



Development of the Health Empowerment Scale (HES) for the Students in the Pondok School of Three Southern Bordered Provinces

Jeranoun Thassri

Wunvimul Benjakul

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ABSTRACT

The purpose of this study was to develop an instrument to explore the components of empowerment related to the health of Muslim students and determine its psychometric properties. Testing psychometric properties of the scale consisted of: (1) construct validity by using exploratory factor analysis, (2) reliability by using alpha coefficient, and (3) discrimination analysis. The HES were developed during September 2008 to February 2009. The results of this study are: (1) The Health Empowerment Scale (HES) consisted of 30 items with four factors and explained a total of 35.783 % of variance. Factor loadings of the HES ranged from 0.475-0.801. The resulting four factors included: Factor I: Participation, discussion, and changing behavior for social well-being (9 items) with factor loadings ranging from 0.475-0.713, and accounted for 21.331% of variance with an eigenvalue of 18.984, Factor II: Participation, discussion, and changing behavior for spiritual well-being (10 items) with factor loadings ranging from 0.420-0.736, and accounted for 5.696% of variance with an eigenvalue of 5.070, Factor III: Participation and discussion for religious well-being (6 items) with factor loadings ranging from 0.520-0.720, and accounted for 4.569% of variance with an eigenvalue of 4.067, and Factor IV: Participation, discussion, and changing behavior for psychology well-being (5 items) with factor loadings ranging from 0.726-0.801, and accounted for 4.186% of variance with an eigenvalue of 3.726.

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CHAPTER 1

OVERVIEW OF THE STUDY

Background

In nursing, empowerment is an important concept for many groups of people including disabled people, older people, female factory workers, HIV infected people, and children. It can be viewed as a process and an outcome. As a process, it is a series of thinking, feelings, and actions directed toward a particular aim of enabling people to have control over their own lives. As an outcome, it is the consequence of the empowerment process (Zimmerman & Warschausky, 1998) that can refer to various aspects such as a sense of control, critical awareness, and participatory behaviors (Chamberlin, 1997; Cox & Parsons, 1994; Israel et al., 1994; Potter & Perry, 2003; Zimmerman & Warschausky, 1998). Without components of an empowerment concept, a process in which people become engaged and an outcome of such engagement will not happen. In addition, empowerment is a multileveled concept that includes individualism, organization, and community. This study is concentrated mainly on the individual level. At an individual level, the construct of empowerment integrates perceptions of personal control, a proactive approach to life, and a critical understanding of the sociopolitical environment (Zimmerman, 1995; Zimmerman & Warschausky, 1998). In conclusion, Suominen, Leino-Kilpi, Merja, Doran and Puukka (2001) studied "Staff empowerment in Finnish intensive care units." They divided the concept of empowerment into three components: behavioral, verbal, and outcome empowerment. First, behavioral empowerment refers to the sense of control that one has gained through his/her own actions over the work environment

and specific job tasks and to job autonomy. Second, verbal empowerment refers to the ability to express views and opinions and to defend them in the workplace. Lastly, outcome empowerment refers to the sense of how far one can influence the outcomes of his/her job.

After an extensive review of the literature, results show that development of an empowerment scale is rarely found in a Thai context, especially for the students in the Pondok schools of the southern border provinces. However, there exists a few empowerment scales in western and eastern cultures, for example; the studies of Bolton and Brookings (1998), Faulkner (2001), and Thassri, Chaowalit, Boonyasopon, & Bullock (2006). These studies focus on disabled people, older people, and female factory workers. Therefore they are not appropriate to be modified for use with students in Pondok schools in southern border provinces in Thailand. Several issues such as language, culture, beliefs, religion, and values are the main reasons for development of empowerment scale. For instance, Pender, Murdaugh and Parsons (2002) mentioned that culture is a powerful influence on health behaviors. To measure empowerment at the individual level, this study focuses on the development of an empowerment scale solely relating to health for the students in the Pondok school of southern border provinces, Thailand. Thus, an empowerment scale developed for one culture is neither sufficient nor appropriate for cross-cultural study. Different societies necessitate culturally appropriate constructs and instruments (Lee, Jones, Mineyama & Zhang, 2002; Saito, Nomura, Noguchi & Tezuka, 1996). In short, these issues must be considered together to develop a sound empowerment instrument harmonious to Thai Islamic students. An appropriate empowerment scale for modifying at this time is nonexistent. Therefore, development of a new empowerment

scale related to a Muslim context for students based on a certain purpose, conceptual framework, population and sample, and setting are required. For nurses to adequately assess levels of empowerment, a tool is very important and needed to provide an effective and efficient approach. The main purpose of this study was to develop a reliable and valid instrument that can assess the extent of empowerment and health for students in the specific context. Assessing the extent of empowerment regarding health enables greater identification of student's health problems and can lead to strategies for improving and maintaining an optimal level of student's health in schools.

Objective

1. To develop the Health Empowerment Scale (HES) for the students in Pondok schools of southern border provinces and determine its psychometric properties.
2. To construct the norm and manual of the Health Empowerment Scale (HES).

Research Questions

1. What are the components of an empowerment scale related to the health of the students in Pondok schools?
2. How valid and reliable is this newly developed empowerment scale related to the health of the students in Pondok schools?
3. What is the norm of the Health Empowerment Scale (HES)?

Significance of the Research

An extensive review of the literature demonstrated that there is no empowerment scale related to the health of students in Pondok schools in Thailand. Therefore, a need for an appropriate health empowerment scale for this specific context is an important consideration. The research was conducted in three southern border provinces. This scale assesses the extent of empowerment related to health, which in turn will provide objective data that impacts on student's health. The information can enable health care providers, particularly nurses, to assess the levels of empowerment in order to promote student's health. The empowerment instrument can be a valuable tool, which may be applied in the other related fields, such as nursing education, nursing practice, nursing administration, nursing research, and theory development.

Conceptual Framework

The conceptual framework of the research consisted of three main aspects: a concept of empowerment, health, and a norm-referenced framework.

1. A concept of empowerment

In a Thai context, especially a Thai Muslim context, a concept of empowerment has not been reviewed and conducted for research as comprehensively as in western cultures. Therefore, the concept of empowerment started with a review of the literature that was then used as a guide to develop key questions for conducting the interviews of the study. Then, findings from both in-depth interviews and literature reviews were used to develop the HES.

A concept of empowerment is rooted in social action, which can be used both for a process in which people become engaged and an outcome of such engagement (Clarke & Mass, 1998; Cox & Parsons, 1994; Zimmerman, 1995; Zimmerman & Warschausky, 1998). Moreover, empowerment is a multileveled concept that includes individualism, organization, and community. In this study, empowerment concentrated mainly on the individual level. At an individual level, the construct of empowerment integrates perceptions of personal control, a proactive approach to life, and a critical understanding of the sociopolitical environment (Zimmerman, 1995; Zimmerman & Warschausky, 1998). Conceptual framework of empowerment in this research consisted of three components: (1) behavioral empowerment refers to the sense of control that one has gained through his/her own actions over the work environment and specific job tasks and to job autonomy, (2) verbal empowerment refers to the ability to express views and opinions and to defend them in the workplace, and (3) outcome empowerment refers to the sense of how far one can influence the outcomes of his/her job (Suominen, Leino-Kilpi, Merja, Doran & Puukka, 2001). To conclude, empowerment is a complex, multidimensional and multifaceted concept. This study focused on attributes of empowerment from both literature reviews and in-depth interviews.

2. Health

Health means different things to different people (Jirojwong & Liamputtong, 2009). In this study, a health concept consisted of physical, psychological, spiritual and social well-being. First, physical health refers to activities involved in the improvement of the body such as exercise, rest, and good nutrition. In addition, health on the physical level is freedom from physical pain or any sense of

negative awareness in the body (Bright, Andrus & Lunt, 2002). Second, psychological health refers to activities for reducing mental health problems such as anxiety, stress, strain, and depression. Most of these mental health problems are caused by a combination of physical, environmental, and social factors (Stewart & Robinson, 1998). Health on the psychological level is related to mental happiness. Third, spiritual health refers to activities for spiritual well being such as religious practice or dogma. Spiritual health reflects the basic human need to experience a connection to life and the life force; it is a vital process of discovering meaning, purpose, fulfillment, and value in life (Bright et al., 2002). Health on the spiritual level applies to culture, belief, and life goals. Finally, social health refers to interpersonal trust and norms of reciprocity and mutual assistance. It reflects the quantity and quality of interactions with family, friends, teachers, and others in the community. Health on the social level is concerned with participation and communication with others. In conclusion, health is an increasingly important global issue, particularly for health promotion and maintenance, wellness, and illness prevention. Generally, health encompasses the complete well being of each individual including physical, psychological, spiritual, and social aspects that were applied to this study.

3. A norm-referenced framework

Measurement is a critical element of research (Ferketich, Phillips & Verran, 1993). To construct an empowerment scale, it is very important to identify and employ a measurement framework to guide the design and interpretation of the scale. A norm-referenced framework was used in this study. Norms are not standards or goals. Polit and Beck (2008) stated that norms indicate the “normal” values and distribution of values on the measure for a specified population. The general purpose

of a norm-referenced measure is to compare a person's score with the scores of other people. Therefore it is advantageous to adopt an instrument because it was used in other similar studies and provides a supplementary context for interpreting the findings. In addition, when a study is an intentional replication, it is essential to use the same instruments as in the original study, even if higher-quality measures are available (Polit & Beck, 2008). In constructing norm-referenced measures, steps are usually taken to maximize variability in the scores. These are in order to discriminate among individuals as much as possible (Goodwin, 1996). Basically, the two main principles related to this measurement framework are variance and a norm group. With regards to variance, empowerment is a broad domain and is the conceptual basis of the scale that measures a specific characteristic among subjects possessing differing amounts of that characteristic. Concerning a norm group, it is used to interpret the score of an individual by comparing it with scores of other individuals. The implications of the norm-referenced framework have benefits for the identification of groups who may be in need of intervention to increase their empowerment level.

A concept of empowerment, health, and a norm-referenced framework are the three main conceptual frameworks of this study. In this study, first, an empowerment concept was initially defined from literature reviews and in-depth interviews. It was constructed by using three components including: (1) behavioral that refers to the sense of control that one has gained through his/her own actions over the work environment and specific job tasks and to job autonomy, (2) verbal that refer to the ability to express views and opinions and to defend them in the workplace, and (3) outcome that refer to the sense of how far one can influence the outcomes of

his/her job (Suominen, Leino-Kilpi, Merja, Doran & Puukka, 2001). Second, health is emphasized on four dimensions of physical, psychological, spiritual, and social well-being. Finally, research for this study has used a norm-referenced measure as its framework.

Definition of Terms

Empowerment is composed of behavioral, verbal and outcome on one's own authority and ability to gain control over one's personal life. Its attributes were developed from a literature review and in-depth interview as follows: (Suominen, Leino-Kilpi, Merja, Doran & Puukka, 2001).

The first component was behavioral empowerment. It refers to the sense of control that one has gained through his/her own actions over the work environment and specific job tasks and to job autonomy

The second component was verbal empowerment. It refers to the ability to express views and opinions and to defend them in the workplace.

The third component was outcome empowerment. It refers to the sense of how far one can influence the outcomes of his/her job awareness of health.

Health refers to the perception of a state of optimal well-being and activities to promote and maintain health, wellness, and illness prevention including physical, psychological, spiritual, and the social well-being of students in school.

Summary

The Health Empowerment scale (HES) is a useful start for nurses, health care professionals, and teachers to assess empowerment among students in schools. Furthermore, there is currently no available tool suitable for a specific Muslim context and culture to fully capture the extent of empowerment of students in the Pondok Schools as related to their health at the individual level. Therefore, the purposes of this study were (1) to develop an instrument to explore the components of empowerment related to health for students in Pondok Schools of southern Thailand, (2) to determine its psychometric properties, and (3) to construct the norm and manual of the Health Empowerment Scale. The results from this study provided objective data of health by assessing the extent of empowerment related to the health of Muslim students in the Pondok Schools. Especially for the researcher's purpose of an intervention program to improve health of students in schools, this is a practical and valuable tool. Finally, it can be used in support of empowerment theory development.

CHAPTER 2

LITERATURE REVIEW

To develop an empowerment scale related to health (HES), a literature review was carried out on three important issues including: (1) a concept of empowerment, (2) health, and (3) psychometric properties.

A Concept of Empowerment

The term empowerment is a noun and means, “The enabling process by which individuals gain power and control over decisions that affect their lives. It may occur when individuals with learning disabilities acquire the ability to live independently in the community or when a group of professionals who share the same goals are able to take collective control or responsibility for the decisions, which affect their practice. The concept of empowerment and enabling activities can be applied to any situation” (Churchill, 2002: 144). Another view from *The World Book Dictionary* (Barnhart, & Barnhart, 1979: 692) and *The Oxford Universal Dictionary Illustrated* (Onions, 1968: 602) state empowerment as the same meaning as, “the act of empowering or state of being empowered”. In the verb form, empower means “(1) to give power or authority to, and (2) to enable or permit” (*The American College Dictionary: Volume One*, 1969: 394). As a result, to empower someone means to delegate legal power to or authorize to enable (*The Grolier International Dictionary*, 1992: 309). This definition suggests that patient empowerment as the patient’s decisions and responsibilities about their own lives.

Based on a review and synthesis of selected expository and empirical literature, Bolton & Brookings (1996) developed a definition of empowerment as following: (1)

assertive refers to stand up for one's convictions, values, and feelings, (2) autonomous refers to be self-sufficient, unconstrained, and self-regulating, (3) collaborative refers to work cooperatively with others to solve problems or to achieve a common goal, (4) committed refers to be completely engaged in whatever one is doing, (5) community-oriented refers to engage in direct interaction with a unified group of individuals, (6) competent refers to be well-qualified, capable, and fully adequate, (7) creative refers to think originally, ingeniously, or inventively, (8) disability-oriented refers to recognize that having a disability is a normal characteristics of a human being, (9) goal-directed refers to strive to meet one's own standards or expectations, (10) independent refers to be free from the influence or domination of others, (11) interdependent refers to acknowledge one's dependence on others and the reciprocal responsibility for others, (12) internal controlled refers to perceive that one has authority or power over self and over environment, (13) personally responsible refers to be accountable for one's actions and their consequences, (14) pride refers to feel delight or elation as a result of some act, possession, or relationship, (15) self-advocating refers to stand up for one's rights and draw on internal strength and support for actions, (16) self-discovering refers to analyze and understand one's own feelings, values, and aspirations, (17) self-efficacious refers to believe that one is able through one's own efforts, to bring about desired outcomes, (18) self-mastering refers to develop and maintain an intrinsic link between feelings of worth and positive outcomes, (19) self-reliant refers to generate one's own opportunities and resources, and (20) socially responsible refers to understand and be committed to the collective well-being of the larger group to which one belongs.

The empowerment philosophy is based on the premise that human beings have the capacity to make choices and are responsible for the consequences of their choices. Its philosophy is based on the assumption that to be healthy, people must be able to bring about change, not only in their personal behavior, but also in their social situations and the organizations that influence their lives (Feste & Anderson, 1995). Anderson (1996) stated that achieving health is not just a matter of enabling people to take more responsibility for their health; it is also about naming injustice, and taking action to address social and economic inequity. This will be the challenge for the 21st century. Also, it is spread into many disciplines not only in organization and management, but education, nursing and public health, psychology, and political sciences (Dhammasaccakarn, 2000). Moreover, Meleis (1997) mentioned enhance empowerment in term of options for understanding, for decision making, or for self-care. For instance, Harvey, Bird, Galavotti, Duncan and Greenberg (2002) found that condom use was significantly higher among women who reported that they make a solitary decision or a joint decision with their partner as compared to those who reported that their partner makes the decisions. Another view, Mithaug (2000) showed in the equal opportunity theory and empowerment evaluation that the discrepancy between the right and the experience of self-determination is due to the lack of capacity and lack of opportunity among individuals whose personal, social, and economic circumstances are beyond their control. As well as Cox and Parsons (1994) proposed the life review process as a useful strategy for helping clients to gain consciousness of their strengths and then bring them to bear on current challenges. In the life review process, an individual or group discussion of questions regarding: (1) attitudes and beliefs about being in the dependent role and (2) perceptions of

historical approaches to dealing with dependency and independence can serve to heighten awareness of the life cycle. From this approach, clients can promote consciousness regarding the status of health care in their society. In addition, Fleury (1991) conducted "Empowering potential: A theory of wellness motivation". Its purpose was to identify, describe, and provide an analysis of the psychological and social processes used by individuals to initiate and sustain cardiovascular health behavior over time. In this study, data collection procedures involved the use of increasingly structured interviews with individuals who were attempting to initiate and sustain cardiovascular health behaviors, in addition to a progressive literature review. Data collection took place over seven months. Throughout data collection and analysis, the investigator attended risk factor modification seminars and exercises with potential informants for eight hours per week. Regular interaction with potential informants allowed the investigator to become familiar with the process of lifestyle change and individuals at different stages in the change process. Finally, Perkins (1995) recommended the value of a dialectical analysis for helping researchers to make more effective use of empowerment theory and research. Ideally, the dialectic dialogue, the reflection and action, the theorizing and practicing, all take place in collaboration with "the people" or "the oppressed" (Seng, 1998).

Empowerment is a complex, dynamic, multidimensional or multilevel and multifaceted concept (McQuiston, 2000; Zimmerman, 1995). It can be used at individual, organizational, and at community levels as a process of engagement and an outcome of such engagement (Clarke & Mass, 1998; Cox & Parsons, 1994; Zimmerman & Warschausky, 1998). Some researchers used the term theory for empowerment. They stated "Empowerment theory is still developing and does not yet

have a set of specific relationships among all relevant constructs. It does, however, include interrelated constructs, definitions, and propositions, all of which are necessary building blocks for more formal theories (Zimmerman & Warschausky, 1998).

The components of the empowerment concept are necessary for researchers developing an empowerment scale. According to Gibson (1991), empowerment is a process of helping people to assert control over the factors that affect their lives. The process encompasses both the individual responsibility in health care and the broader institutional, organizational or societal responsibilities, in enabling people to assume responsibility for their own health. In the hospital setting, empowerment would most commonly be at the point of direct patient care or staff nurse level; however, this kind of empowerment requires an environment of autonomy where mutual trust and respect are encouraged (Fullam, Lando, Johansen, Reyes & Szaloczy, 1998). Similar to Feste and Anderson (1995), empowerment is defined as an educational process designed to help patients develop the knowledge, skills, attitudes, and degree of self-awareness necessary to effectively assume responsibility for their health-related decisions. From Rodwell's point of view (1996), empowerment is a helping process; a partnership, valuing self and others; mutual decision-making; and freedom to make choices and accept responsibility. Moreover, Airhihenbuwa (1994) proposed that the definition of empowerment needs to be expanded to include an understanding of all forces necessary for transformation of reality. Thus the objective changes resulting from empowerment are different in different situations because they reflect the varied needs of individuals, groups, organizations, schools, and communities and the contexts where empowerment occurs. Supporting by Dhammasaccakarn (2000)

presented empowerment into four dimensions including (1) Meaning, (2) Competence, (3) Self-determination, and (4) Impact.

Hawks (1992) analyzed the concept of empowerment in nursing as the interpersonal process of providing the proper tools, resources and environment to build, develop and increase the ability and effectiveness of others to set and reach goals for individual and social ends. Empowerment occurs between two or more people: the person who empowers and the person(s) who is (are) empowered. To clarify the concept of empowerment in nursing, Kuokkanen and Leino-Kilpi (2000) referred to a framework for nurses' professional growth and development. They described empowerment in terms of qualities and as a process associated with the individual and the environment. The articles reviewed were classified into three theoretical approaches: (1) critical social theory that starts out from the premise that certain groups are in a subordinated position. In the nursing context this means primarily nurses and patients. Empowerment connotes influence rather than striving to enhance one's power by taking it from others, (2) organization theory that provides well-being at both the individual and organizational level, which ultimately reinforces staff, self-images and cooperation networks. It may be assumed that management influenced by this idea of empowerment will serve to strengthen staff nurses' professional self-esteem, which in turn will contribute to professional growth and development. Staff cannot, however, be empowered merely by delegation, by transferring tasks downward in the organizational hierarchy, (3) social psychological theory, its emphasis on the individual and environmental factors. As the authoritarian type of leadership assumes less arbitrary forms, the individual's personal qualities and ways of acting assume increasing importance. Suominen, Leino-Kilpi, Merja, Doran

and Puukka (2001) studied “Staff empowerment in Finnish intensive care units.” They divided the concept of empowerment into three components: verbal, outcome and behavioral empowerment. First, verbal empowerment refers to the ability to express views and opinions and to defend them in the workplace. Second, outcome empowerment refers to the sense of how far one can influence the outcomes of his/her job. Finally, behavioral empowerment refers to the sense of control that one has gained through his/her own actions over the work environment and specific job tasks and to job autonomy. Without components of empowerment concept, a process in which people become engaged and an outcome of such engagement will not happen. In brief, to develop an empowerment scale, it is important that the components of empowerment be considered appropriately within the context of the population.

Focuses on an empowerment scale, very few investigators have conducted research on an empowerment scale especially in Muslim context, Thailand. Zimmerman and Warschausky (1998) stated that the shortage of research on empowerment may be mostly due to empowerment theory is not yet fully developed. However, this theory provides a useful framework for guiding various professions. These are the examples of empowerment scales such as: (1) a patient empowerment scale (PES) (Faulkner, 2001), (2) a measure of intrapersonal empowerment (Bolton & Brookings, 1998), (3) the diabetes empowerment scale (DES) (Anderson et al., 2000), (4) the Chinese diabetes empowerment scale (C-DES) (Shiu et al., 2003), and (5) the Women Health Empowerment Scale (WHES) (Thassri, Chaaowalit, Boonyasopun & Bullock, 2005). First, a Patient Empowerment Scale (PES) with act frequency questionnaires (40 items) for older people was developed. The sample item was “Do staff make sure that your nurse call bell is within reach?”(Faulkner, 2001). Second, a

measure of intrapersonal empowerment has four components with 64 items for people with disabilities. Subscales and examples of items are: (1) Personal Competence; sample item: "I can depend on myself to get things done," (2) Group orientation; sample item: "I like to work with others to get a job done," (3) Self-Determination; sample item: "I am comfortable speaking to strangers," and (4) Positive Identity as a Person with a Disability; sample item: "I don't think of myself as a disabled person" (Bolton & Brookings, 1998). Third, the diabetes empowerment scale (DES) has three components with 28 items for diabetes patients. Subscales and examples of items are: (1) Managing the Psychosocial Aspects of Diabetes; sample item: "In general, I believe that I can ask for support for having and caring for my diabetes when I need it," (2) Assessing Dissatisfaction and Readiness to Change; sample item: "In general, I believe that I know what part(s) of taking care of my diabetes that I am dissatisfied with," and (3) Setting and Achieving Diabetes Goals; sample item: "In general, I believe that I can choose realistic diabetes goals" (Anderson et al., 2000). Fourth, the Chinese diabetes empowerment scale (C-DES) has five subscales with 20 items for diabetes patients. Subscales and examples of items are: (1) Overcoming Barriers; sample item: "In general, I believe that I know which barriers make reaching my diabetes goals more difficult," (2) Determining Suitable Methods; sample item: "In general, I believe that I know how to get the facts I need to make diabetes care choices that are right for me," (3) Achieving Goals; sample item: "In general, I believe that I know which of my diabetes goals are most important to me," (4) Obtaining Support; sample item: "In general, I believe that I know what things support me in caring for my diabetes," and (5) Coping; sample item: "In general, I believe that I can cope with feeling down about having diabetes" (Shiu et al., 2003).

Finally, the Women Health Empowerment Scale has four components with 59 items for Thai female factory workers. Subscales and examples of items are: (1) Assurance to Control Action of Personal Well-Being; sample item: "After conflict with my supervisor, I feel happy that I can come to a place of understanding with my supervisor," (2) The Ability to Influence a Reciprocal Community Support in Solving Health Problems: "I invite my friends to participate in activities for their mental happiness," (3) Actions to Achieve Visions and Goals of Health; sample item: "When I have goals in life, I try as best as I can to reach them," and (4) Increasing a Sense of Self-Awareness to Become and Remain Healthy; sample item: "I believe that to follow a religious, life will often bring happiness" (WHES) (Thassri, Chaaowalit, Boonyasopun & Bullock, 2005).

To sum up, empowerment is the concept that needed to be explored in various cultures including Thailand. It can be used for all levels, individual, organization or community.

Health

Health means different things to different people (Jirojwong & Liamputtong, 2009). Also, conceptualization of health is defined in various meaning of different contexts. For example, when health is referred as maintaining stability or avoiding overt illness, health protecting behaviors such as immunization, self examination for signs of cancer, and periodic multiphasic screening may be most important for clients. However, if health is defined as self-actualization or exuberant well-being, the emphasis of health education may be placed on relaxation techniques, enhancing self-awareness, environmental appreciation during outdoor physical activity, or

developing aspects of self that represent untapped potential (Pender, Murdaugh & Parsons, 2002). Though much literature focuses on health being a positive state of well-being, it neglects the fact that health is a fluid state, which constant fluctuation in degrees of wellness and illness (Kennedy, 2001). To develop the Health Empowerment Scale (HES) in this study, a literature review of health was conducted on four dimensions including: (1) physical, (2) psychological, (3) spiritual, and (4) social well-being (Figure 1).

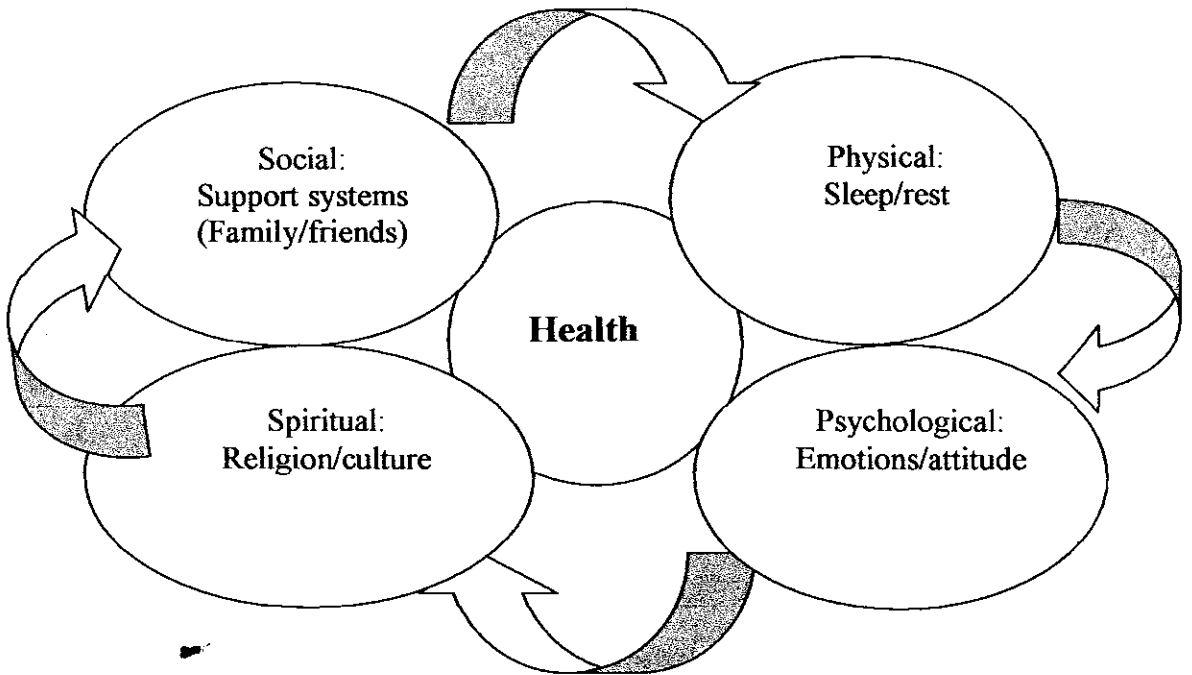


Figure 1 Dimensions of health including physical, psychological, spiritual, and social well-being

The physical dimensions are self-explanatory (Arnold & Boggs, 1999). Being physically active enhances psychological well-being, reduces the risk of depression, and improves mood as well as self-concept and self-esteem (Pender, Murdaugh & Parsons, 2002). Hallal and colleagues stated regarding promotion of physical activity

that must start as early as possible, and needs to be kept as a public health priority. Although the “how much” remains unknown and deserves further research, the benefits of adolescent physical activity on adult health are unequivocal. Figure 2 presented of health benefits of physical activity during adolescent through increased in adults (Hallal, Victora, Azevedo, Wells, 2006). Therefore, schools should play a major role in promoting involvement of children in recreational activities that they can enjoy for a lifetime for example sports days. In brief, maintaining physical health, all ages need to develop lifelong habits of physical activity including walking, bicycling, dancing, or swimming.

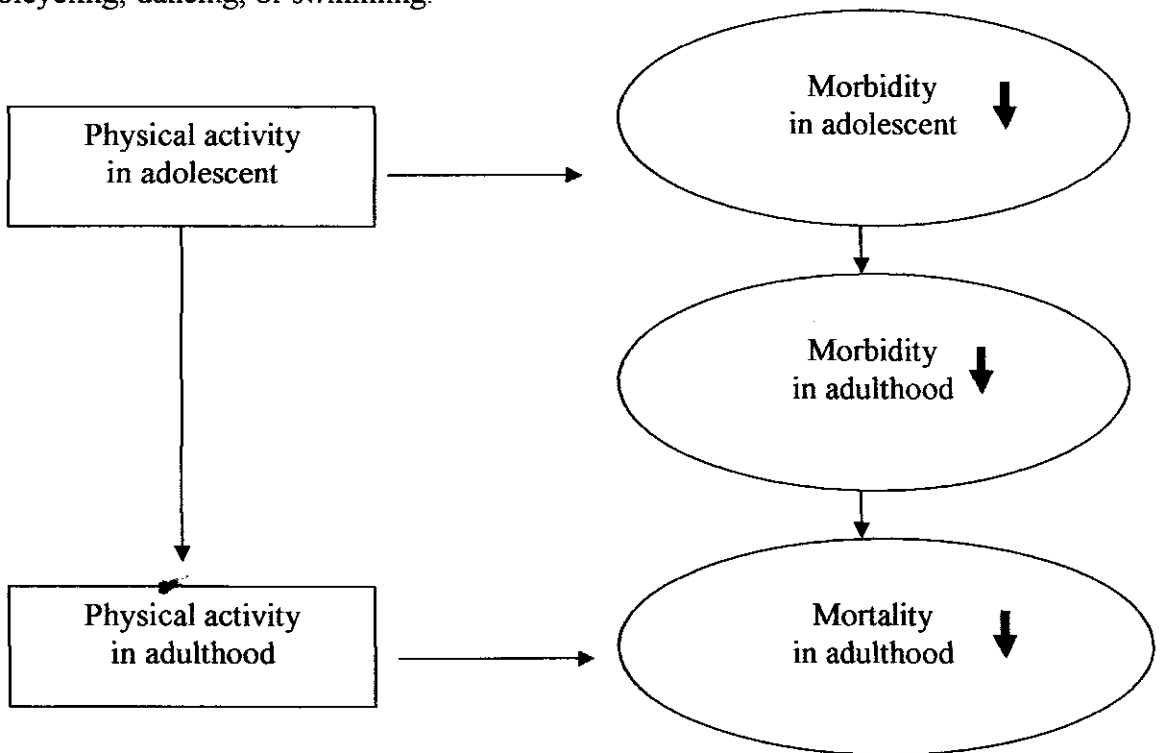


Figure 2 Health benefits of physical activity during adolescent through increased in adulthood

Note. Modified from “Adolescent physical activity and health: A systematic review,” by P.C.Hallal, C.G.Victora, M.R. Azevedo, J.C.K. Wells, 2006, *Sports Med*, 36, p. 1019-1030.

Psychological or emotional concepts of health. During the industrial revolution of the eighteenth century, various psychological factors were identified as underlying causes of disease (Jirojwong & Liamputtong, 2009). For instance, the study to examine utilization of psychological counseling, the results were: (1) less than one third (28%) of suicidal adolescents received psychological counseling, (2) the most common sources of care were private doctors' offices (37%) and schools (34%), and (3) factors associated with receipt of counseling in the past 12 months included age, race, degree of suicidality, depression status, and having had a physical examination during the same period (Pirkis et al, 2003). Similarly to the study of comprehensive school-based health care, the most common major diagnostic categories were emotional problems (29% of all diagnoses), health supervision (13%), respiratory problems (13%), reproductive health problems (11%), and substance abuse problems (8%) (Anglin, Naylor, & Kaplan, 1996). In addition, religion is an area that is increasingly examined as to how it relates to psychological and physical adjustment. Religiosity has also been associated with the moral behavior of adolescents of various ethnicities including the Islamic (Frank & Kendall, 2001). To explore ethnic and generational influences among Chinese, Filipino, and Euro American adolescents on emotional distress and risk behaviors, the results showed that ethnicity predicted depression and delinquency scores, while generation within ethnic groups predicted somatic symptoms and substance use (Willgerodt & Thompson, 2006). Pender and colleagues stated "Clients often give important cues concerning the behaviors they wish to change. For example: I feel very sad when I think of how little time our family spends together (Pender, Murdaugh & Parsons, 2002). In brief, finding reasons to enjoy the moment and allowing oneself to

experience the caring of others enhances health and well-being regardless of physical diagnosis (Arnold & Boggs, 1999).

The spiritual domain of health emphasizes a personal relationship with a higher power and recognition of a person's mortality. It often sustains people when physical or emotional assaults threaten continuity of self in health care (Arnold & Boggs, 1999). An individual who is in a state of spiritual wellness can also be assisted in counseling to achieve further spiritual development. Spiritual wellness is not undefinable, unworkable construct. It is a part of the human being that needs to be attended and fostered as much as do the mind and body (Chandler, Holden & Kolander, 1992). The term spirituality is a very broad concept and often associated with religion and religious beliefs and practices. It is whatever or whoever gives ultimate meaning and purpose in one's life that invites particular ways of being in the world in relation to others, oneself, and the universe (Wright, 2005). Spiritual beliefs can offer a means for reconciliation and an understanding of life (Brooke, 1987). In a holistic approach to health, it is critical to appraise the spiritual health of clients, because spiritual beliefs to which individual subscribe affect their interpretations of life events and health (Pender, Murdaugh & Parsons, 2002). In addition, the meaning of spirituality regarding critical care nurses with experience providing spiritual care to critically ill patients or their families, discovered that spirituality is believing in a higher positive being that helps to guide a person in times of stress. Moreover, spirituality has been related to the joyous experiences of the growth of the soul and connection with a higher good (Kociszewski, 2004). Brooke stated (1987) that there are cultural components to spiritual beliefs and practices, but that which is spiritual transcends the cultural. Cultures and religions have unique ways of dealing with the

same spiritual concerns: worth and dignity of the human being, suffering, reconciliation, love and acceptance, and freedom. Similarly to the statement of the experts who mentioned the culture as the set of beliefs, values, traditions, and customs, including cultural explanations of illness, language, religious, or spiritual beliefs, and personal lifestyle and experiences that play a role in health outcomes (Pender, Murdaugh & Parsons, 2002; Taylor, Lillis, LeMone, LeBon, 2005). One's culture guides behavior, is primarily transmitted through language, and can be adapted over time (Taylor, Lillis, LeMone, LeBon, 2005). The term culture or ethnicity serves as a focus for group identity (Dana, 2005). Finally, life of the spirit is directed toward devotional belief in the influences of the ethereal, incorporeal, and immaterial aspects of beings, as distinguished from the influences of one's physical, concrete, and evidential existence (Karasu, 1999). In brief, spiritual health is the ability to develop one's spiritual nature to its fullest potential, including the ability to discover and articulate one's basic purpose in life, to learn how to experience love, joy, peace, and fulfillment, and how to help ourselves and others achieve their fullest potential (Pender, Murdaugh & Parsons, 2002).

Finally, social health. Pender and colleagues presented social capital reflects the quantity and quality of interaction with family, friends, coworkers, and others in the community. In vulnerable populations, many of these ties may be absent (Pender, Murdaugh & Parsons, 2002). Under Islamic law, fathers are not only required to provide materially for their family, but are also considered responsible for the actions of their children, even so far as to face the punishment themselves for the conduct of their offspring (Frank & Kendall, 2001). Somjai and Chaipoom (2006) found that Buddhist and Muslim gynaecological cancer patients have the same high needs of

psychosocial care, hope, and more information. However, the need for privacy in Muslim patients was much higher than in Buddhist. As one Muslim said, "When I arrived here, it was so strange. I worried about how I can pray. It is the most important.

To sum up, people define health in relation to their own values, personality, and lifestyle. Generally, health is defined as a state of complete physical, psychological, spiritual, and social well-being, not merely the absence of disease and infirmity (World Health Organization, 1996). It is a dynamic process that changes with time and varies according to life circumstances (Chinn & Kramer, 1995). Taylor and colleagues presented certain physiologic and psychological characteristics that are found in specific cultural and ethnic groups are risk factors for illness (Taylor, Lillis, LeMone, LeBon, 2005). Similar to being well that encompasses not only physical homeostasis but also has mental, emotional, social, financial, and spiritual components. One component cannot be successfully maximized without having impact on another, nor can one component be truly healthy while another is not (Kennedy, 2001).

Psychometric Properties

The researchers use several criteria to the quality of a study. Reliability and validity are the two especially important criteria of the research. They ultimately influence the data analysis and the outcome of the report. In research, reliability and validity refer specifically to the measurement of data as they will be used to answer the research questions. In most cases, the instrument that measures the variables is the

central issue in determining the reliability and validity of the data (Brink & Wood, 1994).

Reliability refers to the accuracy, stability, repeatability, and consistency of information obtained in the study (Brink & Wood, 1994; Polit & Beck, 2008). It is a property of scores and not a property of a test (Rouse, 2007). The reliability of a scale may be expressed in terms of the standard error of measurement (SEM) or standard error of a score. This measure is particularly well suited to the interpretation of individual scores; therefore for many measurement purposes it is more useful than the reliability coefficient. SEM can be easily computed from the reliability coefficient of the scale (Anastasi & Urbina, 1997). There are different types of reliability and different procedures for estimating it. In the norm-referenced case, reliability is usually estimated by using internal consistency, a test-retest, and/or parallel form procedure. For instance, Cronbach's alpha or coefficient alpha is commonly used for estimating internal consistency reliability and a form of equivalence reliability is required, while test-retest is used to test for stability. In parallel-form reliability, the interest is in assessing the consistency of performance that alternate forms of a measure elicit from one group of subjects during one administration. Two measures are considered alternate or parallel if they have (1) been constructed using the same objectives and procedures, (2) approximately equal means, (3) equal correlations with a third variable, and (4) equal standard deviation (Waltz, Strickland & Lenz, 2005). There are a number of factors that affect reliability, for example longer scales tend to be more reliable than shorter scales and items of similar content enhance reliability (Wiersma & Jurs, 1990). In brief, every measurement involves some error that cannot be eliminated, however can be reduced by using sound approaches to measurement.

Reliability must be conducted every time a given measure is employed (Waltz, Strickland & Lenz, 2005). However, a reliable instrument does not respond to chance factors or environmental conditions. It will have consistent results if repeated over time on the same person, or if used by two different researchers. The reliability of an instrument says nothing about its validity. It can be measuring the wrong concept in a consistent (Brink & Wood, 1994). Factors affecting the reliability of a research instrument are: (1) the wording of questions means a slight ambiguity in the wording of questions can affect the reliability of a research instrument as respondents may interpret the questions differently at different times, resulting in different responses, (2) the respondent's mood means a change in a respondent's mood when responding to questions in a questionnaire can change and may affect the reliability of that instrument, (3) the nature of interaction means in an interview situation, the interaction between the interviewer and the interviewee can affect responses significantly, (4) the regression effect of an instrument means when a research instrument is used to measure attitudes towards an issue, some respondents, after having expressed their opinion, may feel that they have been either too positive or too negative towards the issue. Then, the second time they may express their opinion differently, thereby affecting reliability, and (5) the physical setting means in the case of an instrument being used in an interview, any change in the physical setting at the time of the repeat interview may affect the responses given by a respondent, which may affect the reliability (Kumar, 2005).

Validity is an important criterion for evaluating methods to measure research variables. It is a more complex concept that broadly concerns the soundness of the study's evidence (Polit & Beck, 2008). The validity of an instrument is a

determination of the extent to which the instrument actually reflects the abstract construct being examined (Burns & Glove, 1997). Simply defined by Waltz and colleagues, validity refers to the extent to which a measure achieves the purpose for which it was intended (Waltz, Strickland & Lenz, 2005). In the norm-referenced case, validity procedures are estimated by using content validity and/or construct validity. First, content validity is important for all measures. When a measure is created, psychometric testing is required, and the first step is to study the content validity of the measure (Rubio, Berg-Weger, Tebb, Lee, & Rauch, 2003). The question of content validity is “Do the items measure the content they were intended to measure?” (Cresswell, 2003). Second, construct validity is useful mainly for measures of traits or feelings (Brink & Wood, 1994). It is the extent to which the scale may be said to measure a theoretical construct or trait. Also, it requires the gradual accumulation of information from a variety of sources. Any data throwing light on the nature of the trait under consideration and the conditions affecting its development and manifestations represent appropriate evidence for this validation (Anastasi & Urbina, 1997). Factor analysis and hypothesis testing are techniques that contribute to construct identification. The question of construct validity is “Do the items measure hypothetical constructs or concepts?” (Cresswell, 2003).

To reiterate, psychometric assessment is particularly important with a newly defined construct to determine more clearly the properties of the construct (Suhonen, Schmidt & Radwin, 2007). Regardless of the nature, type, or scale of measurement, the researcher must answer two basic questions pertaining to collected data including: (1) “Is it truly measuring what the researcher intend to measure rather than something else?” This is a question of measurement validity, and (2) “Assuming that the

researcher measure what is intended, is it without error?" This is a question of measurement reliability (Tashakkori & Teddlie, 1998). Reliability and validity are vital aspects for investigators who are interested in developing a scale. They involve designing the study and the techniques to increase reliability and validity of the scale so that researchers can develop them into useful and valuable tools. Without measurement theory and psychometric properties, the investigators study may be confusing, ambiguous, and offer poor information for the construction of items for scale development.

Summary

Researchers frequently study complex construct and need to create their measure for a particular study. After extensive review literature, no empowerment scale relating to health for Muslim students in Thailand. Previous studies were focused on different groups such as people with disabilities, older people, and female factory workers (Bolton & Brookings, 1998; Brookings & Bolton, 2000; Faulkner 2001; Thassri, Chaowalit, Boonyasopon, & Bullock, 2006). Therefore, to develop the Health Empowerment Scale (HES) for the students in the Pondok school, the investigators should carry out on three main aspects including: a concept of empowerment, health, and psychometric properties.

CHAPTER 3

METHODOLOGY

Introduction

This methodological research was to: (1) develop and test the psychometric properties of the Health Empowerment Scale (HES) that assesses the concept of empowerment regarding health for the students in Pondok schools of southern border provinces, Thailand, and (2) construct the norm and manual of the HES. Three research questions were proposed in the study including: (1) What are the components of an empowerment scale related to the health of the students in Pondok schools?, (2) How valid and reliable is this newly developed empowerment scale related to the health of the students in Pondok schools?, and (3) What is the norm of the Health Empowerment Scale (HES)?

This chapter consists of setting, population and sample, as well as the description of the development of an instrument and testing psychometric properties, protection of human subjects' rights, data collection, and data analysis.

Setting

Thailand's population is predominantly Thai-Buddhist. However, in southern part of Thailand, many Muslim populations live in three provinces namely Yala, Pattani, and Narathiwat (Figure 3). There are differences between Buddhists and Muslims in terms of religion-based beliefs and responses to health. The people in the three southernmost provinces have their unique history, language, education, religious, ethnicity, culture and society. Ethnic difference is accepted since Muslims

in the three southern provinces share different identities in ethnic group. To maintain ethnic identities, Muslims send their children to private Islamic schools or the Pondok schools in which some are beyond official supervision. These schools are funded by private donations.

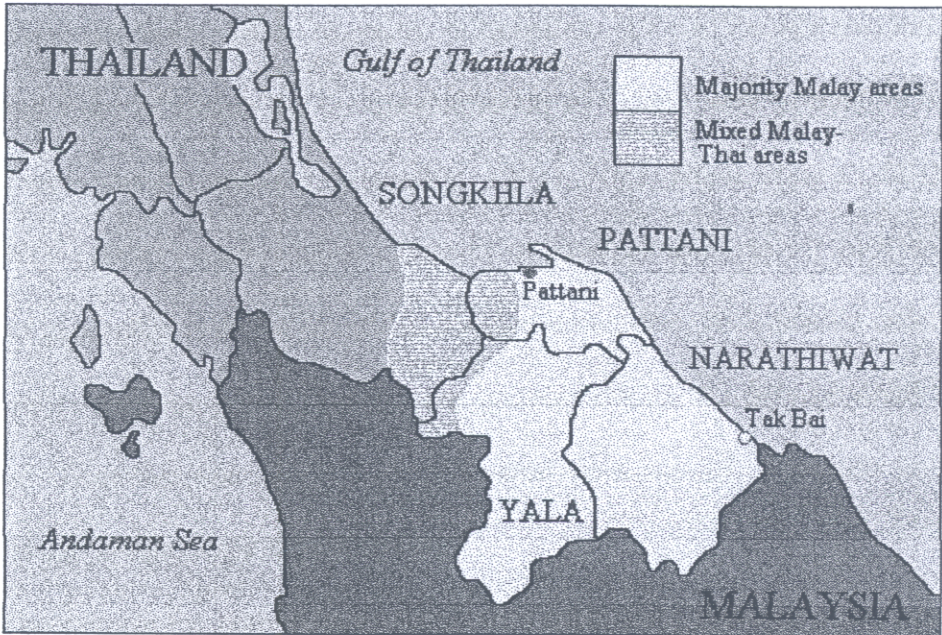


Figure 3 The three southernmost provinces in Thailand namely Yala, Pattani, and Narathiwat

Population and Sample

In 2007, there were a total of 26,915 students at level fourth (Mattyomsuksa 4, 5, & 6 or Grade 10, 11, & 12) in the three southernmost provinces in Thailand including Yala, Pattani, and Narathiwat.

The samples in this study were obtained from two studies; the qualitative and the quantitative. In the qualitative study, the samples were selected from 7 Muslim students of one school in Songkhla province. The samples of the quantitative study

were purposive sampling in three provinces of southern Thailand namely Yala, Pattani, and Narathiwat.

For a sample size, there is neither consensus among experts nor hard-and-fast rules (Polit & Beck, 2008). However, the larger the number of items to be factored and the larger the number of factors anticipated, the more subjects should be included in the analysis (DeVellis, 1991; Nunnally & Bernstein, 1994). Various investigators have offered rules of thumb for the determination of sample size in relation to the number of variables (Pedhazur & Schmelkin, 1991). For example Munro (2001) and Polit & Beck (2008) recommended a ratio of at least 10 subjects for each item is desirable to generalize from the sample to a wider population. With smaller ratios, the influence of relationships based on random patterns within the data becomes more pronounced. Therefore, the sample size in this study is a ratio of 10 subjects for each item or there is 300 students in each school.

The criteria for recruiting subjects were their ability to read Thai language and that they had been studying in the Pondok school of three southern border provinces, Thailand.

Development of an Instrument and Testing Psychometric Properties

The HES was developed by the researchers using a two-phase process as follows (Figure 4): phase 1 (qualitative study) and phase 2 (quantitative study). Two instruments were used in this study: the Demographic Data Form, and the HES. The Demographic Data Form was developed to provide general information and analyses

Phase I: Qualitative

Reviewed literature

Discuss the framework of HES to develop in-depth interviews with an expert committee: 6 Experts (5 experts from Thailand including 3 health care providers and 2 educators and a community health care provider from Australia)

(Date: September 25, 2008)

Developed in-depth interviews from a panel discussion and literature reviews

In-depth interviews (with 7 Muslim students to develop items pool of HES)

(Date: October, 2008)

Phase II: Quantitative

Developed the items from themes of the qualitative study and literature reviews (HES version 1 with 105 items including physical = 39 items, psychological = 28 items, spiritual = 21 item, and social = 21 items) and pilot tested (with 8 Muslim students)

(Date: October, 2008)

Review by seven experts (CVI = 0.915)

(HES version 2 with 96 items including physical = 24 items, psychological = 24 items, spiritual = 24 item, and social = 24 items) and pilot tested (with 150 Muslim students in the Pondok School of one southern bordered province)

After pilot tested, all items were significant at .002-.000 (discrimination analysis)

(Date: November-December, 2008)

Developed HES version 3 with 96 items including physical = 24 items, psychological = 24 items, spiritual = 24 item, and social = 24 items (HES version 3 was changed for wording from version 2, but the items are the same) and pilot tested (with 150 Muslim students in the Pondok School of two southern Bordered Provinces)

(Date: January, 2009)

Final HES with 30 items including psychological = 5 items, spiritual = 10 item, Social = 9 items and religious = 6 items

(with 900 Muslim students in the Pondok School of three southern Bordered Provinces)

(Date: February, 2009)

Figure 4 The development and testing psychometric properties of the Health Empowerment Scale (HES)

with the resulting factors of the HES for this study. The HES was developed to explore its components and determine its psychometric properties.

Phase 1: Qualitative study. This phase was an overview of empowerment concept regarding health of Muslim student in the Pondok school and to check for the feasibility of the interview. Also it was to develop themes for the quantitative study. The details of the qualitative study were presented as follows: (1) after reviewed literature, the researchers discussed the framework of HES to develop in-depth interviews with an expert committee. The following are examples of the issues to discuss including: “What is health for students in the Pondok school?, and What is empowerment for students in the Pondok school?”, (2) develop a guideline for in-depth interviews. The in-depth interviews of empowerment related to the health of students in the Pondok school focused on four dimensions including physical, psychological, spiritual, and social aspects. The following are the examples of the types of questions that the subjects were asked to respond to: “When talking about health, what do you define it?, and divide it in what dimension such as physical, psychological, spiritual, and social well-being”. Pilot testing seven individuals who had characteristics and experiences that were identical to those for whom the interview was designed then followed.

Phase 2: Quantitative study. This phase was concerned with using the guidelines of DeVellis (1991) to develop the HES for Muslim students in the Pondok school. It consisted of literature reviews and the qualitative study from the first phase. Developing the HES and testing its psychometric properties in a quantitative study was divided into four stages as follows: (1) develop an items pool, (2) determine a

content validity index (CVI), (3) two pilot tested the HES, and (4) final testing of field tested.

First stage: Develop an item pool. The objective of this stage was to develop the items for the HES from the results of the qualitative phase and literature reviews. Following three themes of empowerment concept (behavioral, verbal, and outcome) and four themes of health (physical, psychological, spiritual, and social well-being) from the literature reviews and qualitative phase, 105 items of HES were started by generating an initial items pool and determining the format for measurement. The HES version 1 was constructed as follows: Theme 1: physical well-being (39 items), Theme 2: psychological well-being (28 items), Theme 3: spiritual well-being (21 items), and Theme 4: social well-being (21 items). The items of HES (version 1) were written in a structure of the five-point Likert scale format. The eight Muslim students were asked to indicate how they typically responded in a variety of situations. For each statement, they selected the response, which applied best to them. The items were scored: 1 = Not at all, 2 = A little, 3 = Moderate, 4 = High, and 5 = Very high.

Second stage: Determine the content validity index. The objective of this stage was to determine a content validity index. The initial items pool (HES version 1) was reviewed by seven experts, to determine if the questions were totally representative of the interview data. These experts were asked to: (1) link each theme with its respective item, (2) assess the relevancy of the items to the content addressed by themes using a 4-point rating scale: 1 = not relevant, 2 = a little relevant, 3 = quite relevant, and 4 = very relevant. A Content Validity Index (CVI) was used to identify the extent of agreement between the experts. An acceptable level of CVI is at least 0.80 (Waltz et al., 1991). CVI from this phase was 0.92. The development of a

committee-modified version (HES version 2) that consists of 96 items was provided after determining the suggestions from experts.

Third stage: Two pilot tested the HES. This stage examined the reliability and discrimination analysis of the scale. The HES version 2 was administered to 150 Muslim students in the Pondok school who were similar to those for whom the instrument was developed. After the pilot tested version 2 of the HES, modification of this scale resulted in the HES version 3 with 96 items, which was used for the next stage.

Fourth stage: Final testing of field tested. This stage was to determine the components of the HES and its psychometric properties. The new instrument (HES version 4) was presented in Appendix A. The final HES version consisted of 30 items and was tested with 900 randomly recruited Muslim students from three Pondok schools.

Protection of Human Subjects' Rights

Upon approval from the Institutional Review Board of the Faculty of Nursing, Prince of Songkla University, Muslim students in the Pondok schools of three southern provinces, Thailand, were contacted for permission to take part in the study. Protection of subjects' rights was obtained by full oral explanation: (1) the title of the study, (2) the purpose of the study, (3) assurance of the subjects' anonymity, (4) voluntary participation with and withdrawal from the study at any time, (5) the usefulness of the results of the study to students in schools particularly health promotion and maintenance and wellness (6) the name and address of the investigator.

Data Collection

The permission was sent to the manager of all Pondok schools to carry out data collection from their students. After this was granted, the data was collected between September 2008 and February 2009. The details of the data collection from each phase were as follows: (1) phase 1: The qualitative study was conducted during September to October 2008 and (2) phase 2: The quantitative study was conducted from October 2008 to February 2009.

To collect the qualitative data, tape recordings and written text formats were used in in-depth individual interviews. When no new information was identified, the interviews were concluded. Tape recordings were transcribed fully. Written and transcribed data were typed on a word processor. Furthermore, to collect the quantitative data, a questionnaire including the Demographic Data Form and the HES was sent to students to request that they complete and return the questionnaires by helping from research assistants. There were four research assistants who were available for data collection during the qualitative and quantitative study.

Data Analysis

Only those questionnaires with complete data were included in the analysis. Demographic data was computed using descriptive statistics. To assure the quality of the HES, differentiating item selection and reliability testing were conducted in all pilot testing using t-test and Cronbach's coefficient alpha respectively.

Summary

The objective of this study was to develop and test the psychometric properties of the Health Empowerment Scale (HES) that assesses the concept of empowerment regarding health for the students in Pondok schools of southern border provinces, Thailand, and to construct the norm and manual of the HES. Initially, the scale was developed from literature reviews and in-depth individual interviews. Then, using the development guidelines of DeVellis (1991) the instrument (HES) was conducted for assessing the extent of empowerment with regards to health for the students in Pondok schools. Testing psychometric properties of the scale consisted of: (1) construct validity by using exploratory factor analysis, (2) reliability by using alpha coefficient, and (3) discrimination analysis.

CHAPTER 4

RESULTS AND DISCUSSION

Introduction

The main purpose of this study was to develop the Health Empowerment Scale (HES) for the students in the Pondok school of three southern bordered provinces. Moreover, this instrument objective was also to construct the norms and the manual for implication in the school. This chapter consists of the results of the study and the discussion of those results. The results of this study are presented as follows: (1) characteristics of the sample, (2) the components of the HES (3) the psychometric properties of the HES, and (4) the norms and the manual of the HES. The discussion of the results is presented in two parts: (1) the components of the HES and (2) the psychometric properties of the HES.

Results

1. Characteristics of the sample

Of the 900 surveys distributed by the researcher assistants, 894 were returned (99.33%). Of this number, 3 (0.34%) surveys were incomplete, leaving 891 (99.66%) completed surveys for the study sample. Table 1 presents the personal characteristics of the students. The majority were 17-19 years old (69%) and female (70.6%). Their educational level was Grade 10 (28.6%), Grade 11 (35.4%), and Grade 12 (36.0%). They were the students in the Pondok school of three southern bordered provinces, Thailand, namely; Narathiwat (33.6%), Pattani (33.2%), and Yala (33.2%).

Table 1

Demographic Characteristics of the Students in the Pondok School of Three Southern Bordered Provinces (n = 891)

Personal characteristics		Frequency	Percentage
Age	14-16	262	29.4
	17-19	616	69.1
	20 and more	13	1.5
Sex	Male	263	29.4
	Female	628	70.6
Educational level	Grade 10	255	28.6
	Grade 11	315	35.4
	Grade 12	321	36.0
Province	Narathiwat	299	33.6
	Pattani	296	33.2
	Yala	296	33.2

As shown in Table 2, the students subjects ranged in age from 14 to 25 years old with an average age of 17.17 years (SD = 1.137).

Table 2

Means (M), Standard Deviations (SD), Standard Error Mean (SEM), Minimum (Min), and Maximum (Max) Scores for Continuous Demographic Variables (N = 891)

Variables	N	M	SD	SEM	Min	Max
Age	891	17.17	1.137	0.038	14	25

As shown in Table 3, the students subjects were women more than men in all grade including grade 10 (78.4% versus 21.6%), grade 11 (71.4% versus 28.6%), and grade 12 (63.2% versus 36.8%) respectively.

Table 3

Crosstabulation for Sex and Class Relationship (N = 891)

Sex	Class							
	Glade 10		Glade 11		Glade 12		Total	
	N	%	n	%	N	%	n	%
Male	55	21.6	90	28.6	118	36.8	263	29.4
Female	200	78.4	225	71.4	203	63.2	628	70.6
Total	255	100.0	315	100.0	321	100.0	891	100.0

2. The components of the HES

By subjecting the 89-item HES which the reliability equal to 0.926 to principal component analysis, for analyzing and interpreting the factor analysis, four criteria were set including: (1) the factors with Eigenvalues greater than 1, (2) the Scree Plot, (3) an item loading cutoff point of at least .4, and (4) theoretical congruence in each factor. Examination of the initial solution yielded 4 factors with Eigenvalue greater than 1. An examination of the Scree plot (Figure 5) indicated that 4 factors should be examined. From the literature review, HES was hypothesized to have 4 underlying dimensions; a 4-factor solution using varimax with Kaiser normalization was originally specified. Finally, the 4-factor varimax solution was judged to be the most parsimonious and theoretically interpretable.

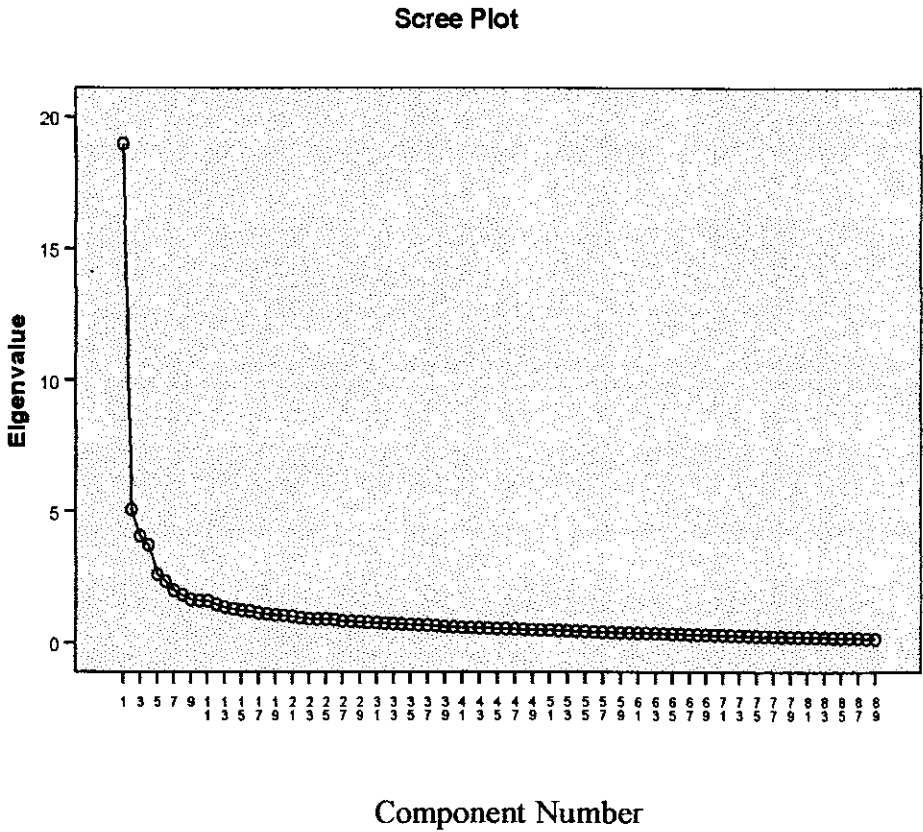


Figure 5 Scree Plot for Factor Analysis

Note. Break in Size of Eigenvalues Occurs between the Fourth and the Fifth Factors

The four factors consisted of 30 items and displayed a total of 35.783% of variance. The resulting four factors included: (1) Participation, discussion, and changing behavior for social well-being, (2) Participation, discussion, and changing behavior for spiritual well-being, (3) Participation and discussion for religious well-being, and (4) Participation, discussion, and changing behavior for psychological well-being.

Factor I consisted of 9 items with factor loadings ranging from 0.475-0.713, and accounted for 21.331% of variance with an eigenvalue of 18.984. An examination of the item content, as shown in Table 4, revealed that these items focused on participation for social well-being (3 items), discussion for social well-being (3 items), and changing behavior for social well-being (3 items). Thus this factor was labeled as "Participation, discussion, and changing behavior for social well-being".

Factor II consisted of 10 items with factor loadings ranging from 0.420-0.736, which accounted for 5.696% of variance with an eigenvalue of 5.070. An examination of the item contents, as shown in Table 5, revealed that these items focused on participation for spiritual well-being (3 items), discussion for spiritual well-being (3 items), and changing behavior for spiritual well-being (4 items). Thus this factor was labeled as "Participation, discussion, and changing behavior for spiritual well-being".

Factor III consisted of 6 items with factor loadings ranging from 0.520-0.720, and accounted for 4.569% of variance with an eigenvalue of 4.067. An examination of the item content, as shown in Table 6, revealed that these items focused on participation for religious well-being (3 items), and discussion for religious well-being (3 items). Thus this factor was labeled as "Participation and discussion for religious well-being".

Factor IV consisted of 5 items with factor loadings ranging from 0.726-0.801, and accounted for 4.186% of variance with an eigenvalue of 3.726. An examination of the item content, as shown in Table 7, revealed that these items focused on participation for psychology well-being (2 items), discussion for psychology well-being (2 items), and changing behavior for psychology well-being

(1 items). Thus this factor was labeled as “Participation, discussion, and changing behavior for psychology well-being”.

Table 4

Items, Factor Loadings, Percent of Variance, Eigenvalue, and Communalities of Factor I (N = 891)

Factor I: Participation, Discussion, and Changing Behavior for Social Well-Being

	Items (n = 9)	Factor loadings	Communalities
HES75	To set the classroom rules with friends.	.713	.659
HES77	To talk about the falsification of school rules with friends.	.701	.661
HES78	When reflecting on breaking a classroom rule, correct behavior accordingly.	.691	.659
HES76	To think and act in way that is beneficial to schools.	.662	.589
HES74	To share ideas about beneficial things for the school with friends.	.659	.618
HES73	When reflecting on doing non-beneficial things for the school, correct behavior accordingly.	.640	.607
HES72	To clean the school with friends.	.619	.614
HES71	To share ideas about cleaning the school with friends.	.507	.606
HES79	When reflecting on times when you didn't keep the school clean, correct behavior accordingly.	.475	.633

Eigenvalue 18.984

% of variance 21.331

Table 5

Items, Factor Loadings, Percent of Variance, Eigenvalue, and Communalities of Factor II (N = 891)

Factor II: Participation, Discussion, and Changing Behavior for Spiritual Well-Being”.

	Items (n = 10)	Factor loadings	Communalities
HES59	To dress traditionally and follow correct culture norms with the family.	.736	.689
HES60	To share ideas of dressing traditionally and culture norms with the family.	.712	.381
HES58	When reflecting on doing the wrong religious doctrine, seek forgiveness of Al-Loah.	.690	.547
HES57	To share ideas to do good things with the family.	.620	.539
HES61	When reflecting on dressing traditionally and culture norms, correct behavior accordingly.	.559	.572
HES56	To philanthropy with family for a demerit.	.541	.560
HES54	To share ideas about doing the wrong religious doctrine with the family.	.508	.539
HES53	To seek forgiveness of Al-Loah with family when doing the wrong religious doctrine.	.481	
HES55	When reflecting on doing something wrong, ask forgiveness from Al-Loah.	.441	.324
HES64	When reflecting on problems that occur that should be resolved by forgiveness to Al-Loah, correct behavior accordingly	.420	.445

Eigenvalue 5.070

% of variance 5.696

Table 6

Items, Factor Loadings, Percent of Variance, Eigenvalue, and Communalities of Factor III (N = 891)

Factor III: Participation and Discussion for Religious Well-Being

	Items (n = 6)	Factor loadings	Communalities
HES50	To read the Al-Qur'an (Bible) with the family	.720	.674
HES51	To share the idea of reading the Al-Qur'an with the family.	.694	.687
HES45	To share idea about praying with the family.	.669	.601
HES44	To pray with the family.	.663	.605
HES48	To share ideas of fasting with the family.	.614	.651
HES47	To fast with the family.	.520	.656

Eigenvalue 4.067

% of variance 4.569

Table 7

Items, Factor Loadings, Percent of Variance, Eigenvalue, and Communalities of Factor IV (N = 891)

Factor IV: Participation, Discussion, and Changing Behavior for Psychological Well-Being.

	Items (n = 5)	Factor loadings	Communalities
HES25	When stressed, talk with friends in order to relax.	.801	.680
HES26	To join activities to help relax with friends.	.797	.735
HES24	To share ideas about trips with friends.	.768	.715
HES27	To share ideas about activities for relaxing with friends.	.739	.682
HES23	To take trips to relax with friends.	.726	.671

Eigenvalue 3.726

% of variance 4.186

3. The psychometric properties of the HES

To be a valuable tool, the construct validity or the component of the HES was presented above. In addition, the 30-Item HES was tested for reliability, Cronbach's coefficient alpha (internal consistency). The results showed in Table 8.

Cronbach's coefficient alpha was computed on each derived factor and the Health Empowerment Scale total score of the 30-Item HES. Table 8 showed that the reliabilities of the four factors and the total scale ranged from 0.850-0.899, and 0.926 respectively. Factor II: Participation, discussion, and changing behavior for spiritual well-being had the highest reliability with alpha of 0.899. While, Factor III: Participation and discussion for religious well-being had the lowest reliability with standardized alpha of 0.850. However, all four factors and the HES total score had internal consistency reliabilities.

Table 8

Cronbach's Coefficient Alpha Reliabilities for the Resulting Four Factors and the 30-Item HES Total Score and Statistics (N = 891)

Factor	N	M	SD	Alpha	SEM
I: Participation, discussion, and changing behavior for social well-being	9	25.15	6.205	0.893	2.030
II: Participation, discussion, and changing behavior for spiritual well-being	10	30.65	6.620	0.899	2.104
III: Participation and discussion for religious well-being	6	18.20	4.241	0.850	1.643
IV: Participation, Discussion, and Changing Behavior for Psychological Well-Being.	5	13.95	3.905	0.862	1.451
The 30-Item HES total score	30	87.95	15.824	0.926	4.309

4. The norms and the manual of the HES

To construct the norms of the HES, the raw scores were transforming to the normalized T-score. Then, using least square method (Thassri, 2002) to provide the norms of the scale as following in table 9.

Table 9

The Norms of the Health Empowerment Scale in the Raw score and T-score

Raw score	T-score	Raw score	T-score	Raw score	T-score
120	70	87	50	54	30
119	70	86	49	53	29*
118	69	85	49	52	28
117	69	84	48	51	28
116	68	83	48	50	27*
115	67	82	47	49	26*
114	66	81	46	48	26*
113	66	80	46	47	25*
112	66	79	45	46	25
111	65	78	44	45	24
110	64	77	44	44	23*
109	64	76	43	43	23*
108	63	75	43	42	22*
107	62	74	42	41	21*
106	62	43	41	40	21
105	61	72	41	39	20*
104	61	71	40	38	20*
103	60	70	39	37	19*
102	59	69	39	36	18
101	59	68	38	35	17*
100	58	67	38	34	17*
99	57	66	37	33	17*
98	57	65	36	32	16*
97	56	64	36	31	15*
96	56	63	35	30	15
95	55	62	35	29	14*
94	54	61	34	28	13*
93	54	60	33	27	13*
92	53	59	33	26	12*
91	52	58	32	25	12*
90	52	57	31	24	11*
89	51	56	31	23	10*
88	51	55	30	22	10

* Extrapolated score

Criterion to interpret and meaning of the Health Empowerment Scale

After transform the Raw scores to T-score, the criterion to make decision for the level of empowerment regarding health and the meaning are presented in table 10 (Pearattakul, 1988).

Table 10

Criterion to interpret and meaning of the Health Empowerment Scale

Normalized T-score	Meaning
Less than 35	Empowerment related to health at the lowest level
35-45	Empowerment related to health at the low level
45-55	Empowerment related to health at the moderate level
55-65	Empowerment related to health at the high level
More than 65	Empowerment related to health at the highest level

Note: The normalized T-score at cutting point is considered to be the higher level. For example, normalized T-score is 35 that refers to **“Empowerment related to health at the low level”**

Discussion

The Health Empowerment Scale, 30 Item-HES presented in this study represents one of the relative efforts to develop a measure of empowerment regarding health in the specific context. This measure focused on an individual level of empowerment and holistic health of students in the Pondok school. The main purpose of this study was to develop a valid and reliable instrument to explore the components of the HES for students in the Pondok school of southern province, Thailand.

By subjecting the original 89-item HES to principal components of analysis, with an eigenvalue greater than 1, an examination of the Scree plot indicated that 4 factors should be examined. From the literature reviewed, the HES was hypothesized to have 4 underlying dimensions; a 4-factor solution using varimax and oblique rotations was originally specified. The factor loading cutoff point was set at .40 (Polit & Beck, 2009). Theoretical congruence in each factor was considered as criteria for factor solution. Finally, the 4-factor oblique solution was also judged to be the most parsimonious and interpretable.

The results of the HES as a total scale and the four factors with 30 items of the HES had high reliabilities ($\alpha = 0.926$ and $0.850-0.893$ respectively). The four factors included: Factor I: Participation, discussion, and changing behavior for social well-being (9 items), Factor II: Participation, discussion, and changing behavior for spiritual well-being (10 items), Factor III: Participation and discussion for religious well-being (6 items), and Factor IV: Participation, discussion, and changing behavior for psychological well-being (5 items). The discussion of the findings is presented in two parts; the components of the WHES and its psychometric properties.

1. The components of the HES

Factor I: Participation, discussion, and changing behavior for social well-being.

First factor, this consisted of 9 items with factor loadings ranging from 0.405-0.635. This factor was labeled as "Participation, discussion, and changing behavior for social well-being." Chamberlin (1997) stated that empowerment does not occur to the individual alone, but has to do with experiencing a sense of

connectedness with other people. In preadolescent and early adolescent, parents are the greatest source of support. On the other hand, in young adults, friends remain dominant, whereas the family net-work as well as friends are important sources of support for the elderly (Pender, Murdaugh & Parsons, 2002). For instance, in the school cultures, principals can work toward fostering a climate in which teachers feel safe and able to work together collaboratively and professionally (Edwards et al., 2002). Similarly, workers in factories feel content if they are able to work together with their supervisors or colleagues. Another literature, a measure of empowerment scale, Speer and Peterson (2000) found that “power developed through relationships”. In addition, the Family Empowerment Scale (FES), systems advocacy, such as professionals and families, is one component of the FES (Singh & Curtis, 1995). Finally, without some resources, the ability to maintain health and well-being is tenuous (Eugenie, 2002).

Factor II: Participation, discussion, and changing behavior for spiritual well-being

The second factor consisted of 10 items with factor loadings ranging from 0.405-0.698. This factor was labeled as “Participation, discussion, and changing behavior for spiritual well-being.” As Chandler and colleagues mentioned to spiritual as a part of the human being that needs to be attended and fostered as much as do the mind and body (Chandler, Holden & Kolander, 1992). The term spirituality is a very broad concept and often associated with religion and religious beliefs and practices. Spiritual beliefs can offer a means for reconciliation and an understanding of life (Brooke, 1987). In a holistic approach to health, it is critical to appraise the spiritual health of clients, because spiritual beliefs to which individual subscribe affect their

interpretations of life events and health (Pender, Murdaugh & Parsons, 2002). In addition, for spiritual well-being, people need to express their views and opinions and to defend them. In brief, spiritual health is the ability to develop one's spiritual nature to its fullest potential, including the ability to discover and articulate one's basic purpose in life, to learn how to experience love, joy, peace, and fulfillment, and how to help ourselves and others achieve their fullest potential (Pender, Murdaugh & Parsons, 2002).

Factor III: Participation and discussion for religious well-being

The third factor consisted of six items with factor loadings ranging from 0.423-0.685. This factor was labeled as "Participation and discussion for religious well-being" because all items reflected participation and discussion regarding religious for example "HES 50: To read the Al-Qur'an (Bible) with the family" or "HES 51: To share the idea of reading the Al-Qur'an with the family". Supporting by other previous study, the findings show that activity and participation are crucial elements of empowerment (Finfgeld, 2004; Akey et al., 2000). To conclude, for human to quality of life, religion is very important in any situation. For instance, one Muslim admitted in the hospital said, "When I arrived here, it was so strange. I worried about how I can pray. It is the most important for me" (Somjai & Chaipoom, 2006).

Factor IV: Participation, discussion, and changing behavior for psychological well-being

The fourth factor consisted of 5 items with factor loadings ranging from 0.405-0.708. The fourth factor in this study incorporated items from issues of mental such as "HES 25: When stressed, talk with friends in order to relax" or "HES 26: To

join activities to help relax with friends". Empowerment does not appear to occur without a basic sense of well being and quality of life (Eugenie, 2002; Rogers et al., 1997).

2. The Psychometric Properties of the HES

The HES offers a valid and reliable measure of empowerment related to health for the students in the Pondok school, southern Thailand. The findings of this study provide support for content validity (CVI = 0.915), construct validity, and internal consistency ($\alpha = 0.956$) of the HES. Therefore, the HES would represent a valuable quality assurance instrument. The discussions of the HES as a valuable tool are as follows:

2.1 The process of developing the HES consisted of various steps including qualitative and quantitative study. For instance, this study started with the extensive review of literature and discuss the framework of the HES with an expert committee from Thailand and Australia. Rubio, Berg-Weger, Tebb, Lee & Rauch (2003) suggested for an expert panel to a new measure. The experts critiqued the measure to determine the representativeness and clarity of the items, the factors with which the item is associated, and the extent to which the measure is comprehensive. Moreover, in the next step, the HES was reviewed by seven experts for content validity index. In short, Morton (1996) mentioned experts as sources of certainty and people accept experts without questions.

2.2 The HES had a sufficient pool of items from the initial phase of developing the scale. First, the HES was made up of 105 items with four factors of the scale. After review from experts, pilot testing, and assessing an item's ability to discriminate and reliability twice, the HES remained at 89 items. By subjecting the

89-item HES to principal components analysis with a whole group (N = 891), four factors of 30 items had a high reliability of 0.926.

2.3 To develop the items of the HES which were written in the five-point Likert scale format appropriate to measure the construct of empowerment. Chamberlin (1997) suggested the format to make choices: “yes or no” was not appropriate to measure a concept of empowerment. Furthermore, for Asian countries, Lee and colleagues (2002) mentioned a Likert scale with a mid-point is fitting.

2.4 The appropriate of the language and the content of the HES were considered in all steps of the process to develop the HES. For example, discussion of religious for Muslim people in the first step of qualitative study.

2.5 For each item, Munro (2001) and Polit & Beck (2008) presented a ratio of at least 10 subjects is desirable for scale development. In this study, a ratio of subject for each item was 10:1.

Summary

This chapter presented the results of analyses of sample characteristics and three research questions. The subjects were 891 students who studied in the Pondok school of three southern bordered provinces, Thailand namely, Narathiwat, Pattani, and Yala. The majority of students were 17-19 years old and female. Their educational level was Grade 10 (28.6%), Grade 11 (35.4%), and Grade 12 (36.0%).

Research question 1 asked for the components of the HES. The four factors consisted of 30 items and explained a total of 35.783 % of variance. The resulting four factors included: (1) Participation, discussion, and changing behavior

for social well-being, (2) Participation, discussion, and changing behavior for spiritual well-being, (3) Participation and discussion for religious well-being, and (4) Participation, discussion, and changing behavior for psychological well-being.

Research question 2 asked for the validity and reliability of the HES. The findings of the psychometric properties of the WHES included (1) a content validity index, which was 0.915, (2) construct validity using EFA on the total sample, (3) Cronbach's coefficient alpha internal consistency reliability demonstrated the alpha of the four factors and a total scale ranging from 0.850-0.926, and (4) item discriminating power by using t-test (Edward, 1957). The results presented as following: (4.1) the first test of the HES consisted of 96 items and all items were significant at $p < .002$, and (4.2) the second test of the HES was modified from the first test of 96-item HES and from these items only 23 items were needed to rewording. In this version, there were only 89 items as significant at .05, while 7 items were cut off.

Research question 3 asked for the norms of the HES. To construct the norms of the HES, the raw scores were transforming to the normalized T-score. Then, using least square method (Thassri, 2002) provided the norms of the scale. After transform the raw scores to T-score, the criterion to make decision for the level of empowerment regarding health and the meaning are consisted as followings: (1) score less than 35 refers to empowerment regarding health at the lowest level, (2) score 35-45 refers to empowerment regarding health at the low level, (3) score 45-55 refers to empowerment regarding health at the moderate level, (4) score 55-65 refers to empowerment regarding health at the high level, and (5) score more than 65 refers to empowerment regarding health at the highest level (Pearattakul, 1988).

CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

Introduction

This chapter presents a conclusion of the study. It was divided into two sections including: conclusions based on the results, and recommendations for nursing practice, education, administration, research, and theory development.

Conclusions

The Health Empowerment Scale (WHES) consisted of 30 items with four factors and explained a total of 35.783 % of variance. Factor loadings of the HES ranged from 0.475-0.801. The resulting four factors included:

Factor I: Participation, discussion, and changing behavior for social well-being (9 items) with factor loadings ranging from 0.475-0.713, and accounted for 21.331% of variance with an eigenvalue of 18.984. The first factor consisted of participation, discussion, and changing behavior for social well-being.

Factor II: Participation, discussion, and changing behavior for spiritual well-being (10 items) with factor loadings ranging from 0.420-0.736, and accounted for 5.696% of variance with an eigenvalue of 5.070. The second factor consisted of participation, discussion, and changing behavior for spiritual well-being.

Factor III: Participation and discussion for religious well-being (6 items) with factor loadings ranging from 0.520-0.720, and accounted for 4.569% of variance

with an eigenvalue of 4.067. The third factor consisted of participation and changing behavior for religious well-being.

Factor IV: Participation, discussion, and changing behavior for psychology well-being (5 items) with factor loadings ranging from 0.726-0.801, and accounted for 4.186% of variance with an eigenvalue of 3.726. The fourth factor consisted of participation, discussion, and changing behavior for psychology well-being.

Due to the psychometric properties the HES, it offers as a valid and reliable measure of empowerment related to health for students in Pondok schools. The results of this study supported the construct validity of the HES by using exploratory factor analysis with the total sample score ($N = 891$). To be a measurement of internal consistency, the HES has been tested for reliability including Cronbach's coefficient alpha. The internal consistency reliability demonstrated that the alpha of the four factors and the total scale ranged from 0.850-0.926 indicating a highly reliable internal consistency.

Recommendations

The HES was developed to measure the extent of health empowerment of students in specific context namely Muslim people. This measurement concentrated on the individual level of empowerment. The HES from this study had robust psychometric properties that will be useful to assess the empowerment status related to health in four dimensions including the social, spiritual, religious, and psychological well-being. Moreover, other methods to psychometric properties of the HES are recommended such as known group validation and multitrait-multimethod approach.

The HES may prove to be a useful measure to the success of nursing professionals and research as followings:

1. Nursing practice

In this study, the HES can determine the extent of empowerment related to the health of Muslim students. For example, nurses working in schools taking care of students would like to promote and maintain student's health by using empowerment concept. They can use the HES to assess the extent of empowerment in students before and after intervention. The results of which will provide health care providers, especially nurses, of ways they may assist students to maintain their well-being. As a result, enhancing student's well-being in health care could happen.

2. Nursing education

In Thailand, an empowerment scale for students in specific context , Muslim culture, had not been developed. Thus, nursing educators in universities or colleges can use this valuable scale to demonstrate to nursing students how the extent of empowerment relates to the health of students in schools. Later, nursing students particularly in graduate program can learn from their educators from a complete and perfect model that may guide them in practice after completing their studies.

3. Nursing administration

Empowerment is an important concept that is acceptable for all organizations including the nursing profession. Nursing administrators can use the results of the implication of the HES' s study for planning resources such as budgets, materials, and manpower, to improve the health of students in school.

4. Research

The HES will be very valuable for researchers who are interested to describing and applying the components of empowerment concept in similar settings and populations. However, each scale needs to be appropriately made for specific contexts and populations. For example, using the HES before and after an intervention program of empowerment model namely "Development of the Health Empowerment Model for the students in the Pondok School of Three Southern Bordered Provinces", a valuable instrument was required to determine the effectiveness of study programs.

Summary

The purpose of this study was to develop an instrument to explore the components of empowerment related to the health of Muslim students and determine its psychometric properties. Initially, the scale was developed from literature reviews, the expert committee discussion and in-depth individual interviews. Then, using the development guidelines of DeVellis (1991), the instrument (HES) was conducted for assessing the extent of empowerment with regards to health for the students in Pondok schools. Testing psychometric properties of the scale consisted of: (1) construct validity by using exploratory factor analysis, (2) reliability by using alpha coefficient, and (3) discrimination analysis. The HES were developed during September 2008 to February 2009.

The results of this study are presented as follows: (1) The Health Empowerment Scale (HES) consisted of 30 items with four factors and explained a total of 35.783 % of variance. Factor loadings of the HES ranged from 0.475-0.801. The resulting four factors included: Factor I: Participation, discussion, and changing

behavior for social well-being (9 items) with factor loadings ranging from 0.475-0.713, and accounted for 21.331% of variance with an eigenvalue of 18.984, Factor II: Participation, discussion, and changing behavior for spiritual well-being (10 items) with factor loadings ranging from 0.420-0.736, and accounted for 5.696% of variance with an eigenvalue of 5.070, Factor III: Participation and discussion for religious well-being (6 items) with factor loadings ranging from 0.520-0.720, and accounted for 4.569% of variance with an eigenvalue of 4.067, and Factor IV: Participation, discussion, and changing behavior for psychology well-being (5 items) with factor loadings ranging from 0.726-0.801, and accounted for 4.186% of variance with an eigenvalue of 3.726, (2) the psychometric properties the HES, it offers as a valid and reliable measure of empowerment related to health for students in Pondok schools. The results of this study supported the construct validity of the HES by using exploratory factor analysis with the total sample score (N = 891). Also, the HES has been tested for reliability including Cronbach's coefficient alpha. The internal consistency reliability demonstrated that the alpha of the four factors and the total scale ranged from 0.850-0.926 indicating a highly reliable internal consistency.

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APPENDICES

APPENDIX A

THE 30-ITEM OF THE HEALTH EMPOWERMENT SCALE

แบบสอบถามการเสริมสร้างพลังอำนาจเกี่ยวกับการดูแลสุขภาพของนักเรียน

ตอนที่ 1 สถานภาพของนักเรียน

1. อายุ ปี
2. เพศ
3. ระดับชั้น
4. เกรดเฉลี่ยล่าสุด

ตอนที่ 2 แบบสอบถามความคิดเห็นเรื่องการเสริมสร้างพลังอำนาจเกี่ยวกับการดูแลสุขภาพของนักเรียน

ข้อ	ข้อความ	ระดับความคิดเห็นเกี่ยวกับการดูแล				
		มาก ที่สุด	มาก	ปาน กลาง	น้อย	น้อย ที่สุด
1.	กำหนดกฎระเบียบของห้องเรียนร่วมกับเพื่อน Set of classroom rules with friends.					
2.	พูดคุยร่วมกับเพื่อนเรื่องการทำผิดกฎระเบียบของ โรงเรียน					
3.	เมื่อรู้ว่าทำผิดกฎระเบียบของห้องเรียน จะแก้ไขทันที					
4.	ร่วมคิดกับเพื่อนทำกิจกรรมที่เป็นประโยชน์ต่อ โรงเรียน					
5.	พูดคุยกับเพื่อน เรื่องทำกิจกรรมที่เป็นประโยชน์ต่อ โรงเรียน					
6.	เมื่อถูกทักว่า ไม่ได้ทำกิจกรรมที่เป็นประโยชน์ต่อ โรงเรียน จะแก้ไขทันที					
7.	ร่วมกับเพื่อน เพื่อทำความสะอาดให้โรงเรียน					
8.	พูดคุยกับเพื่อนเรื่องทำความสะอาดให้โรงเรียน					
9.	เมื่อถูกทักว่า ช่วยทำความสะอาดโรงเรียนน้อยไป จะ แก้ไขทันที					
10.	มีการขอภัยโทษต่อพระอัลเลาะห์ร่วมกับคนใน					

ข้อ	ข้อความ	ระดับความคิดเห็นเกี่ยวกับการดูแล				
		มาก ที่สุด	มาก	ปาน กลาง	น้อย	น้อย ที่สุด
	ครอบครัว เมื่อทำผิดหลักคำสอนทางศาสนา					
11.	มีการคุยร่วมกับคนในครอบครัว เมื่อทำผิดหลักคำสอนทางศาสนา					
12.	เมื่อรู้ว่า ทำผิดหลักคำสอนทางศาสนาจะขออภัยโทษต่อพระอัลเลาะห์					
13.	ทำบุญร่วมกับคนในครอบครัว เพื่อไม่ให้มีบาป					
14.	มีการคุยร่วมกับคนในครอบครัว ให้ทำแต่ความดี					
15.	เมื่อรู้ว่า ทำผิดพลาดจะขออภัยโทษ (เตาบัต) ทันที					
16.	มีการกำหนดการแต่งกายให้ถูกต้องตามประเพณีร่วมกับคนในครอบครัว					
17.	มีการคุยร่วมกับคนในครอบครัว เรื่องการแต่งกายให้ถูกต้องตามประเพณี					
18.	เมื่อถูกทักว่า แต่งกายไม่ถูกต้องตามประเพณี จะแก้ไขทันที					
19.	เมื่อรู้ว่า ปัญหาที่เกิดขึ้นควรแก้ไขด้วยการขอพรจากพระอัลเลาะห์ ขอมทำ					
20.	มีการระมัดระวังร่วมกับคนในครอบครัว					
21.	พูดคุยร่วมกับคนในครอบครัวถึงเรื่องการระมัดระวัง					
22.	มีการถือศีลอดร่วมกับคนในครอบครัว					
23.	มีการคุยเรื่องการถือศีลอดร่วมกับคนในครอบครัว					
24.	อ่านคัมภีร์อัลกุรอ่านร่วมกับคนในครอบครัว					
25.	มีการคุยเรื่องการอ่านคัมภีร์อัลกุรอ่านร่วมกับคนในครอบครัว					
26.	ไปเที่ยวกับเพื่อน เพื่อคลายเครียด					
27.	มีการคุยเรื่องไปเที่ยวร่วมกับเพื่อน เพื่อคลายเครียด					
28.	เมื่อรู้ว่าเครียด จะชวนเพื่อนคุย เพื่อคลายเครียด					
29.	ร่วมทำกิจกรรมกับเพื่อน เพื่อคลายเครียด					
30.	มีการคุยเพื่อหากิจกรรมร่วมกับเพื่อน เพื่อคลายเครียด					

APPENDIX B

THE MANUAL OF THE HEALTH EMPOWERMENT SCALE

คู่มือการใช้เครื่องมือวัดการเสริมสร้างพลังอำนาจเกี่ยวกับการดูแลสุขภาพ ของนักเรียนโรงเรียนเอกชนสอนศาสนาอิสลาม ใน 3 จังหวัดชายแดนภาคใต้

ความหมายของการเสริมสร้างพลังอำนาจเกี่ยวกับการดูแลสุขภาพ

การเสริมสร้างพลังอำนาจเกี่ยวกับการดูแลสุขภาพ หมายถึง การมีส่วนร่วมกับบุคคลอื่น การแสดงความคิดเห็น และการยอมรับเปลี่ยนแปลงตนเองเมื่อได้รับสารสนเทศของผลการกระทำเพิ่มเติม เพื่อให้มีสุขภาพที่ดีในด้านต่าง ๆ ได้แก่ ด้านสังคม ด้านจิตวิญญาณ ด้านศาสนา และด้านจิตใจ

ความมุ่งหมายของการใช้เครื่องมือ

การใช้เครื่องมือวัดการเสริมสร้างพลังอำนาจเกี่ยวกับการดูแลสุขภาพของนักเรียนโรงเรียนเอกชนสอนศาสนาอิสลามใน 3 จังหวัดชายแดนภาคใต้ มีความมุ่งหมายของการใช้เพื่อต้องการวัดความคิดเห็นหรือความรู้สึกรักของนักเรียนโรงเรียนเอกชนสอนศาสนาอิสลามช่วงชั้นที่ 4 ใน 3 จังหวัดชายแดนภาคใต้ ว่า นักเรียนมีส่วนร่วมกับบุคคลอื่น (เช่น คนในครอบครัว เพื่อน และครู) มีการแสดงความคิดเห็น และมีการยอมรับเปลี่ยนแปลงตนเองเมื่อได้รับสารสนเทศของผลการกระทำเพิ่มเติม เพื่อหาข้อสรุปที่เกี่ยวข้องกับสุขภาพว่าอยู่ในระดับมากน้อยเพียงใด โดยนำผลการวัดไปเทียบกับเกณฑ์ปกติ ผลจากการประเมินจะนำไปใช้เป็นสารสนเทศเพื่อการพัฒนาการดูแลสุขภาพของนักเรียนโรงเรียนเอกชนสอนศาสนาอิสลามใน 3 จังหวัดชายแดนภาคใต้ต่อไป

โครงสร้างของเครื่องมือ

เครื่องมือวัดการเสริมสร้างพลังอำนาจเกี่ยวกับการดูแลสุขภาพครั้งนี้มีโครงสร้างที่ต้องการวัดอยู่ 2 แนวคิดคือ แนวคิดของการเสริมสร้างพลังอำนาจและแนวคิดของการดูแลสุขภาพ โดยผสาน 2 แนวคิดเข้าด้วยกัน ฉะนั้นคำถามแต่ละข้อจะถามทั้งแนวคิดการเสริมสร้างพลังอำนาจและการดูแลสุขภาพ สำหรับรายละเอียดโครงสร้างของเครื่องมือมีดังต่อไปนี้

แนวคิดการเสริมสร้างพลังอำนาจ

1. พฤติกรรม หมายถึง การกระทำของบุคคลโดยอาศัยกระบวนการมีส่วนร่วมกับบุคคลอื่น เช่น คนในครอบครัว เพื่อน และครู
2. ภาษา หมายถึง การแสดงความคิดเห็น และหรือคัดค้านเกี่ยวกับเรื่องราวในสถานการณ์ต่าง ๆ

3. ผลลัพธ์ หมายถึง การรับรู้ของบุคคลว่าสามารถทำให้เกิดผลของการกระทำและยอมปรับเปลี่ยนเมื่อได้ข้อมูลของผลการกระทำเพิ่มเติมในแต่ละสถานการณ์

แนวคิดการดูแลสุขภาพ

1. ด้านสังคม เป็นการดูแลตัวเองที่เกี่ยวข้องกับการมีปฏิสัมพันธ์กับบุคคลรอบข้าง เช่น คนในครอบครัว เพื่อน คุณครู
2. ด้านจิตวิญญาณ เป็นการดูแลตัวเองที่เกี่ยวข้องกับความเชื่อ ค่านิยม ขนบธรรมเนียม ประเพณี และวัฒนธรรมต่าง ๆ
3. ด้านศาสนา เป็นการดูแลตัวเองที่เกี่ยวข้องกับศาสนา
4. ด้านจิตใจ เป็นการดูแลตัวเองที่ทำให้เกิดความผ่อนคลาย ไม่เครียด

โครงสร้างของเครื่องมือวัดการเสริมสร้างพลังอำนาจเกี่ยวกับการดูแลสุขภาพและจำนวนข้อคำถาม

การเสริมสร้างพลังอำนาจ การดูแลสุขภาพ	พฤติกรรม	ภาษา	ผลลัพธ์	รวม
1. ด้านสังคม	3	3	3	9
2. ด้านจิตวิญญาณ	3	3	4	10
3. ด้านศาสนา	3	3	-	6
4. ด้านจิตใจ	2	2	1	5
รวม	11	11	8	30

การพัฒนาเครื่องมือ

เครื่องมือที่พัฒนาเป็นแบบสอบถามชนิดมาตราส่วนประมาณค่า 5 ระดับ จากระดับน้อยที่สุดถึงมากที่สุด (0-4) จำนวน 30 ข้อ ซึ่งทุกข้อมีความหมายทางบวก โดยมีขั้นตอนการพัฒนาเครื่องมือสรุปดังต่อไปนี้

1. กำหนดจุดมุ่งหมายในการพัฒนาเครื่องมือวัด
2. ศึกษาเอกสารและงานวิจัยที่เกี่ยวข้องกับแนวคิดเกี่ยวกับการเสริมสร้างพลังอำนาจ และการดูแลสุขภาพ ประกอบด้วย ความหมาย องค์ประกอบ และขั้นตอนของแนวคิด ตลอดจนการพัฒนาเครื่องมือวัด
3. อภิปรายและปรึกษากรอบแนวคิดที่ได้จากข้อ 2. ร่วมกับผู้ทรงคุณวุฒิทั้งในประเทศและต่างประเทศ จำนวน 6 คน เพื่อใช้เป็นแนวทางสร้างแบบสัมภาษณ์ของเครื่องมือ

4. สร้างแบบสัมภาษณ์โดยใช้ผลจากข้อ 3. ร่วมกับการทบทวนเอกสารและงานวิจัยที่เกี่ยวข้องซ้ำอีกครั้ง

5. ใช้แบบสัมภาษณ์กับนักเรียนที่นับถือศาสนาอิสลาม จำนวน 7 คน ทั้งนี้เพื่อนำผลข้อมูลที่ได้มาสร้างเป็นแบบสอบถามชนิดมาตราส่วนประมาณค่า 5 ระดับ

6. นำข้อมูลที่ได้จากข้อ 5. ร่วมกับการทบทวนเอกสารและงานวิจัยที่เกี่ยวข้องสร้างเป็นแบบสอบถามชนิดมาตราส่วนประมาณค่า 5 ระดับ ซึ่งได้เป็นเครื่องมือวัดการเสริมสร้างพลังอำนาจเกี่ยวกับการดูแลสุขภาพครั้งที่ 1 (Health Empowerment Scale: HES) จำนวน 105 ข้อ

7. นำเครื่องมือวัดการเสริมสร้างพลังอำนาจเกี่ยวกับการดูแลสุขภาพครั้งที่ 1 ทดลองใช้กับนักเรียนที่นับถือศาสนาอิสลาม จำนวน 8 คน ทั้งนี้เพื่อนำมาปรับปรุงข้อคำถามก่อนที่จะให้ผู้ทรงคุณวุฒิพิจารณา

8. หลังจากทดลองใช้กับนักเรียนที่นับถือศาสนาอิสลามดังกล่าวในข้อ 7 แล้ว ได้ปรับปรุงเครื่องมือวัดการเสริมสร้างพลังอำนาจเกี่ยวกับการดูแลสุขภาพครั้งที่ 2 ซึ่งประกอบด้วยข้อคำถามจำนวน 96 ข้อ ส่งให้ผู้ทรงคุณวุฒิจำนวน 7 คน พิจารณาความเที่ยงตรงตามเนื้อหา

9. หาค่าดัชนีความเที่ยงตรงตามเนื้อหา (content validity index หรือ CVI) ได้เท่ากับ 0.915

10. ปรับปรุงคุณภาพเครื่องมือวัดการเสริมสร้างพลังอำนาจเกี่ยวกับการดูแลสุขภาพตามข้อเสนอแนะของผู้ทรงคุณวุฒิ และทดลองใช้กับนักเรียนโรงเรียนเอกชนสอนศาสนาอิสลามจำนวน 150 คน ใน 1 จังหวัด จาก 3 จังหวัดชายแดนภาคใต้

11. นำเครื่องมือวัดการเสริมสร้างพลังอำนาจเกี่ยวกับการดูแลสุขภาพที่ได้จากข้อ 10. มาหาค่าความเชื่อมั่นได้เท่ากับ 0.9668 และทุกข้อคำถาม (จำนวน 96 ข้อ) เมื่อวิเคราะห์ค่าอำนาจจำแนก (discrimination analysis) โดยใช้การทดสอบที (t-test) ที่แบ่งเป็นกลุ่มสูง-กลุ่มต่ำกลุ่มละ 25 % ปรากฏว่าทุกข้อ มีนัยสำคัญทางสถิติที่ .002-.000

12. นำเครื่องมือวัดการเสริมสร้างพลังอำนาจเกี่ยวกับการดูแลสุขภาพที่ได้จากข้อ 11. มาปรับปรุงเฉพาะทงภาษา ส่วนจำนวนข้อยังเท่าเดิม (จำนวน 96 ข้อ) หลังจากนั้นจึงทดลองใช้กับนักเรียนโรงเรียนเอกชนสอนศาสนาอิสลามจำนวน 150 คน ใน 2 จังหวัด จาก 3 จังหวัดชายแดนภาคใต้

13. นำเครื่องมือวัดการเสริมสร้างพลังอำนาจเกี่ยวกับการดูแลสุขภาพที่ได้จากข้อ 12. มาหาค่าความเชื่อมั่นได้เท่ากับ 0.9172 และหาค่าอำนาจจำแนกโดยการทดสอบที ปรากฏว่า ค่าสถิติที่ไม่มีนัยสำคัญทางสถิติจำนวน 7 ข้อ จึงได้ตัดข้อคำถามดังกล่าวออก เหลือข้อคำถามเพียง 89 ข้อ เพื่อนำไปทดลองหาคุณภาพครั้งที่ 3

14. นำเครื่องมือวัดการเสริมสร้างพลังอำนาจเกี่ยวกับการดูแลสุขภาพที่ได้จากข้อ 13. ไปใช้จริงเป็นครั้งสุดท้ายกับนักเรียนโรงเรียนเอกชนสอนศาสนาอิสลามจำนวน 891 คน ใน 3 จังหวัดชายแดนภาคใต้

15. หาความเที่ยงตรงเชิงโครงสร้างของเครื่องมือจากข้อ 14. โดยการวิเคราะห์องค์ประกอบเชิงสำรวจ (Exploratory Factor Analysis หรือ EFA) และหาค่าความเชื่อมั่นโดยใช้สัมประสิทธิ์อัลฟา (alpha coefficient) ผลจากการทดสอบคุณภาพครั้งสุดท้ายได้ข้อคำถามอยู่ใน 4 องค์ประกอบพร้อมค่าสถิติต่าง ๆ ดังตารางที่

ตารางที่ ความเชื่อมั่นและสถิติพื้นฐานของเครื่องมือวัดการเสริมสร้างพลังอำนาจเกี่ยวกับการดูแลสุขภาพ

n	k	X	Min-Max	Mean	SD	SEM	α
891	30	120	22-120	87.949	15.824	0.530	0.954

จากตารางแสดงว่า แบบสอบถามได้นำไปทดลองกับกลุ่มตัวอย่าง (n) จำนวน 891 คน โดยแบบสอบถามมีจำนวน (k) 30 ข้อ คะแนนเต็มของแบบสอบถามเท่ากับ (X) 120 คะแนน คะแนนสูงสุด-ต่ำสุดเท่ากับ (Min-Max) 22-120 คะแนน มีคะแนนเฉลี่ยเท่ากับ (Mean) 87.949 คะแนน ส่วนเบี่ยงเบนมาตรฐานเท่ากับ (SD) 15.824 ค่าความคลาดเคลื่อนมาตรฐานในการวัดเท่ากับ (SEM) 0.530 และความเชื่อมั่นของแบบสอบถามเท่ากับ (α) 0.954 ตามลำดับ

วิธีดำเนินการวัด

เพื่อให้ดำเนินการวัดได้ผลตามความมุ่งหมายของการใช้เครื่องมืออย่างมีความเที่ยงตรงและเชื่อถือได้ ผู้ใช้เครื่องมือจะต้องศึกษาคำชี้แจงการตอบในแบบสอบถาม สำหรับวิธีดำเนินการวัดแบ่งออกได้เป็น 3 ระยะ ดังนี้

1. การเตรียมตัวก่อนวัด ผู้ดำเนินการวัดควรปฏิบัติ ดังนี้

1.1 เตรียมแบบสอบถามให้เพียงพอกับจำนวนนักเรียนและมีแบบสอบถามสำรอง

1.2 จัดเตรียมสถานที่ให้เหมาะที่จะใช้เป็นสถานที่ที่จะวัด โดยมีห้องขนาดที่เหมาะสมกับ

จำนวนนักเรียน ไม่มีสิ่งรบกวนต่อการตอบของนักเรียน

1.3 ควรมีอุปกรณ์ในการตอบแบบสอบถามไว้แก่นักเรียนด้วย เช่น ปากกา ดินสอ และยางลบ

2. วิธีดำเนินการขณะวัด ผู้ดำเนินการวัดควรปฏิบัติ ดังนี้

2.1 อธิบายให้นักเรียนเข้าใจวัตถุประสงค์ของการวัด พยายามใจ เพื่อให้นักเรียนร่วมมือในการตอบ และพยายามตอบคำถามให้ครบทุกข้อ

- 2.2 อธิบายคำชี้แจงการตอบแบบสอบถามให้นักเรียนเข้าใจถึงวิธีการตอบ
- 2.3 ไม่ทำการใด ๆ ที่เป็นการรบกวนการตอบแบบสอบถามของนักเรียน
- 2.4 ให้ความช่วยเหลือในกรณีที่นักเรียนต้องการ เช่น การตอบคำถามของนักเรียน
3. วิธีปฏิบัติเมื่อนักเรียนตอบแบบสอบถามเสร็จ ผู้ดำเนินการวัดควรปฏิบัติ ดังนี้
 - 3.1 รวบรวมแบบสอบถามให้ครบถ้วนตามจำนวนนักเรียน
 - 3.2 กล่าวคำชมเชยนักเรียนที่ให้ความร่วมมือในการตอบแบบสอบถามครบถ้วนทุกข้อ

วิธีการตรวจให้คะแนน

การตรวจให้คะแนน คำถามแต่ละข้อคะแนนเต็ม 4 คะแนน ให้คะแนนตามระดับความคิดเห็นที่นักเรียนตอบ โดยคำถามทุกข้อมีความหมายในทางบวก ดังนี้

ระดับความคิดเห็น	คะแนน
น้อยที่สุด	0
น้อย	1
ปานกลาง	2
มาก	3
มากที่สุด	4

คะแนนรวมของนักเรียน หาโดยนำคะแนนทั้ง 30 ข้อ มารวมกัน

เกณฑ์ปกติของเครื่องมือ

เกณฑ์ปกติใช้สำหรับแปลความหมายคะแนนผลการวัดของนักเรียน ซึ่งเกณฑ์ปกติของเครื่องมือวัดการเสริมสร้างพลังอำนาจเกี่ยวกับการดูแลสุขภาพครั้งนี้จะอยู่ในรูปของคะแนนดิบ และเกณฑ์ปกติ (T) การใช้เกณฑ์ปกติของเครื่องมือทำได้โดยนำคะแนนรวมของนักเรียนที่เป็นคะแนนดิบมาเทียบระดับเกณฑ์ปกติในตารางที่ โดยดูว่าคะแนนดิบของนักเรียนอยู่ตรงกับคะแนนที่ที่ตำแหน่งใด เพื่อใช้ในการตัดสินระดับการเสริมสร้างพลังอำนาจเกี่ยวกับการดูแลสุขภาพของนักเรียนต่อไป

ตารางที่ เกณฑ์ปกติของเครื่องมือวัดการเสริมสร้างพลังอำนาจเกี่ยวกับการดูแลสุขภาพในรูปของ
คะแนนดิบและคะแนนที่ปกติ

คะแนนดิบ	T	คะแนนดิบ	T	คะแนนดิบ	T
120	70	87	50	54	30
119	70	86	49	53	29*
118	69	85	49	52	28
117	69	84	48	51	28
116	68	83	48	50	27*
115	67	82	47	49	26*
114	66	81	46	48	26*
113	66	80	46	47	25*
112	66	79	45	46	25
111	65	78	44	45	24
110	64	77	44	44	23*
109	64	76	43	43	23*
108	63	75	43	42	22*
107	62	74	42	41	21*
106	62	43	41	40	21
105	61	72	41	39	20*
104	61	71	40	38	20*
103	60	70	39	37	19*
102	59	69	39	36	18
101	59	68	38	35	17*
100	58	67	38	34	17*
99	57	66	37	33	17*
98	57	65	36	32	16*
97	56	64	36	31	15*
96	56	63	35	30	15
95	55	62	35	29	14*
94	54	61	34	28	13*
93	54	60	33	27	13*
92	53	59	33	26	12*
91	52	58	32	25	12*
90	52	57	31	24	11*
89	51	56	31	23	10*
88	51	55	30	22	10

* คะแนนปรับชาย

เกณฑ์การตัดสิน

เมื่อเปลี่ยนคะแนนดิบของนักเรียนเป็นคะแนนที่ปกติแล้ว สามารถแปลความหมายของคะแนนดิบเพื่อตัดสินระดับการเสริมสร้างพลังอำนาจเกี่ยวกับการดูแลสุขภาพของนักเรียนว่าอยู่ในระดับใด โดยเทียบกับเกณฑ์การตัดสินต่อไปนี้

คะแนนที่ปกติ 65 ขึ้นไป แปลว่า มีการเสริมสร้างพลังอำนาจเกี่ยวกับการดูแลสุขภาพอยู่ในระดับสูงมาก

คะแนนที่ปกติ 55-65 แปลว่า มีการเสริมสร้างพลังอำนาจเกี่ยวกับการดูแลสุขภาพอยู่ในระดับสูง

คะแนนที่ปกติ 45-55 แปลว่า มีการเสริมสร้างพลังอำนาจเกี่ยวกับการดูแลสุขภาพอยู่ในระดับปานกลาง

คะแนนที่ปกติ 35-45 แปลว่า มีการเสริมสร้างพลังอำนาจเกี่ยวกับการดูแลสุขภาพอยู่ในระดับต่ำ

คะแนนที่ปกติต่ำกว่า 35 แปลว่า มีการเสริมสร้างพลังอำนาจเกี่ยวกับการดูแลสุขภาพอยู่ในระดับต่ำมาก

หมายเหตุ ผู้ที่ได้คะแนนตรงจุดแบ่ง ให้เลื่อนขึ้นไปอยู่ในกลุ่มถัดไป