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Validation of A New Questionnaire Assessing Knowledge and Perceptions about Combination between Herbal and Conventional Medicine

(Validasi Kuesioner Baru Menilai Pengetahuan dan Persepsi tentang Kombinasi antara Pengobatan Herbal dan Konvensional)

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Abstract: Indonesia is a country which has great potential of herbal medicine, although combination between herbal and conventional medicine can be beneficial or harmful. Knowledge and perceptions about that combination are needed to achieve the best treatment effect. To validate a new instrument assessing knowledge and perceptions of patients about combination between herbal and conventional medicine. This study used cross sectional study which was conducted in some of pharmacy in Yogyakarta. Inclusion criterias of the subject were people who visited to the pharmacy with ages above 18 years old and below 65 years old, also had used the combination of herbal and conventional medicine for minimal a month to achieve the same goal of treatment. Items of the questionnaire were developed by existing literatures and added some new items. The content validity had been conducted by some experts. Analysis statistic with bivariate correlations was used to determine the validity and reliability of the questionnaire. Subjects who met the inclusion criteria were 30 people, which are consisted of 15 of healthy people and the rest are people who use the combination. In the domain of knowledge, there are 16 valid questions over 19 questions. Reliability had been calculated by 16 questions and it was reliable (cronbach alpha 0.863). In the perception domain, there were 8 valid questions. The reliability showed that the questions were reliable (cronbach alpha 0.862). There are 3 invalid questions because all of the answer is similar. Our study provides that this new questionnaire was valid and reliable to assess knowledge and perception of the patient who use combination of herbal and conventional medicine.

Keywords : Questionnaire, herbal, conventional, validation.

Abstrak: Indonesia adalah negara yang memiliki potensi jamu yang besar, meski kombinasi antara obat herbal dan konvensional bisa bermanfaat atau berbahaya. Pengetahuan dan persepsi tentang kombinasi itu diperlukan untuk mencapai efek pengobatan terbaik. Untuk memvalidasi instrumen baru yang menilai pengetahuan dan persepsi pasien tentang kombinasi antara obat herbal dan konvensional. Penelitian ini merupakan penelitian *cross sectional* yang dilakukan di beberapa apotek di Yogyakarta. Kriteria inklusi dari subjek adalah orang-orang yang mengunjungi apotek dengan usia di atas 18 tahun dan di bawah 65 tahun, serta memiliki kombinasi obat herbal dan konvensional paling sedikit sebulan untuk mencapai tujuan pengobatan yang sama. *Item* kuesioner dikembangkan oleh literatur yang ada dan menambahkan beberapa *item* baru. Validitas isi telah dilakukan oleh beberapa ahli. Analisis statistik dengan korelasi *bivariate* digunakan untuk mengetahui validitas dan reliabilitas kuesioner. Subjek yang memenuhi kriteria inklusi adalah 30 orang, yang terdiri dari 15 orang sehat dan sisanya adalah orang yang menggunakan kombinasi. Dalam domain pengetahuan, ada 16 pertanyaan yang valid selama 19 pertanyaan. Tingkat kepercayaan telah dihitung dengan 16 pertanyaan dan reliabelnya (*cronbach alpha* 0.863). Dalam domain persepsi, ada 8 pertanyaan yang valid. tingkat kepercayaannya menunjukkan bahwa pertanyaan itu reliabel (*cronbach alpha* 0.862). Ada 3 pertanyaan yang tidak benar karena semua jawabannya serupa. Studi kami menunjukkan bahwa kuesioner itu valid dan dapat diandalkan untuk menilai pengetahuan dan persepsi pasien yang menggunakan kombinasi obat herbal dan konvensional.

Kata kunci: Kuesioner, herbal, konvensional, validasi.

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INTRODUCTION

INDONESIA is an agricultural country that has a lot of potential of herbs. Data from Ministry of Health on Research of Herbs (Ristoja) in 2012 showed that Indonesia has 1889 species of herbs. Other study from Basic Health Research (Riskesdas) in 2010 showed that 60 percent of Indonesian society which above 15 years old have used *jamu* (a kind of herb), and 90 percentsof them told that jamu gave a benefit for their health[1].

The use of herbs can be a primary treatment or additional treatment. Indonesia has been known with 2 types of treatment, which are conventional and traditional (herbal) treatment. Belief from the past period of Indonesian society affirm that the use of herbal treatment is effective[2]. Besides the belief of herbal treatment, awareness of individually side effect of the conventional treatment also play a role in increasing of herbal usage.

As a kind of treatment, Complementary Alternative Medicine (CAM) has been used by approximately 38 percent of adults from survey of CAM use in America. National Center for Complementary and Alternative Medicine (NCCAM) determine that CAM is a group of medicine, health care system, practices and products3. Some types of CAM is natural products (which include a variety of herbal medicine), and mind and body medicine (e.g.meditation, yoga, and acupuncture). Based on survey from National Health Interview Survey (2012) in America, the most commonly used of CAM is a natural products (17.7%), which dietary supplements are used more than vitamins and minerals[4].

The decision to choose a treatment influenced by many aspects which include knowledge and individual perception of the herbal treatment[2]. Some of people understand that many diseases require a conventional treatment, therefore, individual with better knowledge of herbal treatment will use it to support their treatment by using the combination of conventional and herbal treatment.

Previous study about complementary alternative medicine (CAM) questionnaire in young adults showed that female young adult who have used CAM to prevent their body from illness have more positive attitude to use CAM5. Regardless of that, individual knowledge of a treatment have an influence to the application of herbal treatment.

Regarding to the information above, a tool is needed to assess the relationship between knowledge and individual perceptions to the decision of adding on the herbal treatment. Recently a questionnaire as an instrument of that is still not available in Bahasa Indonesia version. Besides that, the measurement properties of a tool, i.e. reliability and validity, should be assessed and considered adequately before it is used for a research[6]. Accordingly, the aim of this study is to validate a new questionnaire about assessing knowledge and individual perception about combination between herbal and conventional medicine.

METHODS

Ethical Clearance was granted by the Ethics Committee of Ahmad Dahlan University with approval No.011603045. Informed consent paper was obtained from all participants.

Construction of The Questionnaire. Items of the questionnaire were developed by existing literatures and added some new items. The existing literatures are questionnaires which used complementary alternative medicine (CAM) such as study from Eisenberg D.M7 in 2001, with the title Perceptions about Complementary Therapies Relative to Conventional Therapies among Adults who Use Both, and also study from Hamidah A8 in 2009 with the title Prevalence and Parental Perceptions of Complementary and Alternative Medicine Use by Children With Cancer in a Multi-Ethnic Southeast Asian Population. The questionnair is divided into 4 parts, which are demographic question, history of illness and treatment question, question of knowledge domain, and question of perceptions domain. The knowledge domain consisted of 19 questions and the perceptions domain consisted of 8 questions. The item of questionnaire have been reviewed by several experts which are pharmacists and psychologist after questionnair constructed.

In the domain of knowledge, there are 19 questions with yes and no question. Five of them are questions that should be described by the subjects including the knowledge of definition, benefit, category, how to use and the ingredient of herbal treatment. Other questions are about the differences between category of herbal treatment in Indonesia, and also about some of herbs that mainly used in Indonesia.

Different with the domain of knowledge, in the domain of perceptions, there are 8 questions with 4-point rating scale which ranging from 'Strongly agree' to 'Strongly disaggree'. In this domain, from 8 questions, five of them are questions to assess perceptions of subject about benefit and safety from the combination between herbal and conventional treatment, and four of them are questions to assess perceptions aboutthe search of information about

combination treatment.

Validation Procedure. Subjects who met the inclusion criterias were recruited during 2 months on March-April 2016 in Special Region of Yogyakarta area. The inclusion criteria were all subject with ages 18-65 years old, who came to the pharmacy in Special Region of Yogyakarta with or without receipt from physician, have used or have been using the combination of herbal and conventional treatment at least for a month and for a same purpose, and willing to be a respondent. The informed consent was given to the subject that met the inclusion criteria, and questionnaire distributed to the patients who had been willing to this study. A total of 30 subjects divided into 15 of healthy subjects and 15 of subjects who met inclusion criteria were recruited in this study.

Statistical Analysis. Data were analyzed using statistical software for validation the questionnair. Validity analysis was tested using the bivariate pearson correlation, and reliability analysis was tested by measuring the Cronbach's Alpha coefficient value. The high degree of internal consistency showed the similar construct of the questionnair[9].

RESULTS

Characteristic Patients. Table 1 shows demographic data of 30 subjects that recruited in this study. From 30 subjects, 19 (63.33%) were female and 11 (36.67%) were male. About 60% of subjects were in age 41-60 years old.

Related to the history of herbal use, 22 subjects (73.33%) have used herbal treatment with or without advice from physician, and 15 subjects (50%) claimed that the aim of herbal is to cure the disease.

Table 1. Demographic of the subjects.

Characteristic	Total	Percentage (n=30)
Gender		
Male	11	36.67
Female	19	63.33
Age		
< 40	9	30
41 – 60	18	60
> 60	3	10
Education Level		
≤Senior High School	19	63.33
≥Senior High School	11	36.67
Income (IDR)		
< 1.000.000	11	36.67
1.000.000 – 3.000.000	11	36.67
> 3.000.000	8	26.67
Comorbidities		
Yes	18	60
No	12	40
History of Herbal Treatment		
Yes	22	73.33
No	8	26.67
The aim of using Herbal Treatment	6	20
Preventive	15	50
Therapy	1	3.33
Increase effect of CT	8	26.67
Never use HT		

Note : CT : Conventional Treatment, HT : Herbal Treatment

Validity. Table 2 presents the validity of the questionnaire which included knowledge and perceptions domain tested by bivariate pearson correlation. In knowledge domain, there were 19 questions which have ranged of correlation between 0.145–0.706. The value of pearson correlation for 30 patients (p 0.05) is 0.361. Therefore, there were 3 questions that have correlation lower than 0.361, including question number 9, 11, and 14. Besides that, rest of them were valid.

Table 2. Result of validity test in domain of knowledge.

Questions	Pearson Correlation
1. Meaning of Herbal Medicine	.592
2. Benefits of Herbal Medicine	.592
3. Category of Herbal Medicine	.537
4. The Ingredients of Herbal Medicine	.609
5. How to Consume Herbal Medicine	.703
6. Side effects of Herbal Medicine	.390
7. Healthy effects from Herbal Medicine	.553
8. Symbol of *OHT*	.485
9. The differences between *OHT* and *Fitofarmaka*	.176
10. Kind of herb and its benefit	.564
11. Kind of herb and its benefit	.145
12. Kind of herb and its benefit	.706
13. Kind of herb and its benefit	.703
14. Kind of herb and its benefit	.249
15. Kind of herb and its benefit	.547
16. Kind of herb and its benefit	.488
17. Kind of herb and its benefit	.515
18. Kind of herb and its benefit	.459
19. Kind of herb and its benefit	.703

Similar test with knowledge domain, table 3 shows the perceptions domain in 8 questions have ranged of correlation between 0.590 – 0.820. Therefore, all of the questions have scored more than 0.361 which means that all of them were valid.

Table 3. Result of validity test in domain of perceptions.

Number of questions	Pearson Correlation
If I used combination of herbal and conventional treatment :	
1. Herbal treatment gives a benefit for my health	.794
2. Herbal treatment will decrease my symptomp	.760
3. The combination is better than only one of them	.680
4. Herbal treatment has a minimal side effect	.742
5. Herbal treatment more safe	.590
About the searching literature of the combination of herbal and conventional treatment information	
6. The information is easy to search	.640
7. The information is easy to understand	.676
8. The information give a benefit for my health	.820

Reliability. The internal consistency was 0.862 for perceptions domain which are item to total correlation ranged from 0.460–0.731 (Table 5). Another test of internal consistency using Chronbach's alpha test was knowledge perceptions which got 0.843 for knowledge domain with 19 items, also 0.863 for knowledge domain with 16 items (3 items deleted) (Table 4). The item of knowledge domain to total correlation ranged from 0.053–0.651 (Table 6). Table 4 indicates that questions in perceptions domain and knowledge domain are reliable (>0.70).

Table 4. Result of reliability test.

Reliability Test	Cronbach's Alpha value
Perceptions Domain (n=8)	.862
Knowledge Domain (n=16)	.863
Knowledge Domain (n=19)	.843

Table 5. Result of Item-Total Statistic in Perception Domain

Number of questions	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
1	.716	.833
2	.661	.839
3	.583	.848
4	.638	.842
5	.460	.862
6	.518	.855
7	.589	.849
8	.731	.830

Table 6. Result of Item-Total Statistic in Knowledge Domain

Number of questions	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
1	.532	.832
2	.532	.832
3	.439	.836
4	.532	.831
5	.651	.827
6	.307	.841
7	.508	.835
8	.382	.839
9	.092	.849
10	.476	.834
11	.053	.851
12	.636	.825
13	.651	.827
14	.168	.846
15	.476	.834
16	.389	.838
17	.436	.836
18	.358	.840
19	.631	.825

DISCUSSIONS

This questionnair focused to assess knowledge and perceptions of subject about the use of herbal treatment. Some of existing studies[5,7,8] discuss about complementary alternative medicine (CAM), which are not only about herbs, but also other treatment for example massage or yoga. The interesting previous study from Canada which measures young adult's attitudes about CAM showed that young adults who are female and have used CAM in the past, have more positive attitudes to CAM[5]. CAM products in that questionnaire are vitamin, herbal medicine, massage, yoga, and chiropractic. Different with condition in Indonesia, the other alternative treatment was too much, that in this questionnaire only focused on herbal medicine as an alternative or additional treatment. Besides that, herbs is one of the important cultural resources in Indonesia and with this questionnaire the herbs can be identified and also can be used to assess the perceptions and knowledge of Indonesian society about herbal treatment[1].

Other previous study is perceptions of adults who use both complementary therapies and conventional therapies[7]. In that study, they also assess about believe and better listener of provider of alternative medicine or conventional medical doctor, which is that questions could not be used in Indonesia.

This questionnaire was unique with the purpose to assess knowledge and perceptions of subject who use both conventional and herbal treatment. Previous study in Indonesia assessed perceptions of visitors in pharmacy about herbs as an alternative treatment showed that the respondents have a good perceptions related to the herbal treatment[10]. Other than that, the perceptions of subject about herbal treatment will be different if herbal treatment used for additional therapy with conventional treatment.

Overall, the validity and reability both in knowledge and in perception domains are valid and reliable. Three questions in knowledge domain which have pearson correlation below than 0.361 are questions which the answer of number 9, 11, 14 were similar. The questions are about the differences between jamu and obat herbal terstandar, the benefit of guava as a treatment for diarrhea, and the benefit of *Sauropus androgynus* (Katuk leaves) for breastfeeding. The question number 9 was easy to answer because of subjects already known that the keyword of jamu is herbs which have been used for generation to generation. Similar to question number 9, questions number 11 and 14 were easy to answer because many information about the benefit of guava

and Katuk leaves, for example in advertisement on television.

In term of internal consistency, the alpha value on perceptions domain was higher than in knowledge domain. In perceptions domain there are 2 questions which have alpha value >7, and contrast with that, there is no alpha value >7 in knowledge domain. The high degree of internal consistency showed the similar construct of the questionnaire. The lower alpha value is probably because the use of binary response (yes/no) in knowledge domain than in perceptions domain which used four level of Likert's scale. The alpha value would be increased because the lower measurement error is associated with more response options[11-12].

Limitation to this study is the number of respondents that met the inclusion criteria. In Indonesia, the use of herbal treatment is not used routinely, only if the symptomps occured. Other than that, perceptions and knowledge in area of this study could be different with the other areas in Indonesia, because Indonesia is multi-ethnic population. In order to improve this questionnaire, studies will be ongoing to the other areas in Indonesia and with the larger number of respondents.

CONCLUSION

This new questionnaire was valid and reliable to assess knowledge and perception of the patient who use combination of herbal and conventional treatment in community setting.

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