

A Cross-Sectional Study on the Knowledge and Attitude of the General Population in Saudi Arabia Regarding Weight Management Medications (WMMs)

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ABSTRACT

The escalating obesity epidemic in Saudi Arabia necessitates effective management strategies, including the potential use of Weight Management Medications (WMMs). However, the general population's understanding and perceptions of these pharmacological interventions remain largely unexplored within the Saudi context. This study aims to assess the knowledge and attitudes towards WMMs among the Saudi populace, exploring the influence of demographic and experiential factors on these perceptions. Employing a cross-sectional study design, this research surveyed a representative sample of the Saudi population. Data were collected through structured online questionnaires, focusing on participants' awareness, knowledge, and attitudes towards WMMs, along with demographic information. Preliminary findings indicate a moderate level of awareness about WMMs among participants, with varied knowledge levels and generally cautious attitudes towards their use. Demographic factors such as age, gender, and educational attainment appeared to significantly influence participants' knowledge and perceptions of WMMs. The study highlights a critical gap in the public understanding

and acceptance of WMMs in Saudi Arabia, underscoring the need for targeted educational and public health initiatives to address misconceptions and enhance the population's knowledge about these medications. The findings suggest that tailored communication strategies, considering the demographic and cultural context, could improve the acceptance and appropriate use of WMMs in obesity management within the country.



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1. INTRODUCTION

Obesity represents a burgeoning public health challenge globally and notably in Saudi Arabia. Amid various intervention strategies, weight management medications (WMMs) have emerged as potential adjunctive tools for achieving and maintaining optimal weight. However, the general population's knowledge and attitudes towards these pharmacological interventions remain insufficiently characterized within the Saudi context. This study delineates a cross-sectional approach aimed at elucidating these dimensions among the Saudi Arabian populace.

2. Research Objectives and Questions

Objectives: This investigation is anchored in the following objectives:

- To evaluate the general population's knowledge in Saudi Arabia about WMMs.
- To interrogate the attitudes and perceptions held by Saudi individuals regarding the deployment of WMMs in weight management.
- To delineate the demographic and experiential determinants that sculpt knowledge and attitudes towards WMMs, encompassing age, gender, educational attainment, and prior engagement with weight management modalities.

Questions:

- What level of awareness and understanding of WMMs pervades across Saudi Arabia's demographic landscape?
- What are the prevailing beliefs and acceptance levels of WMMs, and how are their effectiveness and safety perceived?
- Which demographic and experiential factors most saliently forecast knowledge and attitudinal orientations towards WMMs?

3. Literature Review

The prevalence of obesity in Saudi Arabia has been escalating, posing a significant public health challenge. This rise is largely attributed to dietary shifts towards high-calorie, processed foods, reduced physical activity, and the rapid urbanization that has transformed lifestyle choices [1], [2].

A study by [1] further emphasizes the impact of urbanization on lifestyle, indicating a strong correlation between urban living and increased obesity rates due to sedentary habits and dietary changes [2].

Moreover, the cultural and social factors unique to Saudi Arabia, such as the prevalence of large family gatherings and social events centered around abundant food offerings, contribute to overeating and weight gain [4]. These gatherings, coupled with a preference for dining out and the consumption of fast food,

exacerbate the obesity issue [5].

The healthcare system faces significant challenges due to obesity-related comorbidities, including diabetes, cardiovascular diseases, and certain cancers, which are on the rise [6]. This situation underscores the urgent need for effective obesity management strategies, including the potential role of WMMs.

WMMs, which work through various mechanisms such as appetite suppression, fat absorption inhibition, and metabolic rate enhancement, offer a promising adjunct to lifestyle interventions for weight management [7]. However, the acceptance and understanding of these medications among the Saudi population are not well-documented, highlighting a gap in the literature.

Recent studies in other regions have shown mixed public perceptions regarding WMMs, with concerns about side effects and long-term efficacy influencing the acceptance [8]. In the Saudi context, the cultural emphasis on traditional and natural remedies may also affect the acceptance of pharmacological interventions for weight management [9].

Given the complex interplay of factors contributing to obesity in Saudi Arabia, it is crucial to explore public knowledge and attitudes towards WMMs. This exploration is essential for tailoring healthcare initiatives and public health policies to address the obesity epidemic effectively.

4. Methodology

4.1 Study Design

The research employed a quantitative, cross-sectional study design, focusing on the collection and analysis of numerical data from a representative sample of the Saudi Arabian population. The primary objective was to statistically assess the knowledge and attitudes towards weight management medications (WMMs).

4.2 Sampling

Participants were selected using a stratified random sampling method, ensuring representation across various regions of Saudi Arabia. Stratification criteria included age, gender, and socioeconomic status, facilitating a sample that mirrored the diversity of the population. Sample size calculations were performed to achieve statistical significance and power.

4.3 Data Collection

Data collection was conducted through a structured online questionnaire distributed via Google Forms. The questionnaire comprised closed-ended questions designed to quantitatively assess participants' knowledge of WMMs, their attitudes towards their use, and demographic information.

4.4 Data Analysis

The collected data underwent analysis using statistical software such as SPSS or R. Descriptive statistics summarized the dataset, while inferential statistical methods, including chi-square tests, t-tests, and ANOVA, explored the relationships between demographic variables and knowledge/attitudes towards WMMs. Regression analysis was utilized to pinpoint predictors of knowledge and attitudes.

4.5 Survey Instrument

The questionnaire was structured to support quantitative analysis, featuring:

- Multiple-choice and select-all-that-apply questions for demographic information.

- Likert scale ratings (e.g., 1-5) to assess knowledge about WMMs.
- Agree-disagree statements on a Likert scale to measure attitudes towards WMMs. Efforts were made to design questions that minimized bias and maximized clarity.

4.6 Pilot Testing

A pilot test with a small segment of the target population preceded the main data collection phase, validating the questionnaire's effectiveness. This preliminary step facilitated the refinement of questions for enhanced clarity and comprehension.

4.7 Statistical Validity and Reliability

To ensure the questionnaire's validity and reliability, established scales were employed where possible. Content validity was ascertained through reviews by field experts, while reliability analysis, including Cronbach's alpha evaluations, was conducted on the pilot study data.

These adjustments not only improve the readability of your methodology section but also emphasize the thoroughness and scientific rigor of your research approach.

5. Result

Our study population predominantly consisted of females (78.38%) compared to males (21.66%). The age distribution highlighted a significant representation of younger participants, with those aged 18-24 years constituting 49% of the sample, followed by the 35-44 age group at 17.68%. Regarding educational attainment, a substantial majority were either students or had graduated from college or university.

Figures 1-3 illustrate the distributions of gender, age, and educational levels, respectively, providing a visual representation of the demographic characteristics of our study participants.

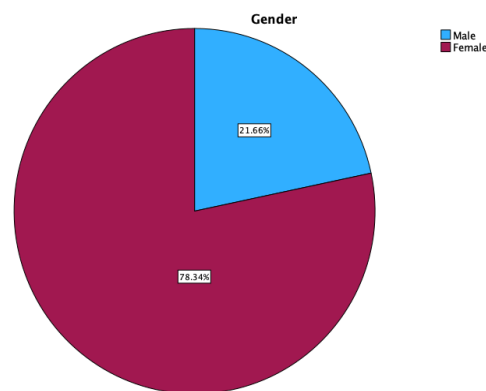


Figure 1 Gender Distribution

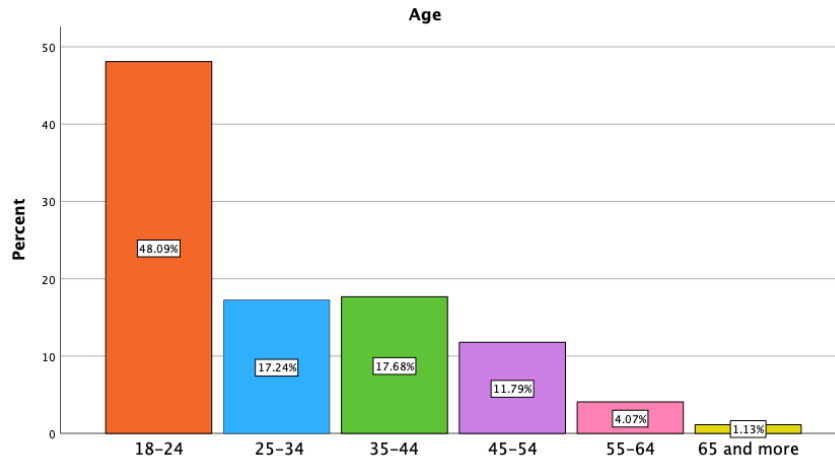


Figure 2 Age Distribution

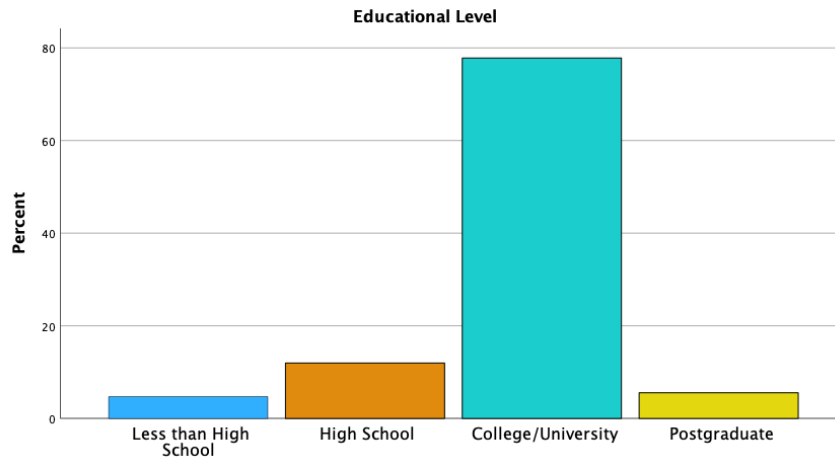


Figure 3 Educational Level Distribution

When inquired about awareness of WMMs, 65.2% of participants acknowledged having heard of them. The awareness level exhibited a mean of 1.35 with a standard deviation (SD) of 0.485.

Table 1: Awareness and Knowledge of Weight Management Medications (WMMs)

Question	Response	Frequency	Percent (%)	Mean	SD
Have you ever heard of WMMs?	Yes	752	65.2	1.35	.485
	No	400	34.7		
Total		1154	100		

As illustrated in Table (2) below regarding the level of knowledge. Our result indicated that most of the respondents reported that they have low knowledge of WMMs; only 7.9% selected option four and 9.1% option five with 2.35 and SD 0.485, and the researchers asked to determine the knowledge on a scale from one to five when five were very knowledgeable.

Table 2: Self-Rated Knowledge about WMMs

Knowledge Level (1=Very Unknowledgeable, 5=Very Knowledgeable)	Frequency	Percent (%)	Mean	SD
1	410	35.5	2.35	0.485
2	232	20.1		
3	317	27.4		
4	90	7.8		
5	105	9.1		
Total	1154	100		

Our result determined that around half of the study sought information about WMMs from the Internet by 52% with a mean of 2.91 and SD 1.281.

Table 3: Sources of Information about WMMs

Source	Frequency	Percent (%)	Mean	SD
Healthcare professionals	199	17.2	2.91	1.281
Television	44	3.8		
Internet	599	51.9		
Friends or Family	286	24.8		
Magazines/Newspapers	26	2.3		
Total	1154	99.9		

The survey results indicate a diverse range of beliefs among participants regarding the effectiveness of Weight Management Medications (WMMs) in aiding weight management. A significant portion of respondents, 37.6%, disagreed with the statement that WMMs can be effective in helping individuals manage their weight, while 31.9% remained neutral. Those in agreement constituted a smaller fraction, with 6.5% agreeing and 4% strongly agreeing with the effectiveness of WMMs. Notably, 20% of the participants strongly disagreed with the effectiveness of these medications. The overall mean score of 2.37, coupled with a standard deviation of 1.029, suggests a tendency towards skepticism or uncertainty about the efficacy of WMMs among the surveyed population.

Table 4: Beliefs and Personal Openness to WMMs

Question	Response Options	Frequency	Percent (%)	Mean	SD
Do you believe that WMMs can be effective in helping individuals manage their weight?	1 - Strongly Disagree	231	20	2.37	1.029
	2 - Disagree	434	37.6		
	3 - Neutral	368	31.9		
	4 - Agree	75	6.5		
	5 - Strongly Agree	46	4		

Are you personally open to considering WMMs as a weight management option if recommended by a healthcare professional?	Yes	699	60.5	1.63	0.843
	No	179	15.5		
	Unsure	276	23.9		

The data from Table 5 reveals that a significant majority of the respondents, 78.5%, have attempted weight management through various means, reflecting a high level of engagement with weight control practices among the surveyed population. A smaller segment, 21.2%, reported not having taken any steps towards weight management, and a negligible 0.2% indicated other unspecified methods. The mean score of 1.22, with a standard deviation of 0.427, suggests a strong inclination within the sample towards actively trying to manage weight. The near-total response rate (99.9%) minimizes bias and enhances the reliability of these findings, underscoring a prevalent concern or interest in weight management among the participants.

Table 5: Experience with Weight Management

Question	Response	Frequency	Percent (%)	Mean	SD
Attempted weight management through any means	Yes	907	78.5	1.22	0.427
	No	245	21.2		
	Other	2	0.2		
Total		1154	100		

Chi-square tests highlighted significant associations between demographic factors and awareness or beliefs regarding WMMs. The chi-square tests reveal significant differences in awareness of WMMs between genders, suggesting a need for gender-specific information dissemination strategies. Additionally, there's a strong relationship between education level and beliefs about the effectiveness of WMMs, indicating the importance of educational tailoring. These findings underscore the influence of demographic variables on health communication strategies and highlight the potential for more personalized interventions to improve awareness and perceptions of weight management solutions.

Table 6: Chi-Square Test Summary for Associations Between Demographic Factors and Awareness or Beliefs Regarding WMMs

Test	Chi-Square Statistic	P-Value
Gender vs Heard of WMMs	2308.9	< 0.001
Education Level vs Belief in Effectiveness	1626.14	< 0.001

Note: The Chi-Square tests indicate significant associations between demographic factors and participants' awareness or beliefs regarding Weight Management Medications (WMMs).

The regression analysis highlights the significant influence of gender and awareness of WMMs on the knowledge rating about these medications. The positive coefficient for Gender (Female) suggests that females, on average, have a higher knowledge rating about WMMs compared to males. The substantial coefficient for 'Heard of WMMs' indicates that individuals who are aware of WMMs have significantly higher knowledge ratings, underscoring the importance of awareness in knowledge acquisition. While Education Level and Age Group are included as predictors, their coefficients are not statistically significant, suggesting

that within this model, they do not have a discernible impact on knowledge rating about WMMs.

Table 7: Regression Analysis Summary for Predictors of Knowledge Rating about WMMs

Variable	Coefficient	P-Value
Constant	1.3966	< 0.001
Gender (Female)	0.2223	0.011
Education Level	0.008	0.829
Age Group	0.0198	0.364
Heard of WMMs	0.9008	< 0.001

Note: The regression analysis identifies significant predictors of knowledge rating about Weight Management Medications (WMMs), indicating the impact of demographic factors and awareness on knowledge levels.

6. Discussion

This study aimed to explore the knowledge and attitudes towards Weight Management Medications (WMMs) among the general population in Saudi Arabia. Our findings reveal a significant engagement in weight management efforts, aligning with global trends where individuals increasingly seek solutions for obesity management. The high level of engagement observed in our study parallels findings from [10], who reported a growing awareness and concern about obesity in Saudi Arabia, highlighting a societal shift towards recognizing and addressing this health issue.

The predominant reliance on the Internet for information about WMMs in our study underscores the critical role of digital platforms in health communication. This is consistent with the observations of [11], who found that the Internet is a key source of health information, particularly among younger populations. However, this raises concerns about the quality and reliability of the information accessed, echoing the findings of [12], who cautioned about the potential misinformation on health-related matters online.

Contrary to the optimism surrounding the efficacy of WMMs in clinical settings, our study detected a notable skepticism among participants. This skepticism mirrors the findings of [13], who reported ambivalence towards pharmacological interventions for weight loss, attributing it to concerns about side effects and the belief in traditional weight management methods. This ambivalence suggests a need for healthcare professionals to engage in more transparent and informative discussions with patients about the benefits and limitations of WMMs, as supported by the work of [14], who emphasized the importance of patient-physician communication in the management of chronic conditions.

Interestingly, our findings indicated a higher willingness to consider WMMs if recommended by healthcare professionals, highlighting the trust in professional medical advice. This is in line with the study by [15], which emphasized the influential role of healthcare providers in patient decision-making regarding treatment options.

The high prevalence of attempts at weight management among respondents aligns with the global increase in health consciousness and the pursuit of weight loss strategies. However, this also reflects the challenges faced by individuals in achieving sustainable weight management, as discussed by [16], who highlighted the complexity of obesity and the multifaceted approaches required for effective management.

Our study's insights into the knowledge and attitudes toward WMMs contribute to the growing body of literature on obesity management and public health perceptions. By understanding these perspectives,

healthcare professionals and policymakers can tailor interventions and communication strategies better to address the needs and concerns of the population, thereby enhancing the effectiveness of obesity management programs in Saudi Arabia and similar contexts.

7. Conclusion

In conclusion, this cross-sectional study provides valuable insights into the knowledge and attitudes of the general population in Saudi Arabia regarding Weight Management Medications (WMMs). Despite a high level of engagement in weight management efforts, there is a noticeable gap in knowledge and a prevailing skepticism towards the efficacy of WMMs. The study highlights the significant reliance on the Internet for information, underscoring the need for credible and accessible health information platforms. The skepticism towards WMMs, coupled with a higher willingness to consider these medications if recommended by healthcare professionals, emphasizes the critical role of healthcare providers in guiding patient perceptions and decisions regarding weight management strategies.

The findings also reveal significant associations between demographic factors such as gender and education level with knowledge and attitudes towards WMMs, suggesting the need for targeted communication strategies to address these disparities. The high prevalence of attempts at weight management among respondents reflects a broader global trend towards health consciousness and the pursuit of effective weight loss strategies, highlighting the challenges individuals face in achieving sustainable weight management.

Overall, the study underscores the importance of enhancing public knowledge and attitudes towards WMMs through credible information sources and healthcare professional guidance. By addressing the identified gaps and leveraging the trust in professional advice, healthcare professionals and policymakers can develop more effective interventions and communication strategies to support obesity management efforts in Saudi Arabia and similar contexts.

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Questionnaire

Section 1: Demographics

1. Age:

- 18-24
- 25-34
- 35-44

- 45-54
 - 55-64
 - 65 or older
2. Gender:
- Male
 - Female
3. Marital Status:
- Single
 - Married
 - Divorced
 - Widowed
4. Educational Level:
- Less than High School
 - High School
 - College/University
 - Postgraduate
5. Employment Status:
- Employed
 - Unemployed
 - Student
 - Retired
6. Monthly Household Income (SAR):
- Below 5,000 SAR
 - 5,000-10,000 SAR
 - 10,001-20,000 SAR
 - 20,001-30,000 SAR
 - Above 30,000 SAR
7. Region of Residence:
- Northern Region
 - Eastern Region
 - Western Region
 - Central Region
 - Southern Region
 - Other (please specify): _____

Section 2: Knowledge of WMMs

8. Have you ever heard of Weight Management Medications (WMMs)?
- Yes
 - No
9. On a scale from 1 to 5, with 1 being "Very Unknowledgeable" and 5 being "Very Knowledgeable," how would you rate your knowledge about WMMs?
- 1
 - 2
 - 3
 - 4
 - 5
10. How did you acquire information about WMMs? (Select all that apply)
- Healthcare professionals (e.g., doctors, pharmacists)

- Television
- Internet
- Friends or family
- Magazines or newspapers
- Other (please specify): _____

Section 3: Attitudes Towards WMMs

11. Do you believe that WMMs can be effective in helping individuals manage their weight?

- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

12. Are you personally open to considering WMMs as a weight management option if recommended by a healthcare professional?

- Yes
- No
- Unsure

Section 4: Experience with Weight Management

13. Have you ever tried to lose weight or manage your weight through any means, including diet and exercise?

- Yes
- No

14. If yes, please select the methods or strategies you have used:

- Dieting
- Exercise
- Dietary supplements
- Weight loss programs

Thank you for your participation in this study. Your responses will contribute to our research on the knowledge and attitudes of the general population in Saudi Arabia regarding Weight Management Medications (WMMs).