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Evaluation of Complementary-Alternative Medicine (CAM) Questionnaire Development for Indonesian Clinical Psychologists: A Pilot Study

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Abstract

This study aimed to evaluate questionnaire development to measure the knowledge of Complementary-Alternative Medicine (CAM), attitudes towards CAM, CAM experiences, and CAM educational needs of clinical psychologists in Indonesia. A 26-item questionnaire was developed through an extensive literature search. Data was obtained from provisional psychologists from the Master of Professional Clinical Psychology programs at two established public universities in urban areas of Indonesia. To validate the questionnaire, panel reviews by executive members of the Indonesian Clinical Psychology Association (ICPA), experts in health psychology, and experts in public health and CAM provided their professional judgements. The self-reporting questionnaire consisted of four scales including: knowledge of CAM (6 items), attitudes towards CAM (10 items), CAM experiences (4 items), and CAM educational needs (6 items). All scales, except CAM Experiences, were assessed on a 7-point Likert scale. Sixty provisional psychologists were eligible to complete the questionnaire with a response rate of 73% (N=44). The results showed that the CAM questionnaire was reliable (Cronbach's coefficient alpha range=0.62-0.96; item-total correlation range=0.14-0.92) and demonstrated content validity. Following further psychometric evaluation, the CAM questionnaire may provide the evidence-based information to inform the education and practice of Indonesian clinical psychologists.

Keywords: *Complementary-Alternative Medicine; health psychology; clinical psychology; clinical psychologists; instrument testing; Indonesia*

1. Introduction

Since the early 2000's, the Indonesian government has begun to integrate Complementary-Alternative Medicine (CAM) into conventional medicine health services, especially in Public Health Centres (PHC).[1] The definition and classification of CAM are unclear and varied across nations and cultures[2,3] with the terms of "complementary" and "alternative" used inter-changeably with "traditional" medicine in some nations, especially in Asia.[4,5] In order to build a shared understanding and provide a foundation for future research with other Indonesian health professionals, the definition of CAM provided by the Indonesian Health Ministry[1] (translated version) was adopted in the current study.

> *CAM is non-conventional treatment aimed to improve public health status including promotive, preventive, curative, and rehabilitative ways that are obtained through a structured education with quality, safety, and high effectiveness that is based on biomedical science and which has not been accepted in conventional medicine.*[1]

In this study, CAM is limited to 13 methods (acupressure, acupuncture, aromatherapy, biofeedback, dietary supplements, energy therapy, herbal therapy, hypnotherapy, massage therapy, meditation, music therapy, religious/spiritual therapy, and yoga) for which there is scientific evidence to support their use with psychological problems. For example, acupressure was shown to significantly reduce stress among college students;[6] acupuncture combined with behaviour therapy was effective in reducing the symptoms of attention deficit hyperactivity disorder (ADHD) among preschool children;[7] hypnotherapy was effective for smoking cessation;[8] and music therapy and yoga significantly improved quality of life and reduced stress and anxiety.[9,10]

The field of psychology, as a discipline as well as profession, is relatively new in Indonesia.[11] Clinical psychologists only have been recognized as health professionals by the Indonesian government since 2008.[12-14] The proportion of psychologists in Indonesia is estimated at 3 among 1,000,000 people,[15,16] which is significantly lower than in upper middle-income nations.[16,17] Furthermore, there is social stigma directed towards people with mental disorders and people who visit psychologists in

Indonesia.[13,18] Consequently, many clients terminate treatment with their psychologist prematurely or look for other treatment methods such as CAM.

In 2000, it was reported that in the USA, the number of CAM users with psychological problems is greater than those with physical illness.[20,21] Further, research has shown that clinical psychologists in the USA proposed to have a basic knowledge of CAM.[19] If clinical psychologists lack knowledge about CAM, then they are less able to understand the benefits and risks of CAM usage or integration than those with basic CAM knowledge. In addition, psychologists without basic CAM knowledge are less able than those with basic CAM knowledge to communicate clients' CAM usage to other health care workers. If clinical psychologists have a negative attitude toward CAM, it is difficult to work in collaboration with CAM practitioners or use CAM methods that are available in health centres.[18,20]

In practice, clinical psychologists have the potential to provide psychoeducation of the latest CAM scientific research to their clients.[21] If required and supported by scientific study, clinical psychologists are well placed to refer their clients to CAM practitioners, especially those who reject psychological therapy provided by their psychologist.[19,21] A sound treatment decision is not only based on the best available scientific data but also the client's best interest.[22,23] Having a valid instrument will help to understand, for example, what psychologists themselves know of CAM and their attitudes for recommending or referring their clients.

There has been a great deal of research conducted on health professionals' knowledge of, attitudes towards, experiences of, and educational needs of CAM in developed nations such as the USA and Australia.[24] These studies have focused on physicians[25-30] and health professional students, especially medical and pharmacy students.[31-33] However, few studies examined clinical psychologists' views.[34-36] In Indonesia, scant research has been conducted with physicians[37] and medical students[38] because most studies have focussed more on investigating CAM effectiveness in alleviating physical ailments.[39-41] Therefore, it is important to develop a psychometrically sound CAM questionnaire that can be applied to measure knowledge, attitudes, experiences and educational needs related to CAM

among clinical psychologists in Indonesia. This current study aims to investigate the psychometric properties of a CAM Questionnaire developed for Indonesian clinical psychologists.

2. Materials and Methods

2.1. Procedure and Participants

The study received ethical approval from the School of Psychology at the University of Queensland. Participants were sent an electronic cover letter including an information sheet, consent form and a link to the online survey. In order to protect the data, collection and storage of data were maintained by secure Qualtrics online survey software (Provo, UT, USA). Of the 60 provisional psychologists (students completing, or having completed, a professional internship) eligible to complete the questionnaire, 44 responded (73%). The participants were all Master of Professional Clinical Psychology students in two established large public universities in urban areas of Indonesia. Most participants were originally from western and central Indonesia with 16 of 33 provinces represented. Table 1 shows participants' demographic data.

[Insert Table 1]

2.2. Measures

Participants were first asked demographic questions (age, sex, entrance year into master program, and working experience in health services). The first scale investigated perceived Knowledge of CAM (K-CAM), modified from a previous study,[42] and included three sub-scales (each with 2 items): 1) CAM basic information; 2) CAM integration in clinical psychology practices; and 3) the risks of CAM use. Participants responded on a 7-point Likert-type scale (1='no knowledge at all' to 7='know very well') for each of 13 CAM methods. A CAM knowledge score for each method was calculated by averaging across the 6 items.

Ten items in the second scale (Attitude towards CAM: A-CAM) were adopted from the Psychologist Attitudes Towards Complementary and Alternative Therapies (PATCAT) Questionnaire.[43,44] A permission to use PATCAT Questionnaire in this study was granted by the owner through email to the

first author (L. M. Wilson, personal communication, June 29, 2015). A 7-point Likert scale (1='strongly disagree' to 7='strongly agree') was used to assess three sub-scales: 1) attitudes towards knowledge of CAM; 2) attitudes towards integration of CAM; and 3) attitudes concerning the risks associated with CAM. The third scale, CAM Experiences (CAM-EX), asked participants about their experiences with the 13 CAM methods by choosing "yes" or "no", including 1) giving CAM recommendation; 2) giving CAM referral; 3) CAM personal purpose; and 4) using CAM in clinical practice. Participants scored a "1" if they responded "yes" to at least one of the four questions thus indicating some experience with CAM. Otherwise, they scored "0" indicating no experience.

The fourth scale investigated Educational Needs about CAM (EN-CAM) through six items on a 7-point Likert scale (1='strongly not needed' to 7='strongly needed'). Three sub-scales (two items each) included: 1) CAM basic information; 2) CAM integration in clinical psychology practices; and 3) the risks of CAM use. Additionally, participants were able to add their comments about the questionnaire in general or regarding a specific scale or item.

The CAM questionnaire was presented to two panels. First was the Indonesian Clinical Psychology Association's (ICPA) executive committee and second was two academic reviewers (one health psychologist and one public health professional with expertise in CAM). The panel provided their professional judgements regarding the CAM questionnaire.

2.3. Data analysis

The number of participants in this study, whilst sufficient for questionnaire testing, were not appropriate for factor analysis.[45] Therefore, the reliability of the instrument was measured using Cronbach's alpha coefficient for internal consistency.[45] The corrected item-total correlation was calculated to examine how each item correlated with other items in each part of the questionnaire.[46] Data were analysed using SPSS software (v.22). Feedback from participants and panel reviewers were used to examine the content validity to ensure that the items covered the expected full content of the construct.

3. Results

3.1. K-CAM

Cronbach's coefficient alpha for K-CAM was high (α=0.90) with a mean score of 3.39 (SD=0.73). All three sub-scales showed good internal consistency (α=0.77-0.85) with items showing strong item-total correlation (r=0.71-0.79) (Table 2). Reviewers suggested adding an open-ended item to accommodate a participant's knowledge outside the thirteen CAM methods listed in the questionnaire.

[Insert Table 2]

3.2. A-CAM

The A-CAM scale showed good internal consistency (α=0.76) and a mean score of 4.77 (SD=1.07). This suggests that participants tended to have positive attitudes towards CAM. Among three sub-scales (Table 3), attitudes concerning the risks associated with CAM sub-scales presented the lowest internal consistency (α=0.49) with one item (#8) showing low inter-item correlation (r=0.14). In their feedback, participants wrote that the risk level of CAM depended on what CAM method was used in clinical practice. Moreover, they admitted that their lack of CAM knowledge made them uncertain in responding. They stated that some of the CAM methods did not have clear scientific evidence so they tended to be doubtful of their use.

[Insert Table 3]

3.3. CAM-EX

Internal consistency for CAM Experiences was low (α=0.62). Table 4 shows the number of participants who had experiences related to CAM. A suggestion from the participants related to the definition of CAM. The definition should be written clearly on a separate page, not on the research information and consent page. In addition, participants expressed their concern about the need to understand CAM before making recommendations to their clients. Although some participants knew the benefits of CAM, they never recommended it to their clients because CAM was new for them and they felt they had insufficient knowledge of it. Furthermore, some suggested defining each item (recommend, refer, personal use, and professional use) as different interpretations of the terms were

possible. An open-ended item was suggested by reviewers to accommodate experiences outside the 13 CAM methods listed in the questionnaire.

[Insert Table 4]

3.4. EN-CAM

The mean score for the EN-CAM scale was 6.02 (SD=0.20) indicating a high willingness of participants to learn about CAM. Cronbach's coefficient alpha for the full scale was high (α=0.96). Table 5 shows the psychometric properties of sub-scales and items. It was suggested that CAM could be taught outside academic institutes.

[Insert Table 5]

3.5. Feedback from participants and reviewers

In general, participants felt that items in the questionnaire were clear, formatted in an orderly way, and did not take long to complete. Several participants expressed their interest in this research topic because they thought this study was important for clinical psychology practice in Indonesia and useful for clinical psychologists' development. More information about participants' responses is presented in Table 6.

[Insert Table 6]

The main issue for participants was the definition of CAM. They highlighted the importance of a clear definition at the beginning of the questionnaire so that participants would have same understanding of the term. In addition, some suggested that the questionnaire define items in the CAM-EX. Open-ended questions were suggested to be added to K-CAM and EN-CAM in order to cover CAM methods that were not listed.

Overall, reviewers gave positive feedback. The executive members of ICPA committee recommended consulting the Indonesian Clinical Psychology Standard of Services[47] about CAM methods that were listed in the questionnaire. They suggested removing biofeedback and hypnotherapy from the list as those methods are considered to be part of (more conventional) clinical psychology intervention. The academic reviewers proposed that open-ended questions be added to

accommodate participants' knowledge, experiences, and educational needs of particular CAM methods outside those listed in the questionnaire.

4. Discussion

This study aimed to psychometrically evaluate a questionnaire to measure knowledge of Complementary-Alternative Medicine (CAM), attitudes towards CAM, CAM experiences, and CAM educational needs of clinical psychologists in Indonesia. Therefore, the findings have focused on the reliability, validity, and revision of the CAM questionnaire. The participants' responses will be reported in another article. The pilot testing showed that the CAM questionnaire developed was reliable and valid.

There was no item revision for the Knowledge of CAM scale as all items showed good item-total correlation. However, it was recommended that an open-ended question be added to accommodate participants' knowledge of CAM methods other than those listed. Using open-ended questions could reveal valuable insight into participants' thoughts about familiar CAM methods for them.[45]

Four items under the attitudes concerning the risks associated with CAM sub-scale had low item-total correlation. Based on participants' feedback, an alternative explanation is that participants were not sure about the definition of CAM used in the questionnaire as well as their hesitation based on their perceived lack of knowledge about CAM. Participants particularly considered the risks of CAM usage and its efficacy to be important. This finding supports the original report of PATCAT[43] where Australian psychology students highlighted the need for scientific evidence of CAM in clinical psychology practice. In a Hong Kong study, the majority of senior Pharmacy students showed neutral attitudes towards CAM.[32] They preferred conventional medicine since pharmacy curricula in Hong Kong mainly focuses on this and covers only a small portion of CAM, particularly herbal medicine. Moreover, studies about attitudes towards CAM among senior physicians in Israel[25] and Poland[28] showed more reliable results than the present study. It may be that the relatively small sample size

for this study prevented a true representation of internal consistency and thus further testing with a larger clinical psychologists' sample is required.

The CAM-EX scale showed low internal consistency that may have been due to the small number of items and the sample size.[46] Item 3 in particular had a low item-total correlation but removal of this item did not improve the internal consistency significantly. The low Cronbach's coefficient alpha for this part could be explained by participants' hesitation based on the definition of CAM and lack of CAM knowledge as stated in their feedback. Low level knowledge and unfamiliarity with CAM have also been found among health professional in previous studies.[48,49] Another possible explanation for the poor internal consistency may be related to participants' multiple interpretations of the terms used (recommendation, referral, personal use, and professional use). Therefore, in a revised version, the definition of each term will be included. Based on the participants' feedback, they were concerned with the scientific evidence for the CAM methods before recommending it to clients. Some of the CAM methods were known better amongst participants. Hence, an open-ended question will be added to this part to accommodate participants' experiences of CAM outside the methods listed in the questionnaire.

For the EN-CAM scale, internal consistency and item-total correlation showed high values with all items and no item was revised for this scale. Participants stated that CAM was an important area to be taught for provisional psychologists since it is a part of Indonesian culture and their clients could be using it. This finding is quite similar to the Hong Kong study with pharmacy students where more than 80% expressed willingness to learn about CAM, especially Traditional Chinese Medicine (TCM).[32]

The majority of participants (93%) perceived that the CAM questionnaire directions were easy to understand and follow. They also wrote that the questionnaire was well-formatted and efficient. To improve the clarity, the CAM methods will be written under the CAM definition in order to build awareness of the participants. On the same page, participants will also be told that many other CAM methods are used by people but that the particular methods were chosen because there was scientific evidence supporting their use with mental health problems. To increase participants' understanding,

a brief explanation about the differences between “complementary medicine” and “alternative medicine” will be given under the CAM methods listed.

Content validity was determined through reviewers’ feedback as professional judgements. In general, the 26 items of the CAM questionnaire showed good content validity. Although no new items were advanced, minor revisions in the CAM definition, the addition of open-ended questions, and the defining of items in the CAM Experiences scale were suggested to improve the validity. Based on the reviewers’ feedback, biofeedback and hypnotherapy will be excluded from further testing, leaving 11 CAM methods listed in the questionnaire.

However, there are a number of limitations in this pilot study to consider. First, the number of participants was not appropriate for conducting factor analysis. Second, most of the participants came from western and central Indonesia. Eastern provisional psychologists who may have different knowledge of, attitude towards, and CAM experiences and educational needs, were not represented in this study. Third, participants were only from the two most well-established public universities whose curricula may differ from private universities. As a recommendation, future studies should use larger numbers of participants and conduct factor analysis, find representatives of participants from eastern Indonesia, and distribute the questionnaire to not only public universities but also to private university participants.

5. Conclusion

The current study enhances research conducted into health professionals’ knowledge of, attitudes towards, experiences of, and educational needs regarding CAM among health professionals. Most previous research has been conducted outside Indonesia with the majority of participants being non-psychologist professionals. Therefore, this study aims to develop a psychometrically sound CAM questionnaire that can be applied to measure knowledge, attitudes, experiences and educational needs related to CAM among clinical psychologists in Indonesia.

The results showed that the CAM questionnaire developed and tested among provisional psychologists has good reliability and validity. However, this pilot study showed lower reliability than previous studies which might be due in part to the smaller number of participants. Based on the results, a revised version of this questionnaire could be used to measure knowledge of, attitudes towards, and CAM experiences and educational needs among clinical psychologists in Indonesia. This psychometrically sound questionnaire might also be appropriate for assessing CAM with other mental health professionals such as psychiatrists and social workers. Furthermore, results from the CAM questionnaire may provide the evidence-base to describe the level of knowledge and attitudes towards CAM among Indonesian clinical psychologists. In addition, stakeholders such as professional organization for psychology and faculties of psychology could use the CAM questionnaire to gain insight about CAM integration into clinical psychology practice and education curricula.

Conflicts of interest

All authors have no conflicts of interest to declare.

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Table 1

Demographic characteristics of participants.

Demographic characteristic	Data (N=44)
Age in years, mean (SD)	25 (2.12)
Sex, frequency (%)	
Male	2 (5)
Female	42 (95)
Entrance year in master program, frequency (%)	
2012	4 (9)
2013	10 (23)
2014	22 (50)
2015	8 (18)
Working experience in health service, frequency (%)	
No	18 (41)
Yes	26 (59)

Table 2

Cronbach's coefficient alpha and corrected item-total correlation for Knowledge of CAM scale.

Sub-scale and item	Mean (SD)	*α*	*r*
CAM basic information (2)	4.24 (0.18)	0.84	NA
My knowledge about the philosophy of CAM.	4.36 (0.99)	NA	0.71
My knowledge about the work mechanism of CAM.	4.11 (1.02)	NA	0.74
CAM integration in clinical psychology practices (2)	2.64 (0.16)	0.85	NA
My knowledge about Indonesian government regulation about CAM.	2.75 (1.43)	NA	0.79
My knowledge about regulation or policy from professional organization about CAM.	2.52 (1.39)	NA	0.72
The risks of CAM use (2)	3.31 (0.08)	0.77	NA
My knowledge about the side effect of CAM.	3.36 (1.37)	NA	0.78
My knowledge about the possibility of CAM interaction with chemical drugs or conventional psychology intervention.	3.25 (1.28)	NA	0.73

Item score=1 (no knowledge at all)-7 (know very well); *α=Cronbach's coefficient alpha*; *r=item-total correlation;* NA=Not Applicable.

Table 3

Cronbach's coefficient alpha and corrected item-total correlation for Attitudes towards CAM scale.

Sub-scale and item	Mean (SD)	α	r
Attitudes towards knowledge of CAM (3)	5.20 (0.51)	0.78	NA
Psychology professionals should be able to advise their clients about commonly used CAM methods.	4.66 (1.27)	NA	0.42
Information about CAM practices should be/should have been included in my psychology degree curriculum.	5.25 (1.50)	NA	0.64
Knowledge about CAM is important to me as a practicing clinical psychologist/student/future practicing health professional.	5.68 (1.09)	NA	0.65
Attitudes towards integration of CAM (3)	5.22 (0.27)	0.76	NA
Clinical care should integrate the best of conventional and CAM practices.	5.02 (1.17)	NA	0.66
CAM include ideas and methods from which conventional psychotherapy could benefit.	5.11 (0.92)	NA	0.55
A number of CAM approaches hold promise for the treatment of psychological conditions.	5.52 (1.09)	NA	0.51
Attitudes concerning the risks associated with CAM (4)*	4.12 (1.51)	0.49	NA
CAM should be subject to more scientific testing before they can be accepted by psychologists.	2.05 (1.08)	NA	0.14
CAM can be dangerous in that they may prevent people getting proper treatment.	4.09 (1.33)	NA	0.38
CAM represents a confused and ill-defined approach.	4.75 (1.35)	NA	0.32
CAM is a threat to public health.	5.59 (1.24)	NA	0.36

Sub-scale and item	Mean (SD)	*α*	*r*

Item score=1 (strongly disagree)-7 (strongly agree); *reversed scored items so that lower values represent higher risks, suspicion, danger, or confusion; *α=Cronbach's coefficient alpha*; *r=item-total correlation;* NA=Not Applicable.

Table 4

CAM experiences among participants.

Item	Frequency (%) (N=44)	*r*
Have you ever recommended CAM to your clients?	32 (73)	0.51
Have you ever made referral to CAM practitioner for your clients?	17 (39)	0.51
Have you ever used CAM for your personal purpose?	43 (98)	0.10
Have you ever given CAM to your client in psychological practice?	26 (59)	0.49

r=item-total correlation

Table 5

Cronbach's coefficient alpha and corrected item-total correlation for CAM Educational Needs scale.

Sub-scale and item	Mean (SD)	α	r^a
CAM basic information (2)	5.92 (0.24)	0.88	NA
Educational need about the philosophy of CAM.	5.75 (1.18)	NA	0.85
Educational need about the work mechanism of CAM.	6.09 (1.05)	NA	0.88
CAM integration in clinical psychology practices (2)	5.91 (0.13)	0.94	NA
Educational need about Indonesian government regulation about CAM.	5.82 (1.30)	NA	0.88
Educational need about regulation or policy from professional organization about CAM.	6.00 (1.10)	NA	0.92
The risks of CAM use (2)	6.23 (0.03)	0.92	NA
Educational need about the side effect of CAM.	6.20 (1.07)	NA	0.91
Educational need about the possibility of CAM interaction with chemical drugs or conventional psychology intervention.	6.25 (0.89)	NA	0.85

Item score= 1 (strongly not needed)-7 (strongly needed); α=*Cronbach's coefficient alpha*; *r*=*item-total correlation;* NA=Not Applicable.

Table 6

Feedback result.

Item	Frequency (%) (N=44)
Was the direction on how to complete the survey easy to understand and follow?	
Easy to understand and follow	41 (93)
Difficult to understand and follow	3 (7)
Were there questions you could not answer because they were not clearly written?	
No	43 (98)
Yes	1 (2)
Were there questions that did not include a complete list of choices?	
No	40 (91)
Yes	4 (9)
Were there words in the questionnaire that you did not understand the meaning?	
No	42 (95)
Yes	2 (5)