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Knowledge and perceptions of the use of complementary and alternative medicine in dental clinic students in Makassar city, Indonesia

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Abstract

To find out the knowledge and perspectives of professional students of the Faculty of Dentistry of Hasanuddin University regarding complementary and alternative medicine in the field of dentistry. The clinical students of class 2014 and 2015 are the respondents in this study. Each received an online questionnaire in the form of Google Form, which consists of questions about knowledge and perspectives on complementary and alternative medicine, along with additional questions about the characteristics of the respondents (gender, class). The data are then analyzed with statistical analysis. The mean correct answers to five items of the clinical question from 148 participating students were 2.22 ± 1.14. Of the 740 correct answers expected (5 correct answers from each student) for 5 clinical questions, only 329 correct answers (44.45%) were obtained. The percentage of students who have little to no knowledge about CAM is 85.8% (127 students). Only 29 students (19.6%) disagreed that CAM was necessary for health and dental services. Twenty-one out of one hundred forty-eight students stated that they knew CAM. More than half of the students are interested in learning more about CAM and agree that CAM education should be integrated into the curriculum.

Keywords: complementary and alternative medicine, knowledge, perspective, physical and mental health

1. Introduction

The history of palliative care is currently attracting public attention through traditional treatments that have developed and are used for various medical and dental conditions because they have had a positive impact on society's history. Health efforts, in addition to conventional medicine, are also mostly done with complementary and alternative medicine (1).

Complementary and Alternative Medicine is a nonconventional treatment aimed at improving the health status of the community, including promotive, curative, preventive, and rehabilitative efforts obtained through structured education with high quality, safety, and effectiveness based on biomedical science, which has not been accepted in conventional medicine (2, 3).

Indonesia has cultural diversity and the habit of using herbs, which is one of the treatment methods of CAM that has been used for a long time. Based on the results of Riskesdas 2018, traditional health services are seen from the use of family medicinal plants, the proportion is 24.6%. The proportion of traditional health service utilization increased slightly, from 30.4% (Riskesdas 2013) to 31.4% (4).

The popularity of CAM is rapid in the field of medical science and is now considered an important branch of the health care system (5). Popular CAM interventions include vitamins and nutraceuticals, herbal and homeopathic products, which can also be applied in dentistry. Common dental indications, including symptom relief, occur in acute oral conditions. About 10% of dental patients use topical herbal products for pain relief. However, it is important for patients and healthcare professionals, including dentists, to adhere to evidence-based practice when using CAM (3).

Traditional practice is based on a holistic approach to people in the wider fields of health, religion, and culture (4, 5). CAM can be classified into the categories of biologically based therapies such as herbal and dietary supplements, alternative medical systems such as acupuncture or Ayurveda, energy therapies such as Reiki, manipulatives, and body-based systems such as chiropractic or massage, and mind-body interventions such as tai chi or yoga (6-8).

About 80% of sick individuals, mainly in developing countries, are more dependent on complementary therapies than conventional health care, while the percentage using CAM therapies has decreased by half among the population in industrialized countries. It has always been a treatment for millions of patients around the world (9, 10).

Although some understanding comes from research abroad, no studies have yet assessed whether dentists in Indonesia

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graduated with adequate knowledge to treat patients using CAM, nor have demonstrated behavior toward CAM, in college students. Indonesian Dentist Competency Standards do not have guidelines on the role of CAM in dentistry. Currently, there are no CAM courses available for clinical dental students at the Faculty of Dentistry, Hasanuddin University.

2. Materials and Methods

This research is a cross-sectional study conducted online through social networks in August 2020. A total of 148 clinical students of the Faculty of Dentistry, Hasanuddin University are actively registered and willing to be respondents.

The instrument used in this study was a questionnaire consisting of a knowledge question questionnaire (clinical knowledge and self-reported), perspective questions, and additional questionnaires regarding the characteristics of the respondents (gender and class).

The clinical knowledge indicator consists of 5 clinically relevant case sketch questions, where there is only one correct answer among the four possible answer choices provided. The self-reported knowledge and interest indicator consisted of 2 questions, which were assessed using a Likert scale (score 4 'yes' to score 1 'no at all). The perspective indicator consists of five perspective-based questions measuring behavior towards CAM. Self-reported behavior about CAM to treat dental disease, safety, effectiveness, necessity, and integration into the dental curriculum was assessed using a Likert scale (score 4 'strongly agree' to score 1 'strongly disagree').

This study was approved by the Ethics Committee of the Faculty of Dentistry, Hasanuddin University based on Attachment Number: 0086/PL.09/KEPK FKG-RSGM UNHAS/ 2020.

Data were processed using SPSS 25 and analyzed using Fisher's test, Chi-square test, Mann Whitney test with statistical significance $p<0.05$.

3. Results

Most of the respondents were women as many as 117 respondents (79.1%), while male respondents were 31 (20.9%). Based on the class, the results showed that the respondents in the 2014 batch were 42 respondents (28.4%) and 106 respondents (71.6%) in the 2015 batch (Table 1).

Table 1. Distribution of study subjects by gender and class (N=148)

Respondents' Characteristics		n	%
Gender	Male	31	20.9
	Female	117	79.1
Class	2014	42	28.4
	2015	106	71.6

A total of 81 (54.7%) respondents got the correct answer regarding CAM. Of the 5 question topics, only on the topic of CAM interaction, there was a significant difference between class years ($p<0.05$) (Table 2).

Table 2. Knowledge of dental clinic student about CAM (N=148)

Topic	Correct answers (%)	Mean ± SD	Gender[a] (p)	Class[b] (p)
CAM Interactions	45 (30.4)	0.30 ± 0.46	0.277	0.014*
CAM-nutraceutical Interactions	61 (41.2)	0.41 ± 0.49	0.414	0.799
CAM used in dentistry	81 (54.7)	0.55 ± 0.49	0.155	0.270
Acupuncture	80 (54.1)	0.54 ± 0.50	1.00	0.401
CAM side effect reaction	62 (41.9)	0.42 ± 0.49	0.838	0.604

[a] Fisher's exact test; [b] Chi-square test; * Statistical Significance ($p<0.05$)

Table 3 shows that 21 respondents (14.2%) know CAM. Based on the question about the interest in learning more about CAM, it was found that 115 respondents (77.7%) were interested in learning more about CAM. Statistically, there was no significant difference between gender and year of class on the question of knowledge and interest in learning more about CAM ($p>0.05$).

Table 3. Knowledge and interest in CAM subjects (N=148)

Question	Number of responses (%)		Gender[a] (p)	Class[b] (p)
	Yes	Not		
Knowledge about CAM	21 (14.2)	127 (85.8)	0.567	0.983
Interest in learning more about CAM	115 (77.7)	33 (22.3)	0.569	0.300

[a] Fisher's exact test; [b] Chi-square test; * Statistical Significance ($p<0.05$)

Table 4 shows 5 questions related to the perspective on the role of CAM in oral health, statistically, no significant differences were found between sex and year of class ($p>0.05$).

Table 4. Perspective of dental clinic student about the role of CAM (N=148)

Question	Number of responses (%)		Mean ± SD	Gender[a] (p)	Class[b] (p)
	Agree	Disagree			
CAM can help direct common dental diseases	114 (77)	34 (23)	2.83 ± 0.56	0.349	0.779
CAM can affect the safety of dental procedures	110 (74.3)	38 (25.7)	2.80 ± 0.57	0.648	0.612
CAM is ineffective and has no effect	43 (29.1)	105 (70.9)	2.25 ± 0.57	0.661	0.935
CAM is considered necessary for health and dental services	119 (80.4)	29 (19.6)	2.89 ± 0.51	0.135	0.572
CAM education is required in the dentistry curriculum	129 (87.2)	19 (12.8)	3.08 ± 0.61	0.765	0.448

[a] Fisher's exact test; [b] Chi-square test

Table 5 shows the gender variable, the results showed that there was no significant difference between the genders in knowledge and perspective on CAM (p>0.05). In the variable class, it was found that there was a significant difference between the class in the knowledge of CAM (p<0.05), but there was no significant difference between the class in the perspective of CAM (p>0.05).

Table 5. Differences in knowledge and perspectives on complementary and alternative medicine by gender and class

Variable	n	Knowledge		Perspective	
		Mean±SD	p	Mean±SD	p
Gender					
Male	31	2.22 ± 1.17	0.841	14.12 ± 1.74	0.105
Female	117	2.22 ± 1.13		13.76 ± 1.53	
Class					
2014	42	2.54 ± 1.06	0.025*	13.57 ± 1.41	0.230
2015	106	2.09 ± 1.14		13.95 ± 1.63	

* Statistical Significance (p<0.05), Mann-Whitney test

4. Discussion

This study is the first study to analyze the knowledge and perspectives of clinical students of the Faculty of Dentistry of Hasanuddin University towards complementary and alternative medicine, which has been investigated by many authors in the international literature (1, 11).

A dentist must always act not to provide treatment beyond his expertise and competence, including the decision to perform CAM, whether it is an adjunct or a substitute for conventional therapy. In discussing with patients, a dentist must always provide an accurate and objective professional opinion, which must be supported by sound clinical judgment and informed by scientific studies (12).

In this study, it was found that quite a several clinical students of the dental faculty of Hasanuddin University were able to correctly answer clinical questions about CAM, especially questions on the topic of CAM used in dentistry and acupuncture used in the treatment of the temporomandibular joint disorder. However, on questions about CAM interactions, CAM-nutraceutical interactions, and side effects related to CAM, more students did not answer correctly. These findings indicate that clinical knowledge of CAM among students is still lacking, which is consistent with a study conducted by Park (2020) that found a clear knowledge gap among clinical dental students in Australia (6).

In this study, the majority of students (74.3%) agreed that CAM can affect the safety of dental procedures, which is by Sekhri's (2013) research on the need to provide knowledge about CAM among dental students about and also considerations of its safety about the effects of CAM side (12). Health professionals, including dentists, must know and understand the safe use of CAM, as any other treatment, to ensure that patients are treated appropriately (13).

One in six clinical students (14.2%) stated that they knew about CAM, as also shown in a study by Kameyama A (2017) at two dental schools in Japan (14). As with studies in other countries, most respondents wanted the introduction of CAM into in the curriculum in the form of lectures during the preclinical stage of the dentistry program (15, 16).

In this study, more than two-thirds of clinical dental students (77.7%) expressed their interest in learning more about CAM and there was no significant difference between interest in learning more about CAM and gender, this is contrary to the class B study (2017) in Germany, which found that German female dentists were more supportive of CAM to patients (17).

In addition, more than two-thirds of clinical dental students (77%) consider CAM to be beneficial for common dental diseases. This confirms the findings in Japan.11 Only one in three clinical students from the Faculty of Dentistry of Hasanuddin University (29.1%) stated that CAM was ineffective and had no effect, which is in agreement with a Malaysian cross-sectional survey (16, 18).

Meanwhile, 80.4% of students think that CAM is considered necessary for oral health, this figure is significantly higher than the results of a survey of clinical dental students in Japan. According to the results of a survey by Newadkar UR (2013) in India, where only 12% of students are unaware of its implications in oral health care services (19).

Most of the students (87.2%) agreed that CAM education was necessary for the dental curriculum given its clinical relevance, which doubled the proportion identified in a cross-sectional study conducted in the United States, where 40% of the students surveyed requested that CAM be included in the study of their dental curriculum (20). Results obtained in the United States are similar to those of Australia, Pakistan, Malaysia, and India (17, 21).

Twenty-one out of one hundred forty-eight students stated that they knew CAM. More than half of the students are interested in learning more about CAM and agree that CAM education should be integrated into the curriculum.

Conflict of interest

The authors declared no conflict of interest.

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Authors' contributions

Concept: A.I.A., Design: A.I.A., Data Collection or Processing: A.I.A., Analysis or Interpretation: A.I.A., Literature Search: A.I.A., Writing: A.I.A.

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