

ORIGINAL ARTICLE

THE ASSOCIATION BETWEEN THE USE OF COMPLEMENTARY AND ALTERNATIVE MEDICINE (CAM) WITH HEALTH-RELATED QUALITY OF LIFE (HRQOL) AND ANTHROPOMETRIC INDICES AMONG UNIVERSITY'S STAFF

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ABSTRACT

Complementary Alternative Medicine (CAM) is broadly used as an adjunct treatment for patients to treat various kinds of disease, prevent disease and to sustain and enhance quality of life of the users. The study is aimed to investigate the association between CAM uses, Health-Related Quality of Life (HRQoL) and anthropometric indices among workers or staffs in Universiti Sultan Zainal Abidin (UniSZA) Gong Badak Campus, Kuala Terengganu. A total of 300 subjects participated in this study and completed the Malay version of modified HRQoL (SF-12) questionnaires. Anthropometric measurements among the subjects were done. Independent t-test, One-way ANOVA and Pearson correlation were used to test the association and the hypotheses. The prevalence of CAM users was 37.3%. The results showed that bodily pain score domain was significantly higher among non-CAM users. Overall, male had higher Mental Health Composite Score (MCS) score than female. Physical Health Composite Score (PCS) was only correlated negatively with BMI among non-CAM users but negative correlated with body fat percentage in both CAM and non-CAM users. As conclusion, HRQoL had significant negative correlation with body fat percentage among CAM users. No association was found between CAM use and HRQoL scores.

Keywords: CAM use, HRQoL, MCS, PCS, body fat percentage

INTRODUCTION

World Health Organization (WHO) defined that the traditional medicine as diverse health practices, approaches, knowledge and beliefs incorporating plant, animal, and/or mineral based medicines, spiritual therapies, manual techniques and exercises applied singularly or in combination to maintain well-being, as well as to treat, diagnose or preventing illness¹. Whereas the National Center of Complementary and Alternative Medicine defines complementary and alternative medicine (CAM) refers to therapies used together with conventional medicine, while alternative medicine refers to therapies used to substitute conventional medicine, which is generally not recommended².

The complementary and alternative medicine is usually referred as Traditional and Complementary Medicine (T & CM)³. Application of traditional and complementary medicine (T&CM) into daily life was getting popular nowadays, even among peoples who practise modern or conventional medicine (CVM) due to its was not only accessible, but affordable. In Malaysia, the term T&CM was widely used to replace CAM. It was well documented in the Malaysia's T&CM National Policy. It comprises of practises such as traditional Malay medicine, traditional Chinese medicine, traditional Indian medicine, homeopathy, Islamic medical practice, biological based practice, manipulative-based practices, energy medicine, and mind body soul

therapy. However, all dental and medical that were practiced by the related registered practitioners were excluded⁴.

The CAM is commonly used by individuals that are healthy and that are having chronic diseases such as hypertension, diabetes mellitus, cancer, stroke and so on⁵. Previous research reported a prevalence of 56% of CAM use among Malaysian⁶. People use CAM due to many reasons. Reason for using CAM can be divided into three different characteristics, which are those who utilize CAM for wellness, for both wellness and treatment and for treatment solely. Previous study found that more than half of the CAM users reported using CAM for purpose of wellness⁷. Approximately 80% of the population in some Asian and African countries depends on traditional medicine for primary health care purposes whereas in many developed country, about 70% to 80% of the population has used some form of complementary or alternative medicine, with herbal treatments being the most popular form of CAM⁸. A previous study in 2005, done in Canada (n=5164) showed that CAM use is associated with HRQoL, where CAM users will have higher HRQoL score than non-CAM users. CAM therapy offers a set of alternative treatments to improve the HRQoL for a culturally diverse population⁹. A study had concluded that there was an association between normal BMI and CAM usage as CAM users were likely to consume vitamins and supplements, had stamina back up energy and healthier activities

diet and also active lifestyle that lead to the higher HRQoL¹⁰.

QOL is defined by the World Health Organization Quality of Life (WHOQOL) Group as a broad multidimensional concept that usually includes subjective evaluations of both positive and negative aspects of life¹¹. With regard to health-related QOL, the Center for Disease Control and Prevention refers to QOL as “a multidimensional concept that includes domains related to physical, mental, emotional, and social functioning”¹².

Since, the availability information regarding the practice of the complementary and alternative medicine (CAM) among Malaysian is still limited and that the results obtained from the previous studies are still not strong enough to reflect the actual CAM usage among Malaysian especially in Terengganu, this study was carried out to determine the association between CAM uses, Health-Related Quality of Life (HRQoL) and anthropometric indices among Staffs in Gong Badak Campus, UniSZA.

METHODOLOGY

Study design

This study was a cross-sectional study conducted between February 2015 to May 2015 at University Sultan Zainal Abidin (UniSZA) in Kuala Nerus, Terengganu, Malaysia. The study was conducted among staffs in the university in which the prevalence of CAM usage, health related quality of life (HRQoL) and nutritional status among the staffs were measured at one time or over a very short period using pre-tested structured questionnaire. A total of 300 subjects aged 21 years old and above who fulfilled the inclusion criteria were chosen through convenience sampling method to participate in this study. Ethical approval was granted by UniSZA Human Research Ethics Committee (UHREC) prior study commencement. Standard questionnaire on socio-demographic was given to all the participants. The survey questionnaire with a cover letter explaining the aims of the study was used distributed and each participant was asked to fill in a consent form prior to responding to the survey questionnaire. The demographic data, the use of CAM and the Health-related Quality of Life of the subjects were obtained through questionnaire (HRQoL SF-12 questionnaire).

Anthropometric Assessment

Anthropometric assessment which included measurements of standing height and weight was used to measure the body mass index (BMI) of the subjects. The subject's weight and height were taken by using TANITA weighing scale and stadiometer (SECA) respectively according to the standard procedures. The BMI classification was categorised based on WHO cut off point and reference (2015)¹³. The waist circumference was

taken using a measuring tape. The body fat percentage was measured using Tanita Weighing Scale.

HRQoL Questionnaire

Health related quality of life (HRQoL) is an essential tool in the evaluation of physical function and basic health to explore people's feelings about health and their understanding of social health. The health related quality of life (HRQoL) questionnaire was developed by Ware, Kosinski and colleagues¹⁴. SF-12 is a shorter version of SF-36 that has been widely used worldwide to measure general health-related quality of life (HRQoL). SF-12 enable its application in a large health studies with focus on both overall physical and mental health outcomes. SF-12 version is a reduced number of items from 36 to 12 and it can be completed less than a third of the usual time needed to complete the SF-36. SF-12 accurately and efficiently measures physical and mental health outcome in academic and clinical settings and it takes less than 2 minutes to administer. The SF-12 does not target a specific age, disease or treatment group but it has been proven useful in surveys of general and specific populations¹⁵. Final scores of SF-12 vary from 0 to 100 with a score of 100 indicating optimal health.

It consists of 12 questions which measures quality of life across eight domains, which are, (1) physical functioning; (2) role limitations due to physical health; (3) bodily pain; (4) general health; (5) vitality; (6) social functioning; (7) role emotional; (8) mental health. It produced 2 scores, which are physical component summary (PCS) score and the mental component summary (MCS) score. In this study, the HRQoL SF-12 questionnaire was administered in Malay, translated and back translated accordingly and was pre-tested (Cronbach's alpha = 0.873).

Study sample

The inclusion criteria were those with age 21 years old and above, local, able to read and agree to take part in the study. Meanwhile, the exclusion criteria covered the respondents who were foreigners (non-Malaysian), pregnant, aged below 21 years old and mute, deaf or blind. Total sample size was 300 individuals. Out of 300 respondents among UniSZA staffs in Gong Badak Campus, 125 (41.7%) of them were male and 175 (58.3%) of them were female.

Statistical analysis

All the analyses of this study were carried out using the Statistical Package for the Social Sciences (SPSS) software version 22.0. Independent t-test was used to compare HRQoL domain scores between CAM user and non-CAM user. The correlation of HRQoL score between age, BMI, waist circumference and body fat percentage for CAM users and non-CAM users is

analyzed using Pearson correlation. The results obtained the statistical tests were considered to be significant as p value less than 0.05 ($p < 0.05$).

RESULTS

Sociodemographic Data

Result on socio-demographic shows majority of the subjects were male (58.3%) and the largest age group was adult aged 18 to 30 years old (43.4%). Majority of them had tertiary education level (70.3%) and had income level of RM 1000 to RM 2999 (59.7%) per month (Table 1). Results in Table 1 also indicates that the percentage of CAM users and non-CAM users was 37.3% and 62.7% respectively. BMI results demonstrated that 34% and 19% of the subjects were found to be overweight and obese.

Comparison of HRQoL scores between CAM users and non-CAM users.

Table 2 shows results on the comparison of HRQoL scores between CAM users and non-CAM users. Results indicates that only bodily pain shows a significant difference between CAM users and non-CAM users ($p < 0.05$). Non-CAM users found to have higher score for bodily pain ($p = 0.01$) compared to CAM users. Whereas, other domain HRQoL such as physical functioning, role physical, general health, vitality, social functioning, role emotional and mental health showed no significant different in HRQoL scores between Cam users and non CAM users. Furthermore, there were no significant differences of MCS score, PCS score, and Overall HRQoL score between CAM users and Non-CAM users (Table 2).

Table 1: Characteristics of Respondents (n=300)

Parameters	n	%
Gender		
Male	125	41.7
Female	175	58.3
Age		
21 - 30	130	43.4
31 - 40	101	33.7
41 - 50	46	15.3
51 - 60	22	7.3
61 - 70	1	0.3
Education		
Primary Education	5	1.7
Secondary Education	84	28.0
Tertiary Education	211	70.3
Salary		
< RM1000	18	6.0
RM1000 - RM2999	179	59.7
RM3000 - RM5000	74	24.7
> RM5000	29	9.6
BMI		
Underweight (< 18.5 kg/m ²)	15	5.0
Normal (18.5 - 24.9 kg/m ²)	120	40.0
Overweight (25 - 29.9 kg/m ²)	102	34.0
Obese Class I (30 - 34.9 kg/m ²)	48	14.0
Obese Class II (35 - 39.9 kg/m ²)	12	4.0
Obese Class III (≥ 40 kg/m ²)	1	1.0
CAM Users		
Yes	112	37.3
No	188	62.7

BMI = Body Mass Index

CAM = Complementary and Alternative Medicine

Table 2: Comparison of HRQoL Domain Scores between CAM User and Non-CAM User (n=300)

Parameters	CAM User (n = 112)	Non-CAM User (n = 188)	p value
	mean $\pm$ SD	mean $\pm$ SD	
Physical Functioning	87.72 $\pm$ 22.51	89.23 $\pm$ 21.01	0.559
Role Physical	73.21 $\pm$ 41.33	80.59 $\pm$ 36.68	0.121
Bodily Pain	80.80 $\pm$ 20.41	86.30 $\pm$ 16.21	0.010*
General Health	51.79 $\pm$ 17.35	52.79 $\pm$ 17.97	0.635
Vitality	65.18 $\pm$ 21.75	67.55 $\pm$ 22.29	0.361
Social Functioning	70.09 $\pm$ 21.96	73.40 $\pm$ 21.73	0.204
Role Emotional	75.00 $\pm$ 39.71	79.52 $\pm$ 37.19	0.322
Mental Health	69.11 $\pm$ 15.16	69.10 $\pm$ 15.98	0.995
MCS Scores	66.23 $\pm$ 15.21	68.47 $\pm$ 15.49	0.221
PCS Scores	71.70 $\pm$ 16.43	75.19 $\pm$ 15.89	0.070
Overall HRQoL	71.64 $\pm$ 15.72	74.74 $\pm$ 15.49	0.096

*p value <0.05, Independent t-test, score range = 0-100; higher score indicate better mental health

Correlation of MCS Scores and PCS Scores between Age, BMI, Waist Circumference and Body Fat.

Table 3 and Table 4 shows the correlation between the HRQoL score with age, BMI, waist circumference (WC), and body fat (BF) for both CAM users and non-CAM users. For CAM users, there is a significant positive correlation between age ($r=0.271$; $p<0.05$) and MCS score whereby a higher MCS score was associated with increasing age. On the other hand, there was a significant negative association between PCS

Score with BMI among CAM users and non-CAM users ($r=-0.212$; $p<0.05$). Furthermore, correlation between body fat and PCS score for both CAM users and non CAM users was reported to have a significant negative correlation ($r= -0.252$, $p<0.05$). Similarly, they was a significant negative correlation between body fat and PCS score among both CAM users ($r=-0.252$; $p<0.05$) and non-CAM users ($r= -0.164$; $p<0.05$). The correlation between body fat percentage and overall HRQoL score was also found to be positive among CAM users group only ($r=-0.218$, $p<0.05$).

Table 3: Correlation of MCS Scores and PCS Scores between Age, BMI, Waist Circumference and Body Fat for CAM Users (n=112)

Para-meters	MCS		PCS		Overall HRQoL Score	
	r	p value	r	p value	r	p value
Age	0.271	0.004*	- 0.048	0.612	0.110	0.247
BMI	0.015	0.879	- 0.177	0.063	- 0.095	0.321
WC	0.120	0.210	- 0.051	0.598	0.033	0.728
BF	- 0.145	0.132	- 0.252	0.008*	- 0.218	0.022*

*p value<0.05, Pearson correlation

DISCUSSION

Among all the nine domain of HRQoL (physical functioning, role physical, bodily pain, general health, vitality, social functioning, role emotional, mental health and overall HRQoL), present study showed that CAM users only had significantly lower score in bodily pain domain compared to non-CAM users. Lower score means that the body pain can interrupt normal daily

activities such as sweeping floor, washing clothes and climbing up the stairs. Previous study also reported the same result, where CAM-users has worse score of bodily pain and it interrupts with their capability of doing daily activities. The study interpreted that the body pain itself was the motive of CAM use¹⁶. Therefore, it can be said that CAM was used to cure or overcome bodily pain in order to experience better quality of life.

Table 4: Correlation of MCS Scores and PCS Scores between Age, BMI, Waist Circumference and Body Fat for Non-CAM Users (n= 188)

Para-meters	MCS		PCS		Overall HRQoL Score	
	r	p value	r	p value	r	p value
Age	0.064	0.382	- 0.101	0.170	0.001	0.984
BMI	- 0.027	0.715	- 0.212	0.004*	- 0.114	0.121
WC	0.070	0.340	- 0.089	0.226	- 0.014	0.851
BF	- 0.117	0.112	- 0.164	0.025*	- 0.125	0.090

*p value<0.05, Pearson correlation

Result also demonstrated a significant correlation between age and MCS score ($r=0.271$, $p<0.05$) only but not with PCS and overall HRQoL score, which indicates that mental component summary (MCS) score increased with advancing age. Results also shows that older people have higher MCS score may be due to their maturity and capability of handling emotions without interrupting daily lives than the younger groups it may be due to negative emotions become more infrequent (until very old age) and social roles change quantitatively and qualitatively¹⁷. Besides, they were more likely to have satisfaction in life achievement. Unlike the younger generation, they have to struggle in work in achieving the satisfaction of life. The extent of struggle is different between older people and younger people. Several studies have shown that older adults often demonstrate high life satisfaction and happiness^{18,19}, less negative emotions²⁰ and experience positive affect as frequently or more frequently than younger adults^{21, 22}. The use of CAM and adherence to the treatments among patients had a strong relationship with the cultures, age and motivational to survive²³. Besides, in a report had stated that an older age of CAM users, was significantly associated with increase in vitality and mental health²⁴.

Results also indicate a significant negative correlation between PCS score with age and BMI among non-CAM users. It shows that non CAM users with higher BMI had more difficulties in their daily physical activity than individuals with lower BMI value. However, some studies reported a contrast result where BMI was found to have an inverse association among CAM users²⁵. This particular finding signified that increasing body fat percentage would lead to decreasing in overall HRQoL score. These correlations explained that higher body fat percentage in individuals contributed to higher difficulties in daily physical activities compared to lean body fat individuals.

CONCLUSIONS

As a conclusion, there was a significantly higher bodily pain among the non-CAM users than CAM

users. The HRQoL score is negatively correlated with body fat percentage indicating that those who have higher body fat percentages will have lower and poorer HRQoL score. People with higher BMI and body fat have more difficulty in their daily physical activity than those in lower BMI. It was also found that people with advancing age will have lower mental disturbance as compared the younger people.

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