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HOLISTIC HEALTH POTENTIAL ASSESSMENT: AN INSTRUMENTAL DEVELOPMENT FOR THAI STUDENT NURSES IN NORTH-EAST THAILAND.

Suree Trummikaborworn*, Pulsuk Siripul**, and Supawatanakorn Wongtanawasu. **

Boromarajonani College of Nursing Sappasithiprasong, Ubon Ratchathani Province 34000, Thailand.
***Faculty of Nursing, Khon Kaen University, Khon Kaen Province 40002 Thailand.*

ABSTRACT

The purpose of this study was to develop and to assess the psychometric properties of a newly devised instrument, the Holistic Health Potential Assessment Tool (HHPAT), a 47-item likert-type self-report instrument designed to detect the holistic health potential in student nurses. The validity of content was confirmed based on consistency with the concept of the human potential and in accordance with contributions from a focus group discussion of student nurses and experts. The constructed validity and reliability of the instrument were evaluated. The psychometric properties of the instrument consisting of item analysis, factor analysis, and reliability measures were derived from the responses of 356 Thai student nurses from four colleges of Praborommarajchanok Institute, north-east Thailand. Kaiser Meyer-Olkin (KMO) measure and Bartlett's sphericity test showed that the samples met the criteria for factor analysis. It was found that an eight-factor instrument that explained 42.77% of the variance in the 47 items. The eight factors were health assessment potential, physical potential, mental potential, emotion potential, self-concept and relationship potential, choice potential, positive thinking potential, and spiritual potential. The Cronbach alpha reliability coefficient for the total scale was 0.94, and the alpha coefficients for subscales ranged from 0.61 to 0.86. Results indicated that the HHPAT had good constructed validity and reliability when used with Thai student nurses. Thus, the HHPAT is potentially a beneficial instrument that to be used for self-assessment, evaluation, and monitoring of student development.

Keywords: Holistic health potential, instrument development, student nurses, Thailand.

* Corresponding author: Email address: sureetrum@hotmail.com

INTRODUCTION

Holistic health is widely accepted as the goal for all health, as reflected by the health definition recognized by World Health Organization. Health is referred to a state of complete physical, mental and social well-being, and not merely the absence of disease and infirmity. Several studies have been conducted on health promotion that focuses on health risk behaviors, but does not identify how individuals might develop in terms of harmony, connectedness and personal responsibility (Walter, 2006). However, the concept itself is complex and is not well defined for measurement, especially in Thai student nurses. All of previous studies have been focused on health risk behaviors, whereas little attention has been paid to the concept of holistic health and the development of instrument for measuring holistic health. The broad approaches to health are currently emphasizing towards holistic health concerning nursing practice.

Student nurses are important human resources that serve as providers for healthcare, and are expected to serve as health models for clients. It was shown that nurses' attitudes, beliefs, and health practices affected clients' health perspective both direct and indirect (Srivirod and Nantachaiphun, 2004). The first year of student-life is considered to be a critical period or a transition time for student nurses similar to those of other college students. Their health may be vulnerable to develop a serious illness, such as migraine headaches, emphysema, or even arthritis, because of poor adaptation to the new environment. It is essential for student nurses to gain an understanding of holistic health (Praboromarajchanok, 2003). In order to help student nurses to adapt themselves and become a good role model for healthcare providers, there is a need to develop an appropriated instrument to serve as guidelines for self-assessment for the student nurses. The human potential concept described by Dossey and Keegan (2005) was selected as a conceptual framework to explore holistic health concept due to its clear explanation of wholeness and providing an appropriate tool for measuring human potential. Since human potential composes of six areas, i.e., physical potential, mental potential, emotional potential, choice potential, relationship potential, and spiritual potential, it is important to maximize human potential by empowering six components of human potential. However, these components and the instrument have been applied mostly in adult groups, but it has never been done in adolescents. Hence, the concept of holistic health was revised and an appropriated instrument was developed to serve as guidelines for self-assessment for student nurses.

The instrumental development for holistic self-assessment was carried out based on the concept of the development of human potential. The idea is considered as health is a way of life which is close to the cultural values and norms of the population. Therefore, a holistic health instrument should be developed from student nurses' perspectives, human potential concept, and framework from the holistic self-assessment tool. This implies that student nurses should be included as experts of content for itemizing the instrument.

The aim of the study was to develop a holistic health potential assessment scale for student nurses, and to give some suggestions to assist students developing their skills in order to serve as holistic health models. Most of health instruments that are currently used are addressed only to physical emotional or mental well-being (Pakdevong, 2001). It does not reflect ideas of holistic health suitable for student nurses (Kajorntrum et al., 2000). Although the instrument dealing with quality of life that derived from all aspects of health, it was not appropriate for Thai student nurses and did not relate to or reflect holistic health potential. Therefore, there was a need to develop an instrument that could reflect holistic health.

Methods

Participants

This cross-sectional study of the knowledge and health perspective of Thai student nurses towards holistic health was conducted in four nursing colleges of Praborommarajchanok Institute located in the north-eastern part of Thailand. These participants were recruited by random sampling from the first

year students. According to Tinsley and Tinsley's criteria (DeVellis, 1991), approximately 10 participants per item are required for factor analysis. Thus, a sample size of at least 390 participants was required based on the 78 items in the HHPAT. In order to test the psychometric properties of the final draft of the instrument, a total of 390 sets of questionnaire were administered to student nurses with an overall response rate of 98 % was obtained. Twenty-six sets of returned questionnaires were not completely fill-out and were discarded resulting in a sample size of 356 participants. This result was led to the reduction of items used for HHPA in which 47 items were used instead of 78 items, and yielded eigen values greater than one with factor loading ≥ 0.40.

Instrument

The instrument, HHPAT, was developed by using mixed method design including qualitative and quantitative methods. The qualitative method was used to explore student nurses' perspective of health and holistic health, whereas the quantitative method was used for the construction of validity and reliability following the method described by Tashakkori and Teddlie (2003).

The constructed instrument was evaluated by a field pre-test and experts. The field pre-test was aimed to include some perspectives of student nurses concerning HHPAT. Twelve student nurses consisting of three students each from each of the first to fourth year students were participated in evaluation of the constructed instrument. The instrument was subsequently modified after evaluation following Dossey and Keegan's concept. A group of 5 experts from adolescent psychiatric medicine, holistic health nursing and nursing education was participated in evaluation of the holistic health potential concept. The instrument was subsequently itemized using information derived from health perspective of student nurses. The information concerning health perspective was derived from results of a focus group discussion of 11 students consisted of 5 male and 6 female students that recruited from first year students, and from several focus group discussions of a total 71 students recruited from all level of student-classes, including both sex.

The constructed instruments consisted of 78 items across 6 dimensions. The concepts of health perspective and human potential were modified from concepts of Dossey and Keegan. They are consisting of 11 items of physical potential, 14 items of mental potential, 11 items of emotion potential, 16 items of relationship potential, 15 items of choice potential, and 11 items of spiritual potential, respectively. The instrument used a 5-point rating format to obtain data regarding the strength of their opinion, with a rating score ranging from 1 to 5. The first draft of the instrument was tested by 10 students with more than 90% of the 78 items were rated as an appropriate level. The instrument was subsequently modified following the feedback of the students. The revised HHPAT was administered to 12 student nurses recruited from first year students. The revised HHPAT was used to analyze reliability coefficient with the result of 0.89.

The study was approved by the Ethics Committee of the Institutional Review Board of Khon Kaen University. Informed consent was obtained from all of the participants before study entry.

RESULTS

Demographic characteristics of the sample

The questionnaires were fully completed by 356 of 390 respondents, of whom 90.2% were female. Their median age was 19 years (range 17- 24 years). It was found that only 11.5% of respondents developed a serious illness, i.e., allergy, peptic ulcer, anemia, emotional stress, migraine or thyroid hyperactivity. It was shown that most of them had a good health approximately 57.9% whereas 33.1 % were in fair conditions.

Factor analysis. The Kaiser Meyer-Olkin (KMO) measure and Bartlett's sphericity test were used to measure the sampling adequacy. The results showed that the KMO value was 0.917, and the significance of Bartlett's sphericity test was 0.000, (x^2 = 11, 540.30, df = 3003, p = .000). It indicated that the sample size met with the criterion for factor analysis (Hair et al., 1998). The varimax rotation was used in principle components factor analysis. The results of

factor analysis yielded an 8- factor solution with an explained variance of 42.77%, as shown in Table 1. The Eigen values were greater than 1.00, and factor loading value was suppressed absolute value less than 0.4.

Table 1. Results of factor analysis of the student nurses' holistic health potential assessment using only 356 questionnaires that were fully completed.

Factor	Subscale	No. of items	Factor loading	Eigen value	Variance explained	Cumulative percentage
1	Mental potential	11	0.43-0.62	18.95	24.29	24.29
2	Self-knowledge and relationship potential	12	0.40-0.62	2.85	3.654	27.94
3	Choice potential	7	0.41-0.68	2.22	2.85	30.79
4	Emotion potential	4	0.40-0.68	2.15	2.76	33.51
5	Spiritual potential	3	0.62-0.72	1.98	2.54	36.11
6	Physical potential	3	0.54-0.72	1.85	2.38	38.49
7	Positive thinking potential	3	0.42-0.76	1.71	2.19	40.68
8	Assessment potential	4	0.40-0.59	1.62	2.08	42.77

The mental potential factor was the strongest factor that explained the greatest percentage of variance of the HHPAT that equivalent to 24.29%. It obtained an eigen value of 18.95 and comprised of eleven items, i.e., having the goal to develop decision-making potential, having the goal to develop peace and centering (meditation), creating many ways to solve problems, priority setting, working by following a plan, underlying critical thinking before making a decision, considering their ability and performance before making a decision, studying despite various struggles, setting a proper time for studying and personal activities, adapting to any situation, and understanding the essence and feelings of the person with whom they are talking to.

The factors dealing with self-knowledge and relationship potential were consisting of twelve items. They were listed as follows: accepting the importance of friends and other relationships, setting proper times for studying and joining with friends, not being judgmental, showing concern for others, having an ongoing goal for life, believing that life has meaning and value, having some cohesion in the way of life, being mindful or aware of when saying or doing something, having a reasonable way of living, satisfaction with what the person has and is, and having a positive perspective on any struggle or dilemma.

The factors dealing with choice potential were consisting of seven items, i.e., you can be yourself when sharing opinions and feelings, doing activities happily for the sake of the experience, having the goal to develop good relationships with friends and others, being open mind and willing to do, being able to state your own needs, being yourself, and giving love and feeling empowered.

The factors dealing with emotion potential were consisting of four items, i.e., self-assessment about your emotion, skill development for emotional management, feeling conscious of your emotions, and feeling and knowing why you have particular emotions and feelings.

The factors dealing with spiritual potential were consisting of three items, i.e., awareness that nothing is complete, everything is possible, and that there are opportunities to make amends for mistakes.

The factors dealing with physical potential were consisting of three items, i.e., having a clear goal for caring for physical needs, exercising 3-5 times a week for 30 minutes, and eating nutritious foods daily.

The factors dealing with positive thinking potential were consisting of three items, i.e., having a positive worldview, learning various and interesting things, and caring for others within limits.

The factors dealing with assessment potential were consisting of four items, i.e., the capacity to assess physical changes, to have time to be reflective and consider one's own life, assess others' emotions and feelings, and accept others' emotions and feelings.

Reliability

The final 47-itemized instrument was tested for the reliability by using Cronbach alpha. It was shown that it had high internal consistency, with an alpha coefficient of 0.94 as shown in Table 2. The alpha value for eight subscales ranged from 0.61-0.86.

Table 2. The analysis of internal consistency of the NSHHPA and subscales when the final 47-itemized instrument was used.

Factor	Subscale	Items	Item subscale correlation	Alpha
1	Mental potential	11	0.418-0.617	0.856
2	Self-knowledge and relationship potential	12	0.429-0.617	0.861
3	Choice potential	7	0.457-0.598	0.789
4	Emotion potential	4	0.406-0.597	0.736
5	Spiritual potential	3	0.503-0.574	0.743
6	Physical potential	3	0.368-0.537	0.616
7	Positive thinking potential	3	0.388-0.503	0.638
8	Assessment potential	4	0.308-0.481	0.646
9	Total scale	47		0.943

DISCUSSION

The HHPAT was developed by combining the conceptual framework for holistic health potential from Dossey et al. (2003) and qualitative data from a focused group discussion of student nurses. Since holistic health is a way of life, each group has a different perspective on holistic health, and consequently a specific holistic instrument is needed (Kajorntrum et al., 2000). From the point of view that this instrument was developed for the first year student nurses in four colleges located in the north-eastern part of Thailand, the students' culture, growth and developmental factors relevant to late adolescence and young adults, and its cultural values, are important for the development of the instrument. Consequently, the instrument was modified and tested before use. Two groups of experts on contents consisting of specialists about adolescent psychology, nursing education and holistic health, and the target group were employed by based on their experiences on the way of life and in the way of how to balance their life.

Each factor was named, using varimax rotation in the principal analysis, with a loading cut-off point of 0.40 to ensure practical significance (Hair et al., 1998). The variance that can be explained by the eight factors is 42.77%. The HHPAT is useful for self-assessment because it is parsimonious with 47 items. The final draft was different from the first draft, having two factors more than the first: positive

thinking potential and assessment potential, but there were fewer items than those of the first 31 items and a factor item reflecting student nurses' holistic health. Factors 1 and 2 have two items with a factor loading in 2 factors. The first item was the determination to develop peace and centering (meditation). If this item was omitted, it would not change other items. Therefore, this item should be placed in factor 1 and the second item placed in factor 2. Factors 1 and 3 have one item with factor loading in 2 factors: the determination to develop a good relationship with friend and others. For the same reason, this item should be placed in factor 3. In this study, the item of avoiding health risk behaviors was not included. It is interesting to note that student nurses differ from other young people, as almost all student nurses are female and do not drink alcohol or smoke cigarettes. On the other hand, positive thinking potential and assessment potential are important to student nurses and so they were included as items. The results from factor analysis support the idea that student nurses' holistic health potential is a multidimensional construct and that holistic health varies according to the target group.

Another point to discuss is internal consistency and reliability. Cronbach's coefficient alpha internal consistency demonstrates the reliability of the resultant eight factors and the total HHPAT range between 0.616-0.943, indicating that the HHPAT is a reliable instrument that can be used in future studies. However, a quite small alpha value (0.616- 0.646) of physical potential, positive thinking potential and assessment potential factors should be the refining factors through item reduction. Further study should be conducted to improve the reliability of these three factors.

Implication and limitations

Thai student nurses should be observed as health models, and preparing them to have holistic health potential. The HHPAT can be used as a practical guide for student nurses' holistic health potential assessment and to prepare a suitable program to develop their health potential. The strength of this potential is based on its focus on holistic health. This HHPAT was developed from student nurses who were living in one region of Thailand and may not necessarily be a suitable tool for assessing student nurses in other parts of Thailand or other country settings.

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