

UNIVERSITI PUTRA MALAYSIA

DEVELOPMENT AND VALIDATION OF A QUESTIONNAIRE ON KNOWLEDGE, ATTITUDE AND PRACTICE ON HEALTHY LIFESTYLE FOR MALAYSIAN ADOLESCENTS IN SCHOOL HOSTELS

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By

HIEW CHU CHIEN

Thesis Submitted to the School of Graduate Studies, Universiti Putra Malaysia, in Fulfilment of the Requirements for the Degree of Master of Science

April 2015

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Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfilment of the requirement for the degree of Master of Science

DEVELOPMENT AND VALIDATION OF A QUESTIONNAIRE ON KNOWLEDGE, ATTITUDE AND PRACTICE ON HEALTHY LIFESTYLE FOR MALAYSIAN ADOLESCENTS IN SCHOOL HOSTELS

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April 2015

Chair : Chin Yit Siew, PhD Faculty : Medicine and Health Sciences

Instruments to assess knowledge, attitude and practice (KAP) on healthy lifestyle of adolescents are limited. This study aims to develop and determine the validity and reliability of the Knowledge, Attitude and Practice on Healthy Lifestyle Questionnaire (KAP-HLQ) among Malaysian adolescents living in secondary school hostels.

A cross-sectional study which involved 647 lower secondary school students from 12 school hostels in Malaysia was conducted to determine construct validity, internal consistency reliability and test-retest reliability of the KAP-HLQ. The initial set of the KAP-HLQ consisted of 56 knowledge items, 62 attitude items and 60 practice items. Items were developed mainly based on the Healthy Eating and Active Living among Teens (HEBAT) intervention module under the Healthy Lifestyle Program. From the content validity, an expert panel agreed upon eliminating 14 knowledge items, and one item each from the attitude and practice sections due to inappropriateness of items. This results in retaining 42 knowledge items, 61 attitude items and 59 practice items. Several items were revised based on the feedbacks from a separate pool of 36 respondents during the determination of face validity. In performing construct validity through exploratory factor analysis, four dimensions were identified for the attitude section consisting 27 items and six dimensions were identified for the practice section consisting 28 items. In addition, convergent validity was determined by correlating knowledge and attitude (r=0.260, p<0.05), knowledge and practice (r=0.201, p<0.05), and attitude and practice (r=0.517, p<0.05) on healthy lifestyle. These indicate that those who have good knowledge in healthy lifestyle have positive attitudes and do practice healthy lifestyle.

The internal consistency coefficients for the KAP sections of the KAP-HLQ instrument were 0.654, 0.845 and 0.636 respectively, indicating that it is a reliable tool to assess KAP towards healthy lifestyle of the target group. Furthermore, test-retest reliability of



the KAP-HLQ was determined among a subset of adolescents (n=118) at two time points with an interval of two weeks (knowledge: r=0.631, p<0.05; attitude: r=0.358, p<0.05; practice: r=0.481, p<0.05). The significant correlations indicate the repeatability of the instrument.

The final set of the KAP-HLQ consisted of 42 knowledge items (possible score: 0-42), 27 attitude items (possible score 27-135) and 28 practice items (possible score: 28-140). Knowledge on healthy lifestyle can be assessed by total knowledge score, while attitude and practice on healthy lifestyle can be assessed by total score and by dimensions. The mean total knowledge, attitude and practice on healthy lifestyle scores obtained by the respondents were 19.7 ± 4.9 , 97.9 ± 12.4 and 90.0 ± 10.0 , respectively.

This KAP-HLQ has been validated and tested for its reliability, thus should act as a useful tool to determine the knowledge, attitude and practice on healthy lifestyle among adolescents living in school hostels. It is recommended that the KAP-HLQ can be further improved to measure more aspects of healthy lifestyle. Besides, validation should be done if used among other populations.

Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia sebagai memenuhi keperluan untuk ijazah Master Sains.

PEMBENTUKAN DAN KESAHIHAN UNTUK BORANG SOAL SELIDIK TENTANG PENGETAHUAN, SIKAP DAN AMALAN UNTUK CARA HIDUP SIHAT DI KALANGAN REMAJA MALAYSIA DI ASRAMA SEKOLAH

Oleh

HIEW CHU CHIEN April 2015 Pengerusi : Chin Yit Siew, PhD Faculti : Perubatan dan Sains Kesihatan

Instrumen untuk menilai pengetahuan, sikap dan amalan untuk cara hidup sihat di kalangan remaja adalah terhad. Kajian ini bertujuan membentuk serta menentukan kesahihan dan kebolehpercayaan borang soal selidik pengetahuan, sikap dan amalan untuk cara hidup sihat (KAP-HLQ) di kalangan remaja Malaysia yang tinggal di asrama sekolah menengah.

Suatu kajian keratan rentas yang melibatkan 647 pelajar sekolah menegah rendah dari 12 asrama sekolah di Malaysia telah dijalankan untuk menentukan kesahihan konstruk, kebolehpercayaan konsistensi dalaman dan kebolehpercayaan ujian semula bagi KAP-HLQ. KAP-HLQ yang dibentuk pada permulaan terdiri daripada 56 item pengetahuan, 62 item sikap dan 60 item amalan. Item-item dibentuk adalah berdasarkan modul intervensi Pemakanan Sihat dan Cara Hidup Aktif di kalangan Remaja (HEBAT) di bawah Program Cara Hidup Sihat. Untuk kesahan kandungan, satu panel pakar bersetuju untuk menyingkirkan 14 item pengetahuan, satu item sikap dan satu item amalan disebabkan ketidaksesuaian item. Ini mengakibatkan 42 item pengetahuan, 61 item sikap dan 59 item amalan dikekalkan. Beberapa item telah dipinda berdasarkan maklum balas dari satu kumpulan berasingan yang terdiri daripada 36 responden semasa tentuan kesahan muka. Semasa menjalankan kesahihan konstruk melalui analisis faktor explorasi, empat dimensi telah dikenalpasti untuk seksyen sikap yang mengandungi 27 item dan enam dimensi telah dikenalpasti untuk seksyen amalan yang mengandungi 28 item. Tambahan pula, kesahihan menumpu ditentukan dengan menghubungkaitkan pengetahuan dan sikap (r=0.260, p<0.05), pengetahuan dan amalan (r=0.201, p<0.05), serta sikap dan amalan (r=0.517, p<0.05) untuk cara hidup sihat. Ini menyatakan bahawa responden yang mempunyai pengetahuan yang baik tentang cara hidup sihat juga mempunyai sikap positif dan mengamalkan cara hidup sihat.

Koefisien kebolehpercayaan konsistensi dalam untuk seksyen-seksyen pengetahuan, sikap dan amalan ialah 0.654, 0.845 and 0.636 masing-masing, dan ini menandakan bahawa instrumen KAP-HLQ boleh dipercayai untuk menilai pengetahuan, sikap dan amalan untuk cara hidup sihat. Selain itu, kebolehpercayaan ujian semula KAP-HLQ telah ditentukan di kalangan subset remaja (n=118) pada dua titik masa dengan selang dua minggu (pengetahuan: r=0.631, p<0.05; sikap: r=0.358, p<0.05; amalan: r=0.481, p<0.05). Hubungkait yang signifikan menunjukkan kebolehulangan instrumen.

Set terakhir KAP-HLQ mengandungi 42 item pengetahuan (skor kemungkinan: 0-42), 27 item sikap (skor kemungkinan: 27-135) dan 28 item amalan (skor kemungkinan: 28-140). Pengetahuan cara hidup sihat boleh dinilai dengan skor pengetahuan keseluruhan, manakala sikap dan amalan cara hidup sihat boleh dinilai dengan skor keseluruhan dan melalui dimensi-dimensi. Min skor keseluruhan untuk pengetahuan, sikap dan amalan cara hidup sihat oleh responden ialah 19.7 \pm 4.9, 97.9 \pm 12.4 and 90.0 \pm 10.0 masing-masing.

Kesahihan dan kebolehpercayaan KAP-HLQ telah ditentukan, oleh itu, ia adalah suatu alat yang berguna untuk menentukan pengetahuan, sikap dan amalan cara hidup sihat di kalangan remaja yang tinggal di asrama sekolah. Adalah dicadangkan bahawa KAP-HLQ boleh ditambahbaik lagi untuk menilai lebih banyak aspek tentang cara hidup sihat. Di samping itu, kesahihan patut ditentukan jika digunakan di kalangan populasi yang lain.

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This thesis was submitted to the Senate of Universiti Putra Malaysia and has been accepted as fulfilment of the requirement for the degree of Master of Science. The members of the Supervisory Committee were as follows:

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LIST OF ABBREVIATIONS

AERA	American Educational Research Association
AHA	American Heart Association
APA	American Psychological Association
BMI	Body Mass Index
CATCH	Child and Adolescent Trial for Cardiovascular Health
CANKAP	The Comprehensive Assessment of Nutrition Knowledge, Attitudes, and Practice
CSAO	The Child Sedentary Activity Ouestionnaire
CVR	Content Validity Ratio
DHHS	US Department of Health and Human Services
DI	Discrimination Index
ewba	Eat Well Be Active
EPIC	Evidence-based Practice Identification and Change
HEBAT	Healthy Eating Be Active among Teens
HELENA	Healthy Lifestyle in Europe by Nutrition in Adolescence
HELIC	Healthy Lifestyle in Children
ICC	Intra-class Correlation Coefficient
IDI	Item Difficulty Index
IOTF	International Obesity Task Force
ITC	Item-to-total Correlation
KAB	Knowledge-Attitude-Behavior
KAP	Knowledge, Attitude and Practice
KAP-HLQ	Knowledge, Attitude and Practice on Healthy Lifestyle
	Questionnaire
KAP-nOKU	Nutrition Knowledge, Attitude and Practice Questionnaire in
VD 20	Persons with Disabilities
NK-20 MSA	Massure of Sempling Adaguagy
MOA	Netional Coordinating Committee on Food and Nutrition
NCME	National Council on Massurement in Education
DEC	Process Evoluation Checklist
FEC	Process Evaluation Checklist
	Palotive Diele
KK UNICEE	Kelative Kisk United Nations Children's Fund
UNICEF	World Health Organization
WIU	wonu meatur Organization

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CHAPTER 1

INTRODUCTION

1.1 Background of the Study

According to statistics reported in the Noncommunicable Diseases Country Profiles 2014 (WHO, 2014a), non-communicable diseases contributed to approximately 38 million mortality worldwide, in which most occur in developing countries (28 million). It was also reported that South-East Asia and Western Pacific Regions had the most drastic increase in mortality due to non-communicable diseases. The increasing trend is supported by a recent study stating that diseases such as type 2 diabetes mellitus, hypertension, dyslipidemia and cardiovascular disease have rapidly increased in developing countries (Kulkarni, Hills & Byrne, 2014).

The Global Burden of Disease Study 2010 have reported 30% increase in mortality due to non-communicable disease from 1990 to 2010 among the whole population worldwide (Lozano et al., 2013). Diseases have not only been prevalent in the adult population, but also among the younger generation. In year 2012, approximately 1.3 million adolescents died, mostly due to preventable factors (WHO, 2014b). Patton et al. (2009) reported that among adolescents and young adults, mortality due to cardiovascular diseases were 3.4 times higher in males and 4.7 times higher in females in low-income and middle-income countries compared to high-income countries. Several risk factors are associated with non-communicable diseases, including modifiable behavioral risk factors and metabolic or physiological risk factors. Some major modifiable risk factors are tobacco use, over-consumption of alcohol, unhealthy diet and physical inactivity (Kontis et al., 2014; Lee et al., 2012). Meanwhile, metabolic or physiological risk factors are high blood pressure, hyperglycemia, hyperlipidemia, and overweight and obesity (WHO, 2014c).

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A healthy lifestyle is important to prevent a person from developing non-communicable diseases (Stampfer, Hu, Manson, Rimm, & Willett, 2000; Chiuve, McCullough, Sacks, & Rim, 2006; Hu et al., 2001; Platz et al., 2000). Healthy lifestyle refers to people's preference towards combination of health-related behaviors based on their life chances (Cockerham, 2000). Healthy lifestyle behaviors comprise a healthy diet, involving in regular physical activities and not smoking (Ford, Bergmann, Boeing, Li, & Capewell, 2012; Rodriguez & Moreno, 2006). These behaviors are major preventable and modifiable factors that may contribute to morbidity and mortality caused by chronic diseases (Danaei et al., 2009; Mokdad, Marks, Stroup, & Gerberding, 2004; Rodriguez & Moreno, 2006). Healthy diets and regular physical activities are directly fitted into the

energy balance equation (Thievel, Duche, & Morio, 2013). The energy balance equation was mentioned to be able to predict and manipulate changes in body weight.

It is essential to conduct interventions to educate the adolescents to practice healthy lifestyle, but prior to that, it is important to know their current knowledge, attitude and practice on healthy lifestyle to suit their needs and monitor their changes during and after the intervention. Knowledge, attitude and practice towards health have great impact on one's health-related behaviors, and in turn regulates his body weight status (Baranowski, Cullen, Nicklas, Thompson, & Baranowski, 2003). Over the years, much effort has been made in conducting interventions to promote healthy lifestyle and disease prevention among people in different age groups worldwide, and knowledge, attitude, and behavior questionnaires were common in measuring the improvements of the target group and effectiveness of the interventions (Contento, Randell, & Basch, 2002; Singhal, Misra, Shah, & Gulati, 2010). For instance, a systematic review has explored on journal articles from year 1990 to year 2001 regarding community-based interventions to prevent or delay type 2 diabetes, and half of the studies have reported on the knowledge, attitude and behaviors results (Satterfield et al., 2003). Therefore, in order to improve the lifestyle of the community, knowledge, attitude and practice in relation to their lifestyles should first be improved.

1.2 Problem Statement

This study is part of the main research study entitled "Healthy Lifestyle Program" (*Program Cara Hidup Sihat*), which is a collaborative experimental study between the Ministry of Education, Nestlé Products Pte Ltd and Universiti Putra Malaysia. It aims to promote healthy lifestyle, focusing on healthy eating and active living among adolescents living in school hostels. A total of 100 selected secondary school hostels all over Malaysia (Peninsular Malaysia and East Malaysia) participated in the Healthy Lifestyle Program, having 50 schools as intervention schools and the other 50 schools as control schools. The intervention schools will receive healthy lifestyle education modules and teaching materials in two phases which will last for three years, while the control schools will not receive any intervention during the research period.



Before implementing the Healthy Eating and Active Lifestyle among Teens (HEBAT) intervention module, the knowledge, attitude and practice on healthy lifestyle questionnaire (KAP-HLQ) was developed. The validity and reliability of the newly developed questionnaire were determined among adolescents with homogenous characteristics similar to the adolescents in the main study. In order to evaluate the effectiveness of the intervention module, adolescents in both intervention and control schools will be required to complete the valid and reliable KAP-HLQ at three points in the study. The knowledge, attitude and practice on healthy lifestyle of the adolescents

will be assessed before the first phase of intervention to serve as baseline data, followed by another point after the first phase of intervention, as well as after the second phase of intervention.

The KAP-HLQ was directed towards adolescents studying in day schools and living in secondary school hostels for several reasons. First of all, many studies related to healthy lifestyle components have been conducted in day schools (Moy, Gan & Siti Zaleha, 2004; Moy, Gan & Siti Zaleha, 2006; Pon, Kandiah & Mohd Nasir, 2004), but not among the target group. To the best of knowledge, there was only one study conducted among students with special needs living in boarding school in Malaysia (Roszanadin & Norazmir, 2011) and secondary school students living in school hostels seemed to be completely neglected. Moreover, as limited studies have been conducted among the target group, the daily lifestyles of adolescents should be explored. School wardens revealed that the students' meals are prepared according to the menu planned by nutritionists in the Ministry of Health. Besides, their daily schedules were also planned by schools. Nevertheless, even though the students' diet have been well-planned, students can choose to put aside food that they dislike or skip the meal. In addition, although leisure times were slotted into their schedule so that they be physically active, students can choose to perform sedentary activities such as chatting with friends.

WHO (2008) suggested that knowledge, attitude and practice surveys can help to determine information commonly known by the community, their beliefs and behaviors towards a particular health-related topic. This information will then allow us to determine their needs, problems and possible barriers and enable the development of a comprehensive intervention closely related to their current lifestyle. However, existing valid and reliable instruments to assess knowledge, attitude and practice on healthy lifestyle of the Malaysian community are extremely limited (Siti Sabariah et al., 2006). Parmenter and Wardle (2000) suggested that an instrument without sufficient validity and reliability is arguable as it may not be measuring the aspect that it is supposed to. Moreover, existing instruments are usually developed for specific purposes, such as evaluating the effectiveness of a particular intervention program, and therefore might not be relevant to other studies. For instance, the questionnaire used in the Healthy Lifestyle in Children (HELIC) study and Nutrition Knowledge, Attitude and Practice Questionnaire in Persons with Disabilities (KAP-nOKU) were developed to evaluate the effectiveness for their respective intervention program among different populations (Chen, Soo, Ab Rahman, Van Rostenberghe, & Harith, 2013; Siti Sabariah et al., 2006). The HELIC study targeted on primary school students, while the KAP-nOKU targeted on care givers of persons with disabilities in rehabilitation centers. However, no published knowledge, attitude and practice questionnaires regarding healthy lifestyle were developed for Malaysian adolescents. Therefore, it is of imperative needs to develop a knowledge, attitude and practice on healthy lifestyle questionnaire to test on the mentioned aspect for adolescents in Malaysia.

This study proposes to develop and validate the KAP-HLQ as a measure of knowledge, attitude and practice on healthy lifestyle for adolescents involved in the Healthy Lifestyle Program. In the attempt, the following research questions are addressed:

- i. What is the content, face and construct validity of the KAP-HLQ?
- ii. What is the internal consistency and test-retest reliability of the KAP-HLQ?

1.3 Significance of the Study

A valid and reliable KAP-HLQ will serve as a useful tool to provide in-depth information regarding current knowledge, attitude and practice on healthy lifestyle of adolescents living in school hostels to aid the development of a suitable intervention module to educate them on healthy lifestyle. In addition, this instrument can serve as a useful tool to monitor and evaluate the effectiveness of the "Healthy Lifestyle Program" intervention module. Meanwhile, this instrument can be used to determine knowledge, attitude and practice on healthy lifestyle needed by this population. The results from such studies can serve as a guideline for health program planners and educators to consider focusing on other specific healthy lifestyle components in future health-related interventions. Furthermore, since the KAP-HLQ is one of the limited instruments developed, results obtained using a valid and reliable KAP-HLQ can serve as a base to compare with other studies in the future.

1.4 Study Objectives

1.4.1 General Objective

To develop and determine the validity and reliability of the Knowledge, Attitude and Practice on Healthy Lifestyle Questionnaire (KAP-HLQ) for Malaysian adolescents living in secondary school hostels.

1.4.2 Specific Objectives

- i) To develop the Knowledge, Attitude and Practice on Healthy Lifestyle questionnaire (KAP-HLQ) for Malaysian adolescents living in secondary school hostels.
- ii) To determine the content, face and construct validity of the KAP-HLQ.
- iii) To determine the internal consistency and test-retest reliability of the KAP-HLQ.

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