ORIGINAL ARTICLE

Assessment of Believes and Awareness about the Use of Natural Supplements for Weight management among Saudi Adults in Saudi Arabia. A Cross Sectional Descriptive Study

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Abstract

Introduction: Natural supplements have gained significant attention due to their potential to aid in weight management. This study aimed to assess the beliefs and awareness about the use of natural supplements for weight loss among Saudi adults in Saudi Arabia. **Methods:** A cross-sectional, descriptive online survey was conducted among the public from March to April 2023 using Google Forms. The survey was divided into three themes and comprised 18 items that gathered information about the beliefs and awareness of respondents toward natural weight loss supplements. Data analysis was performed using the statistical package for social science version 27 (SPSS Inc., Armonk, New York, United States). **Results:** A total of 261 participants were included in the study. Among those, the majority of them were female, 253 (59.3%), and 75.1% had a university degree. About 28.7% (n = 75) were aged between 37 and 47 years. More than half (54%, n = 141) of the respondents were in good health, whereas 47.9% (n = 125) had a normal weight. In this study, 73.6% (n = 192) of the respondents never believed that using natural products to reduce weight. Furthermore, 25.7% (n = 67) of the participants sought medical assistance for the weight loss treatment. In addition, 33.7% (n = 88) of respondents were aware of the benefits of natural weight-loss supplements. With regards to recommendation use of natural supplements, 6.5% (n = 17) of them reported health care professionals, followed by relatives and friends (17.6%, n = 46). In addition, 55.6% (n = 145) of the respondents revealed that social media and the internet, followed by health-care professionals (12.6%, n = 33), were the main sources of information for their natural supplements. **Conclusion:** The current findings revealed that 26.4% of adults believed the benefits of natural supplements for weight loss. The use of natural supplements is a fairly popular and traditional approach to managing weight. More awareness and education are required about the benefits and complications of natural supplements for weight loss or any other diseases that might be needed.

Key words: Attitude, knowledge, natural supplements, Saudi Arabia, weight loss

INTRODUCTION

Natural supplements provide a natural and holistic approach to total health and well-being support. They can be a helpful complement to a healthy lifestyle due to their vast range of benefits, which include nutritional support, immune system strengthening, mental health enhancement, and joint and bone health maintenance.[1-3] Herbal

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supplements have become increasingly popular in recent years as many people turn to natural alternatives for weight loss.[4] While herbal supplements are not a substitute for a healthy diet and regular exercise, they can provide additional support and promote weight loss.[4-8]

Obesity is a complex health issue that has reached epidemic proportions worldwide. It not only affects one's physical health but also has profound effects on one's mental and emotional well-being. In recent years, there has been a growing interest in the use of herbal medicines in the treatment of obesity.[6-9] Herbal supplements for weight loss come in a wide range of formulations, each with its own unique combination of ingredients.[9,10] Some common ingredients found in herbal supplements for weight loss include green tea extract,[9] caffeine,[11] Garcinia cambogia,[12,13] and cayenne pepper.[9,14] These ingredients are known to have properties that may help boost metabolism, suppress appetite, or burn fat.[9-14] Therefore, obesity reduction can reduce the financial and social burden on the health-care system as well as improve patient quality of life. It is the lifestyle modification approach that is the foundation of weight loss.[15] The rich cultural heritage and deep-rooted beliefs in natural remedies have contributed to the widespread use of herbal medicines among the Saudi population. Some factors cause an increase in herbal medicine usage, such as availability and simplicity, as well as the belief that traditional recipes are safe and have no side effects.[16]

According to World Health Organization (WHO) estimates, 80% of the world's population relies heavily on traditional medicine as their primary method of health care.[17] In the wake of the increase in global demand for medicinal herbs, there have been some concerns raised about the safety of their use.[18,19] Medicinal plants have been used for centuries to treat various ailments and promote overall well-being. The use of herbal medicine in Saudi Arabia can be traced back to ancient times.[16] The region's geographic location, rich biodiversity, and traditional knowledge have contributed to the development of an extensive herbal medicine system. Herbal remedies were the primary form of health care before the introduction of modern medicine.[16] Previous data on the utilization rate of herbal medicine for obesity in Saudi Arabia was found to be 98.1%.[20] Another study on obese Iranians reported that 32.3% used herbal medicine for weight loss.[21] The Chinese studies on traditional Chinese medicine reported it to be very effective in reducing weight.[22,23] Unfortunately, information about the use of herbal products for the management of obesity is limited in Saudi Arabia. To the best of our knowledge, this is the first study to look into the usage of herbal medicines for weight loss in the Riyadh area. Therefore, the current study aimed to assess the beliefs and awareness about the use of natural supplements for weight loss among Saudi adults in Saudi Arabia.

MATERIALS AND METHODS

Study design and population

For the current study, a cross-sectional survey was created. The survey was performed among Saudi adults from March to April 2023. The study included both male and female participants over the age of 18 who were currently living in the Riyadh region and were able to provide informed consent. Others who did not match the inclusion criteria were excluded from the study. The online survey was carried out via a link shared on social networking sites such as WhatsApp and Facebook. Furthermore, before processing the study, informed consent was obtained from the participants.

Questionnaire design and validation

To investigate the beliefs and awareness of natural weight loss supplements among the adults living in Riyadh, Saudi Arabia, a member of the research team, who had previous experience in questionnaire development and validation, developed a new questionnaire based on the enclosed items of previously used and published questionnaires related to natural weight loss supplements.[16,20,22] The survey form had 18 questions divided into three sections. The first component gathered demographic data from the participants. The following section comprised 11 questions about natural weight loss supplement knowledge, awareness, and attitudes. The final section included three multiple-choice questions about the source of knowledge and recommendations for utilizing natural supplements for weight loss in Saudi Arabia. The survey questionnaire was drafted in Arabic, Saudi Arabia's native language.

Before using the questionnaire, a preliminary phase was undertaken to assess its validity and reliability. Initially, a research specialist in the fields of clinical pharmacy and research at King Saud University were requested to analyze the extent to which the items in the questionnaires are relevant and can accurately reflect the Saudi public's knowledge and attitude toward natural weight loss supplements. Following that, all the necessary additions or changes in the study tools were made according to the results of the review with the research team. The questionnaire was then pretested on 20 people, who were eventually eliminated from the study population. They were instructed to complete the questionnaire. Internal consistency reliability was determined using Cronbach's alpha, and test-retest reliability was determined using the intra-class correlation coefficient. Internal consistency reliability was good (with Cronbach's alpha = 0.72 and an intra-class correlation coefficient of 0.96).

The data was collected from adults aged >18 who were able to provide informed consent. An invitation message to participate in the study was given to family members, friends, and the broader community via social media (WhatsApp®)

and email, along with a link to the survey. To acquire the data, the snowball technique was utilized, in which one person contacted to take the survey produced numerous recommendations. The study objectives were explained to the participants, and a consent form was delivered along with the surveys. Only the obtained data was analyzed, and the information provided by the study participants in the questionnaires was kept confidential. Before data collection, each questionnaire was translated into Arabic, the local language, and then back into English to verify consistency. For data gathering, a stratified random sample technique was used. Participants were randomly picked from the Saudi population, primarily from social media and the Google platform, and from the Riyadh region. Non-respondents were contacted via phone and email and asked to return their forms. All usable surveys that were returned were filled out anonymously.

Statistical analysis

The data were analyzed using SPSS Version 27 for Windows. Descriptive statistics were used to summarize data on socio-demographic factors, medical history, and responses to questions about knowledge, attitude, and awareness of natural weight loss supplements. For categorical variables, the data were summarized as frequencies (n) and percentages (%).

RESULTS

During the study period, a total of 261 subjects responded to the survey. More than two-thirds of the respondents were female: 253 (59.3%), while 100 (38.3%) were male, and approximately 75.1% had a university degree. About 75 (28.7%) were aged between 37 and 47 years. More than half, 141 (54%) of the respondents, had good health, whereas 125 (47.9%) had a normal weight. 101 (38.7%) were overweight [Table 1].

Table 1: Demographic characteristics of the survey respondents (*n*=261)

Characteristics	Frequency (n)	Percentile (%)
Gender		
Male	100	38.3
Female	161	61.7
Age (years)		
18–25	46	17.6
26–36	44	16.9
37–47	75	28.7
48–57	59	22.6
>58	37	14.2
Education		
Primary school	47	18
Secondary school	18	6.9
University	196	75.1
Overall health status		
Excellent	109	41.8
Good	141	54
Poor	11	4.2
Weight		
Normal weight	125	47.9
Obese	25	9.6
Overweight	101	38.7
Underweight	10	3.8

Among the respondents, 224 (85.8%) believed that losing weight improved their health. whereas 27 (10.3%) do not. Moreover, 254 (97.3%) respondents were aware that an increase in weight increases the risk of diabetes and high blood pressure. In this study, 73.6% (n = 192) of the respondents never believed that using natural products helped to reduce weight, while only 26.4% (n = 69) of them believed that natural products helped with weight loss. Furthermore, 67 (25.7%) of the participants sought medical assistance for the weight loss treatment. In addition, 88 (33.7%) participants were aware of the benefits of natural weight loss supplements, while 173 (66.3%) were unaware. Overall, 75 (28.7%) believed that natural supplements are safe and effective to use for weight loss; in contrast, 128 (28.7%) were unaware; and finally, 79 (30.3%) respondents thought that natural supplements for weight loss are better than prescription medicine. Almost half of the participants claimed that safety concerns associated with the consumption of natural weight loss supplements may cause harm. The detailed responses of the respondents were given in Table 2.

With regards to recommendations for the use of natural supplements, 6.5% (n = 17) of them reported health care professionals, followed by relatives and friends (17.6%, n = 46), and previous positive experience of natural supplements (6.5%, n = 17). Figure 1 shows the responses to the recommendation of natural supplements among respondents.

The most commonly stated sources of information for natural supplements were social media and the internet 145 (55.6%), followed by health-care professionals 33 (12.6%). Other sources included scientific studies 28 (10.7%), the Ministry of Health 25 (9.6%), television and radio 20 (7.7%), and magazines and textbooks 10 (3.8%) [Figure 2].

The most common possible reasons for using natural supplements for weight loss were, alternative to diet (n = 81; 48.8%), flow to improve the overall health (n = 80; 48.2%), easy availability of the supplement (n = 41; 24.7%), and desire to use natural supplements (n = 38; 22.9%). The detailed possible reasons for the consumption of natural weight loss supplements are given in Figure 3.

Table 2: Natural weight loss supplements awareness among the survey participants (*n*=261)

Variables	Frequency (n)	Percentage
Do you think that losing weight can improve your health?		
Yes	224	85.8
No	27	10.3
I don't know	10	3.8
An increase in weight increases the risk of developing chronic illnesses such as diabetes and high blood pressure		
True	254	97.3
False	3	1.1
I don't know	4	1.5
Have you ever believed that using natural products to reduce weight?		
Yes	69	26.4
No	192	73.6
Have you ever sought a doctor's assistance for weight loss therapy?		
Yes	67	25.7
No	194	74.3
Are you aware of the benefits of natural weight loss supplements?		
Yes	88	33.7
No	173	66.3
Do you believe that natural supplements are safe and effective to use for weight loss?		
Yes	75	28.7
No	58	22.2
I don't know	128	28.7
Do you believe that natural supplements for weight loss are better than prescription medicine?		
Yes	79	30.3
No	69	26.4
I don't know	113	43.3
Do you consider natural weight loss supplements as an alternative to diet and/or exercise?		
Yes	60	23
No	87	33.3
I don't know	114	43.7
Safety concerns associated with the consumption of natural weight loss supplements		
May cause harm	129	49.4
Drug-supplement interaction	37	14.2
Disease-supplement interaction	19	7.3
No safety concerns	63	24.1
Others	13	5

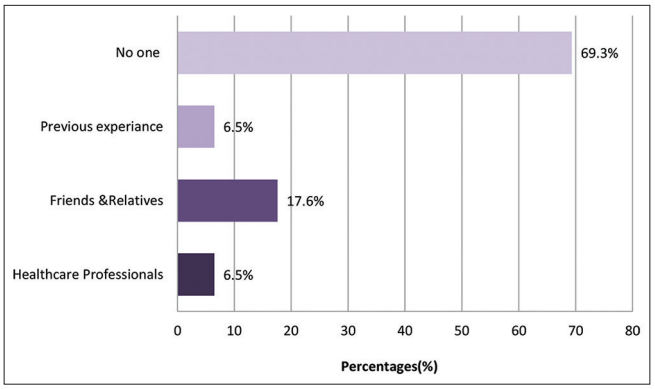

Figure 1: Recommendation to consume natural weight loss supplements among respondents

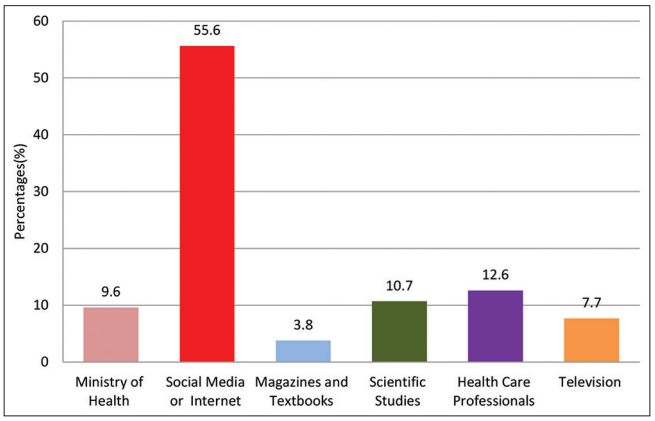

Figure 2: Source of information for natural supplements among respondents

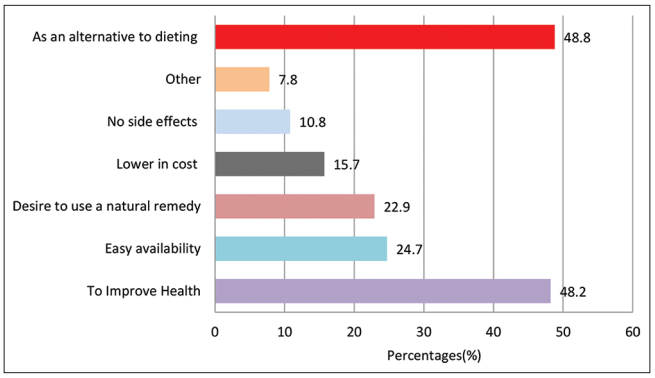

Figure 3: Reasons for the consumption of natural weight loss supplements

DISCUSSION

Weight loss is a common goal for many adults, and there are various methods and approaches available to achieve it. One approach that has gained popularity in recent years is the use of natural supplements for weight loss. Natural weight-loss supplements have gained significant popularity among adults who are looking for effective ways to shed those extra pounds and have become a topic of interest and research. Many adults turn to these supplements as a way to enhance

their weight-loss efforts and achieve their desired results. These supplements are often marketed as a safe and effective alternative to prescription medications or other weight-loss methods. According to recent estimates by the WHO, in the Kingdom of Saudi Arabia, the overall prevalence of obesity is estimated to be 33.7% and that of overweight is 68.2%. Furthermore, WHO also revealed that Gulf regions were found to have the highest rates of obesity, and Saudi Arabia stands in the second position with a high prevalence.[24]

The current findings revealed that approximately 85.8% of Saudi adults believed that losing weight improved their health. These results were comparable to a previous study by Sharaf *et al*. (2021) among the public, who reported that 90.2% of the participants knew that maintaining good physical activity and a healthy diet would manage obesity.[24] To successfully manage weight, it is essential to adopt a holistic approach that combines regular physical activity with a healthy diet. By incorporating these lifestyle changes into their daily routines, individuals can not only manage their weight effectively but also improve their overall health and well-being. More than one-third of the participants were aware of the benefits of natural weight-loss supplements. Similarly, another recent study by Almughais *et al*. (2023) reported that more than half (55.6%) had an overall good awareness level about anti-obesity medications.[15] These results point to the need for better strategies and guidelines for the awareness of natural weight loss supplements, as it is steadily increasing as individuals seek safer and more holistic approaches to achieve their weight loss goals. These supplements offer several benefits, including being derived from natural sources and promoting overall health and well-being. Our results show that only 17 (6.5%) believed that health-care professionals recommended that they consume weight-loss natural supplements, whereas a study in Saudi Arabia reported that 724 (67.5%) participants could use anti-obesity drugs if advised by their physicians.[15] Similarly, a study conducted in the USA found that 75% of primary care patients followed their doctors' advice about weight-loss drugs daily.[25] Indeed, medical concerns, including patient safety and adverse events, and beliefs about the safety of natural supplements are the main concerns raised by the participants.

According to our study, 69 (26.4%) of the participants used natural products for weight loss. Our study results were similar to the Liou *et al*. study, which showed that 27.2% of females in Taiwan used anti-obesity drugs,[26] and in a recent study among females in Saudi Arabia, 21.3% were using weight medications.[27] Our findings indicated that 23% of the participants considered natural weight-loss supplements as an alternative to diet and/or exercise. Hasan and Ganesh reported that dieting and exercising were the main methods used to lose weight (64.1% and 61.5%, respectively).[27]

Notably, a study by Al-Yousef *et al*. in 2019 reported that 51% of the respondents believed that herbal medications were better than commercially available prescription and over-the-counter drugs.[28] Additionally, our results show that 30.3% of the participants believed that natural supplements for weight loss were better than prescription medicine. Likewise, Sharaf *et al*. (2021) reported among obese patients that 14.1% agreed obesity medications were not safe and ineffective for controlling obesity.[24] In the US, more than 30% of people with overweight or obesity believe supplements to be an effective method for losing weight[29] Furthermore, a study conducted on the perception and use of natural health products (NHPs) concluded that 47% agreed that NHPs are safer than prescription medications.[30] The perception that herbal and dietary supplements were safer and of higher quality than conventional treatments contributed to the increased use of herbal and nutritional supplements.[28,30] Our findings indicated that most participants accepted that weight gain leads to chronic illnesses such as diabetes and high blood pressure. Hence, Saudi adults in this study expressed a positive attitude and a desire to adopt the strategy into their practices shortly. On the other hand, Alqahtani *et al*. estimated that weight loss relatively reduced the risk for type 2 diabetes by 37.4% reduction and for hypertension by 18.7% reduction.[31] Because a product is natural, it is not necessarily safe. Though it is uncommon, some dietary supplements have been related to serious issues such as liver damage.[32] Supplements can have significant impacts.[32] For the purpose of managing of obesity, physical activity and following adequate dietary habits are proven methods to control obesity and associated risks.[33-39]

Ephedra is an herb that was historically utilized to aid in weight loss. The Food and Drug Administration has officially banned it due to serious consequences such as mood swings, high blood pressure, irregular heart rhythm, strokes, seizures, and heart attacks.[40] These supplements are marketed as a safer and more natural option compared to synthetic weight-loss drugs. One of the primary safety concerns associated with natural weight-loss supplements is the lack of regulation and quality control in the industry. Moreover, the participants in this study strongly supported the idea that safety concerns associated with the consumption of natural weight-loss supplements may cause harm. Furthermore, in a study conducted among community pharmacists, 56% of participants expressed concerns about the safety of herbal remedies, and 30% considered them to be harmless.[41] The present study has some limitations. First, the study used a self-administered tool, which could have introduced self-presentation bias that might have influenced the results. In addition, the study did not give more details about the natural supplements, such as the type of usage of weight-loss natural supplements and their dosage. These areas are worth further investigation by researchers in the future.

CONCLUSION

The current findings revealed that a considerable proportion of adults believed in the benefits of natural supplements

for weightlessness. The use of natural supplements in the treatment of obesity is a growing area of interest in Saudi Arabia. While traditional approaches such as diet and exercise remain essential, herbal medicines offer potential adjunctive benefits. However, it is crucial to approach their use with caution and seek guidance from health-care professionals to ensure safety and efficacy. Further research with a larger sample is needed to establish the effectiveness of specific herbal medicines in the treatment of weight loss in Saudi Arabia.

INFORMED CONSENT STATEMENT

Informed consent was obtained from the respondents, and it was confirmed that their data would be kept confidential and used exclusively for research purposes.

DATA AVAILABILITY STATEMENT

The datasets used and analyzed during the current study are available from the corresponding author upon reasonable request.

REFERENCES

1. Rizvi SA, Einstein GP, Tulp OL, Sainvil F, Branly R. Introduction to traditional medicine and their role in prevention and treatment of emerging and re-emerging diseases. Biomolecules 2022;12:1442.
2. Shahrajabian MH, Sun W, Cheng Q. Asafoetida, natural medicine for future. Curr Nutr Food Sci 2021;17:922-6.
3. Sun W, Shahrajabian MH, Cheng Q. Natural dietary and medicinal plants with anti-obesity therapeutics activities for treatment and prevention of obesity during lock down and in post-COVID-19 Era. Appl Sci 2021;11:7889.
4. Ekor M. The growing use of herbal medicines: Issues relating to adverse reactions and challenges in monitoring safety. Front Pharmacol 2014;4:177.
5. Roberts AT, Martin CK, Liu Z, Amen RJ, Woltering EA, Rood JC, *et al*. The safety and efficacy of a dietary herbal supplement and gallic acid for weight loss. J Med Food 2007;10:184-8.
6. Zhou Q, Chang B, Chen XY, Zhou SP, Zhen Z, Zhang LL, *et al*. Chinese herbal medicine for obesity: A randomized, double-blinded, multicenter, prospective trial. Am J Chin Med 2014;42:1345-56.
7. He RR, Chen L, Lin BH, Matsui Y, Yao XS, Kurihara H. Beneficial effects of oolong tea consumption on diet-induced overweight and obese subjects. Chin J Integr Med 2009;15:34-41.
8. Attari VE, Mahdavi AM, Javadivala Z, Mahluji S, Vahed SZ, Ostadrahimi A. A systematic review of the anti-obesity and weight lowering effect of ginger (*Zingiber officinale* Roscoe) and its mechanisms of action. Phytother Res 2018;32:577-85.
9. Bahmani M, Eftekhari Z, Saki K, Fazeli-Moghadam E, Jelodari M, Rafieian-Kopaei M. Obesity phytotherapy: Review of native herbs used in traditional medicine for obesity. J Evid Based Complement Altern Med 2016;21:228-34.
10. Bommakanti V, Ajikumar AP, Sivi CM, Prakash G, Mundanat AS, Ahmad F, *et al*. An overview of herbal nutraceuticals, their extraction, formulation, therapeutic effects and potential toxicity. Separations 2023;10:177.
11. Blanck HM, Serdula MK, Gillespie C, Galuska DA, Sharpe PA, Conway JM, *et al*. Use of nonprescription dietary supplements for weight loss is common among Americans. J Am Diet Assoc 2007;107:441-7.
12. Heymsfield SB, Allison DB, Vasselli JR, Pietrobelli A, Greenfield D, Nunez C. Garcinia cambogia (hydroxycitric acid) as a potential antiobesity agent: A randomized controlled trial. JAMA 1998;280:1596-600.
13. Mattes RD, Bormann L. Effects of (-)-hydroxycitric acid on appetitive variables. Physiol Behav 2000;71:87-94.
14. Janssens PL, Hursel R, Westerterp-Plantenga MS. Capsaicin increases sensation of fullness in energy balance, and decreases desire to eat after dinner in negative energy balance. Appetite 2014;77:46-51.
15. Almughais ES, Alshehri MH, Alsatti M, Almatar A, Albladi FH, Almomatin HH, *et al*. Awareness and perception of anti-obesity medications among Al-Ahsaa, Riyadh, and Hail in Saudi Arabia populations. Cureus 2023;15:e40425.
16. Al Akeel MM, Al Ghamdi WM, Al Habib S, Koshm M, Al Otaibi F. Herbal medicines: Saudi population knowledge, attitude, and practice at a glance. J Family Med Prim Care 2018;7:865-75.
17. Available from: https://www.who.int/news/item/25-03-2022-who-establishes-the-global-centre-for-traditional-medicine-in-india [Last assessed on 2023 Oct 22].
18. Bellanger RA, Ramsinghani S, Franklin C, Seeger C. Safety of complementary and alternative medicine (CAM) treatments and practices. In: Side Effects of Drugs Annual. Vol. 38. Amsterdam: Elsevier; 2016. p. 513-22.
19. Nasri H, Shirzad H. Toxicity and safety of medicinal plants. J HerbMed Plarmacol 2013;2:21-2.
20. Eldalo AS, Alotaibi MN, Alenazi TO, Albogami HA, Mohamed KM. Use of herbal medicines in the treatment of obesity in Taif, Saudi Arabia. Saudi J Med Med Sci 2017;5:149-54.
21. Fazelian S, Namazi N, Heshmati J. Self-treatment with anti-obesity medications in overweight and obese women in Tehran-Iran. Res J Recent Sci 2014;2277:2502.
22. Hioki C, Yoshimoto K, Yoshida T. Efficacy of bofu□tsusho□san, an oriental herbal medicine, in obese Japanese women with impaired glucose tolerance. Clin Exp Pharmacol Physiol 2004;31:614-9.
23. Lenon GB, Li KX, Chang YH, Yang AW, Da Costa C, Li CG, *et al*. Efficacy and safety of a Chinese herbal medicine formula (RCM-104) in the management of

simple obesity: A randomized, placebo-controlled clinical trial. Evid Based Complement Alternat Med 2012;2012:435702.
24. Sharaf SE, Al-Shalabi BT, Althani GF, Bazuhair HM, Fairaq BJ, Ali FA, *et al*. Obesity self-management: Knowledge, attitude, practice, and pharmaceutical use among healthy obese individuals in Saudi Arabia. Int J Fam Community Med 2021;5:110-21.
25. Wee CC, Sugai E, Aliberti G, Chiodi S. Willingness to take weight loss medication among obese primary care patients. J Clin Outcomes Manage 2017;24:115-21.
26. Liou TH, Wu CH, Chien HC, Lin WY, Lee WJ, Chou P. Anti-obesity drug use before professional treatment in Taiwan. Asia Pac J Clin Nutr 2007;16:580-6.
27. Hasan T, Ganesh K. Weight lowering medications to alter morphological indices: A cross-sectional study among Saudi females. J Biol Todays World 2020;9:1-8.
28. Al-Yousef HM, Wajid S, Sales I. Knowledge, beliefs and attitudes towards herbal medicine-a community-based survey from a central region of Saudi Arabia. Indian J Pharm Pract 2019;12:188-93.
29. Manore MM. Dietary supplements for improving body composition and reducing body weight: Where is the evidence? Int J Sport Nutr Exerc Metab 2012;22:139-54.
30. Barry AR. Patients' perceptions and use of natural health products. Can Pharm J (Ott) 2018;151:254-62.
31. Alqahtani SA, Al-Omar HA, Alshehri A, Abanumay A, Alabdulkarim H, Alrumaih A, *et al*. Obesity burden and impact of weight loss in Saudi Arabia: A modelling study. Adv Ther 2023;40:1114-28.
32. Samreen S, Siddiqui NA, Wajid S, Mothana RA, Almarfadi OM. Prevalence and use of dietary supplements among pharmacy students in Saudi Arabia. Risk Manag Healthc Policy 2020;13:1523-31.
33. Alobaid AM, Syed W, Al-Rawi MB. Factors associated with sedentary behavior and physical activity among people living in Saudi Arabia-a cross-sectional study. Risk Manag Healthc Policy 2023;16:1985-97.
34. Bashatah A, Qadhi OA, Al Sadoun A, Syed W, Al-Rawi MB. Evaluation of young adults' physical activity status and perceived barriers in the Riyadh region of Saudi Arabia. J Multidiscip Healthc 2023;16:557-69.
35. Syed W, Alharbi MK, Samarkandi OA, Alsadoun A, Al-Rawi MB, Iqbal A, *et al*. Evaluation of knowledge, awareness, and factors associated with diabetes: A cross-sectional community-based study. Int J Endocrinol 2022;2022:1921010.
36. Syed W, Menaka M, Parimalakrishnan S, Yamasani VV. A study on diabetes-related self-care plan and its determinants among diabetes patients in a Warangal region, Telangana, India. Braz J Pharm Sci 2023;58:e21266.
37. Wajid S, Menaka M, Yamasani VV. Assessment of level of medication adherence and associated factors among diabetes patients. Lat Am J Pharm 2021;40:1555-61.
38. Syed W, Menaka M, Parimalakrishnan S, Yamasani VV. Evaluation of the association between social determinants and health-related quality of life among diabetic patients attending an outpatient clinic in the Warangal region, Telangana, India. J Diabetol 2022;13:285-93.
39. Wajid S. Assessment of health-related quality of life among diabetic out patients at Warangal region Telangana India-a cross-sectional study. Asian J Pharm 2021;15:453-60.
40. Healthy Lifestyle Weight Loss. Available from: https://www.mayoclinic.org/healthy-lifestyle/weight-loss/in-depth/weight-loss/art-20046409 [Last assessed on 2023 Oct 18].
41. Alkharfy KM. Community pharmacists' knowledge, attitudes and practices towards herbal remedies in Riyadh, Saudi Arabia. East Mediterr Health J 2010;16:988-93.

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