DSI)/National Research Foundation (NRF) Centre of Excellence in Human Development, which surveyed a nationally representative sample of adults (> 18 years old). Data collection took place during May/June 2022 and was carried out by a team of experienced fieldworkers across the nine provinces of SA. Face-to-face interviews with the use of computer-assisted personal interviewing technology[16,17] were conducted with 3 459 participants across the country as outlined in Figure 1.

Data collection and respondent inclusion

Data collection was conducted using a six-phase approach with a stratified probability sampling method. In Phase 1, community sizes (including metropolitan areas, cities, large and small towns, large villages, and rural areas) and gender distribution were identified to ensure adequate representation across provinces. Phase 2 involved the random selection of sampling units, defined as small areas, with six interviews (the minimum recommended number statistically) conducted per small area. Phase 3 employed mapping technology (GIS) to identify a starting location. Once the starting point was determined, Phase 4 involved the interviewing of the first household. Subsequently, five houses were skipped, and an interview was conducted at the sixth household. In SA, a household is defined as either a single person living alone or a group of people — usually, but not always, family members — who live together for at least four nights a week and manage food and other expenses as a single unit. In Phase 5, interviewers requested a list of all households in the dwelling, and a built-in randomised programme selected specific households for interviews based on the total number of households in the dwelling. Finally, in Phase 6, an automated Kish grid was used to select a respondent from the identified household, ensuring that only individuals 18 years and older were chosen for the interview.

Survey

In brief, the survey included questions pertaining to respondent and household demographics. Province and community size (urban [including metropolitan, city and/or towns] and rural [including villages]) were recorded and information was collected on household assets, age, sex, employment status, marital status, education attained, and health-related questions. A household asset score was computed in alignment with the Demographic and Health Surveys household questionnaire and used as an indicator of socioeconomic status (SES) in this study. This included a tally of all major operational household amenities (e.g. refrigerator, washing machine, television, computer etc.). In this cross-sectional study, household asset score tertiles were computed and used as an indicator of economic differentiation.[18–20]

To assess the overall prevalence of overweight/obesity in SA, respondents were asked if they had previously been told by an HCP that they were overweight/obese. Respondents were also asked a series of questions regarding their views, including who they believe should be responsible for reducing the number of overweight/obese individuals in SA, and whether

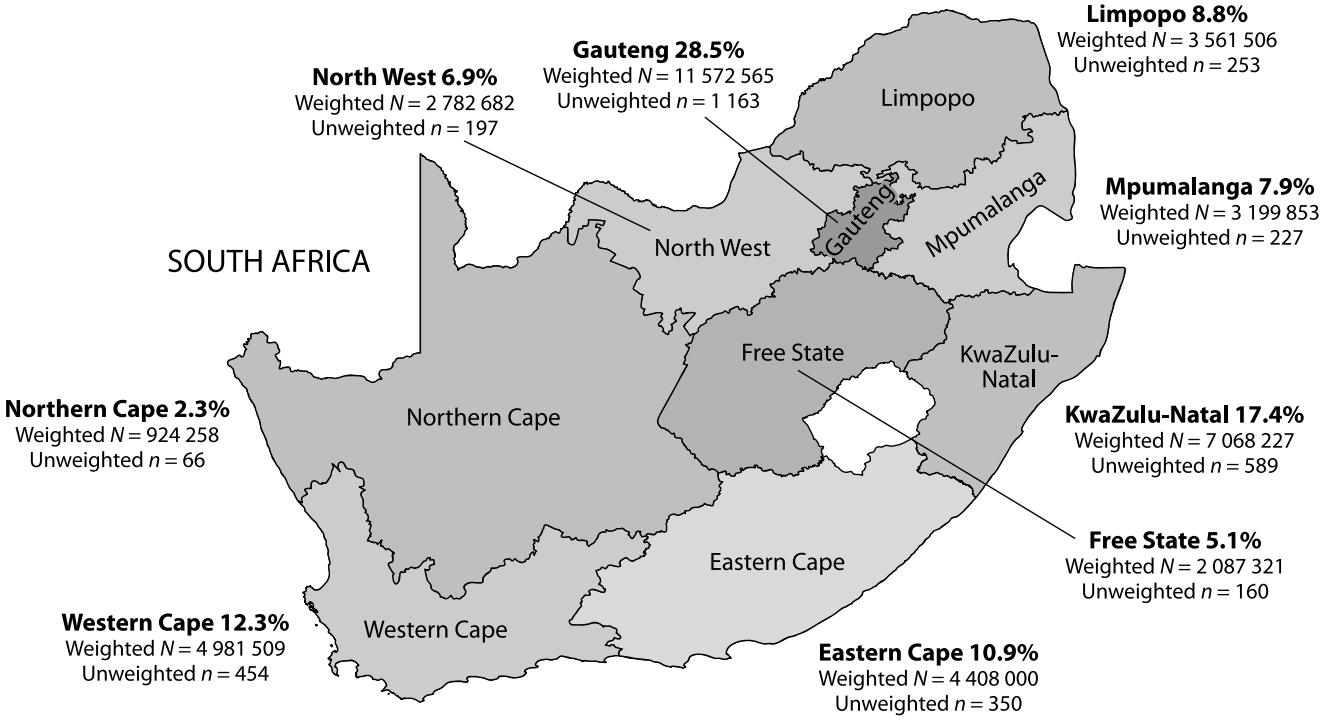

Figure 1: Population demographics outlining the nine provinces of South Africa. Figure shows unweighted (*n*) and weighted (*N*) data to project South Africa's population (18 years+).

they are in favour, have neutral views, or are against various proposed measures to address the issue as outlined in the British Social Attitudes Survey.[21]

Participants were also asked nine questions from the dietary recommendation section of the general nutrition knowledge questionnaire[22] and a dietary recommendation knowledge (DRK) score was calculated by giving each correct response a score of 1, conceding a maximum total score of 18 (questions 1 and 3 contained multiple sub-questions). A higher DRK score suggested better nutrition knowledge. The DRK score was further categorised into 3 groups based on those respondents who scored less than 6 (< 30%) (group 1: low nutrition knowledge); those who scored in the range 6–12 (≥ 30–< 70%) (group 2: moderate nutrition knowledge); and those who scored 13 or more (≥ 70%) (group 3: high nutrition knowledge), respectively.

Statistical analyses

For all statistical analyses, IBM® SPSS® version 29 (IBM Corp, Armonk, NY, USA) and GraphPad Prism version 5.03 for Microsoft® Windows (GraphPad Software, San Diego, CA, USA) were used to analyse and plot the data. Additionally, QGIS (Penn Libraries, Philadelphia, PA) was used to plot and scale Figure 1, showing the geographical location of the South African provinces.

All statistics were weighted to represent the most recent census of the South African population (18 years or older). The weighted matrix factored in age, sex, population group, home language, and provincial distribution. Proportions across sociodemographics (age, sex, marital status, education level, employment, household assets, and urbanicity) and provinces were determined with crosstabs with significant differences indicated by chi-square tests and presented as percentages.

Results

General descriptives

The general descriptives of the total sample of survey respondents have been described elsewhere.[23] Briefly, the study sample ($n = 3\ 459$) presented with an equal sex distribution, (female: 50.7%; male: 49.3%). Respondents were predominantly aged 25–34 years (29.4%) with the largest proportion of respondents reporting a marital status of single (57.8%), employed (51.6%), having an education level of graduated high school or equivalent (54.2%), and/or with a SES score in the middle tertile (40.6%). Furthermore, respondents predominantly resided in Gauteng province (28.5%) as shown in Figure 1.

Overweight/obesity prevalence and sociodemographics

Of the total sample, 3.2% reported that they had been told by an HCP that they were overweight/obese with a larger proportion being females (3.5%) (Table 1). Additionally, Mpumalanga province reported the highest number of respondents reporting that they had been told that they were overweight/obese by an HCP (5.5%) while, KwaZulu-Natal province reported the least (1.0%) (Supplementary Table S1). Additionally, Table 1 shows a large proportion of respondents confirmed as overweight/obese were in the age range 55–64 years (6.3%), employed (3.6%), uneducated/partial primary schooling (7.0%), with a marital status of being married (3.4%). A greater proportion of those respondents who reported being overweight/obese had a low DRK score (3.9%). Lastly, a similar distribution of respondents reported being told that they are overweight/obese in urban (3.1%) and rural (3.2%) areas.

Respondents' views regarding the overweight/obesity crisis

When asked who should be responsible for reducing the number of people in the country who are overweight/obese, a greater proportion of those who presented with low DRK score (Figure 2A and Supplementary Table S2) reported that none of the suggestions made (by +12.5%) should be responsible for reducing the number of overweight/obese people when compared with their dietary knowledge counterparts. Rather, those who were confirmed as overweight/obese by an HCP indicated 'gyms and leisure centre', 'healthcare professionals', and all categories listed (Figure 2B). Across the sexes (Supplementary Table S2), collectively both males and females indicated 'gyms and leisure centres' (males: 19.1%; females: 19.7%), 'healthcare professionals' (males:17.7%; females: 17.1%), and the 'individual themselves' (males: 15.7%; females: 16.7%). Furthermore, when comparing urban and rural settings (Figure 2(C)), a higher percentage of urban respondents cited most of the suggestions (by ≥ 0.4%) when compared with the rural group.

When asked if respondents were in favour, expressed neutral views, or were opposed to suggestions provided that might help reduce the number of people in the country who are overweight/obese (Figure 3 and Supplementary Table S3), interestingly, those in the low DRK group indicated neutral views on all actions (all ≥ 38.9%) but were against 'banning adverts for high fat foods' (41.4%) when compared with those who presented with a moderate or high DRK score. A similar trend emerged across the moderate and high DRK groups. Most respondents in these upper dietary knowledge groups opposed raising taxes on fatty foods and fizzy drinks, banning adverts, and standardising the size of unhealthy snacks or drinks (all ≥ 43.6%). However, they were in favour of implementing more free weight management courses for individuals looking to lose weight and expanding government-operated weight loss programmes (≥ 46.1%). Consistent with the low DRK group, the majority of respondents in the moderate and high DRK groups were also opposed to raising taxes on fuel and parking to encourage more walking and cycling.

Discussion

This nationally representative study gauged nutrition knowledge determined by a DRK score among adult respondents in SA and assessed the prevalence of those who had been told that they were overweight or obese by an HCP. This study also explored respondents' attitudes and support for action on the ever-increasing obesity epidemic. Despite more than half of South African women (68%), and more than a quarter of men (33%) being overweight or obese as nationally reported in 2016,[3] overall, only 3.2% of this national sample of adult men and women had ever been told by an HCP that they were overweight/obese. This potentially highlights a significant gap in health communication in SA. Recent reports have shown that adults who had been informed of their weight status were more likely to change their dietary patterns and engage in physical activity compared with those who remained uninformed.[24–27] Although treatment guidelines for HCPs in SA are available,[28] in practice, our results indicate that overweight/obesity is less often reported to patients and only a very small percentage of individuals are informed of their excess weight. Failure of HCPs to notify individuals regarding their weight status[29] is a

Table 1: General descriptives of the South African survey respondents ($n = 3459$).

Factor	Total population Weighted (%)	Overweight/obese		
		No Weighted (%)	Yes Weighted (%)	*p*-value
Age categories				
18–24 years	20.2	95.8	2.9	< 0.001
25–34 years	28.7	95.9	2.6	
35–44 years	22.1	95.1	3.0	
45–54 years	15.0	95.2	3.1	
55–64 years	10.5	91.5	6.3	
65 + years	3.5	96.5	1.5	
Sex				
Male	47.8	95.5	2.8	< 0.001
Female	52.2	94.8	3.5	
Employment				
Unemployed	37.2	95.7	2.9	< 0.001
Employed	48.9	94.4	3.6	
Student	8.1	97.4	1.5	
Retired	5.8	94.0	3.1	
Education				
Uneducated/Partial primary	2.9	91.8	7.0	< 0.001
Primary school	2.2	93.7	3.1	
Partial secondary	22.3	95.7	2.0	
NSC/Short course	52.8	94.8	3.6	
Tertiary	19.8	96.0	2.6	
Marital status				
Single	58.2	95.1	3.2	< 0.001
Married/Cohabiting	34.9	95.1	3.4	
Widowed/ Divorced/ Separated	6.9	96.0	1.5	
Socioeconomic status				
Lower tertile	37.8	95.1	3.2	< 0.001
Middle tertile	38.7	95.2	3.2	
Upper tertile	23.4	95.1	3.1	
Urbanicity				
Urban	69.3	95.1	3.1	< 0.001
Rural	30.7	95.3	3.2	
DRK score				
Low (< 30%)	19.0	92.2	3.9	< 0.001
Moderate (30–70%)	71.0	95.6	3.2	
High (> 70%)	10.0	97.5	1.7	
Lifestyle behavioural risk				
Alcohol (yes)	34.2	92.4	4.7	< 0.001
Tobacco (yes)	65.8	95.0	3.1	

Abbreviations: *n*: number of participants; %: percentage; NSC: national senior certificate; DRK: dietary recommendation knowledge.

missed opportunity to tackle this burden. Many individuals therefore may remain unaware of the health-related risks associated with obesity,[30–32] and this lack of awareness could possibly hinder efforts to motivate lifestyle changes that could ultimately improve health outcomes.

Nutrition knowledge plays a crucial role in shaping attitudes towards one's lifestyle, as it equips individuals with the necessary information needed to make informed decisions regarding diet and overall health. In our national sample, the majority of respondents presented with a moderate DRK score (71.1%). In support of our results, the South African National Health and Nutrition Examination Survey — a survey focused on general nutrition knowledge — also reported a moderate level of nutrition knowledge among South Africans.[33] The general understanding of the nutritional value of food not only impacts dietary choices but has long-term health benefits as one is more likely to develop positive attitudes towards healthier lifestyle practices.[33] This informed perspective empowers individuals to prioritise nutritious food, leading to better dietary habits and increased motivation to engage in physical activity.[34] Moreover, with a clearer understanding of how nutrition affects health outcomes, individuals can resist misleading marketing, fostering a more critical approach to food choices. Enhancing nutrition knowledge not only promotes healthier choices but also cultivates a proactive mindset towards overall well-being, reducing the risk of related diseases (i.e. obesity), thus improving one's overall quality of life.[35]

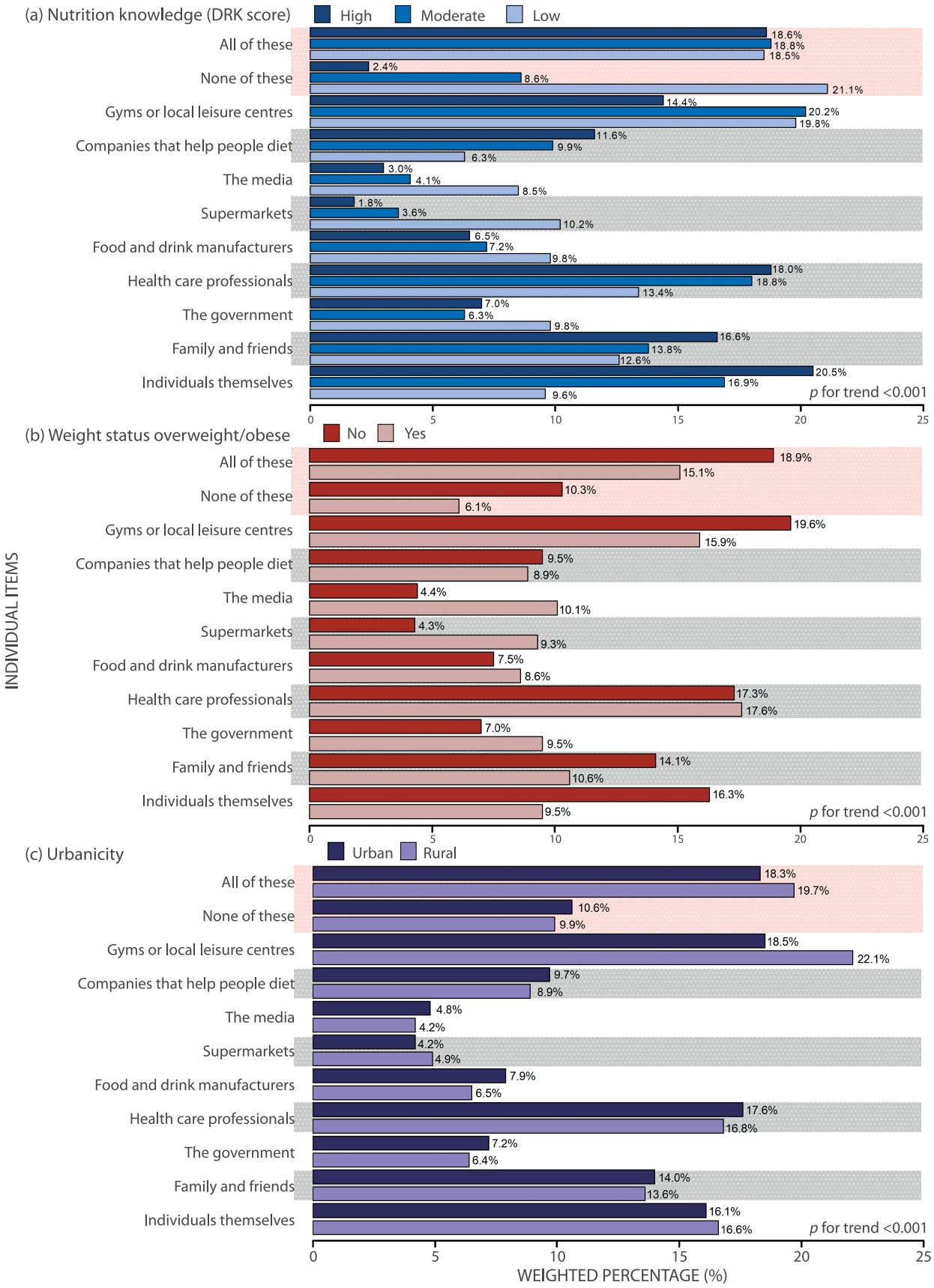

Figure 2: Comparison of participants' thoughts on who is responsible for reducing the number of people in South Africa living with overweight/obesity. (A) weight status, (B) urbanicity, and (C) dietary recommendation knowledge categories.

However, we recognise that knowledge alone often is not sufficient to change lifestyle behaviours to address excess weight.

Therefore, there is a great need for a comprehensive and systematic approach to reducing the burden of overweight/obesity in SA. Integrating various strategies (i.e. campaigns aimed at creating public awareness, community engagement, corporate responsibility, and educational programmes) could create a robust framework for addressing the complex challenges of lifestyle-related disease. By running these initiatives in parallel, stakeholders could foster a comprehensive approach to improving nutrition knowledge and promoting healthier eating habits, thus ultimately reducing the overweight/obesity burden. Evidence from this national survey suggests that respondents who scored in the highest tertile of the DRK score, thus suggestive of higher nutrition knowledge, indicated that those responsible for aiding in a reduction in overweight/obesity in the country were 'gyms and leisure centres', 'healthcare professionals', and the 'individual themselves'. Our results therefore suggest reducing overweight/obesity in SA was seen largely as both an individual (i.e. the individual themselves) and a collective (i.e. gyms and leisure centres and HCPs) responsibility. These views were seen consistently across the sexes, among those who reside in urban areas, and those who had been informed by their HCP that they were overweight/obese. The fact that many South Africans view gyms and leisure centres, HCPs, and individual effort as key components in addressing obesity in SA shows a holistic approach where combining physical activity, professional guidance, and personal commitment could potentially offer a comprehensive strategy to tackle obesity. This multifaceted approach therefore addresses both the physical and psychological aspects of weight management and has the potential to significantly improve the overall health[36] of many South Africans.

When respondents were asked their opinion on certain interventions aimed at reducing the overweight/obesity level in the country, the majority of the respondents were opposed to the implementation of raising tax and a reduction in the standard size of unhealthy consumables. Additionally, those who were identified as overweight/obese by their HCP were more likely to oppose all suggested actions compared with the rest of the population. Despite < 10% of the sample across various stratifying groups identifying the government as responsible for reducing levels of overweight/obesity in SA (see Figure 2), respondents opposed most interventions that are implemented by the government (i.e. heightened taxation and public restrictions). These results suggest that respondents across SA do not believe in the efficacy of the actions of the South African government in improving the weight status of the country. These tax levers are shown to be effective globally and data in SA do indicate changes in sugar-sweetened beverage consumption.[37] The disconnect makes a call for greater public awareness and trust in these intervention levers. Another interesting finding was that most respondents in the upper dietary knowledge group were in favour of implementing more free weight management courses for individuals looking to lose weight and expanding government-operated weight loss programmes. Therefore, providing accessible and affordable weight management educational programmes could potentially aid in access to knowledge and provide the necessary tools needed for healthier lifestyle choices. Free or low-cost programmes can ensure that individuals from all socioeconomic backgrounds have equal opportunities to participate, promoting greater health equity.

The fact that those in the low DRK group (i.e. low nutrition knowledge) exhibited a neutral view to all calls of action in reducing overweight/obesity in SA and further implied that no actions will help reduce the weight status of the nation suggests the importance of the promotion of dietary knowledge, and improving nutritional education. This will be a step in the right direction for the public to get behind public health campaigns.

This study included various strengths, limitations, and recommendations. This study was strengthened by the use of national survey data, including respondents from all nine

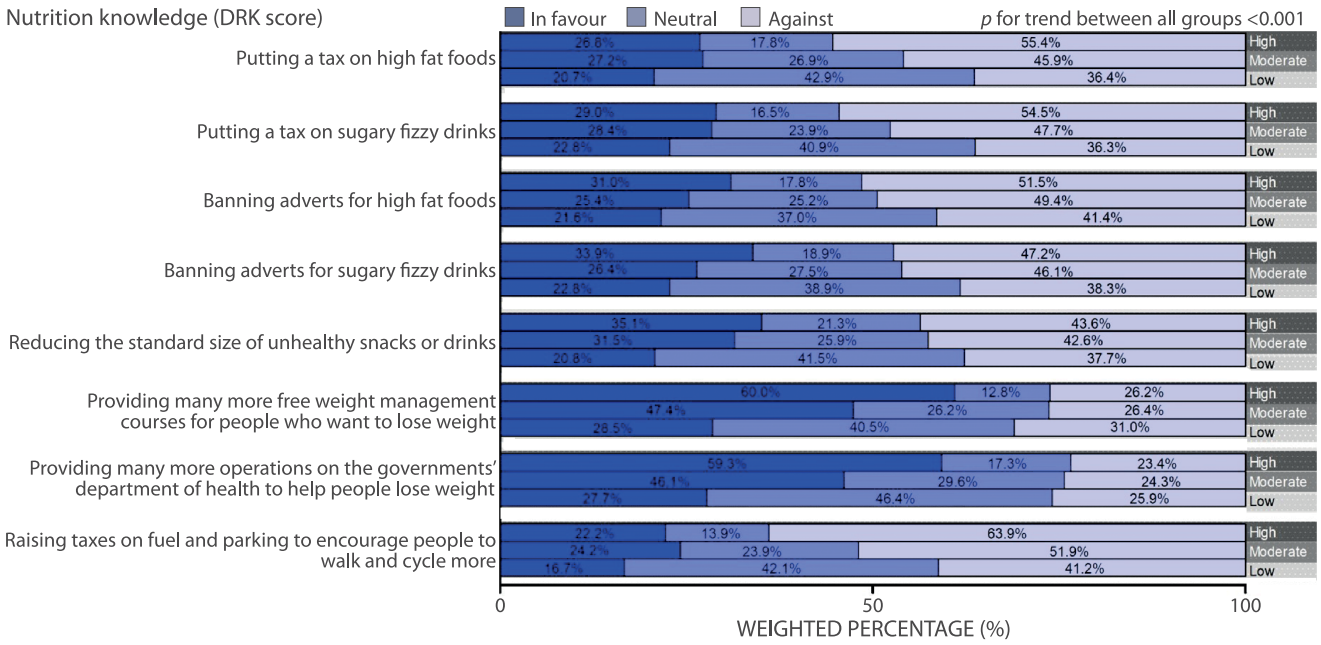

Figure 3: Participants' support for action in reducing the number of people in South Africa who are overweight/obese in the total population stratified by (A) DRK score categories.

provinces of SA, weighted to be representative of SAs adult population. However, findings are limited by the cross-sectional design, hence we were unable to investigate mechanisms and causal relationships. While the use of face-to-face interviews was advantageous to the study, the study is limited by its use of self-reported questionnaires where respondents are required to report their personal experiences, thus posing bias.[38] Respondents are more likely to report experiences that are socially acceptable or preferred, thus we acknowledge this as a limitation of the study. We further acknowledge that the absence of actual measured height and weight constitutes an additional study limitation. Future studies that objectively measure adiposity are recommended in order to reflect a true representation of the overweight/obesity status in SA and a comparison between objectively measured and self-reported weight status would be advantageous.

To conclude, we report lower public support for implementing or increasing tax to reduce the overweight/obesity burden. Evidence-based interventions that incorporate nutrition education that targets vulnerable groups (i.e. the overweight/obese) are needed. In the long run, a well-informed population is better equipped to make healthier lifestyle choices, and more engaged in public health initiatives to tackle the burden of excess adiposity-related disease in SA.

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Statement of ethics – The study was conducted in line with the ethical principles of the Declaration of Helsinki and approval was obtained from the Human Research Ethics Committee (Non-Medical) of the University of the Witwatersrand, South Africa (H21/06/36). Written informed consent was obtained from each respondent.

Authorship contributions – All authors were involved in the conception and planning of the study and interpretation of the results. SAN was responsible for oversight of data collection. AC carried out the data analyses and generated tables. AC interpreted the data, did the literature search, and undertook the writing of the paper. All authors interpreted the data and made a significant contribution to the interpretation of the results. All authors were responsible for revising the manuscript and approving the submitted version.

Data availability statement – All data generated or analysed during this study are included in this article. Further enquiries can be directed to the corresponding author.

Supplementary material – Supplemental data for this article can be accessed online at https://doi.org/10.1080/16070658.2025.2498872.

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