

ORIGINAL ARTICLE

UTILIZATION AND PERCEPTION OF COMPLEMENTARY AND ALTERNATIVE THERAPIES (CATS) AMONG SECONDARY SCHOOL STUDENTS IN KUALA TERENGGANU

Nurul Afiedia Roslim¹, Aryati Ahmad², Mardiana Mansor³, Myat Moe Thwe Aung³, Farrahdilla Hamzah³ and Pei Lin Lua*¹

¹Faculty of Pharmacy, Universiti Sultan Zainal Abidin (UniSZA), Kampus Besut, 22200 Besut, Terengganu, Malaysia.

²Faculty of Health Sciences, Universiti Sultan Zainal Abidin (UniSZA), Kampus Gong Badak, 21300 Kuala Nerus, Terengganu, Malaysia.

³Faculty of Medicine, Universiti Sultan Zainal Abidin (UniSZA), Kampus Kota, 20400 Kuala Terengganu, Terengganu, Malaysia

*Corresponding author: Pei Lin Lua

Email: peilinlua@unisza.edu.my and peilinlua@hotmail.com

ABSTRACT

Complementary and alternative therapies (CATs) are tremendously popular as an adjunct treatment for treating various health conditions but limited literature is available on the extent of use and perception among adolescents. This study aimed to 1) assess the general utilization and perception toward CATs and 2) compare the perception between CATs users and non-CATs users among secondary school students in Kuala Terengganu. A cross-sectional study was conducted among 99 students of a secondary school in Terengganu, Malaysia using convenience sampling. Responses were analysed via descriptive analysis and non-parametric tests using SPSS (v21). Among the participants (age = 15.3 ± 0.6 years; female = 78.8%), 23.2% had previously used some types of CATs, with herbal or dietary supplements (56.5%) being the most common. Participants' utilization towards CATs were mostly influenced by their family and friends (82.6%). The students gained information about CATs from the internet (67.7%), followed by physicians (62.6%) and family/friends (61.6%). Most students have favourable opinions regarding CATs usage with no significant association between CATs users and non-users ($p > 0.05$). Nonetheless, CATs users scored higher in their beliefs that CATs has fewer side effects in comparison to conventional medicine ($p = 0.050$). From the findings, this study has provided some early evidence on the positive perceptions harboured by adolescents in Terengganu regarding CATs. Further approaches should be taken to educate the students about the fundamentals of CATs use to ensure their safety and efficacy.

Keywords: complementary and alternative therapies, adolescents, perception, students

INTRODUCTION

Numerous remedies have been used to cure and preserve human health and well-being since ancient times. In addition to allopathic medicine, complementary and alternative therapies (CATs) are similarly widely embraced and used within society, either domestically or globally. The National Center for Complementary and Integrative Health (NCCIH) defines CATs as a group of diverse medical and health care systems, practices, and products that are not presently considered to be a part of conventional medicine. They have been classified into five broad categories such as alternative medical system (traditional medicine), biologically-based (natural products and dietary supplements), mind-body, manipulative and body-based and energy therapies¹. In Malaysia, CATs were included in the Traditional and Complementary Medicine (T&CM) as part of a medical care system².

As of today, the proportion of people who used CATs globally ranges from 9.8% to 76% with more than 80% of the population from developing countries practiced CATs for primary healthcare purposes³. The trend is similar in Malaysia where

The Malaysian Cohort (TMC) project found that more than 50% of Malaysian individuals used CATs to treat their various health problems, with biologically-based products (herbal, dietary supplements, vitamins and minerals) being the most common⁴. The growing demands and the acceptance of CATs are due to the inconvenience, perceived efficacy, safety and affordability which are also related to the personal, religious and spiritual beliefs^{5,6}.

In view of the recent upsurge of interest in CATs, multiple studies have been conducted to explore the use of CATs among adolescents with varying prevalence (ranges from 32.5% to 69.1%)⁷⁻⁹. Likewise, these studies also suggested a higher prevalence of using natural products and dietary supplements to maintain their well-being. As claimed by Patterson et al.¹⁰, social factors such as culture, internet, families and friends lead to the utilization of CATs among adolescents. This phenomenon raises concern about unproven CATs and some potentially dangerous supplements, thus highlighting the need for increasing CATs knowledge among the public. In addition, it was reported that adolescents commonly engage in increased desire to experiment with substance

use and risky behaviour, thus, in turn, increasing the use of CATs, especially for enhancing sports performance, acne or weight reduction^{10,11}.

Nevertheless, to date, limited studies exist on CATs use and perception among students in Malaysia and to a lesser degree, Terengganu. It is also equally important to explore their perception towards CATs, which are often more vulnerable to inappropriate use. Therefore, the purposes of our current study were to assess the utilization and perception of CATs among secondary school students in Kuala Terengganu, Malaysia. Consequently, this study attempts to also compare the perception towards CATs based on their usage within this cohort.

MATERIALS AND METHODS

Ethical approval

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

Setting and participants

This cross-sectional study was conducted among 99 students at Sekolah Menengah Kebangsaan (SMK) Manir, Kuala Terengganu, Terengganu, Malaysia. Convenience sampling was applied. The target group of participants consisted of students between the ages of 14 to 16 years, able to understand and communicate in Malay, possessed internet access and must be able to give a written informed consent. Participants were excluded from the study if they had hearing problems, suffering from chronic medical conditions and encountered any psychotic symptoms that could affect the process of data collection.

Study instrument

The Utilization and Perception of Complementary and Alternative Therapies (UPCATs) Questionnaire was administered via Google Form to accomplish the objectives proposed. This form consisted of four different parts namely, socio-demographic characteristics (gender, age, ethnicity), use of CATs (24 items), source of information (11 items) and perceptions about CATs (10 items). The second and third parts were assessed using questions adapted from NCCAM (2013) and evaluated by using multiple choice questions. Participants' perceptions were assessed on 5-point Likert scale adapted from Jamshed et al.¹². Higher scores indicate a good perception of CATs.

Data collection procedure

For the purpose of this study, only those with verbal consent and who met the study inclusion were recruited. For each participant, a Written Consent Form was signed before they agree to participation. All participants were assured that

their personal details would remain anonymous, kept confidential and only used for this research. Participants then proceeded to complete a set of questionnaire on sociodemographic and UPCATs-Malay, and submitting them via Google Form. A token of appreciation was distributed to the participants at the end of the study.

Data analysis

The collected data were analysed using IBM Statistical Package for Social Sciences (SPSS) version 21.0. All descriptive statistics were presented in frequencies (n) and percentages (%), and normal distribution was also tested. Sociodemographic data of CATs users and non-CATs users were compared using either chi-square test or Fisher's exact test and results were presented as frequency and percentage with *p*-values. Scores for Likert scale questions were summarized using means and standard deviations, and categorical data were summarized using frequency distributions. Mann-Whitney U test was employed to compare the differences between continuous variables. The value of *p*<0.05 was considered statistically significant.

RESULTS

Sociodemographic characteristics

A descriptive analysis for participants' demographics is presented in Table 1. Out of the 99 Malay, Muslim students, 23.2% had a history of using CATs while 76.8% students had never used CATs before. The mean age in years of the respondents was 15.3 ± 0.6 years and out of the total, 21 (21.2%) were males and 76 (76.8%) were female students. As shown in Table 1, there were no significant differences between CATs users and non-users with demographics variables (age and gender).

CATs utilization patterns

The behaviour of using CATs among the CATs users is illustrated in Table 2. Herbal or dietary supplements (56.5%) appeared to be the most commonly utilized of CATs, followed by mind-body therapies and traditional alternative therapies (34.8%). Most participants had used CATs to prevent illness or for overall well-being (78.3%) and to reduce pain (43.5%). On the other hand, only 39.1% of students utilised CATs to treat specific health condition and as supplementary to conventional medicine (34.8%). Majority of participants were advised by their family or friends (82.6%) or chose to try CATs by themselves (56.5%). Most (65.2%) had poor communication with their health care providers regarding CATs because they did not know they should discuss it (43.5%), not comfortable to discuss (43.5%) and their health care provider did not inquire about it (34.8%). Only 26.1% of them used CATs concurrently with conventional medicine

Table 1. Sociodemographic characteristics between CATs users and non-users (N=99)

Item	All students (N=99)	CATs users n=23 (%)	Non-CATs users n=76 (%)	p-value
<i>Gender</i>				
Male	21 (21.2)	6 (6.1)	15 (15.1)	0.56 ^a
Female	78 (78.8)	17 (21.8)	61 (61.6)	
<i>Age (years)</i>				
14 years	10 (10.1)	7 (7.1)	3 (3.0)	0.84 ^b
15 years	51 (51.5)	40 (40.4)	11 (11.1)	
16 years	38 (38.4)	29 (29.3)	9 (9.1)	

^aFisher's Exact test, ^bChi-squared test

Table 2. CATs utilization patterns among CATs users (N=23)

Item (s)	n	%
<i>Type of CATs used:</i>		
• Herbal or dietary supplements	13	56.5
• Manipulative and body-based	2	8.7
• Mind-body	8	34.8
• Traditional alternative	8	34.8
<i>Purpose of using CATs:</i>		
• To prevent illness/for overall wellness	18	78.3
• To treat specific health condition	9	39.1
• To reduce pain	10	43.5
• As supplementary to conventional medicine	8	34.8
<i>Used CATs on advice of:</i>		
• Ownself	13	56.5
• Physician	6	26.1
• Pharmacist	6	26.1
• Family/friend	19	82.6
<i>Any discussion with health care provider (s)</i>		
• Yes	8	34.8
• No	15	65.2
<i>Reasons not discussing with health care provider (s):</i>		
• Don't know should discuss	10	43.5
• No enough time during visits	8	34.8
• Health care provider didn't ask	8	34.8
• Not comfortable to discuss	10	43.5
• Health care provider have been dismissive	2	8.7
<i>Concomitant CATs usage with conventional medicines</i>		
• Yes	6	26.1
• No	17	73.9

Sources of information about CATs

Figure 1 showed the sources of information of information acquired by the students. The internet (67.7%), followed by physicians (62.6%) and family/friends (61.6%) were the most widely used sources of information by participants. The total percentage may exceed 100% as more than one sources of information could be mentioned by the participants.

Perceptions towards CATs

Data demonstrated insignificant differences in overall perception scores between CATs users (27.83 ± 5.97) and non-CATs users (26.14 ± 5.38). However, significant differences were noticed in item 'CAT use has fewer side effects compared to conventional medicine' with CATs users scored higher compared to non users when estimated for individual perceptions (p = 0.050) (Table 3).

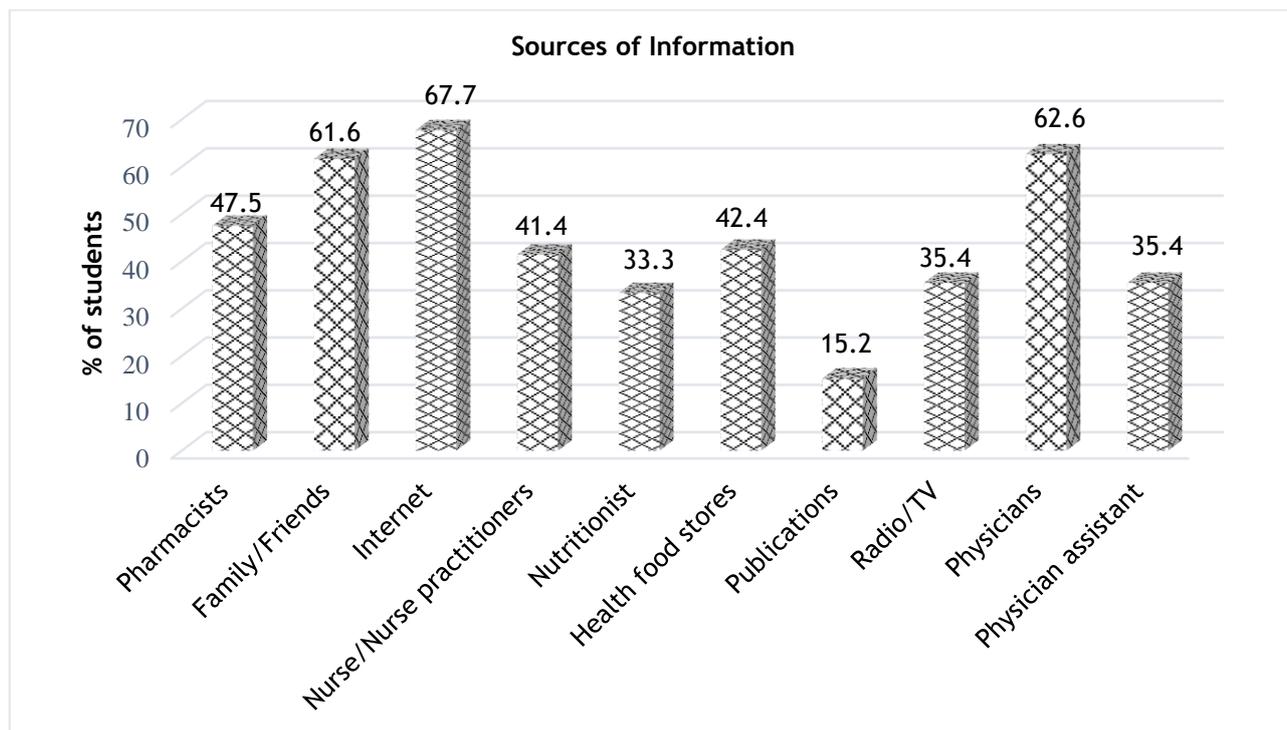


Figure 1. Sources of information about CATs.

Table 3. Perceptions towards CATs (N=99)

Item (s): (I believe that...)	CATs users (n=23) Mean±SD	Non-CATs users (n=76) Mean±SD	p-value*
CATs use is unsafe	3.43 ± 0.99	3.32 ± 0.94	0.468
CATs use is not an appropriate treatment in any disease	3.39 ± 1.03	2.97 ± 1.08	0.071
CATs use has fewer side effects compared to conventional medicine	3.00 ± 0.85	2.64 ± 0.87	0.050
CATs is a threat to public health	3.57 ± 0.99	3.25 ± 1.12	0.190
It is important to consult any healthcare professional before CATs use	2.13 ± 1.10	1.75 ± 0.87	0.145
CATs benefits are related to their placebo effects	2.43 ± 0.95	2.46 ± 0.70	0.832
Lack of scientific evidence is a barrier toward CATs use	2.48 ± 0.95	2.49 ± 0.97	0.986
The concern of legal issues is a barrier toward CATs use	2.70 ± 0.93	2.53 ± 0.92	0.388
Clinical care should integrate the best of conventional and CATs use	2.35 ± 0.88	2.22 ± 0.79	0.487
I will consider to join any programme using CATs to lose weight	2.35 ± 1.11	2.51 ± 1.04	0.398
Total	27.83±5.97	26.14±5.38	0.067

Responses to items 1,2,4 and 6 were reversed so a higher value indicated greater endorsement

*Mann-Whitney test were used at a level of significance $p < 0.05$

Responses were based on a 5 point Likert-type scale with 1=absolutely disagree to 5=absolutely agree

DISCUSSION

Nowadays, more than 80% of the developing world's population still depends upon CATs, while half of the developed world uses CATs for some part of primary healthcare¹³. Nonetheless, there are few published studies among secondary school students documenting the level of usage and perceptions towards CATs. Since adolescents are more vulnerable to unsuitable and improper use of CATs, it is important to explore their attitudes towards CATs so that any intended use is always accompanied by safety advice. The observed rate of CATs usage among the study population (23.2%) was within the prevalence range (10.9-87.6%) defined among teenagers in previous studies¹⁴. The prevalence differed possibly because of the different nature of research, where those higher prevalence studies were conducted in various community settings while only a secondary school was focused in the current study. Additionally, parental background, health condition, accessibility and affordability of CATs modalities may have influenced the student's usage^{8,15}.

This study highlighted that herbal/dietary supplements (56.5%) were the most frequently used by students in both groups. This finding is similar to a previous report by Sien et al.¹⁶ demonstrating that dietary supplements were the possibly the most preferred CATs modalities among participants due to its easy availability over the counter. Other studies supporting this view has been reported among teenagers from Pakistan, United States and Japan^{6,8,17}. These suggested that herbal/dietary supplements are well known and frequently utilized CATs modality among students of Asian, Arab and European origin. Despite easy access, influence of local culture and belief in the society might be attributed to their usage⁶. The majority of participants used CATs primarily to prevent illness (78.3%), reduce body pain (43.5%) and to treat specific health conditions (39.1%). Wang et al.¹⁸ found similar results as common explanations for adolescent's use of CATs, indicating that people are looking for CATs to maintain their well being as they perceived it to be safer and possesses a natural approach to preserve health and preventing disease. Nevertheless, most students used CATs as per advised by their family and friends suggesting the existence of their faith and trust among family members. This is in line with previous findings that have documented the impact of family and culture on the use of CATs, despite greater chances of misleading information particularly in the Asian population^{6,8}.

Poor communication between teenagers and their health care providers regarding the use of CATs has been reported previously^{8,18}. In full agreement with this fact, current study also showed a high rate of non-disclosure of the use of CATs because it was not a comfortable topic to discuss. They

also felt that it was not an important thing to do. This shows that there is still a gap that needs to be bridged in the relationship between health care providers and users. In addition, it is necessary to understand people's beliefs and provide information of the available therapy whether prescribed or non-prescribed, relating to their health condition in order to strengthen the relationship between health care providers and individuals. Consequently, the potential for herb-drug interactions when combining CATs use with conventional treatment can be minimised. Consistent with previous finding⁶, this study showed that the internet, physicians, family and friends were the main sources of CATs knowledge among participants. The internet has become the most popular search engines among youth due to its unique features such as easy availability (smartphone access nearly ubiquitous among teens), affordable and offers fast communication (services and social networking sites like Facebook, Twitter and etc.)¹⁹. Although the wealth of information regarding CATs available on the internet, lack of trustworthiness could be a problem thus, appropriate reports on evidence-based CATs are constantly in need.

Additionally, the present study also revealed that most of the students exhibited positive perceptions towards CATs, with users possessing more favourable belief regarding CATs side effects than non-CATs users. This was understandably due to their confidence in the safety and efficacy of CATs modalities, probably due to the utilisation being already regularly practised by family members. As claimed by Tangkiatkumjai et al.²⁰, a close-knit family or community structure can influence individual decision-making regarding CATs usage especially among the Asian population. In this regard, it is imperative to provide sufficient information on CATs (benefits, side effects, good practice of CATs, etc.) for the provision of clinical and community health care services. Besides, health care providers should frequently ask their patients about their use of CATs before prescribing any medicine in order to avoid undesirable adverse effects or drug interactions with CATs.

However, it is noted that the lack of scientific evidence and concern about legal issues relating to CATs could constitute obstacles to the implementation and use of CATs. By looking into the widespread CATs use and practice in community, effective legislation should be enforced to ensure public safety and standardise practices of CATs. On this account, the Malaysian government has gazetted the Traditional and Complementary Medicine Act 2013(4) which is in line with the WHO policy to regulate the CATs practitioners and practices within the healthcare services and to use evidence-based CATs as

complementary to conventional medicine²¹. Other than that, the introduction of courses related to CATs in the academic curriculum and the promotion of public awareness campaigns could help individuals develop more CATs-related information.

There are certain limitations in this study which restrict its conclusion. Recruitment of participants using convenience sampling and being restricted to only one location may not be representative of all adolescents. In addition, the use of CATs was self-reported subject to memory bias or underreporting. Anyhow, this study managed in exploring a public health issue particularly among high school students, hence providing valuable information regarding CATs that can help optimize its benefits to improve the well-being in the near future.

CONCLUSION

Generally, only one-fifth of the respondents had ever used CATs over the past twelve months, of which herbal and dietary supplements were the most common types. The key sources of information were the internet, followed by the physicians, family and friends. Despite that, positive views of CATs have been established among the adolescents, with more than half believing that CATs was safe and not a public health threat. Our present findings could be an early indicator that requires further validation via comprehensive clinical and scientific research. Despite its exploratory nature, this study added some details to the prevalence of CATs among adolescents in Terengganu, Malaysia. In order to explore how CATs could play a role in improving well-being, further research on CATs practice and safety evidence should be undertaken.

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