ORIGINAL ARTICLE

Utilisation and Perception of Complementary and Alternative Therapies (CATs) among Obese and Overweight Individuals in a Malaysian Public University

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ABSTRACT

INTRODUCTION: Obesity and overweight are among the most serious public health issues that can threaten the well-being of individuals. Its increasing prevalence in Malaysia has inevitably caused many to additionally seek complementary and alternative therapies (CATs) to lose weight. This study intends to 1) assess the utilisation and perception toward CATs among obese and overweight participants and 2) assess applicability, practicality, reliability, and validity of the UPCATs-Malay. **MATERIALS AND METHODS:** It was conducted cross-sectionally on 30 students and staff. Responses were analysed using SPSS (v21). **RESULTS:** Among the participants (age = 26.17±8.23 years; female = 66.7%; students = 63.3%), 40.0% were overweight and 60.0% were obese. Overall, 23.3% of the participants had previously used some types of CATs to lose weight, with herbal or dietary supplements (20.0%) being the most common. Participants' attitudes towards CATs were mostly influenced by the internet (93.3%). Most believed that CATs modalities were safe (53.3%) and not a threat to public health (70.0%). The majority of participants (53.3%) were also considering joining any CATs-based weight management programmes. Additionally, the questionnaire was considered clear, comprehensive, and not difficult to complete (<5 minutes). The overall reliability was 0.711 (domain range=0.641-0.881). The majority of individual items in UPCATs-Malay correlated better with their domains compared to other domains supporting validity. **CONCLUSION:** Overall, positive perceptions towards CATs were apparent and the questionnaire was reliable and valid. Further approaches should be taken especially on the identification of safe, viable CATs modalities and their role in weight management.

KEYWORDS: obesity, overweight, complementary and alternative therapies, weight loss

INTRODUCTION

According to the World Health Organization, obesity together with overweight problems are the second leading cause of preventable death worldwide in which the prevalence is rising significantly over the past two decades at 39% and 13%, respectively.[1] In Malaysia, the figures have similarly shown dramatic rises from 14% to 17% (obesity), and 20.7% to 30.0% (overweight).[2] Currently, the treatments for excess weight include lifestyle modification such as diet, exercise, medications, and surgery.[3] However, their compliances are generally poor and the obesity and overweight rates keep increasing globally. Further, almost 70% would regain their lost weight after the intervention, indicating that these strategies are sometimes ineffective for sustainable weight reduction.[4]

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Nowadays, complementary and alternative therapies (CATs) are tremendously popular as an adjunct treatment for weight management as well as for improving health. CATs represents "a group of diverse medical and health care systems, practices, and products that are not presently considered to be part of conventional medicine such as biologically-based system, manipulative and body-based, mind-body therapies and traditional Asian medical systems".[5-6]

The global rapid increase in CATs uses for maintaining well-being ranges from 50% to 80% of the population.[1,7] In Malaysia, CATs have long been practiced and it is estimated that about 18-37% individuals are using at least one form of CATs for various health problems, the most commonly-used being herbal-based products and dietary supplements.[8-10] With an escalating rate of obesity and overweight, the demand for CATs is expected to keep soaring. A previous study among excess weight females in Jordan indicated that 40% of the participants used CATs for weight management.[10] Similar studies have reported positive results but limited opinions exist regarding the utilisation of CATs for weight loss.

In Malaysia, such weight-focused studies are still scarce. Therefore, the current study was conducted to assess the utilisation and perception toward CATs and to evaluate the applicability, practicality, reliability, and validity of the Utilisation and Perception of CATs-Malay questionnaire among obese and overweight individuals in a public university in Malaysia.

MATERIALS AND METHODS

Setting and participants

This was a cross-sectional study using convenience sampling in Universiti Sultan Zainal Abidin (UniSZA), Kuala Nerus, Malaysia. Participants had to be students and staff with body mass index (BMI) greater than 25kg/m^2, between 18 to 60 years old, and understand the Malay language. The excluded participants were: (1) currently participating in other weight management programs; (2) having hearing problems; (3) suffering from chronic medical conditions; (4) pregnant or post-menopausal; (5) experiencing any psychotic symptoms. Thirty overweight or obese individuals according to a general rule for the sampling of a pilot sample for the intervention study.[11]

Ethical approval

Ethical approval was obtained from the UniSZA Human Research Ethics Committee (UHREC) (ref: UniSZA/UHREC/2019/116).

Instruments

Personal Information and Anthropometry Assessment

A self-administered questionnaire was used to collect data on socio-demographic characteristics and anthropometric measurements (weight, height, BMI). Bodyweight was measured in light clothing and without shoes with Seca 813 weighing scale. Height was measured in an upright standing position with a portable stadiometer (Seca 213). BMI was calculated by dividing the measured body weight (kg) by the squared measured height (m^2). The BMI classification as follows; (a) normal: 18.5-24.9kg/m^2, (b) overweight: 25-29.9kg/m^2, (c) obese type I: 30-34.9kg/m^2, (d) obese type II: 35.0-39.9kg/m^2, and (e) obese type III: >40.0kg/m^2.[12] All measurements were measured twice, and the average values were used in the analysis.

Utilisation and Perception of Complementary and Alternative Therapies (UPCATs)- Malay

This questionnaire was adapted from previous studies.[13,14] The original questionnaire was translated from English into Malay by one independent translator. The translated versions had been compared, discussed, and modified before a preliminary Malay version of the UPCATs was agreed on. Later, backward translation of the preliminary Malay version into English was done by one independent, an expert translator. The English version was then compared with the original questionnaire for accuracy. Consequently, a provisional version of the UPCATs-Malay questionnaire was developed and ready for pilot testing.

The questionnaire was divided into four sections covering utilisation of CATs (25 items), source of information (11 items), and awareness and perceptions

about CATs (10 items). The first and second parts of the questionnaire were evaluated by using multiple-choice questions. Participants' perceptions were assessed on a 5 -point Likert scale. Higher scores indicate a good perception of CATs.

Applicability and Practicality Form

This feedback form was adapted from a previous study in Malaysia.[15] It consisted of five items that asked on the duration to complete the UPCATs questionnaire, clarity and understanding, comprehensiveness, and the spontaneous responses from participants. All items were open-ended questions except for Item 2 (4-point Likert-scale) and item 4 (answered either 'yes' or 'no').

Data Collection Procedures

Upon agreeing to participate, participants were first asked to sign a written consent form before anthropometric measurements were taken. Participants later proceeded to complete demographic information and the UPCATs-Malay questionnaire. The duration spent answering the questionnaire was recorded using a stopwatch. The researchers remained with all participants during completing questionnaires to assist them with any difficult or unclear questions. Upon completion, the questionnaires were submitted to the researchers. A token of appreciation was distributed to the participants at the end of the study.

Statistical analysis

Statistical analysis was conducted using Statistical Package for Social Science (SPSS version 21.0). All descriptive analyses were presented as frequencies (n) and percentages (%). The internal consistency reliability was assessed via Cronbach's alpha (α) for overall and each domain of the UPCATs-Malay questionnaire. The α-value of 0.70 or greater indicates acceptable reliability. Spearman's rank correlation coefficient (r_s) was used to determine the strength of the associations between an item and its domain or with other domains for validity purposes. The magnitude of r_s>0.40 between an item and its domain is considered as adequate evidence of convergent validity.[22] Meanwhile, divergent validity was confirmed when an item weakly correlated with another domain than its domain (r_s<0.40).[16]

RESULTS

Socio-demographic

A total of thirty Malay Muslim students and staff participated in this study. The majority of the participants were females (66.7%) and in the 18-28 years age group (70.0%). Besides, 70.0% of the participants were unmarried, had no income (56.7%) and 63.3% of them are students (18 undergraduates, one postgraduate). Most of them were obese (Class I: 36.7%; Class II: 20.0%; Class III: 3.3%). The more comprehensive demographic data are presented in Table I.

Table I: Sociodemographic characteristics of participants (n=30).

Characteristics	Frequency (n)	Percentages (%)
Gender		
Male	10	33.3
Female	20	66.7
Age (years)		
18-28	21	70.0
29-38	6	20.0
39-48	2	6.7
49-58	1	3.3
Marital status		
Single	21	70.0
Married	7	23.3
Divorced/Widowed	2	6.7
Educational level		
Sijil Pelajaran Malaysia (SPM)/ O-Level	7	23.3
STPM/Diploma/Asasi/ Matrikulasi/Sijil/A-Level	8	26.7
Degree	14	46.7
Master's degree/PhD	1	3.3
Occupation		
Staff	11	36.7
Student	19	63.3
Income		
No income	17	56.7
≤RM 1,000/USD 230	1	3.3
RM 1,001 – RM 2,000/ USD 230 – USD 460	4	13.3
RM 2,001 – RM 3,000/ USD 460.53 – USD 690	4	13.3
RM 3,001 – RM 4,000/ USD 690.68 – USD 920	2	6.7
≥ RM 4,001/USD 920.83	2	6.7
BMI Status		
Overweight (BMI: 18.5-24.9 kg/m²)	12	40.0
Obese type I (BMI: 25.0-29.9 kg/m²)	11	36.7
Obese type II (BMI: 30.0-34.9 kg/m²)	6	20.0
Obese type III (BMI: > 40.0 kg/m²)	1	3.3

CATs Utilisation Patterns

Table II describes the habit of using CATs among the participants. Only 23.3% had the experience of using CATs with herbal or dietary supplements (20.0%) were the most commonly utilised CATs, followed by manipulative and body-based therapies (3.3%) and mind -body therapies (3.3%). The majority had used CATs to prevent illness or for overall wellness (16.7%) and as supplementary to conventional medication (16.7%). Besides, 13.3% utilised CATs either to treat a specific health condition or to reduce pain. Most participants were advised by their pharmacists (10.0%), and family or friends (10.0%) to try

Table II: CATs utilisation patterns among participants (n=30).

Items	Response	Participants (N = 30)		n (%)
		Students (n=19)	Staff (n=11)	
Usage of CATs	Yes	5	2	7 (23.3)
	No	14	9	23 (76.7)
Type of CATs used:				
Herbal or dietary supplements	Yes	5	1	6 (20.0)
	No	14	10	24 (80.0)
Manipulative and body-based	Yes	0	1	1 (3.3)
	No	19	10	29 (96.7)
Mind-body	Yes	0	0	0
	No	19	11	30 (100.0)
Traditional alternative	Yes	1	0	1 (3.3)
	No	18	11	29 (96.7)
Others	Yes	0	0	0
	No	19	11	30 (100.0)
Purpose of using CATs:				
To prevent illness/for overall wellness	Yes	3	2	5 (16.7)
	No	16	9	25 (83.3)
To treat a specific health condition	Yes	3	1	4 (13.3)
	No	16	10	26 (86.7)
To reduce pain	Yes	3	1	4 (13.3)
	No	16	10	26 (86.7)
As supplementary to conventional medicine	Yes	4	1	5 (16.7)
	No	15	10	25 (83.3)
Others	Yes	0	0	0
	No	19	11	30 (100.0)
Used CATs on the advice of:				
Ownself	Yes	3	0	3 (10.0)
	No	16	11	27 (90.0)
Doctor	Yes	2	0	2 (6.7)
	No	17	11	28 (93.3)
Pharmacist	Yes	3	0	3 (10.0)
	No	16	11	27 (90.0)
Family/friend	Yes	3	0	3 (10.0)
	No	16	11	27 (90.0)
Others	Yes	1	0	1 (3.3)
	No	18	10	29 (96.7)
Any discussion with health care provider (s)	Yes	4	0	4 (13.3)
	No	15	11	26 (86.7)
Reasons not discussing with health care provider (s):				
Don't know should	Yes	5	2	7 (23.3)
	No	14	9	23 (76.7)
Not enough time during visits	Yes	5	3	8 (26.7)
	No	14	8	22 (73.3)
The health care provider didn't ask	Yes	5	2	7(23.3)
	No	14	9	23 (76.7)
Don't know should discuss	Yes	3	0	3 (10.0)
	No	16	11	27 (90.0)
Not comfortable to discuss	Yes	3	0	3 (10.0)
	No	16	11	27 (90.0)
Health care provider have been dismissive	Yes	0	1	1 (3.3)
	No	19	10	29 (96.7)
Others	Yes	0	0	0 (0)
	No	19	11	30 (100.0)
Concomitant CATs usage with conventional medicines	Yes	4	0	4 (13.3)
	No	15	11	26 (86.7)

alternative treatment modality and only 6.7% were recommended by doctors. In general, respondents had poor communication with their health care providers regarding CATs (13.3%). The most common reasons for not discussing included not enough time during visits (26.7%), not knowing they should discuss (23.3%) and their health care provider did not ask about it (23.3%). CAT was used concurrently with conventional medicine by 13.3% of participants.

Sources of information about CATs

Figure 1 describes the sources of information acquired by the participants. The majority of students (60.0%) and staff (33.3%) considered the internet as the primary source of information about CATs. Whereas the second source of information was from the pharmacists (20.0% and 13.3%, respectively), followed by family and friends (13.3% and 10.0%, respectively). The percentage total may exceed 100% as more than one source of information could be mentioned by the participants.

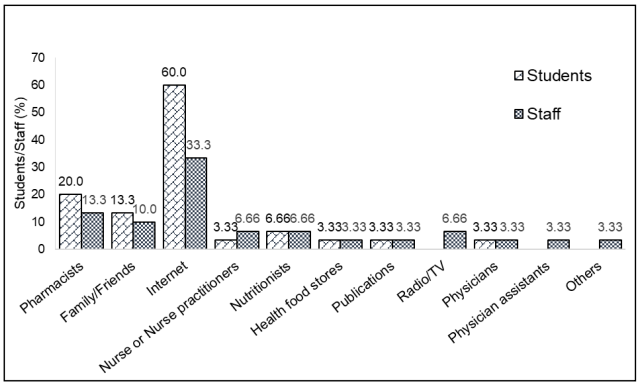

Figure 1. Sources of information about CATs.

Perceptions towards CATs

The majority of the participants were disagreed (53.3%) or stayed neutral (30.0%) about the notion that CATs' use is unsafe. Approximately 63.4% agreed that CATs beneficial for disease treatment and 56.7% agreed CATs use has fewer side effects than conventional medicine. The majority did not think that CATs is a threat to public health (70.0%) and 63.3% strongly agreed that it was important to consult with healthcare professional before using CATs. About 60.0% were neutral with the statement on the benefits of CATs being related to their placebo effects. However, 60.0% of participants considered that the lack of scientific evidence is a barrier to CATs usage. A large proportion of the participants agreed (53.3%) that clinical care should integrate the best of conventional therapies and CATs use while about 53.4% were considering joining any weight management programme using CATs. The overall perceptions are presented in Table III.

Table III. Perceptions towards CATs (n=30).

Item (s) (I believe that...)	Frequency n (%)				
	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
CAT use is unsafe	0	1 (3.3)	9 (30.0)	16 (53.3)	4 (13.3)
CAT use is not an appropriate treatment in any disease	0	1 (3.3)	10 (33.3)	17 (56.7)	2 (6.7)
CAT use has fewer side effects compared to conventional medicine	0	17 (56.7)	6 (20.0)	6 (20.0)	1 (3.3)
CAT is a threat to public health	0	2 (6.7)	7 (23.3)	20 (66.7)	1 (3.3)
It is important to consult any healthcare professional before CAT use	10 (33.3)	9 (30.0)	6 (20.0)	2 (6.7)	3 (10.0)
CAT benefits are related to their placebo effects	0	8 (26.7)	18 (60.0)	3 (10.0)	1 (3.3)
Lack of scientific evidence is a barrier toward CAT use	0	18 (60.0)	9 (30.0)	3 (10.0)	0
The concern of legal issues is a barrier toward CAT use	3 (10.0)	12 (40.0)	9 (30.0)	4 (13.3)	2 (6.7)
Clinical care should integrate the best of conventional and CAT use	6 (20.0)	10 (33.3)	11 (36.7)	2 (6.7)	1 (3.3)
I will consider joining any programme using CAT to lose weight	2 (6.7)	14 (46.7)	10 (33.3)	2 (6.7)	2 (6.7)

Applicability, Practicality, Reliability, and Validity of UPCATs-Malay

The majority of participants took an average of 3.18 minutes (SD=±0.837, range=2–5 minutes) to complete

the questionnaire. Most of them considered the questions and instructions to be "clear" (n=15, 50%) and "very clear" (n=12, 40%) respectively. Only three participants stated that some of the items (items number 6 and 9 in domain *Perceptions towards CATs*) were "not clear" as they did not understand the term 'placebo' and 'integration'. All participants (100%) thought UPCATs-Malay was comprehensive and had no difficulties completing the questionnaire.

The overall Cronbach alpha (α) was 0.711. This internal consistency reliability gauge for all domains exceeded 0.70 except for the domain on perception towards CATs which was considered moderately acceptable (α=0.641) (Table IV). Within UPCATs itself, all individual items produced moderate correlations (corrected for overlap) with their respective domains than with other domains (r_s≥0.30) except for the nine items in the *Usage of CATs*, *Sources of information,* and *Perceptions towards CATs* (items number 2, 14, 17, 18, 19, 23, 35, 36 and 38). These findings demonstrated overall convergent validity. Subsequently, most items in dissimilar domains illustrated divergent validity as they showed weak correlations (r_s=0.00–0.29) or moderate associations (r_s=0.30–0.38) with each other.

Table IV: Internal consistency measured by Cronbach's alpha of UPCATs-Malay domains.

Variable	Cronbach's alpha (α)
Usage of CATs	0.707
Sources of information	0.881
Perceptions towards CATs	0.641
Overall	0.711

DISCUSSION

Although the use of CATs is increasing, there are very few published studies documenting the extent of use and perceptions towards CATs for weight management.[10] The current study showed that the utilisation of CATs among this population was slightly more than the general prevalence of CATs used in Malaysia, based on a survey in 2015 which was nearly 30%.[9] However, the respondents in NHMS (2015) involved the general population whereas, in our study, data were collected from obese and overweight individuals. There was also a study done in Jordan which indicated approximately twice higher CATs use among excess weight females (40.0%) than that found in our study.[10] This difference seen was probably because all the other studies were conducted in various community settings while this study was only restricted to a public university. Additionally, the accessibility and availability of CATs modalities may have influenced an individual's usage.[17]

Herbal or dietary supplements were the most preferred CATs in this study (20.0%), probably due to them being readily available over the counter (may purchase from supermarkets, health food stores, online) and affordable cost in comparison to conventional medicine. This finding is comparable to an earlier general survey in Malaysia where herbal-based products were the most commonly used CATs among the population.[9] This is similar to a study in the UK, where easier to access and less expensive CATs products were found to be the major reasons for their use.[18] Majority of the participants used CATs to prevent illness (16.7%) and as additional food supplements (16.7%) – a phenomenon which may be due to the common belief that natural food is safe and possess fewer adverse effects. The literature has previously reported that participants' choice of using CATs was not only due to the availability of natural foods, but also because it was considered healthier and did not have the adverse effects as conventional medicines.[25,26] Preventing complications from conventional medicine had also been cited as a reason for its common practice.[19-20]

On a separate issue, the majority of the respondents have not discussed their CATs usage with their health care providers. This illustrates a rather poor communication between the participants and their health care providers, which could be due to the participants' assumption that it was not a necessary thing to do. It could also result from being fearful of the health care providers' reactions. This finding was comparable to other studies which revealed that most participants thought discussing CATs with physicians was not important due to reasons such as lack of knowledge and awareness.[17,21] Nonetheless, most subjects used CATs as advised by the pharmacists, family, and friends suggesting the existence of their confidence in the pharmacists as well as their strong ties and trust towards family members in Malaysia. It was

demonstrated from an earlier report that 31.3% of the participants started to utilise CATs on the advice of family and friends to help individuals achieve their goal and improving motivation.[22]

In this study, the internet, pharmacists, family, and friends were the main sources of information when it came to matters regarding CATs. This trend of information-seeking is already a common practice in many countries such as the obese and overweight in Jordan who turned to the internet, family, and friends as their main resources.[10] The fact that the internet is a popular and notable information source undoubtedly hinges on its ease of accessibility (most people own smartphones or laptops/iPads/tablets), availability (very wide coverage nowadays in many countries), and affordability (free WiFi services in common public places). However, the internet and social media can sometimes be unreliable due to a lack of properly-cited scientific evidence and thus, appropriate reports on evidence-based CATs are constantly in need.

Interestingly, this research also discovered that majority of the subjects showed positive perceptions towards CATs. This is consistent with another study that also claimed a similar finding.[10] Most female participants (who constituted more than 50% of the respondents) agreed that CATs were safe and not a threat to public health. This could be due to the reason those female participants are more interested in using CATs for weight management compared to males. According to Alwhaibi et al.,[23] females were likely to be more responsive and have a greater desire in seeking CATs benefits to improve their health and well-being. Furthermore, women are more concerned about their appearance and drive for smaller body image because of the influence from social media (Facebook, Instagram, etc,) which features slim appearance as perfect and more acceptable in society.[24]

In contrast, lack of scientific evidence on the effectiveness was the major barrier of CAT use. There is a need for evidence-based CATs information to be spread by CATs professionals and other healthcare providers as suggested before.[25] Based on the results, it was observed that legal concern may be one of the reasons that influenced individual's preferences towards CATs. Kwon et al.[26] also reported that CATs regulation was important to ensure the safety and standardisation of CATs practices. Accordingly, the Malaysian government has gazetted the Traditional and Complementary Medicine Act 2013(4) which is in line with the WHO strategy to regulate the CATs practitioners and practices. This attempt includes standardisation and accreditation of education and training of recognised practices, the establishment of CATs units in selected government hospitals, promotion of safe use of CATs, and increasing the number of research and development.[9] Besides, participants were uncertain about the benefits of CATs which could be related to their placebo effects. This might be due to the lack of knowledge and exposure to CATs. This is well supported by literature that reported the positive perceptions of CATs following the introduction of CATs courses into the present curriculum.[27,28] At the same time, developing CATs education programs could help improve an individual's knowledge related to CATs and protect them from unexpected adverse effects of CATs.

From the perspectives of the respondents, the UPCATs -Malay was generally acceptable -they found it to be practical as it needed minimal time to complete. The majority of them stated that the questionnaire is clear, comprehensive, and possessing a suitable basic construct, indicates acceptability and applicability of the questionnaire. The findings of the reliability tests surpassed the Cronbach's alpha coefficient threshold of 0.70.[29] However, domain *Perceptions towards CATs* were moderate and likely due to a low number of questions and poorly interrelated between items. A moderate correlation was also demonstrated between their domain compared to other domains, exhibit convergent validity. These findings have been confirmed by previous studies from the literature.[14,30]

Anyhow, some limitations of this study need mentioning. Among others, the small number of participants which was coincidentally all Malay Muslims, could not permit a more thorough generalisation. Since the method was based on convenience sampling, the overall outcomes may not represent the actual results from the larger segments of obese or overweight individuals in the country. Nevertheless, the strength of this study is that it has explored a public health issue that is of pertinent interest to healthcare researchers in

Malaysia and worldwide. The findings are still worthy of some contribution to public health education and CATs literature, and it may become the basis to fully utilise CATs' potential in combating weight problems in near future.

CONCLUSION

The present study demonstrated that only one-fifth of the respondents had ever used CATs for weight management within the last twelve months, in which the most common types were herbal and dietary supplements. The main sources of information were the internet, followed by the pharmacists, family, and friends. Despite that, positive perceptions towards CATs were found, with more than half believing that CATs were safe and not a threat to public health. Additionally, the questionnaire was also considered clear, comprehensive, and reliable for this current population.

Conflicts of interest

None declared.

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