

ASSESSMENT OF ADULT'S UTILIZATION OF COMPLEMENTARY AND ALTERNATIVE MODALITIES FOR WEIGHT CONTROL AMONG ADULTS

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Abstract

Background: Overweight and obesity issues are still becoming more commonplace globally, with major health consequences, despite different approaches. As a result, there is a growing need for complementary and alternative modalities as well as more safe, effective, and acceptable methods of losing weight. **Aim:** To assess utilizations of complementary and alternative modalities for weight control among adults. **Design:** A descriptive design was employed with a purposive sample of 360 adult male and female clients who visited the adult obesity and thinness clinic at the national nutritional institute. **Tool for Data Collection:** Adult's utilizations of complementary and alternative modalities for weight control questionnaire, it included two parts: **Part one:** - Demographic data of adults. **Part two:** - Adult's utilizations of complementary and alternative modalities for weight control Results: The mean age of the studied adults was 28.3 years. Regarding gender, 93.6% of them were females. The participants' mean body mass index was 30.2 kg/m². 59.2% of them use complementary and alternative modalities for weight control. Most of them 78.2%, used herbs for weight control followed by nutritional supplements. Moreover, 58.5% used cinnamon and cumin for weight control. While, only 3.4% of them used chamomile to control their weight. Additionally. **Conclusion:** The highest percentage of participants use complementary and alternative modalities for weight control. Moreover, most of them used cinnamon and cumin for weight control. **Recommendation:** Further research is recommended to evaluate the effectiveness and long-term safety of commonly used CAMs for weight control.

Keywords: Complementary and Alternative Modalities, Utilization, Weight Control.

1. INTRODUCTION

Obesity and overweight are chronic conditions that have spread like wildfire around the world. In 2022, 2.5 billion persons were overweight, with 890 million obese. This represents a 43% overweight and 16% obesity rate, more than doubling since 1990. This worldwide disaster affected both high-income and developing nations, particularly those with urban populations. The burden of diseases and the death rate may be increased as a result of the rise in potentially fatal conditions like diabetes, musculoskeletal disorders, cardiovascular diseases, and some types of cancer brought on by the increased prevalence of overweight and obesity [1].

Complementary and alternative modalities (CAMs) are defined as techniques aimed at facilitating healing by considering the interconnectedness of the body, mind, and spirit of each individual. Back to nature is one of several factors that have led to the rise in the use of CAMs. It makes people think that these practices are natural and safe, and that they can't hurt anyone. Consequently, numerous individuals resort to CAMs for weight management, as they are regarded as safer, more economical, and associated with fewer adverse effects than conventional [2]. Besides that [4], classified CAMs into five categories: mind-body interventions that employ mental systems including biofeedback, yoga, meditation, prayer, and tai chi. biologically based treatments, like dietary supplements and herbal medications. Body based and manipulative techniques, including osteopathic manipulation, therapeutic massage, and chiropractic adjustments. Acupuncture, therapeutic touch, and bio-electromagnetic therapies are examples of energy therapies. Whole medical systems, including naturopathic, homeopathic, and traditional Chinese medicine.

Additionally, [3] clarified that the use of CAMs is becoming more widely accepted among adults despite the absence of scientific evidence. This is due to a variety of factors, including the beliefs of family, friends, the media, and past experiences and opinions regarding the safety and efficacy of CAMs. The surge in frequency may also be attributed to other factors, such as adults' discontent with contemporary medicine's inefficiency, its exorbitant costs, a lack of faith in the current healthcare system, and the apparent link between CAMs and spirituality. Also [1], added that complementary and alternative modalities are used by 93% of people in the Western Pacific region, which includes China, 80% of people in Asia and Africa, 90% of Germans, 70% of Canadians, 50% of people in Sweden, and 40% of adults in the United States. About 70–80% of people in many underdeveloped nations rely on traditional medicine as their primary source of healthcare.

Family health nurses, play a vital role in educating and raising public understanding about the benefits and limitations of using CAMs. At the National Nutrition Institute, community health nurses play an important role in adopting CAMs for adult weight control at all three levels of prevention. Primary prevention focuses on education and awareness, with courses on healthy eating and complementary and alternative medicine (CAM) modalities such as yoga and herbal supplements. They also conduct tests to identify at-risk individuals and educate the community through partnerships with local wellness centers [5].

At the secondary level of prevention, conduct regular health exams, provide tailored counseling sessions that include CAMs, and enable support groups to maintain healthy weight control. Nurses can help manage chronic obesity-related problems by measuring body weight, height, body mass index, incorporating CAMs into treatment plans, establishing rehabilitation programs, and providing constant monitoring and support to ensure weight control goals are followed. Community health nurses that fulfill these duties offer a comprehensive approach to weight control that blends established medical procedures with complementary and alternative medicine (CAMs) to promote overall

Furthermore, putting these findings into practice will greatly improve community health nurses' roles. Nurses can provide clients who are having trouble controlling their weight with more individualized and comprehensive care if they are trained in complementary and alternative therapies that are both culturally relevant and effective.

Additionally, this study will enable nurses to support integrative health practices, enhance client education, and offer evidence-based advice. As a result, community health nurses will be in a better position to assist a variety of adult populations, which will ultimately lead to more sustainable weight control methods and healthier communities [18].

Significance of the Study

Egypt is ranked 18th in the world for the highest prevalence of obesity, according to [7]. In addition to a number of serious illnesses, obesity plays a significant role in the development of diabetes mellitus, hypertension, obstructive sleep apnea, and fatty liver.

An estimated 115,000 deaths per year were attributed to obesity (19.08% of all predicted deaths in 2020). In 2020, obesity-related disability adjusted life years might have totaled four million. An estimated 62 billion Egyptian pounds are lost annually due to obesity. This amount represents the expense of treating illnesses linked to adult obesity.

Egyptians' economic, social, and cultural ideas have changed significantly, primarily as a result of the internet's widespread promotion of complementary and alternative modalities (CAMs). The most popular forms of CAMs were herbal products (78.4%), followed by natural substances (70%), Ruqyah, Holy Quran, and diet products (64% and 46.3%, respectively), according to a study conducted by [6] to evaluate determinants of CAMs use among patients attending outpatient clinics of Tanta University Hospitals.

However, the most frequent justifications for utilizing complementary and alternative medicine (CAM) were that it has no negative effects (82.8%), is less expensive than modern treatment (79.9%), is socially and religiously acceptable (62.7%), and that current medical treatment is ineffective (39.6%).

Therefore, this study will offer insightful information about weight control strategies that work for Egyptians. The study also closes a significant vacuum in the literature by providing evidence-based suggestions that may have an impact on healthcare practices and legislation.

In the end, the results might improve how CAMs are incorporated into weight management, which would increase knowledge of their function in global health contexts and contribute to better health outcomes.

2. METHODS

2.1 Aim

This study aims to assess adult's utilizations of complementary and alternative modalities for weight control.

Research question

To achieve the aim of the current study the following research question is formulated:

Q1: What are the adult's utilizations of complementary and alternative modalities for weight control?

Operational definition

Complementary and alternative modalities (CAMs) are used in the current study for weight control include the following modalities biologically based practices (dietary supplements), mind- body practices, and energy healing practices (acupuncture).

2.2 Design

A descriptive design was utilized in this study. Descriptive design is a type of research design that utilizes both quantitative and qualitative methods of research to collect data to describe a phenomenon, situation, or population. Major methods of descriptive research design include observations, surveys, and case studies. In this design method, researchers do not control or manipulate variables [19].

2.3 Setting

This study was conducted at National Nutrition Institute, under the Authority of Hospitals and Educational Institutes affiliated with the Ministry of Health and Population in Egypt, established in 1955 to improve the nutritional health of the population. It conducts research, surveys, and training programs aimed at understanding nutritional problems and developing evidence-based strategies to promote healthy diets and prevent malnutrition and related chronic diseases across different age groups. The Institute also provides clinical nutrition services, public education, and technical consultations, and it plays a key role in national initiatives such as food fortification and nutritional awareness campaigns. Over the decades, it has gained recognition as an important reference center for nutrition science and public health both nationally and regionally [20].

The study was conducted at outpatient clinic (obesity and thinness adult clinic). The National Nutrition institute consists of one building divided into 5- floors. It composed of 18 clinics which are distributed on the five floors. The obesity and thinness adult clinics are located in the ground floor and divided into two rooms, first room for anthropometric measurements (weight, height, and waist circumference) and then doctor's clinic (another room) for adults' physical examination. Doctors don't prescribe any CAMs for weight control; instead, they only prescribe diet plans and vitamins based on the findings of anthropometric measurements and lab investigation results.

2.4 Participants

A purposive sample of 360 adults who were available in the obesity and thinness clinic for adults at the time of data collection for six months and fulfill the inclusion criteria were recruited for this study.

The sample size was calculated using the following formula [21].

$$\text{Sample size} = (Z\text{-score})^2 \times \text{Std Dev}^2 \times \left(\frac{1}{\text{Margin of error}}\right)^2$$

Where: $z = (x - \mu) / \sigma$, total population is 5760 clients (Flow rate= 40 clients/ day, weekly = 40 x 6 =240 clients /week, monthly = 240 x 4= 960 clients / month, 960 x 6= 5760 clients in 6 months), confidence level is 95%, margin of error is 5%. The formula estimated that the sample size (n) = 360.

Inclusion criteria:

- 1) Egyptians
- 2) Early adulthood 20-40 years old [8].
- 3) Adults with BMI above 25 kg/m² and below 18.5 kg/m² & waist circumference >40 inches for males & >35 inches for females.

Exclusion criteria:

- 1) Adults with chronic diseases.
- 2) Pregnant and lactating women.

2.5 Data Collection Tools

The current study data was collected using the following tool:

Adult's utilizations of CAMs for weight control questionnaire based on related literature review [6], [10], [12], [13]. It was developed by the researcher. It included 2 parts:-

Part 1: Demographic data of adults. It included information about personal characteristics such as: age, gender, income, family size. And anthropometric measurements as height, weight, waist circumference and calculate body mass index.

Part II: It included questions such as: on what basis did you start using CAMs to control your weight, when using CAMs for weight control do you stop using the traditional medicines or continue using them, which kind of CAMs do you use to control your weight, do you find the use of CAMs effective for weight control, what difficulties have you encountered when using CAMs for weight control, and what symptoms or disorders have you experienced when using CAMs for weight control.

2.6 Procedure

The procedure was proceeded in three phases: preparatory, interview, and data analysis phase.

Preparation: - this phase involved extensive reviewing of the recent related literatures to develop data collection. Then Adult's utilizations of CAMs for weight control questionnaire was translated into Arabic language to suit the studied adults' level of understanding. Furthermore, the tools' validation was done.

Tools were developed by researcher and revised by 3 experts in community health nursing department. The researcher constructed and developed tools, based on

extensive literature review. The study was primary approved by the Research Ethical Review Committee at Faculty of Nursing, Cairo University at 19/3/2025. Then an official permission was obtained from ethical committee of The General Organization for Teaching Hospitals and institutes and an official permission was obtained from the institute to start collecting data from participants after reviewing protocol and reviewing tools for data collection.

II. Interview phase: - The researcher introduced herself to the participants and clearly explained the purpose and nature of the current study to each adult individually. Interviews were conducted inside the institute after obtaining approval from the institute manager, ensuring a comfortable environment that allowed participants to freely express their feelings and experiences. Written informed consent was obtained, and demographic data were collected from all participants. Each adult was interviewed individually for approximately 10–15 minutes. Interviews were carried out on Saturdays and Sundays each week. During the interview sessions, the researcher maintained a non-judgmental approach, avoided interrupting participants, clarified questions when needed using simple explanations, and allowed sufficient time for participants to express themselves. Measurements of body mass index and waist circumference were taken in the nursing room using the available instruments

III. Data analysis phase: - Upon completion of data collection, the data were scored, tabulated, analyzed by computer using the "statistical package for the social science"(SPSS) program version 26. A descriptive statistic was utilized as frequency, mean, and standard deviation; frequency; percentage and correlation coefficient. As well correlation analysis was used to assess the correlation between the variables of the study. Probability (p-value) less than 0.05 is considered as significant and less than 0.001 was considered as highly significant.

Then, the researcher carefully reviewed the interview transcripts word by word and line by line, rereading those several times to gain a comprehensive understanding of the data. Subsequently, the transcripts were reviewed by an expert (the professor supervising the study) to identify significant statements and ensure the validity of the content analysis.

3. RESULTS

Table (1) indicates that 45% of adults aged 30-39 years old, while 15% of them aged <20 years old with the Mean age + SD equal 28.3 + 7.6. Regarding gender, 93.6% of adults were female while, 6.4% of them were male. Regarding level of education 46.9% of adults were had secondary degree while, 9.2% were not educated. Regarding marital status 66.7% of adults were married while, 0.8% of them were divorced and also 0.8% of them were widowed. As regard to employment status 57.2% of adults were house wife while, 18.1 of them did not work. Regarding family income per month 59.1% of adults their monthly income was enough while, 0.3% of them their monthly income was sufficient and saving. Related to place of residence 76.4% of them were from urban areas while, 23.6% of them were from rural areas.

Table 1: Percentage distribution of Adult's demographic characteristics (n=360)

Demographic data	No.	%
Age		
<20	54	15
20-29	144	40
30-39	162	45
Total	360	100
Mean + SD of age = 28.3 + 7.6		
Gender		
Male	23	6.4
Female	337	93.6
Education		
Primary	72	20
Secondary	169	46.9
Bachelor	86	23.9
Cannot read and write	33	9.2
Marital status		
Single	114	31.7
Married	240	66.7
Divorced	3	0.8
Widow	3	0.8
Employment status		
House wife	206	57.2
Working	89	24.7
No work	65	18.1
Family income per month		
Enough	213	59.1
Not enough	146	40.6
Sufficient and saving	1	0.3
Residence		
Urban(city)	275	76.4
Rural(countryside)	85	23.6

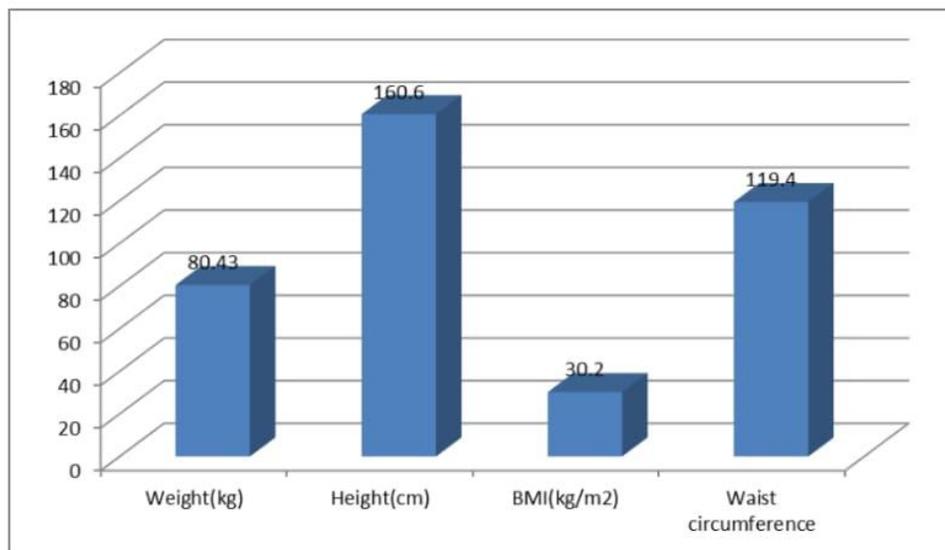


Figure 1: Mean of adult's body measurements (n=360)

Figure (1) shows that the mean anthropometric measurements of the study participants. As shown, the average weight was 80.43 kg, while the mean height reached 160.6 cm. The participants' mean BMI was 30.2 kg/m², which falls within the obesity range according to WHO classifications. Additionally, the average waist circumference was 119.4 cm, indicating a markedly high central adiposity level.

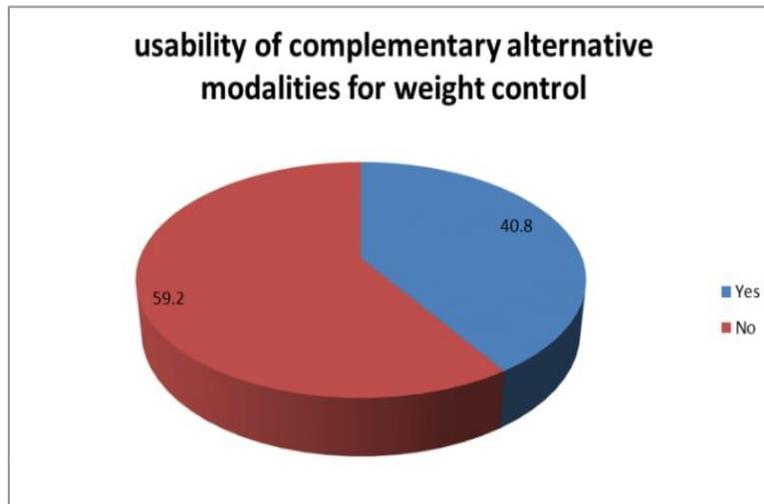


Figure 2: Percentage distribution of utilization of complementary alternative modalities for weight control among adults (n=360)

Figure (2) indicates that 59.2% of adults use complementary and alternative modalities for weight control while, 40.8% of them did not use it.

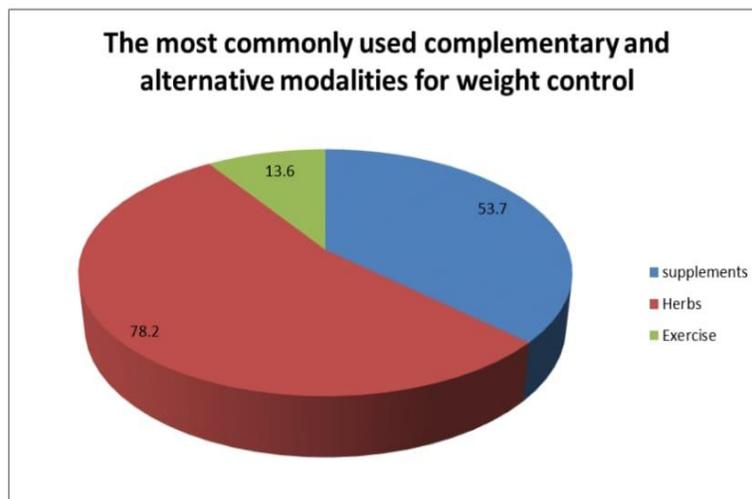


Figure 3: Percentage distribution of the most commonly used complementary and alternative modalities for weight control (n=360)

Figure (3) reveals that 78.2% of adults used herbs for weight control, while no one of them used acupuncture for weight control.

Table (2) indicates that 40.1% of adults used CAMs for weight control based on suggestion from Attar while 17% of them used it based on an advice from friend or relative.

Table 2: Percentage distribution of adults' decisions to start using complementary and alternative modalities (CAMs) for weight control based on various factors. (n=147)

Items	No.	%
A doctor's description	30	20.4
An advice from friend or relative	25	17
Suggestion from Attar	59	40.1
Through internet (social media)	33	22.4

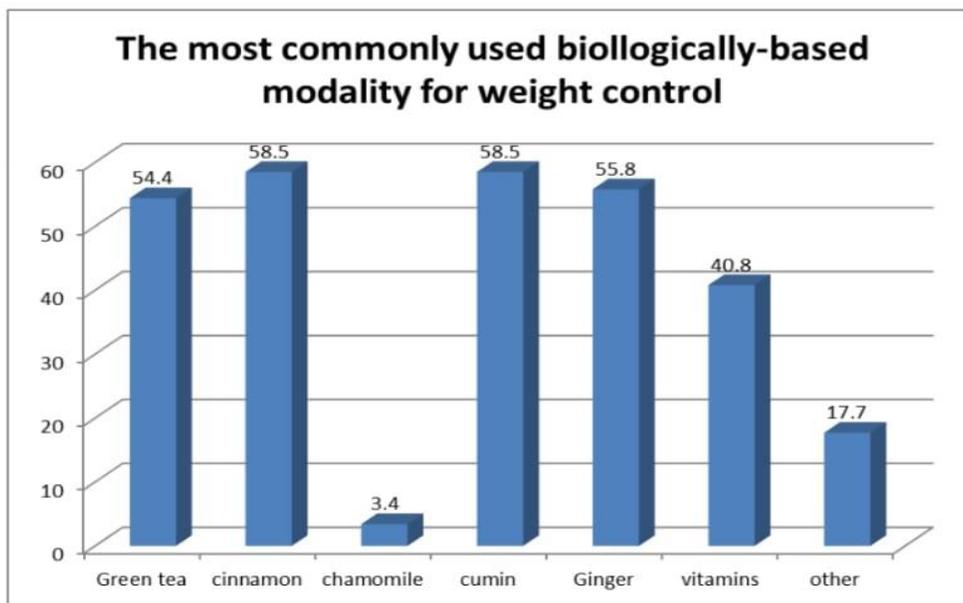


Figure 4: Percentage distribution of the most commonly used biologically-based modality for weight control (n=147)

Figure (4) shows that 58.5% used cinnamon and cumin for weight control. While, only 3.4% of them used chamomile to control their weight.

Table (3) indicates that adults' use of complementary and alternative modalities (CAMs) for weight control did not differ significantly by gender or place of residence, indicating similar usage among males and females and between urban and rural participants ($p > .05$).

Table 3: Differences in means of use of complementary alternative modalities for weight regarding gender and place of residence of studied adults

Demographic data	mean	SD	T	P
Gender			0.38	0.69
Female	0.46	0.52		
Male	0.41	0.49		
Residence			0.44	0.65
Urban(city)	0.42	0.49		
Rural(countryside)	0.39	0.49		

*Significant at p -value <0.05

4. DISCUSSION

As rising of global health concern, adult obesity is associated with poor diet, inactivity, and lifestyle modifications. It raises the chance of developing long-term conditions like diabetes, heart disease, and high blood pressure. Many individuals choose natural methods including herbal items, vitamins, and mind-body techniques when using CAMs to control their weight. Despite the scarcity of scientific evidence, these techniques are frequently perceived as safer or more economical. It is important to evaluate adults' comprehension and application of CAMs since they may be utilized without the necessary information. The objective of this study is to evaluate adults' utilization of CAMs for weight control.

Results of the current study revealed that almost half of the studied adults aged 30-39 years old with Mean age + SD equal 28.3 + 7.6. these results in agreement with study done by [9] who in their study in titled "Determining knowledge levels, attitudes toward, and use of complementary and alternative medicine among individuals applying to family health centers" on 366 participants in Ankara that is Turkey's capital to determine the knowledge, attitude and application status of CAM in a family health center and found that more than one half of participants aged from 26-45 years. From the investigator's point of view, these results may be due to the fact that individuals in this age group are more concerned about their body image and health, especially after child bearing age, making them more interested in weight control practices.

In the other hand, this results in congruent with the result of the study done by [2] who in their study in titled "Use and perceived effectiveness of complementary medicines for weight loss in adult women" on 160 adult women from Johannesburg, South Africa to gather information on the use and perceived effectiveness of complementary modalities for weight loss among adult women, and found that the average age of the studied adults was between 18 and 29. From the investigator's point of view, these dissimilarities between both studies may be due to differences in the target population, cultural practices.

In relation to the gender the results of the current study revealed that the most of the studied adults were females. This results in agreement with the results of the study done by [9] who in their study in titled "Determining knowledge levels, attitudes toward, and use of complementary and alternative medicine among individuals applying to family health centers" on 366 participants in Ankara that is Turkey's capital to determine the knowledge, attitude and application status of CAM in a family health center and found that almost of participant were females. From the investigator's point of view, these similarities between the results may be due to the greater concern of females to have higher interest in maintaining healthy body weight and good body image.

In the opposite side, this results in congruent with the result of the study done by [11] who in their study in titled "Awareness, knowledge, attitude, perception, and utilization of complementary and alternative medicines (CAMs) in the common population of Dammam" on 375 people from Dammam KSA to examine the perception, attitude, knowledge, and awareness of the general population about CAMs and their utilization and found that half of the participants were males. From the investigator's point of view, these dissimilarities may be due to differences in cultural norms and gender roles that may influence participation rates.

Regarding the place of residence, the results of the current study revealed that more than two third of the studied adults were from urban areas. This results in agreement with the results of the study done by [11] as mentioned before reported in their study that the majority of the studied people were urban residents. In the investigator opinion this similarity between both studies may be due to the presence of most healthcare services in the urban areas which make them more to easily access for the urban population than the people who live in rural areas.

Regarding body measurements, the results of the current study illustrated that body mass index (BMI) for the studied adults varied greatly between 15 and 61, with a mean of 30.20, placing the average participant in the obese category. This results in agreement with the results of the study done by [13] who in their study in titled "Complementary and alternative medicine use for weight management among females in Jordan: a community-based survey" on 858 women in Jordan to explore the status of complementary and alternative medicine use for weight management among adult females in Jordan and the possible relationship between complementary and alternative medicine use and body mass index and found that nearly half of the respondents were classified as overweight (BMI \geq 25–29.9 kg/m²) or obese (BMI \leq 30 kg/m²). From the investigator's point of view,

both studies showed a similar pattern of elevated BMI values, indicating that overweight and obesity are common concerns among women in both populations in spite of differences in both demographics and settings.

Regarding to adult's utilizations of complementary and alternative modalities for weight control the results of the current study revealed that more than one half of adults use complementary and alternative modalities for weight control these results in agreement with study done by [13] who in their study in titled "Complementary and alternative medicine use for weight management among females in Jordan: a community-based survey" on 858 women in Jordan to explore the status of complementary and alternative medicine use for weight management among adult females in Jordan and the possible relationship between complementary and alternative medicine use and body mass index and reported that a large proportion of women in Jordan relied on several CAM practices to control their weight. Their findings similarly highlighted the growing tendency among adults to use herbal products, nutritional supplements, and other natural remedies as part of their weight-control strategies.

In contrast to the current study, which found that more than half of adults use complementary and alternative modalities for weight control, the study by [14] who in their study entitled "Prevalence of and attitudes towards complementary therapy use for weight after breast cancer in Australia: a national survey" on 309 adult women who living in Australia and previously diagnosed with breast cancer reported that only about one third of Australian breast cancer survivors had tried CAM specifically for weight management. While overall CAM use was high in their population, use for weight control was limited, mainly due to concerns about cost, limitation of scientific evidence, and difficulty finding trusted practitioners. This suggests that utilization of CAM for weight control can vary widely depending on the population, health status, and perceived accessibility or credibility of these therapies, highlighting the influence of both cultural and contextual factors on CAM adoption.

Regarding the most common complementary-alternative modality used for weight control, the results of the current study showed that more than three-quarters of the studied adults used natural herbal products, followed by exercise. This finding aligns with the results of the study by [15] who in their study entitled "A Questionnaire-based Study for Weight Loss by Using Herbal Drugs in Dammam (Eastern Region), Kingdom of Saudi Arabia" on 355 participants, and found that more than one half of participants used herbal products especially green tea, ginger, and flax seeds for weight loss. From the investigator point of view, these similarities might originate from similar features in all Arabic cultures and a trust in herbal remedies. These are commonly used, easily accessible and low-cost products for weight control. Natural products are often seen as a safe alternative by adults.

In contrast, the results of the current study is in disagreement with the results of the study done by [16] who in his survey entitled "Complementary and Integrative Health Approaches for Weight Management in the Obese Population: The 2018 Korea National Health and Nutrition Examination Survey" reported that in the Korean obese population

The most commonly reported approach was exercise, which included fitness, yoga, biking, and other physical activities between about three quarters of the studied population, while the use of herbal remedies was very low. From the investigator point of view this disagreement may be due to cultural differences between the two populations. In Egypt, herbal remedies are well-known, cheaper, and easily accessible so many people prefer them for weight control. In Korea, people rely more on exercise and conventional medicines, and herbal products are less common or trusted.

Regarding to the most common used biologically – based modalities for weight control among studied adults, the results of the current study showed that more than one half of the studied adults use cinnamon, cumin, ginger and green tea for weight control, this findings in agreement with the study done by [13] who in their study in titled "Complementary and alternative medicine use for weight management among females in Jordan: a community-based survey" on 858 women in Jordan to explore the status of complementary and alternative medicine use for weight management among adult females in Jordan and the possible relationship between complementary and alternative medicine use and body mass index and found that Commercial dietary supplements and herbal remedies were the most widely used CAM modalities. Green tea was the most commonly used herbal drink, while ginger was the most widely used home remedy for weight reduction. From the investigator's point of view, these similarities may be explained by the strong cultural belief in and tradition of using natural remedies in the region, which makes herbal products a common choice for health and weight control. Their easy availability, low cost, and the belief that they are safe and effective also encourage people to use them.

Regarding the most common mind–body modalities used for weight control, the current study found that walking was the most practiced activity, followed by running and yoga. This finding is in disagreement with the study by [14], who in their study entitled "Prevalence of and attitudes towards complementary therapy use for weight after breast cancer in Australia: a national survey" on 309 adult women who living in Australia and previously diagnosed with breast cancer to describe the use of CM for weight management after breast cancer in Australian women, and reported that about one half of adult women, the most used CAM modalities for weight management were included yoga, relaxation techniques, and meditation. From the investigator point of view these dissimilarities between the findings may be due to in Egypt walking is more applicable for all and need no money to practice that's why walking is most practiced activity. In Australia, people rely more on practicing exercises in gym.

Related to the adults' decision to start using complementary and alternative modalities (CAMs) for weight control the results of the current study indicated that two fifth of the participated adults used CAMs for weight control based on description from Attar these results in disagreement with study done by [13] who in their study in titled "Complementary and alternative medicine use for weight management among females in Jordan: a community-based survey" on 858 women in Jordan to explore the status of complementary and alternative medicine use for weight management among adult

females in Jordan and the possible relationship between complementary and alternative medicine use and body mass index and reported that main source of information about herbal dietary products and herbal remedies was relatives and friends, followed by the herbalist (attar). In the investigator opinion such factors highlight that personal attitudes, prior experiences, and expectations play a crucial role in starting CAMs use for weight control.

As well as one more study done by [17] who in their study in titled "Knowledge and practice about non-prescription weight loss supplements utilization among university students" on 437 male and female undergraduates from all academic years to investigate the prevalence, knowledge, and practices related to non-prescribed weight loss supplements among university students, and to identify reported side effects to support targeted health education., found that social media and family recommendations were key influencing sources for nearly one third of all users. From the investigator point of view these differences highlight the importance of multiple communication channels like (social media, herbalist, and nutritionist) to ensure all population awareness regarding different CAMs for weight control.

5. CONCLUSION AND RECOMMENDATIONS

Based on the findings of the current study, it can be concluded that the utilization of complementary and alternative modalities (CAMs) for weight control is common among Egyptian adults attending obesity and thinness clinics, despite an overall unsatisfactory level of knowledge regarding these modalities. Natural herbal products and exercise were the most frequently used CAMs, while many participants perceived CAMs as safe, reflecting a gap between perceived safety and actual knowledge. Significant relationships were found between CAM utilization and marital status, age, and body mass index, whereas no significant associations were observed with gender, employment status, or place of residence. Additionally, higher levels of education, younger age, and higher income were associated with better knowledge about CAMs, with a negative correlation identified between knowledge level and CAM utilization. These findings highlight the need for targeted educational interventions to promote safe, informed, and evidence-based use of CAMs for weight control.

Based on the results of the current study, the following recommendations are suggested:

- 1) Further research is recommended to evaluate the effectiveness and long-term safety of commonly used CAMs for weight control.
- 2) Regulatory policies should be strengthened to ensure the safety and quality of herbal and alternative weight control products.
- 3) Family health nurses should routinely assess clients' use of CAMs and provide evidence-based counseling during clinic visits

Abbreviations

CAMs	Complementary and alternative modalities
BMI	Body mass index

Declarations

Ethical Considerations

A primary written approval to conduct the study was obtained from the Research Ethics Committee of Cairo University's Faculty of Nursing. The objective and nature of the study were explained to the chosen adults by the investigator, who also stressed that participation in the study is entirely voluntary and that any participant is free to leave at any time. Every participant gave written informed permission. Data coding has guaranteed confidentiality and anonymity. Participants have been reassured that their data would not be utilized in another study without their consent, that the data acquired was used only for this study, and that no damage was experienced by the study participants.

Content Validity. The content validity of the tools was examined by a panel of three experts' professors from Faculty of Nursing, Cairo University, in the field of community health nursing. The investigator submitted the study tools to the experts to examine all items and the relevance of tools to the research question and aim of the study. Each expert examined the tools for content's coverage, clarity, wording, length, format and overall appearance of the tool. The modifications were done according to the panel feedback.

Tool reliability. Cronbach's alpha test was used to assess the internal consistency of the tools. It is often evaluating the extent to which items within a tool were correlated, suggesting they measure the same underlying concept. Additionally, a Cronbach's alpha of 0.7 or higher is generally considered acceptable in most social science research. In this study, the tool achieved a Cronbach's alpha of 0.80, indicating a good and reliable level of consistency.

Availability of data and materials

The data that support the findings of this study are available from the corresponding author upon reasonable request.

Competing Interests

The authors declare that they have no competing interests.

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