FAMILY HEALTH PROMOTING BEHAVIOR SCALE: DEVELOPMENT AND PSYCHOMETRIC ANALYSIS

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Health promotion is the process of enabling individuals to attain optimal wellness. The family as a social unit influences its members' health, the family should be supported in health promotion. The purpose of this study was to develop a reliable and valid Family Health Promoting Behavior Scale (FHPBS). An item pool for FHPBS was developed from in-depth interviews of 15 Thai families living in Bangkok. Content validity of FHPBS was clarified by seven experts and yielded .95 of the content validity index (CVI). Two family informants (a parent and an adolescent child) answered self-administered questionnaires and family mean scores were analyzed. After pre-testing 305 families, the 72-item were developed for the FHBPS. Data collection was conducted with 828 families. The 72-item FHPBS showed high reliability with a standardized alpha of .96. Four factors were identified by using Principal Axis Factoring with Promax Rotation and a loading cutoff point of .40. The final FHPBS consisted of 40 items and explained a total 47.1% of variance. The four factors were: (1) Family Mental Health: 15 items, α = .88; (2) Family Physical Health: 12 items, α = .93; (3) Family Responsibility: 10 items, α = .89, and, (4) Family Social Relation: 3 items, α = .85. The second-order factor analysis with 4 factors yielded a single factor, interpreted as Family Health Promoting Behavior.

The results of this study suggest that the researchers can utilize the scale in families with an adolescent child living in Bangkok. Further studies could apply this scale with different types of families to help perfect the Family Health Promoting Behavior Scale.

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การส่งเสริมสุขภาพ เป็นกระบวนการสนับสนุนให้บุคคลสร้างเสริมการมีสุขภาพดีสูงสุด ครอบครัวในฐานะที่เป็นหน่วยทางสังคมที่มีอิทธิพลต่อสุขภาพของสมาชิก ครอบครัวควรได้รับการสนับสนุนให้มีการส่งเสริมสุขภาพ จุดมุ่งหมายของการศึกษาครั้งนี้ ได้มุ่งพัฒนามาตรวัดพฤติกรรมการส่งเสริมสุขภาพของครอบครัวที่มีความตรงและความน่าเชื่อถือได้ ข้อคำถามของมาตรวัดได้มาจากการสัมภาษณ์เชิงลึกกับครอบครัวไทย 15 ครอบครัวที่อาศัยอยู่ในกรุงเทพมหานคร และข้อคำถามในมาตรวัดได้รับการตรวจสอบความตรงตามเนื้อหาจากผู้เชี่ยวชาญจำนวน 7 คน ได้ค่าดัชนีความตรงตามเนื้อหาเท่ากับ .95 สมาชิกในครอบครัว 2 คนเป็นบิดาหรือมารดา และบุตรวัยรุ่นของครอบครัวที่เป็นกลุ่มตัวอย่างเป็นผู้ตอบแบบสอบถาม และคะแนนที่ใช้ในการวิเคราะห์เป็นคะแนนเฉลี่ยของครอบครัว จากนั้นมาตรวัดถูกนำไปทดลองใช้กับกลุ่มตัวอย่างจำนวน 305 ครอบครัว หลังจากปรับปรุงแล้วเหลือข้อคำถามจำนวน 72 ข้อ เมื่อนำแบบสอบถามไปใช้ประเมินกับ 828 ครอบครัว ผลการวิจัยพบว่ามาตรวัดทั้งฉบับมีความเชื่อถือได้ .96 และผลการวิเคราะห์องค์ประกอบโดยวิธี Principal Axis Factoring with Promax Rotation กำหนดค่าคะแนนองค์ประกอบตั้งแต่ .40 ทำให้ได้มาตรวัดที่มีข้อคำถามทั้งหมด 40 ข้อ สามารถอธิบายความผันแปรได้ร้อยละ 47.1 ประกอบด้วยองค์ประกอบ 4 ด้าน คือ สุขภาพจิตของครอบครัว (Family Mental Health) มี 15 ข้อคำถาม (α = .88), สุขภาพร่างกายของครอบครัว (Family Mental Health) มี 12 ข้อคำถาม (α = .93), ความรับผิดชอบของครอบครัว (Family Responsibility) มี 10 ข้อคำถาม (α = .89), และความสัมพันธ์ทางสังคมของครอบครัว (Family Social Relation) มี 3 ข้อคำถาม (α = .85) เมื่อตรวจสอบด้วยการวิเคราะห์องค์ประกอบซ้ำ พบว่า 4 องค์ประกอยย่อยอธิบายองค์ประกอบเดียวกัน นั่นคือ พฤติกรรมการส่งเสริมสุขภาพของครอบครัว

จากการศึกษาครั้งนี้แนะนำให้ผู้สนใจนำมาตรวัดนี้ไปใช้กับครอบครัวที่มีบุตรวัยรุ่นที่อาศัยอยู่ในกรุงเทพมหานคร ในการศึกษาครั้งต่อๆไปควรนำมาตรวัดนี้ไปประยุกต์ใช้กับครอบครัวรูปแบบอื่นๆ เพื่อพัฒนามาตรวัดให้มีความสมบูรณ์ยิ่งขึ้น

CONTENTS

CONTENTS (CONTS.)

LIST OF TABLES

LIST OF TABLES (CONTS.)

LIST OF FIGURES

CHAPTER I

INTRODUCTION

Significant of the study

Family is an important social institute. At present, Thai families have changed in terms of family size and structure--from expanded family to nuclear family number with the average of members equal to 3.7 per household (Thailand National Statistics Office, 2541: 9). Furthermore, the number of families with single parent is also increasing. The survey of the impact of critical economic status on Thai families by Social Research Institute, Chulalongkorn University (1998: 6-8), revealed that 65.8 % of Thai families encountered occupational problems, 7.5 % had unemployed members, and 73.2 % had decreased family income. Furthermore, one quarter of the families identified worsened family relationship, 50.7 % of the members worked too hard to have shared quality time, 38% had health problems, and 97.8 % experienced various symptoms related to stress. Besides, the problems of child was influenced from family, especially the problem of neglected child increased 3-5% in each year. The neglected child encountered housing problems, health problems, mental health problems, drug abused, and crime. These problems was influenced from family problems such as uncertainty of family status, lack of love, family violence, weaken family system, and broken family' relationship (Jitradup, S., 1998). The above family conditions both affected and be affected by social problems. Therefore, it is deemed necessary that the structure and function of family should be studied and promoted.

Healthy families and functional families usually positively influence both health and lifestyle of their members. The family is a social unit that influences health and non-health behaviors including health status of its members. As the basic unit of health care management, the family assumes responsibility for at least 75% of all health care provided to its members--health promotion, disease prevention, early intervention, and rehabilitation (Duffy, 1988: 109). Health values, attitudes, and behaviors are developed, organized, and performed in the family context. The place of health in the the family value structure and the extent to which health-promoting knowledge and skills are transmitted to offspring determine the degree of impact that families have on the health potential of future generation. Thus, the relationship between family health and individual health are multivariate and complex. Just as individuals must assume increased responsibility for their own health status, families must assume similar responsibilities for the family structure as a whole. The family is the primary social structure for health promotion within society. It is within the context of the family that health behaviors are learned and the rudiments of health-enhancing or health-damaging lifestyles emerge (Pender, 1996: 135). These are seen in various cases of similar health problems that are experienced among family members although they are not genetic problems. There are some common shared risk behaviors within the family; the examples are coronary disease, hemorrhoid caused by eating high fat and low fiber diet, inadequate exercise, and inability to manage stress. In addition, the head of the household's health status has been found to be positively related to family happiness, especially the head of the household who has no disease, low stress, and regular exercise (Thianthavorn, 1999: 36).

The following studies describe some issues concerning family's influence on family members' behaviors. Rossow & Rise (1994: 1299-1305), for example, have found that the strongest association between parental and adolescent health behavior is fat intake. The adolescent's probability of having a low fat intake is 5 times higher if the mother has a low fat intake than if she does not. All other health behaviors except mother's frequency of exercise have also been found to be positively and significantly associated with the corresponding health behaviors of their adolescent child. Hence, the effect of parental health behaviors on those of their adolescent child does not seem to decrease with increasing age of the adolescent. Wild, Taylor, Knehans, & Cleaver (1994: 147-152) maintain that a significant correlation exists between spouse-spouse, parent-child, and sibling-sibling when it comes to cholesterol, high and low density lipoprotein, diet, physical activity, and smoking.

Moreover, Szabo & Hollands (1997: 531-534) have found that family, especially maternal factors, plays a vital role in determining eating attitudes for female high-school students, while peer and media(television) factors are not so significantly influential. Another example is a study of Su, Story, & Su (1997 : 426-433) which has discovered adolescents whose parents have substance abuse disorder have lower intakes of fruits and higher intakes of high fat foods, and they also eat more frequently at fast-food restaurants and purchase more snacks. Adolescents whose parents are depressed also have lower intakes of all food groups. Furthermore, it has been documented that mothers' mental health status has more impact on adolescent's dietary behaviors than does the father's mental health status. Ge, Conger, Lorenz, & Simons (1994: 28-44) indicate that stressful life events experienced by parents are first

related to parents' depressed mood which operates to disrupt skillful parenting practices. The disrupted parenting practices in turn place adolescents at increased risk for developing depressive symptoms. Walker, & Preski (1995: 345-349) point out that the mother's overall health behaviors are significantly related to total pre-school child behavioral/emotional problems.

Besides, the influence of family background and personality are powerful forces in shaping attitudes and behaviors for virtually every aspect of human existence. Biopsychosocial influences could create lasting imprints upon the future health of children. Under nurturing family conditions, individuals are able to attain levels of self-efficacy which are beneficial in the maintenance of good health and the value of medical intervention (Rockhill, 1992: abstract). Due to the importance of family to indoctrinate health related behaviors for optimal health as much as possible, family is considered an appropriate social unit to promote health.

Health Promotion is a process of enabling individuals to increase control over the determinants of health and thereby improve their health. It supports a state of complete physical, mental, emotional, and social well-being, as well as adaptability with environment. Health Promotion would be achieved in changing individual's lifestyle necessary to determine supporting and caring systems. The most important system is the family because it is a social unit for nurturing, is important resources and is the first essential surrounding involving an individual's health. Children develop almost all strategies to interact with the environment from socialization within their families, and adults learn to make decisions regarding vital matters related to health behaviors within their families. In a number of Eastern cultures, health promotion decisions are considered to be family decisions rather than individual decision (Wong

& Pang, 2000). Family members perceive and perform several attitudes and behaviors in similar traits. So, family influences health behaviors of both adult members and child members because it is a unit of socialization for physical and social environment as the determinant of health. Family characteristics also influence their healthy lifestyle. Children continue to be influenced significantly by the family, family norms, social support from family members, emotional support, and positive and negative reinforcement.

The family can be identified in eight stages of family life cycle and each stage has its own specific developmental tasks. The eight development stages are beginning family, early childbearing family, preschool children, school-age children, adolescence, launching family, middle-age family and aging family (Duvall, 1967: 9). A family that is able to meet stage-specific developmental tasks both of family members and of the family unit could be defined as optimal and, therefore healthy. Because families have various compositions and vary in stages of family life cycle as mentioned above, this study needs to identify the family subjects' boundary. The family assessment from all family members or only part of family depends on the purpose of the assessment. In the case of examining differences between family members' perceptions, there are several methods to create data from individual assessment (Bray, 1995: 471). As for the methods of assessment, self-reports have many advantages in clinical and research contexts because they are easy to gather, and inexpensive. Self-reports include perceptions of the family by individual family members, ratings of other family members' behavior or relationships, and report of affect and emotions while engaging in certain behaviors (Bray, 1995: 474). In studying family health promoting behavior, the family may be either single-parent or two-

parent families because there are more similarities than differences in both types of family (Ford-Gilboe, 1997: 205).

From the above suggestion, families with one or two parents (father and/or mother) and a child are targeted families in this study. The assessment of families with children or adolescents is especially critical because the success of the nursing care plan depends on the family's ability to implement the plan consistently (Speer & Sachs, 1985: 349). The children in the family who act as an informant should be 12-15 years in age. The underlying the reason for this is that, based on Piaget's stages of cognitive development, children aged 12 years and up are able to think about abstractions and hypothetical concepts and are able to speculate on thoughts from the real to the possible (Berger & Thompson, 1995: 58; Decey & Travers, 1996: 37). Based on Erikson's psychosocial theory, children 11 years and older develop a strong sense of identity and ego and can select among various potential selves (Berger & Thompson, 1995: 47; Decey & Travers, 1996: 32). In addition, Havighurst's developmental tasks claim that children 12 years old and up have developed conceptual and problem-solving skills, an ethical system to guide behavior, and have achieved emotional independence from parents (Lefrancois, 1996: 39). The potential effectiveness of early behavior education to help children engage in healthy behaviors fostered by healthy families and healthy environment merits increased attention by researchers (Pender, 2001: 43). So, in this study, the target population have been selected to study families with an adolescent child.

Based on the review of studies related to health promotion, most of the studies have either developed or tested concepts, or models of factors influencing individual's health promoting behavior. They have focused on individual levels at a different age

(i.e. child, adolescence, elderly etc.), aggregates (i.e. patients with specific disease etc.), and groups in specific setting (i.e. students in the school, people in the workplace etc.). However, the knowledge-based understanding of family health promotion is still in the formative stage (Loveland-Cherry, 1996: 27). Although a model of family health promotion has been developed by Loveland-Cherry, it is a preliminary model modified from Pender's revised model of health promotion, family theories and research. It is still unexamined in relation of determining factors within the model. Besides a major gap in family assessment tools, there is the lack of an instrument that measures family dimensions of health-related lifestyle. Nurse scientist need to direct their attention to the development of valid and reliable tools to assess families' aggregate health behaviors (Pender, 1996: 137). Renewed attention is being given globally to the need to assist family units to become empowered in creating healthy family and community environments to support healthy lifestyle among their members (Pender, 2001: 46). Although health promotion is one dimension of health care and nursing care, health promotion in family level still lacks empirical data about family health promoting behavior that would suggest health promotion programs in the family. In the area of community health nursing that closely works with families in the community, only a few added items of health promoting behaviors of families in the survey questionnaire is not specific and comprehensive to be a tool for family health promoting behavior. The investigator as a community health nurse is interested in developing the family health promoting behavior scale that have appropriate structure and pattern to assess family health promoting behavior. This development is based on the concept of health promotion and family assessment model and the application of knowledge from the studies of health promotion. It is

investigator's hope that this instrument will facilitate health personnel, especially community health nurses, in planning to enhance health promoting behavior at the family level and that it will be used as on initial tool to encourage future research in the field of family health promotion.

Research Questions

1. What are the components of family health promoting behavior?
2. What is the structure and pattern of family health promoting behavior scale?

General Objective

To develop the reliable and validated family health promoting behavior scale.

Specific Objectives

1. To identify the components of family health promoting behavior.
2. To formulate structure and pattern of family health promoting behavior scale.
3. To examine the validity (content validity, construct validity), discrimination power and reliability of the family health promoting behavior scale.

Scope of Research

The population of the study is Thai families that consist of at least one parent and an adolescent child studying in level of Mattayomsuksa 2 in Bangkok. The

families were chosen from the families of the students in the schools under the Department of General Education, Ministry of Education.

Operational Definition

"Family" means Thai families consist of at least one parent and an adolescent child. They live in Bangkok at the time of study.

"Family Health Promoting Behavior" means family members' activities in everyday life including the same actions, interactions, and supportive actions to promote positive health behaviors, and avoidance of disturbing actions related to family health promoting behavior. The activities support physical, mental, emotional, spiritual, and social well being of all family members as well as the whole family. In this study, the behaviors consist of 8 components derived from the integration of related studies as follows:

1. Nutrition means eating behavior and choosing food for family members in the sense of adequate and appropriate nutrient intake including family support about healthy diet and avoiding harmful diet for family members.

2. Exercise and Recreational Activity means activities that were planned into everyday life and activities in leisure time. These activities may be performed as individually or together with other family members.

3. Stress Control and Management means family members' activities conducted so as to deal with stress in everyday life and to adapt to the environment to maintain healthy family.

4. Sleep means sleep patterns of family members, sleep environment, family awareness in family members' needs and search for ways to support them with the reason of promoting individual family members' health and family functions.

5. Family Spirituality means family members' activities expressing bonding within their families, beliefs, religious preference, meaning and hopeful purpose of life that help maintain family wholeness.

6. Family Support means the activities that imply the relationship between family and family's social networks. Family social networks consist of relatives, friends, neighbors, groups in the community that involve in the aspects of communication, intimacy and interdependence, both in the normal and critical events.

7. Environmental Awareness means family members' activities to keep up the home environment and surrounding. It encompasses the physical, biological, and chemical environment influencing the family members.

8. Family Responsibility means the family's activities to support their members including care, search for health information, provision of routes to perceive knowledge of health practices to change for the family health.

"Psychometric Analysis" means the determination of content and construct validity, discrimination power, reliability of the Family Health Promoting Behavior Scale. Content validity was accomplished through experts' review of the Family Health Promoting Behavior Scale. Internal consistency reliability was determined by Cronbach's coefficient alpha. Construct validity was assessed by Factor analysis and MTMM.

CHAPTER II

LITERATURE REVIEW

Based on a review of document and literature related to the development of Family Health Promoting Behavior Scale, basic knowledge, family assessment model, and instrument related of Family Health Promoting Behavior Scale will be discussed in the follow topics:

- Definitions of "Family," "Family Health," "Health Behavior," "Health Promotion," and "Family Health Promoting Behavior"
- Review of Family Health Promoting Behavior
- Assessment of Health Promoting Behavior
- The Components of Family Health Promoting Behavior
- The Existing Instruments Related to Development of the Family Health Promoting Behavior Scale
- Concept of Family Assessment
- Scale Development

A. Definitions of "Family," "Family Health," "Health Behavior," "Health Promotion," and "Family Health Promoting Behavior"

1. Definition of "Family"

Because of various characteristics of family, the term "Family" was defined differently. Clements & Roberts (1983: 8) contend that family is a group of individuals related by blood or marriage whether they live in the same household or

not. Burgess & Ragland (1983: 247) defined family as a group of two or more people who are emotionally involved with each other and who choose to identify themselves as a family, while Friedman (1992: 9) states that family is a group of two or more persons living together with cohesion, sharing, closeness in mind, and they are recognized as a part of their families. Clemen-Stone, et al (1998: 160) define a family as a group of two or more persons related by blood, marriage, adoption or emotional commitment who have a permanent relationship and who work together to meet life goals and needs.

The census of Thailand National Statistic Office has classified the structure of household into unrelated individuals, nuclear family, and 3 types of extended family. Most Thai families are nuclear families and this means that household comprises members as husband, and wife or husband and/or wife, unmarried child, and/or other relatives who are unmarried and live together.

Based on the previous definitions of family and types of Thai families, this study defines family as composed of at least a husband and/or wife, and a child as 87% of Thai families are nuclear families with average members in the household of 3.4 in Bangkok (Thailand National Statistics Office, 1998: 9).

2. Definition of "Family Health"

The common definition of family health is given by WHO (1974) which has defined family health as functions of family and adaptability in health promotion and family well-being. Loveland-Cherry (1996: 23-24) extends Smith's models of health focusing on individual health to describe family health, and she explains family health into 4 models of health as follows: in the clinical model, family health would be considered as lack of evidence of physical, mental or social disease in family members

or lack of deterioration of the family system; in the role performance model, family health is the ability of the family system to carry on family functions effectively and achieve family developmental tasks; in the adaptive model, family health is family patterns of interaction with the environment characterized by flexible, effective adaptation or ability to change and grow; and in the eudaimonistic model, it is characterized as the ongoing provision of resources, guidance, and support for the realization of family members' maximum well-being and potential throughout the family life span. Weeks & O'Connor (1994: 209) define family health as a concept in evolution-- a statement of the present and of destination; a perception of physical, emotional, social, and spiritual commitment and energy that varies with culture, values, and time and that is based on, and reflected in, the connection between people who value each other and have hopes for the future.

In conclusion, family health indicates both the present and destination state of family including physical and mental health, relationship among family members, capability to achieve family developmental tasks, adaptability to their environments, and effective support of each other.

3. Definition of "Health Behavior"

There are some definitions of health behavior, Gochman (1988: 3) gives a common definition that has established family behaviors as those personal attributes i.e. beliefs, expectations, motives, values, perceptions, and other cognitive elements; personality characteristics, including affective and emotional states and traits; and overt behavior patterns, actions and habits that relate to health maintenance, to health restoration, and to health improvement. Pill (1991: 191), another expert, defines health behavior as any activities that could be conducted to promote well-being in

purpose of disease prevention or early detection, while Nutbeam (1998: 355) identifies health behavior as any activities undertaken by an individual, regardless of actual or perceived health status, for the purpose of promoting, protecting or maintaining health, whether or not such behavior is objectively effective towards that end. Health behaviors are distinguished from risk behaviors associated with increased susceptibility to a specific cause of ill health. In conclusion, health behaviors are any activity undertaken by individuals for the purpose of promoting, protecting or maintaining health to conduct individual well-being.

4. Definition of "Health Promotion and Family Health Promotion"

Health promotion is an important component of health care development since it is a low-cost investment but more effective in all levels of health services. Nutbeam (1998: 301) proposes health promotion as the process of enabling people to increase control over, and to improve their health. Pender (1996: 34) describes health promotion as directed toward increasing the level of well being and self-actualization of a given individual or group. Health promotion focuses on efforts to approach or move toward a positively valence state of high-level health and well being. Friedman (1992: 26) points out that health promotion is designed to contribute to the growth, enlargement or excellence of health. It is a positive, dynamic process that focuses on improving the quality of life and well-being, not merely avoiding disease.

The goal of health promotion is high-level wellness. Travis (1977: 23-24), a wellness doctor, explains the meaning of high-level wellness as the ideas of measuring wellness and helping people attain high levels of wellness. Most people think in terms of illness and assume that the absence of illness indicates wellness, which is not true as there are many degrees of wellness as there are many degrees of illness. Travis also

explains his diagram as a health-illness continuum whose the left side of the center shows a progressively worsening state of health, and the right side of the center shows increasing level of health and well-being. Traditional medicine is oriented towards curing evidence of disease, but usually stops at the midpoint. Wellness education begins at any point on the scale with the goal of helping a person to move as far to the right as possible.

In addition, wellness is not a static state. It results when a person begins to see him/herself as a growing, changing person. High-level wellness means giving good care to physical self, using the mind constructively, expressing emotions effectively, being creatively involved with surrounding people, being concerned about your physical and psychological environments and becoming aware of other levels of consciousness.

In conclusion, health promotion means actions that are directed toward an increase in levels of wellness of individuals, families, groups, and communities, not merely avoiding disease or illness.

Family health promotion is the family behaviors that are undertaken to increase the family's well being or quality of life (Bomar, 1996: preface). Hanson & Boyd (1996: 182) identify family health promotion as activities to enhancing family strength for the purpose of maintaining physical, mental, and emotional well-being of family members.

As for the description of family health promotion, Loveland-Cherry (1996: 27) offered a preliminary model based on Pender's revised model for Health-promoting behavior, and family theory and research. It is presented as a beginning point for articulating on understanding of family health promotion. The family health

promotion model is organized based on three main influences: general influences, health related influences, and behavioral-specific influences, to affect health-promoting behaviors of the family. General influences comprise family system patterns (values, communication style, interactions, power structure, cohesion, socialization patterns, interaction with other systems), demographic characteristics (family size, structure, socioeconomic status, ethnicity, culture, developmental stage), and biologic characteristics (genetic/familial characteristics). Next, health related influences are composed of family health socialization patterns, family definition of health, and perceived family health status. Finally, behavioral-specific influences consist of perceived barriers to health, promoting behaviors, perceived benefits of health-promoting behavior, prior related behavior, family norms regarding health-promoting behavior, intersystem support for behavior, and situational influences on behavior. Behavioral-specific influences directly affect to health promoting behavior. General influences have both direct effect on health promoting behavior and indirect effect through health-related influences and behavioral-specific influences. Health-related influences have direct effect on health-promoting behavior and indirectly effect through behavioral-specific influences. Besides, internal family and environmental cues are another factors that influence health-promoting behavior.

In conclusion, family health promotion means any action performed to achieve high level of family well-being including physical, mental, emotional, and spiritual well-being of family members, internal and external family relationship, achievement of family functioning, and healthy family.

B. Review of Family Health Promoting Behavior

The existing knowledge of family health promotion is still unclear when it comes to components of health promoting behavior in the family level. But some knowledge could still be implied; the behaviors identifying healthy family, the functions of family promoting family health from family health assessment models, and the components of health promoting behavior at the individual level.

1. Characteristics of Healthy Family

Family health promoting behaviors are the matter of action but healthy family is the goal of actions. There are some authors who have described characteristics of healthy family in different ways.

Pratt (1976: 3) has identified six characteristics of healthy families as follows:

- Members facilitate an interaction process.
- Members enhance individual development.
- Role relationships are structured effectively.
- Members actively attempt to cope with problems.
- Members promote healthy home environments and lifestyles.
- Members establish regular links with the broader community.

The Beaver and Voeller model (1983: 94) characterized healthy families as follow: an affiliate attitude about human encounters; respect for subjective views; a brief in complex motivations, high levels of initiative; a flexible family structure with a strong parental coalition; congruent mythology (perceived self as others do); high levels of personal autonomy within the family; open expression of feeling; and high degree of spontaneity, humor, and wit .

Curran (1983: 24-25) surveyed 551 professionals who work and with families in an attempt to identify traits of healthy families. The fifteen most frequently identified traits of healthy family included:

- Communicates and listens
- Affirms and supports one another
- Teaches respect for others
- Develops a sense of trust
- Has a sense of play and humor
- Exhibits a sense of shared responsibility
- Teaches a sense of right and wrong
- Has a strong sense of family in which rituals and traditions abound
- Has a balance of interaction among members
- Has a shared religious core
- Respects the privacy of one another
- Values service to others
- Fosters family table time and conversation
- Shares leisure time
- Admits to and seeks help with problems

Hanson & Boyd (1996: 178) have adapted the characteristics of healthy family from a number of authors and described a healthy family as having unity commitment, flexibility able to deal with stress, positive communication, shared time, spiritual well-being, and appreciation and affection.

Vasi (1998: 25) has described healthy family or healthy home as consisting:

- Having sufficient family economic status

- Family members spending time together in leisure and recreation
- Having healthy environment
- Having adequate knowledge and skill to live together and to promote child-rearing
- Having healthy lifestyle

In conclusion, characteristics of healthy family lead to the components of family health promoting behavior: balance interaction among family members, share leisure time, foster family table time and conversation; have a spiritual well-being, have a shared religious core, affiliate attitudes to cope with problems or stress, have open expression of feeling, communicate and listen, have high degree of spontaneity, and humor; establish regular links with the broader community, admit to and seek help with problems, and have healthy home environment.

2. The Family Health Assessment Model

The Structural-Functional Theory is a well-known theory to assess the family as a whole and in the interaction with its external interacting systems. The structure of the family reveals how the family is organized, the manner in which units are arranged, and how these units relate to each other. It is based on the type of family form, type of power structure, or marital patterns. The family's structure serves to facilitate the achievement of family functions. Family functions are commonly defined as outcomes or consequences of the family structure. Five family functions are most germane when assessing and intervening with families: affective function, for stabilization of adult personalities, and meeting the psychological needs of family members; socialization and social placement function, for the primary socialization of children aimed at making them productive members of their society, as well as the

conferring of status on family members; reproductive function, for maintenance of family continuity over the generations as well as for societal survival; economic function, for the provision of sufficient economic resources and their effective allocation; and health care function, for the provision of physical necessities – food, clothing, shelter, and health care.

1.1 The Friedman Family Health Assessment Model

The Friedman family health assessment model is the model created based on the structural-functional theory consisting six broad categories: identifying data, developmental stage and history, environmental data, family structure, family functions, and family coping. A study of Friedman's family health assessment model has led to a conclusion that the structural-functional of family influence family health promotion. The components of family health promoting behavior should be interpreted from: communication patterns within family and interaction with external family; family relations; family coping that is examined with power structure, decision making process, role function, family values, affective response to bonding; and health care function in the family. Health care function includes family dietary practices, sleep and rest habits, exercise and recreation, family drug habits, self care practices, environmental practices, medically based preventive measure, dental health practices, family health history, health care service received, feeling and perceptions regarding health care services, emergency health services, source of payment, and logistics of receiving care.

1.2 The Calgary Family Assessment Model (CFAM) (Wright, & Leahey,1994)

The CFAM has been created based on the system theory, cybernetics, communication theory, and change theory. CFAM consists of three major categories: structural, developmental, and functional assessment. The CFAM guides the components of family health promoting behavior as follows: instrumental functioning that refers to the routines of daily living such as eating, sleeping, preparing meals, giving injections, changing dressings, and so forth; expressive functioning that refers to emotional communication, verbal communication, nonverbal communication, circular communication, problem solving, roles, influence, beliefs, and alliances/coalitions.

C. Assessment of Health Promoting Behavior

Although a review of related literature about health promotion, revealed that there is no study which clearly identified the components of family health promoting behavior, the components of individual health promoting behaviors are useful guideline for the development of the family health promoting behavior scale.

Travis (1977) describes the dimensions of a wellness or health promoting lifestyle as self-responsibility, nutrition, physical awareness, and stress control.

Ardell (1979, 1986) has refined and expanded Travis's dimensions into self-responsibility, nutritional awareness, stress management, physical fitness, and environmental sensitivity.

A series of cross-sectional and longitudinal studies were conducted by the Human Population Laboratory in Alameda County, California (Berkman, & Syme, 1979: 198; Wingard, et al, 1982: 765) to examine the relationship of lifestyle to current and future health status and mortality in the general population. The lifestyle components for which support was provided to varying extents in those studies were

social ties or networks and good health habits related to never smoking, drinking moderately, eating breakfast regularly, not snacking between meals, sleeping seven to eight hours per night, having regular physical activity, and having average weight status.

Pender (1982: 77) has developed the Lifestyle and Health Habits Assessment (LHHA), a 107-item checklist of illness prevention and health promotion designed as a clinical nursing tool. The LHHA is arranged in 10 categories as follows:

General Health Practices	Nutrition
Physical/Recreational Activity	Sleep
Stress Management	Self-Actualization
Sense of Purpose	Relationship with Others
Environmental Control	Use of the Health Care System

Walker, et al. (1987: 79) has adapted the LHHA into the 48-item Health Promoting Lifestyle Profile (HPLP) which consists of:

Self-Actualization	Health Responsibility
Exercise	Nutrition
Interpersonal Support	Stress Management

Pender (1996: 134) has developed HPLP through many studies into HPLP II and renamed the subscales as follows:

Health Responsibility	Physical Activity
Nutrition	Interpersonal Relations
Spiritual Growth	Stress Management

Gorin & Arnold (1998: 92) propose the health promotion matrix and use 9 healthy behaviors from Healthy People 2000: National Health Promotion and Disease Prevention Objectives as healthy behaviors for health, which are:

Smoking Cessation	Eating Well
Physical Activity	Sexual Awareness
Injury Prevention	Substance Safety
Oral Health	Self-Development Productivity

By studying the components of health promoting behavior in the family level are as follows:

Pender (1996: 138) has suggested the 6 components of health promoting lifestyle for family with some example items but they have been never proved as follows:

Nutrition	Physical Activity
Stress Control and Management	Health responsibility
Family Resilience and Resources	Family Support

Friedman (1992 : 30) has summarized the dimensions of wellness lifestyle by using Ardell's framework and integrating more recent notions of Pender's framework, each of the five dimensions is as follows:

- Self-Responsibility and Self-Care are the foundations on which the other dimensions of the wellness lifestyle rest. Without a sense of active accountability for one's own health, the necessary motivation will be lacking to engage in a health producing lifestyle. Families also need a strong sense of accountability to create a home environment where eustress (healthy stress) and self-actualizing health behaviors are

promoted. Families need to be given the feeling that their health lies primarily in their hands. They need to believe that a wellness lifestyle fueled by a strong sense of self and family responsibility can be more gratifying than living life filled with high-risk behaviors. Self-responsibility and self-care are knowing how to use the health care system effectively, coupled with creating a lifestyle that keeps individuals well.

- Nutritional Awareness means an awareness of the composition of a healthy diet and good nutritional habits. Because adequate nutrition is a crucial component in the maintenance of health, it plays a major role in both a wellness lifestyle and in the prevention of the major chronic illness.
- Stress Management. The stressful personal lives cause many problems but if individuals try to master it, many time stress will not have negative consequences. Eustress in the family context is used to refer to a positive type of stress that takes place when families benefit from or enjoy facing the challenges of life. One component of stress management involves the use of techniques to gain mental relaxation in times of duress. Families need to be sensitive to the amount of stress within the home environment and how as a group to provide an eustressful environment.
- Exercise and Physical Fitness. Unless individuals are reasonably fit, high-level wellness cannot be maintained. Yet, our modern comfortable lifestyle has led individuals to become sedentary and physically disadvantaged, so they are at greater risk especially for coronary heart disease.

- Environmental Awareness encompasses the physical and social environmental influences on the family and its members which is how the environment either enhances or diminishes health and well-being. The air we breathe, the community in which we reside, and the neighborhoods' characteristics are all examples of the environments that affect us. Social support networks are crucial to health promotion and maintenance of both individuals and families. Environments need to be suitable for the developmental stages of the children and the family as a whole.

The suggestion of studies of healthy family's traits, family health promotion, wellness lifestyle, knowledge from the structural-functional theory, the components of various health promoting behaviors can be listed as follows: **Nutrition; Exercise or Physical Activity** (Travis, 1977; Ardell ,1979,1986 ; Human Population Laboratory in Alameda County, California ; Pender,1982; Walker, et al., 1987 ; Friedman, 1992; Pender, 1996; Gorin & Arnold, 1998); **Recreational Activity** (Curran, 1983); **Stress Control and Management** (Pratt, 1976 ; Travis, 1977; Ardell, 1979,1986; Pender, 1982 ; Curran, 1983; Walker, et al., 1987; Pender, 1996); **Sleep Habit** (Human Population Laboratory in Alameda County, California; Pender, 1982; Friedman, 1992); **Social Support** (Pratt, 1976; Human Population Laboratory in Alameda County, California; Pender,1982; Curran, 1983; Walker, et al., 1987; Friedman, 1992; Pender, 1996); **Spirituality** (Lewis,et al., 1976; Stinnett, et al., 1979; Pender, 1996); Shared religious core (Lewis, et al., 1976; Curran, 1983); **Health Responsibility** (Travis, 1977; Ardell ,1979,1986; Pender,1982; Curran, 1983; Walker, et al., 1987; Friedman, 1992; Pender, 1996); **Environmental Awareness** (Pratt, 1976; Ardell,

1979,1986; Pender, 1982 ; Friedman, 1992 ; Vasi, P., 2541). The summary of this suggestion is shown in Table 1.

Table 1. Summary of the Components of Health Promoting Behavior in Different Studies

Author	Nutrition	Physical Activity	Stress Manag-ement	Sleep	Family Spiritua-lity	Family Support	Environ-mental awareness	Family Respon-sibility
Individual level								
Travis(1977)	/	/	/					/
Ardell (1979,1986)	/	/	/				/	/
Human Population Laboratory in Alameda County	/	/		/		/		
Pender (1982)	/	/ & recreation	/	/	Actualization & sense of purpose	Relationship with others	/ & General health practice	Use of the health care system
Walker, Sechrist, &Pender (1987)	/	Exercise	/		Actualization	Interper-sonal support		/
Pender (1996)	/	/	/		Spiritual growth	Interper sonal relation		/
Family level								
Pratt (1976)			/			/	/	/
Curran(1983)		Shared leisure time	Admits to & seeks help		Shared religious core, trust	Commu nicate, listen, balance of inter action		Shared responsi bility
Friedman (1992)	/	Exercise, Physical fitness	/				/	/ & self-care
Pender (1996)	/	/	/		Family resilienc e & resource	/		/

Note "/" means that dimension suggested by the researcher. The letter in each cell have a similar meaning to the header.

Therefore, some related components was combined within the same component and the components guide to develop the Family Health Promoting Behavior Scale as follows:

1. Nutrition
2. Physical & Recreational Activity
3. Stress Control and Management
4. Sleep
5. Family Spirituality
6. Family Support
7. Environmental Awareness
8. Family Responsibility

D. The Components of Family Health Promoting Behavior

The family members usually have similar health behaviors in a variety of dimensions. To assess family health promoting behavior, we need the knowledge base in each dimension. The eight components of family health promoting behavior can be described in detail as follows:

1. Nutrition

An eating habit is a behavior that is passed on to family members. The same pattern of eating among family members may be caused by parental modeling of behavior, selecting and cooking for members, informational support and health education, and interacting on during meals. The examples of the same eating patterns are to eat or not to eat vegetables or fruits, to like or dislike high fat diet, to favor spicy foods, or to drink the amount of water etc. Mealtime is the time to socialize eating

habits or values that may be static in the rest of life. Although the assessment of the amount of diet is individually different but the kinds of food of family members may still be similar. From a study of Thai family , the rate of shared dinner among family with spouse or family with parents and child is more than 70% and the rate of shared breakfast and lunch is 50% (Thianthavorn, et al., 1999: 33).

Food Based Dietary Guideline for Good Health or Rules of Dietary Intake has been published by the Division of Nutrition, Department of Health, Ministry of Public Health, and Institute of Nutrition, Mahidol University, under the name of "Food Based Dietary Guideline for Thai." These guidelines consist of a total of nine rules as follows:

1.1 Eat a variety of foods from each of the 5 food groups and maintain proper weight.

1.1.1 Eat a variety of food from each of the 5 food groups. To obtain all of the essential nutrients in adequate quantities, do not consume repeatedly and not receive too few, or even too much, of certain nutrients. Each type of food is composed of many nutrients such as protein, carbohydrate, fat, minerals, vitamins, water as well as dietary fiber.

1.1.2 Maintain a proper weight. Each individual should maintain a proper weight for age and height by eating good food along with having a regular and appropriate exercise in order to have a healthy and long life. The easiest and best methods are as follows:

Children : using weight for age or weight for height as compared to the reference standard.

Adult : using the Body Mass Index (BMI)

$$BMI = \frac{Weight(kg)}{Height\ (m^2)}$$

A person with a desirable weight should have the BMI between 18.5-24.9 kg/m^2

Underweight : BMI less than 18.5 kg/m^2

Overweight : BMI range 25-29.9 kg/m^2

Obesity : BMI more than 30 kg/m^2

1.2 Eat adequate amount of rice or alternative carbohydrate sources.

Rice, a source of energy, is the staple food of the Thai people. The main nutrients in rice are carbohydrate and protein. Unpolished rice or home pounded rice is more nutritious than highly milled rice (polished rice) because it contains substantial nutrients such as protein, fat, dietary fiber, minerals, and vitamins. Rice and starchy foods should be consumed daily and in appropriate quantities.

1.3 Eat plenty of vegetables and fruits regularly.

Vegetables and fruits are good sources of vitamins, minerals, and other useful substances, which are necessary for good health. Fiber in vegetables and fruits helps the body to remove waste as well as eliminating cholesterol and some carcinogenic compounds. Vegetables and fruits are generally low in calories. As a result, eating a wide variety of vegetables and fruits on a regular basis is one way to reduce the risk of obesity and coronary disease. Therefore, it is suggested that everyone eats a variety of vegetables during every meal, take fruits regularly, and especially after meals or as a snack. There are numerous kinds of vegetables. They are classified according to the parts of the plant which are edible, such as leaves and stems; flowers; fruits; and roots. Green, leafy vegetables contain vitamin C, beta-carotene, minerals, and dietary fiber.

1.4 Eat fish, lean meat, eggs, legumes and pulses regularly.

Fish, lean meat, eggs, legumes and pulses are good sources of protein. Fish contains good quality protein, is easily digested, and is low in fat. Children should eat one egg a day while normal adults should eat 2 to 3 eggs per week. Most importantly, eggs must be well cooked.

1.5 Drink milk in appropriate quality and quantity for one's age.

Milk is good for everyone. It is rich in calcium and phosphorus and contains protein, lactose, and vitamins (especially vitamin B2). Pregnant women, school children, adolescents, adults and the elderly should drink 1 to 2 glasses of milk each day. They should drink milk along with having adequate exercise in order to strengthen the bones and decrease bone resorption.

1.6. Eat a diet containing appropriate amounts of fat.

One strong recommendation is to limit energy from fat to not more than 30% of total energy intake per day. To prevent risk of cardiovascular disease, saturated fat and cholesterol should be limited. Saturated fat comes from meat and animal skin, whereas less is found in vegetable oil. Cholesterol is commonly found in every type of meat, egg yolks, visceral organs (especially in liver), and some types of seafood such as squid and oyster. Foods with coconut milk are also considered high-fat foods. Oily snacks such as potato chips contain a large amount of fat along with few other nutrients and should be consumed in moderation. It is advisable to cook foods by boiling, steaming, or grilling which yield less fat.

1.7 Avoid sweet and salty foods.

Eating foods with sharp and strong tastes can result in fewer health benefits, especially if they include salty and sweet foods. Thus, one should obtain no more than

10% of his/her total food energy from sugar. The daily intake should not be more than 40-55 grams or 3-4 tablespoons per day. Salt intake of more than 6 grams per day or more than 1 teaspoonful places a person at risk of hypertension.

1.8 Eat clean and safe foods.

There are several sources of contamination such as bacteria, parasite and chemicals, especially heavy metals in the process of food production, preparation, cooking and unhygienic handling. Criteria for selection of non-contaminated foods include: a clean appearance, freshly prepared foods, foods produced from reputable institutions, and food products having the Thai FDA logo. Foods should have a natural smell, taste and color. Eat foods that have been thoroughly cooked, especially those containing meat. Fruits and vegetables should be washed thoroughly before eating. In selecting ready-to-eat foods, the foods should be freshly prepared and cooked, be kept in clean covered containers, and use hygienic utensils to handle food. In the case of ready-to-cook foods, canned foods and food additives, pay attention to the label. The name of the food, its main ingredients, production place, date of production and date of expiry should be clearly specified.

1.9 Avoid or reduce the consumption of alcoholic beverages.

The regular consumption of alcoholic drinks should be reduced, if not avoided altogether. Those who drink alcoholic beverages occasionally or are beginners should avoid alcoholic drinks as much as possible.

2. Exercise and Recreational Activity

The family exerts the most immediate and formative influence on the lifestyle patterns of its members. It is from the family context that attitudes and practices related to health, recreation, and exercise are established. Spending time together in

leisure and recreation provides opportunity for lifestyle values and patterns to be passed on to family members. Curran (1983; Holman , 1985, Cited by Bomar, 1996: 265) reports that in healthy families, time and leisure are shared with family members. Furthermore, it is known that families who are involved in well-organized recreational activities express greater satisfaction as a family unit.

Recreation can be a beneficial force in the family. It can provide members with common goals and measurable experiences that strengthen bonds. A truly recreational lifestyle attitude is one without goals, demands, or expectations where individuals can develop fully physically and cognitively and where human bonding occurs. Recreation involves renewing bonds, feeling emotions, having fun, relieving tension, and improving self-confidence. Family recreation is the one expression of family strength. There are five questions to help the family to select appropriate and satisfying recreational experiences. First, who will be involved in family recreation (friends, teammates, extended relatives, and so on)? Second, when will the families recreate (amount of time required for recreation)? Third, where will the family go for recreation? Fourth, why does the family seek recreation (benefits accrued to its members in terms of cohesiveness, unity, fun, and sharing as well as renewal of love and energy)? Fifth, how is the family able to provide for recreation? This deals with the amount of money, materials, and time available for recreational use (Bomar, 1996: 266). From a survey of Thai family, most families (90 %) watch TV together daily, but only 40% of families share time outside of home (Thianthaworn, 1999: 33).

As regards exercise, several studies found that family members influence each other to have regularly exercise. The effects of exercise include physiologic and psychosocial benefits across the life span. Physiologic benefits may be categorized as

cardiovascular, biochemical, and morphologic. Because cardiovascular disease is the first major cause of death in Thailand (Ministry of Public Health, 1997: 68), both consuming healthy diet and having regular exercises are necessary for individuals and families. Exercise can be categorized into 2 categories: lifestyle exercise and leisure time exercise. Lifestyle exercise is characterized as integrating of numerous short bouts of exercise into daily living. One randomized clinical trial does suggest that three 10-minute periods of exercise spread throughout the day produce essentially the same conditioning as one 30-minute session (De Busk, et al.,1990: 1010).

Lifestyle exercise, defined as physical activity that can be planned into activities of daily living, has been suggested as a new strategy for promoting physical activity in populations. Suggestive activities substitute more active for less active approaches to work and home activities such as substitute climbing the stairs for taking the elevator or escalator, substitute walking down the hall or walking next door substitute for calling on the telephone, substitute walking for driving to lunch, substitute getting up quietly and walking around the room for sitting in a chair throughout a meeting, substitute taking several minutes to arm and leg exercises for remaining sedentary at your desk, substitute getting up and walking to the TV when you want to change the channel for using the remote control etc. Leisure time exercise is generally characterized as planning exercise patterns that should be moderate or vigorous in intensity. Components of an exercise fitness program include activities that address (1) endurance, (2) strength, (3) flexibility, and (4) body composition. Endurance usually refers to the body's cardiovascular/cardiopulmonary ability to supply oxygenated blood to the whole system i.e. aerobic exercise. Strength is important in developing muscle mass and contributes to good physical appearance and

posture i.e. weight lifting. Flexibility is the body's ability to move through the full range of motions at the joints and involves lengthening and stretching of the elastic fibrous tissues surrounding and connecting the muscle, ligaments, and tendons. Stretching exercises are important for people of all ages and should be a normal part both warming up before and cooling down after any type of physical exercise. Body composition is the proportion of body organs, bone, fat, and muscle that makes up the human body. Body fat percentage varies with age and sex. Exercise combined with calorie restriction effectively assists with body fat and weight control.

Certain active recreation and exercises are naturally very vigorous, aerobic, and need to be done at least 15 minutes three times per week. The activities that are considered conditioning for the cardiopulmonary include jogging, jumping rope, running in place, and stationary cycling. Other activities are moderately vigorous but can be excellent conditioners if done for at least 30 minutes three times per week. If done briskly, they also condition both the heart and the lungs. These are bicycling, basketball, handball, squash, swimming, single tennis, and walking. For the average individual, the intensity recommended by the American Heart Association (1990) is between 50% to 75% of the maximum heart rate (220 minus age). When beginning to exercise, aim for the lowest target zone (50%) during the first few months. Remember that the lower the fitness, the lower the exercise intensity required to induce a training effect. Providing for a warm up and cool down period is of utmost importance. The American Heart Association recommends a 5-minute warm up (stretching and medium-paced activities), 15-30 minutes of exercise at the target zone, and 5-minute cooling down. The total exercise, depending on the activity, would be 25-40 minutes. Family members should be carefully instructed concerning gradual cessation of

exercise. Realistic plan of exercise would (1) allow the family to participate near or at home, (2) be cost-conscious programs and equipment should be of low cost, and (3) fit into home routines with minor alterations.

3. Stress Control and Management

All human beings are born into a family and all members of the family experience stress as a natural part of human existence. The family is a complex, multigenerational system subject to internal and external demands. The reaction to such demands is considered to be the stress response. Stress is an inevitable human experience in any modern society characterized by rapid and accelerating change. Selye, a pioneer in stress research, has defined stress as the nonspecific response of the body to any demand made on it. Stressors can be both positive and negative activators. Negative stressors are called "distress" such as illness, fear, and frustration, while positive stressors are called "eustress" such as marriage, or newborn delivery. The family is a complex system that consists of multigeneration, requires internal and external demands, has reactions and reflects on the stress and stressor. Both distress and eustress force the fight-or flight response. The major sources of distress experienced by individuals in modern society originate in interpersonal relationships (communication) and performance demands (action) rather than from direct physical threat. Although all individuals experience stress, people interpret and react to it differently, resulting in differing vulnerabilities to the deleterious effects of stress. Some stressors are viewed as challenges, creating stimulation and excitement. Other stressors are viewed negatively, perhaps because they are considered undesirable, uncontrollable, or emotionally distressing. There is much scientific interest in the

"resistance resources" that enable some individuals to successfully manage stressors and flourish while others find the same stressors debilitating.

Healthy families adapt to stressful situations by mobilizing their resources and repertoire of many and varied coping strategies. However, Curran (1985: 13) suggested that the stress-effective family "(1) views stress as a normal part of family life, (2) shares feeling as well as words, (3) develops conflict-resolution and creative coping skills, (4) makes use of support people and system, and (5) is adaptable." The effectiveness of coping strategies varies depending on the uniqueness of each family, the developmental stage, and the choices made.

4. Sleep

Sleep is necessary for everyone. Learning health behaviors of the family including sleep that must be learned early in life. What infants and/or children learn about sleep and sleep rituals may stay with them for a lifetime. For this reason, it is necessary to establish healthful sleep habits early in life. Many theories related to the function of sleep exist. These theories include (1) the energy conservation theory, which states that sleep is necessary for rest to reduce metabolic requirements of the body; (2) the restorative theory, which states that sleep is a period of recovery when functional states that have been depleted in the wakeful hours can be restored; (3) the learning theory, which states that there are beneficial effects of sleep on memory retention; (4) the humoral theory, which states that there is a build up of a chemical toxin during the wakeful period which causes tiredness and sleep; and (5) the restitution theory, which states that wear and tear of the body occurs during wakefulness and repair and tissue growth occur during sleep (Kick In Bomar, 1996: 245).

A major factor determining how much sleep family members require is age. Infants 0-6 years of life sleep progressively more at night than in the day, with requirements for 10 to 12 hours of rest nightly and usually 2-3 daytime naps by the end of the first year. Toddlers require 8 to 12 hours of sleep nightly and one daytime nap. The preschool-age children require 10 to 12 hours of sleep, while he average school-age children require 9 to 10 hours. The need for sleep declines for adolescents to about 7.5 hours daily. Young and middle-age adults requires 6-8 hours of sleep. Finally, elderly sleep requirements drop to an average of 6.5 hours (Friedman, 1992: 299).

Quality sleeping of family members is a health promoting behavior that should be supported from the family according to age, sex, and health status including arrangement of sleep environments. Assessment of effective sleeping determines the amount of sleeping at night and sleepiness in the daytime. Effective sleeping of family members affects family functioning.

In the assessment of sleep habits and sleep disorders, a subject's general level of sleepiness during the day is an important characteristic that should be measured routinely. Sleepiness has an important impact on general health and functional status specifically influencing self-perceptions regarding energy/fatigue. Sleepiness, as assessed by the Epworth Sleepiness Scale, explains 8% of the variance in general health perceptions, 17% of the variance in energy/fatigue, and 6% of the variance in the summary measure of well-being (Briones, et al., 1996: 583). The Epworth Sleepiness Scale (ESS) is a self-administered eight-item questionnaire that has been proposed as a simple method for measuring daytime sleepiness in adults. The ESS rates on a scale of 0-3 and eight situations describing sitting and reading, watching

TV, sitting and being inactive in a public place, being a passenger in a car for an hour without a break, lying down to rest in the afternoon when circumstances permit, sitting and talking to someone, sitting quietly after a lunch without alcohol, and being in a car while stopped for a few minutes in the traffic.

Assessment of the family's sleep pattern must begin with a sleep history. The time spent developing the history will meet two objectives: (1) a valid sleep history will be gained, and (2) family members will gain knowledge about other members' sleep habits, needs, interruptions, and so on that has never been brought to the family's awareness before. Common behaviors to overcome sleep disturbance include going to bed and getting up at the same time daily, not taking fluids three to four hours before bedtime, providing soft music, and taking daytime naps etc.

5. Family Spirituality

Spirituality is a component of health related to the essence of life. It is a vital principle in human beings that gives life to the physical organism in contrast to its purely material aspects, and it is related to the soul as opposed to the body. It is also clarified as a sensitivity or commitment to religious values and sacred matters.

Spirituality is more than just the core and integrating factor; it is what causes the person to question the meaning and purpose of life. Spirituality has been described as the desire to "touch transcendence". This transcendence might be described as God, a higher power, another world order, or the wonder and mystery of nature around us or beyond our earth. Positive expressions of spirituality bring out healthy and inspiring qualities in human behavior. Love, hope, faith, trust, and forgiveness are lived out in our relationship with others, with our environment, and with a transcendent God or higher power (Labun, In Johnson, 1997: 160). Love is the core of

spirituality. Our health and vitality can be limited only by our ability to love. Unconditional love, loving people as they are and as they are not, is a spiritual force that is related to healing and can be tapped into by practice (Hill & Smith, 1990: 190).

The family as a unit is held together by interwoven threads representing the various paths and patterns of family life, including areas of security and protection, food and shelter, education and growth, and spiritual cohesiveness and purpose. It is this important area of spiritual bonding that affords the basis for family strength, endurance, and growth. One example of concern about spirituality is a recent resolution of Tokyo's spirituality. This plan puts a blame on over-protective child-bearing, including child's wrong attitudes about individualism or equity. It also views children as self-centered, not caring or respecting others including parents or teachers. The plan suggests that parents coach social norm for their children (i.e. expression to respect seniority) and enhance parent-child relationship by sharing time together in daily life (Nattaya, 2000: 6).

Spirituality encompasses a sense of relation or connectedness within oneself, with others, and with a higher unseen power of God. Spiritual well-being is defined as a sense of inner peace, compassion for others, reverence of life, gratitude, and appreciation of both unity and diversity; it includes the conviction that there is a purpose and meaning of life, a relationship with God, and realistic views of adversity and loss. Spirituality and spiritual well-being may not be linkêd to a specific religious institution or group.

The family that has family spirituality should be nourished by the beauties of love, peace, warmth, bonding, and safety of family members. They may share religious rituals and hold religious activities in order to maintain virtue and happiness.

6. Family Support

There are an extensive body of social support and health research. First, House (1981: 30-31) has pointed out that both buffering effects (social support buffers the negative effects of stress on health) and main effects (social support directly influences health outcomes) have been found. In fact, the main and buffering effects of social support on health and well-being may function simultaneously. In general, families have social networks including friends, relatives, neighbors, and social groups that provide assistance when needed. The factors having empirical support are social network variables such as the number of network ties, and perceiving and/or receiving social support.

Social network means a web of relationships including size, accessibility, trust, frequency of contacts and security. Social network refers to friends, companion, neighbors, relatives, and social groups. House (1981: 24-25) defines social support as consisting of 4 kinds of support: emotional support (esteem, affect, trust, concern, and listening); appraisal support (affirmation, feedback, and social comparison); information support (advice, suggestion, directives, and information); instrumental support (aid in kind, money, labor, time, and modifying environment).

However, only a few articles have discussed family social support. Kane (1988: 23) has defined family social support as a process of relationship between the family and its social environment. The three interaction dimensions of family social support are reciprocity (the nature and frequency of reciprocal relations), advice/feedback (the quality/quantity of communication), and emotional involvement (the extent of intimacy and trust) in the social relationship. Family social support is a process that occurs over the life span, but the nature and type of social support differ

within the various family life cycle stages. Nevertheless, in all life cycle stages, family social support enables the family to function with versatility and resourcefulness. As such, it promotes family adaptation and health.

Family support refers to the social supports that are perceived by family members to be available/ accessible to the family (the social support may or may not be used, but family members perceive that supportive persons are ready to provide aid and assistance when needed). Family social support can either be internal family social support such as spousal support or sibling support, or external family social support such as the social support extended to the nuclear family.

In incomprehensible family communication is defined as a symbolic, transactional process of creating and sharing meanings in the family. Each family has its unique communication style or pattern. Clear and functional communication among family members is the crucial vehicle through which the necessary feelings regarding self-worth develop and become internalized. Functional communication is viewed as the cornerstone of a successful, healthy family. The communication patterns within the family system have a major impact on the individual members. Communication, even in the healthiest of families, is still many times tenuous and problematic. Communication problems are found in all life cycle stages, therefore, the family should initially determine good conditions for family communication such as talking together rather than leaving problems, asking for information about daily living, having family time daily, creating a warm and carefree home. Family power structure that influences companionship and closeness in the family are also important. The family that shares decision making have positive relationships among family members.

7. Environmental Awareness

Environmental issues have generated a concern for the effect of the environment on family health. We all live within a sphere of occupational, vocational, and home setting. Each arena may impose a variety of physical and psychological stressors on the individual or family units, and each poses a new challenge to families and health professionals. The environment is made up of all that is visibly and invisibly surrounding us. Individuals contribute to the environment by their presence or their activities, and the by-products of their actions. They encounter environmental stressors at work, home, and play that may be physical, biologic, or chemical in nature.

Because the environment within the home and surrounding influences family members as promoting or damaging health, so families should be awarded to support allocated environmental health. An example of environmental awareness from a family survey has indicated that there are less than 30% of parents who advise or encourage their children to take social and public responsibility such as keep natural water resources clean (Thianthavorn, et al., 1999: 35).

Environmental awareness consists of habits or patterns that positively or negatively affect the family's or its members' health status such as whether the family is regularly exposed to smoke, herbicides, asbestos or other harmful substances. Noise pollution may also be harmful, as well as water pollution and radiation exposure. Commonly used household products such as air fresheners, shoe polish, paints, cleaners, mothballs, and dry-cleaned clothing contain low levels of chemicals that are known as animal carcinogens.

Environmental awareness may start within the home such as keeping the home and its surrounding clean and tidy, using less chemical substances or using only as prescribed (i.e. insecticide, cleaner solution etc.), decorating green surrounding (i.e. gardening) to enhance oxygen and fresh air, screening and collecting garbage and rubbish sanitary. Therefore, environmental awareness behaviors reflect family health concern and health promoting behavior.

8. Family Responsibility

Another important health promoting behavior of family is family responsibility because the family is an important social institution that allows individuals to be socialized and indoctrinated. If the parents are good role models of responsibility, children are usually the same, too. Family responsibility means sharing responsibilities within families to lead family members to quality of life. These responsibilities may include searching news information about health promotion from various sources such as television, radio, magazines, journals, textbooks, the Internet, newspapers, meetings, seminars etc. These are meant to support and encourage health of family members. In addition, family responsibility includes caring for ill members (i.e. preparing food for recovering, providing medicine, taking to see doctor etc.) and utilizing health resources such as clinics, health promoting clubs, health centers, and hospitals for maximum usefulness appropriate for family members and family as a whole.

E. The Existing Instruments Related to the Development of the Family Health Promoting Behavior Scale

Based on a review of health promotion research, there were many studies related to health promotion conducted over ten years ago. However, there is no research concerning the development of the family health promoting behavior scale (FHPBS). This finding correlated with Pender 's suggestion "a major gaps in family assessment tools is the lack of an instrument that measures family dimensions of health related lifestyle" (1996: 137). Since there is no finding of FHPBS, the studies related to the use of existing health promoting behavior scales and studies related to family health assessment tools are reviewed instead. The commonly found health promoting behavior scale is Pender's Lifestyle and Health Habits Assessment (LHHA) that consists of ten components, and is used for assessing individual health promoting behavior in various groups such as HIV infected groups, pregnancy adolescent, or patient with specific diseases. Another popular instrument is Walker's Health Promoting Lifestyle Profile II (HPLP) consists of six components and is developed to assess individual health promoting behavior. However, this tool has been used in a lot of studies with various groups of subjects but except families.

In an assessment of family health, several assessment approaches can be used in various types of family. Most tools appear to deal with dysfunctional families and might be viewed negatively by healthy families suddenly faced with a crisis such as stroke, traumatic injury, heart attack, renal failure, AIDS, or cancer. However, the purpose of this study was to design and validate the tool to assess the positive aspects of family. Some specific instruments that could be used as a guideline for the development of FHPBS are as follows:

The Family Coping Index was developed in 1964 as a tool for practice, and as an approach to identify the family's need for nursing care and the potential for behavioral changes. It is a method of determining in a more systemic way how the nurse can help the family to manage. This tool consists of 9 dimensions: physical independence, therapeutic competence, knowledge of health condition, application of principles of personal and general hygiene, health care attitudes, emotional competence, family living patterns, physical environment, and use of community facilities. It suggests the level of competence of family coping as: no competence, moderate competence, or complete competence (Stanhope, & Knollmueller, 1992: 79-85).

The FAMTOOL Family Health Assessment Tool developed by Weeks & O'Connor (1997) consists of positively worded 12 statements based on a concept analysis of family and health. The FAMTOOL provides rehabilitation nurses with a quick, positive assessment instrument to help patients and their family members assess their own family's health, compare response with each other, and see strengths they might not have considered otherwise.

The Family Adaptability and Cohesion Evaluation Scales II(FACES II) was developed by Olson, Portner & Bell (1981) to enable the researcher or clinician to place individual families or groups of families within the Circumplex Model, and it could be use with children and those with limited reading ability. The 30-item scale contains 16 cohesion items and 14 adaptability items. This tool is used to assess family functioning in particular.

The Family Assessment Device (FAD) was developed from the McMaster model of family functioning (Epstein, Baldwin & Bishop, 1983) to measure family

health. This 53-item screening instrument consists of 7 scales that measure problem solving, communication, roles, affective responsiveness, affective involvement, behavior control, and general functioning.

The Family Environment Scale (FES) was developed by Moos & Moos (1979). It is a 90-item, true-false questionnaire which was designed to have 10 subscales measuring three domains: relationship dimensions (cohesion, expressiveness, and conflict), personal growth or goal orientation dimensions (independence, orientation, moral-religious emphasis, intellectual-cultural, and active recreational orientation), and system maintenance and change dimensions (organization and control).

The Health-Promoting Lifestyle Profile (HPLP) was developed by Walker, et al. (1987). The HPLP was developed from the 100-item Lifestyle and Health Habits Assessment (LHHA) and was revised as 107-item HPLP in order to testing with adults in Midwestern communities. HPLP was evaluated using item analysis, factor analysis, and reliability measures. Factor analysis isolated six factors: Self-Actualization, Health Responsibility, Exercise, Nutrition, Interpersonal Support, and Stress Management. These six factors accounted for 47.1% of the variance in the 48-item measure. Second-order factor analysis yielded a single factor, interpreted as Health-Promoting Lifestyle. The alpha reliability coefficient for the total scale is .922; alpha coefficient for the subscales range from .702 to .904.

From the above examples, it can be seen that family assessment tools focus on family functioning, relationship or interaction within the family system, or specific areas of family health. As such, tools cannot be applied to fully assess family health promotion though some items of some dimensions may be used to list the item pool.

F. Concept of Family Assessment

A major problem in family research is to obtain information that will reflect the family as a unit and yield true family characteristics. In the development of good family scale, family oriented practitioners do not regularly make use of standardized or formal family assessments in their practices. There are several reasons for this. First, a major problem with family assessment is the lack of a unified theory of family functioning (Bray, 1995: 469). There is no consensus about the definition of healthy or dysfunctional family relationships or even the key processes that need to be assessed. Second, many family practitioners view family assessments as empirically-based, structured methods that do not have direct applicability or utility in clinical practice. Third, most of the available family measures and methods have been developed for research contexts and have not been specifically applied to clinical practice. Therefore, many instruments do not provide either the instructions or clinically relevant norms and comparisons necessary for use in practice settings.

A central issue for family assessment is to decide which parts or aspects of the family that need to be evaluated. In research terms, this refers to determining the appropriate unit of analysis for assessment. Much of the family research is based on data from individual family members, rather than data from multiple sources or direct study of families. Is it necessary to have complete family assessments from all family members to evaluate family functioning or is it sufficient to have individual perspectives from only part of the family? Answers to these questions depend on the purpose of the assessment and the answers may vary in different circumstances (Bray, 1995: 470). Family researchers and researchers from other areas, such as in

developmental and social psychology, argue that assessing various family dyads and triads, such as parent-child interactions, may be more useful than examining the family as a whole (Bray, 1995; Cole & Jordan, 1989; Cowan, 1987; Gable,Belsky &Crnic, 1992). Fisher, et al.(1985: 213), for example, argue that information from an individual concerning family relationships is an individual assessment and does not reflect the functioning of the entire family system. From a systematic perspective, the family as a whole is more than a sum of its parts. Thus, the comparison of individual data within the family is one method of trying to get this whole, while observation of family members interacting or responding to interviews as a whole is another (Boyd, 1996: 49). When two or more family members complete the scale, the comparison of different members' perspectives provides more in-depth information.

There are several methods to create relational data from individual assessments. Family members' individual evaluations about the family and about various family members are collected and the information is related to each other through various methods. These methods include forming composite measures from averaged or empirically derived weighted responses from individual family responses. In addition, discrepancies between family members' data may be used to assess agreement or satisfaction. An alternative approach is to have family members work together to develop a consensus about their family's functioning. If time permits, an investigation can observe the family members negotiate their answers and to observe family interaction patterns. These sources usually represent insider's data because they include the internal perceptions of individual family members. Fisher, et al. (1985: 217) suggested another category of family assessment called transactional assessment that involves evaluation of the family through some types of observation or

structured interaction. Transactional assessments represent system interactions rather than a sum or combination of the individual parts. These types of data represent assessments of the family as a whole or subsystems within the family. In most cases, this information also represents an outsider's view of the family. Transactional data can be combined with relational assessments to provide multimethod, multisource measures of family functioning using a variety of methods. Family evaluation also depends on the context, purpose, and specific aspect of family functioning being evaluated. Thus, in some cases, it may be more important to evaluate individual family members' perceptions of family process, whereas in other situations it may be necessary to evaluate the family as a unit to understand the multiple family interactions and functioning.

The family composite, however, is full of redundant variance. The contribution of an individual family member's data to the composite will have two parts: the variance it shares in common with other family members and its own variance, due to its inclusion in the composite. The examination of both individual and family composite scores is important because it provides the opportunity to investigate whether it is valuable to compute family scores. A study of individual scores of family functioning comparing two different family composite scores, mean and discrepancy, in relation to child psychopathology has suggested that aggregating individual family members' scores into a family mean score can be valuable. Therefore, in this research, the families was evaluated by assessing family health promoting behaviors from two-individual family members and computing their scores into family mean scores before analyzing the data.

G. Scale Development

Measurement is a fundamental activity of science. One acquires knowledge about people, objects, events, and processes by observing them. Within the behavioral/social sciences, psychometrics has evolved as the subspecialty concerned with measuring psychological and social phenomena, typically the measurement procedure used is the questionnaire, and the variables of interest as part of a broader theoretical framework.

Scales are an important instrument of research, especially quantitative research. Scales are developed when we want to measure phenomena that we believe to exist because of our theoretical understanding of the world, but which we can't assess directly. If the investigator could develop or use a validated and reliable scale, results of the research are more reliable. Satisfied scales should have the following characterization:

- Validity denotes the scientific utility of a measuring instrument, broadly stable in terms of how well it measures what it purports to measure. Validity has been given three major meanings: construct validity--measuring psychological attributes, predictive validity—establishing a statistical relationship with a particular criterion, and content validity—sampling from a pool of required content (Nunnally & Bernstein, 1994: 83).
- Reliability is the proportion of variance attributable to the true score of the latent variable, and it gives consistent estimates of the phenomenon. There are four general classes of reliability estimates: inter-rater reliability, test-

retest reliability, parallel-forms reliability, and internal consistency reliability.

- Discrimination power that is a technique to distinguish among groups, based on predictor variables. If the number of sample is more than 100, we can use 27% of the subjects at the top (high-scored group) and a like number at the bottom (low-scored group) to test items and scale discrimination (Thorndike, et al., 1991: 249).
- Objectivity is an attribute of generalization, not biased or specific for anywhere.
- Efficiency means the scale is easy to use, and has low cost.

Guidelines in Scale Development (De Vellis, 1991: 51-90)

A set of specific guidelines that the investigator used in developing measurement scale, especially the Family Health Promoting Behavior Scale is as follows:.

Step 1 : Determine Clearly What it is You Want to Measure

The first thing that researchers should be clear is what they wish to measure. Should the scale be based on a theory, or should you strike out in new intellectual directions? How specific should the measure be? Should some aspect of the phenomenon be emphasized more than others? Theories are a great aid to clarity and relevant social science theories should always be considered before developing a scale. Although there are many technical aspects involved in developing and validating a scale, one should not overlook the importance of being well grounded in the substantive theories related to the phenomenon to be measured. The boundaries of the phenomenon must be recognized so that the content of the scale does not inadvertently

drift into unintended domains. The level of specificity or generality which a construct is measured may also be very important. Scale specificity can vary along a number of dimensions, including content domains, setting, or population. Scales can be developed to be relatively broad or narrow with respect to the situations to which they apply.

Step 2 : Generate Pool Items

The next step is to generate a large pool of items that are candidates for eventual inclusion in the scale. Obviously, these items should be selected or created with the specific measurement goal in mind. Beware that all items making up a homogenous scale should reflect the latent variable underlying them. Multiple items will constitute a more reliable test than individual items, but each must still be sensitive to the true score of the latent variable.

Redundancy is not a bad thing when developing a scale. It is an attempt to capture the phenomenon of interest by developing a set of items that reveal the phenomenon in different ways. Considering two items, even when they are as similar as these, might provide the scale developer with an opportunity to compare them and express a preference. As the nature of the correlation among items is usually not known at this stage of scale development, having lots of items is a form of insurance against poor internal consistency. It would not be unusual to begin with a pool of items that is three or four times as large as the final scale. If items are particularly difficult to generate, or if empirical data indicate that numerous items are not needed to attain good internal consistency, the initial pool may be as small as 50% larger than the final scale (DeVellis, 1991: 57). If the pool is exceptionally large, the researcher can eliminate some items based on a priori criteria such as lack of clarity, questionable

relevance, or undesirable similarity to other items. Another related consideration in choosing or developing items is the reading difficulty level. For example, a sentence of 9 words and 13 syllables or one with 19 words and 22 syllables are both classified as sixth-grade reading level. Aiming for a reading level between the fifth and seventh grades is probably an appropriate target for most instruments that will be used with the general population (Fry, 1977 cited by DeVellis, 1991: 58). For good items, scale developers should avoid items that are exceptionally lengthy, unnecessary wordy, multiple negative, and double barreled items, with ambiguous pronoun references, and misplaced modifiers.

Step 3 : Determine the Format for Measurement

This step should occur simultaneously with the generation of items so that the two are compatible. There are a number of general strategies in constructing scales that influence the format of items and response options.

Thurstone Scale

A Thurstone scale is a unidimensional scale that is generated items corresponding to different intensities of the attribute, spaced to represent equal intervals, and probably formatted with agree-disagree response options such as rate on a 1-to-11 scale. The selection of items to represent equal intervals across items would result in highly desirable measurement properties because scores would be amenable to mathematical procedures based on interval scaling. As Nunnally & Bernstein (1994: 76) point out, developing a true Thurstone scale is considerably harder than describing one. Finding items that consistently 'resonate' to specific levels of the phenomenon is quite difficult. Therefore, the practical problems associated with the

method often outweigh its advantages unless the researcher has a compelling reason for wanting the type of calibration that it provides.

Guttman Scale

A Guttman scale is a series of items tapping progressively higher levels of an attribute. A respondent's level of the attribute is indicated by the highest item yielding an affirmative response. Note that whereas both Thurstone and Guttman scales are made up of graded items, the focus is on a single affirmative response in the former case but the point of transition from affirmative to negative response is the focus of the latter. A desirable quality of a measurement scale is variability. One way to increase opportunities for variability is to have lots of scale items. The number of response options in the respondent's ability to discriminate meaningfully will depend on the specific wording or physical placement of those options, with at least one or more issues related to the number of responses. An even number of response forces the respondent to make at least a weak commitment in the direction of one or the other extreme.

Likert Scale

One of the most common item formats is a Likert scale. The item is presented as a declarative sentence, followed by response options that indicate varying degrees of agreement with or endorsement of the statement. A common practice is to include six possible responses: strongly disagree, moderately disagree, mildly disagree, mildly agree, moderately agree, and strongly agree. A Likert scale is widely used in instruments measuring opinions, beliefs, attitudes, or other construct under study in clear terms.

Step 4 : Have Initial Item Pool Reviewed by Experts

After generating a pool of suitable items, and selecting a response format for these items, the next step is having a group of people who are knowledgeable in the content area review the item pool. This review serves multiple purposes related to maximizing the content validity of the scale. First, having experts review can confirm or invalidate your definition of the phenomenon. You can ask your panel of experts to rate how relevant they think each item is to what you intend to measure. In essence, your thoughts about what each item measure is the hypothesis, and the responses of the experts are the confirming or disconfirming data. Reviewers can also evaluate the items' clarity and conciseness. The content of an item may be relevant to the construct, but its wording may be problematic. In your instructions to reviewers, ask them to point out awkward or confusing items and suggest alternative wording, if they are so inclined. Expert reviewers can provide pointing out ways of tapping the phenomenon that you have failed to include. The final decision to accept or reject the advice of your experts is your responsibility as the scale developer, however (DeVellis, 1991: 76).

There are essentially three types of validity that correspond to these operations:

1. Content validity concerns item sampling adequacy, that is, the extent to which a specific set of items reflects a content domain. Content validity is easiest to evaluate when the domain is well defined. One's methods in developing a scale can help to maximize item appropriateness. Expert reviewers are asked for weighting relevant opinions in each item and determine inter-rater agreement as called content validity index (CVI). Content validity index may be 4 levels of scores: not relevant, somewhat relevant, quite relevant, and very relevant. Scores for relevance will then be

used to compute content validity index using a formula described by Waltz, Strickland, & Lenz (1991: 73). When seven experts evaluate content validity, CVI is computed with a following formula:

$$CVI = \frac{\text{Number of items that at least 6 experts evaluate quite relevant/very relevant}}{\text{Number of total items}}$$

Content validity index is close to 1 indicates that most of the experts evaluate from quite relevant to very relevant, and this value should be higher than 0.8.

2. Criterion-related validity

In order to have criterion-related validity, an item or scale is required only to have an empirical association with some criterion or 'gold standard.' The most important aspect of criterion-related validity is not the time relationship between the measure in question and the criterion whose value one is attempting to infer, but rather the strength of the empirical relationship between the two events. Criterion-related validity is classified into predictive validity and concurrent validity. Predictive validity means correlation between observed scores and expected scores for predicting personal ability from result of measurement. Adequate value for predicting groups range from 0.6 to 0.7 (Frank-Stromborg, 1988: 10) and above 0.8 for predicting individuals. Put another way,, concurrent validity is the value that compare obtained result with established criterion traits.

3. Construct validity is directly concerned with the theoretical relationship of a variable to other variables. The extent to which empirical correlation matchs the predicted pattern provides some evidence of how well the measure 'behave' like the variable it is supposed to measure. The construct validated scale has the measured result related to a theory or purpose. There are some methods to test it such as the

Multidimensional scaling, Multitrait-Multimethod Matrix (MTMM), Factor Analysis, and Cluster Analysis.

Step 5 : Consider Inclusion of Validation Items

Obviously, the heart of the scale development questionnaire is the set of items from which the scale under development will emerge. However, there are at least two types of items to consider. First, a scale developer might choose to include in the questionnaire serves to detect flaws or problems. Respondents might not be answering the items of primary interest for the reasons your assume as there may be other motivations influencing their responses. One type of motivation that can be assessed fairly easily is 'social desirability.' Including a social desirability scale allows the investigator to assess how strongly individual items are influenced by social desirability. Items that correlate substantially with the social desirability score obtained should be considered as candidates for exclusion unless there is a sound theoretical reason that indicates otherwise. There are other sources of items for detecting undesirable response tendencies such as The Minnesota Multiphasic Personality (MMPI), and The Marlowe-Crown Social Desirability.

Step 6 : Administer Items to a Development Sample

After deciding which construct-related and validity items to include in your questionnaire, you must administer them, along with the pool of new items, to some subjects. The sample of subjects should be large. It is difficult to find a consensus on this issue. Nunnally (1978: 280) points out that the primary sampling issue in scale development involves the sampling of items from a hypothetical universe. In order to concentrate on the adequacy of the item, the sample should be sufficiently large to eliminate subject variance as a significant concern. He suggests that an adequate

number should not be less than 300 (Nunnally, 1978: 237). There are several risks in using too few subjects. First, the patterns of covariation among the items may not be stable. Second, small sample size may not represent the population for which the scale is intended as it may exclude certain types of individuals. Thus, a scale developer should consider both the size and composition of the development sample.

Step 7 : Evaluate the Items

After an initial pool of items has been administered to an appropriately large and representative sample, it is time to evaluate the performance of the individual items so that appropriate one can be identified to constitute the scale. This is the heart of the scale development process.

- For initial examination of the item's performance, what we seek in an item is a high correlation with the true score of the latent variable. The higher the correlation among items, the higher are the individual item reliabilities. The more reliable the individual items are, the more reliable will be the scale that are highly interrelated. One way to determine how interrelated the items are is to inspect the correlation matrix. Any item that is positively correlated with some and negatively correlated with others in a homogeneous set should be eliminated.
- Item-scale correlation. We can examine corrected item-scale correlation that correlates the item being evaluated with all the scale items, excluding itself, while the uncorrelated item-scale correlation correlates the item in question with the entire set of candidate items, including itself. In general, an item with a high correlated item-total correlation is more desirable than an item with a low value. The usual rule of thumb is that

an item with lower than 0.20 of item-total correlation should be discarded (Streiner & Norman, 1995: 66), while Nunnally & Bernstein (1994: 306) suggested 0.30 or higher. Another valuable attribute for a scale item is relatively high variance. If the development sample is diverse, the range of scores obtained for an item should be diverse as well. This implies a fairly high variance. A mean close to the center of the range of possible scores is also desirable. If a mean is near one of the extreme of the range, then the item might fail to detect certain values of the construct. Inspecting means and variances, however, is a useful double-checked once a tentative selection of items has been made on the basis of the correlation. Besides, one of the most important indicators of a scale's quality is the reliability coefficient alpha. An acceptable bound for alpha should be .70 or higher depending on the importance of the scale (Nunnally & Berntein, 1994: 265). However, Streiner & Norman (1995: 65) suggested that it should probably not be higher than .90 when it is too high, it may suggest a high level of item redundancy. Furthermore, DeVellis (1991: 85) provides the following comfort ranges for research scales: a below .60 means unacceptable, between .60 and .65 means undesirable, between .65 and .70 means minimally acceptable between .70 and .80 means respectable, between .80 and .90means very good, while much above .90 means one should consider shortening the scale.

Step 8 : Optimize Scale Length

Scale length affects reliability. A scale's alpha is influenced by two characteristics: the extent of covariation among the items and the number of items in

the scale. For items that have item-scale correlation about equal to the average inter-item correlation, adding more will increase alpha and removing more will lower it. Generally, shorter scales are good because they place less of a burden on respondents. Longer scales, on the other hand, are good because they tend to be more reliable. Therefore, the scale developer should give some thought to the optimal trade-off between brevity and reliability.

If the development sample is sufficiently large, it may be possible to split it into two subsamples. One can serve as the primary development sample, and the other can be used to cross-validate the findings. So, for example, data from the first subsample can be used to compute alpha, evaluate items, tinker with scale length, and arrive at a final version of the scale that seems optimal. The second subsample can then be used to replicate these findings. However, the choice of items to retain will not have been based at all on the second subsample. If the alpha remains fairly constant across the two subsamples, you can be more comfortable assuming that these values are not distorted by chance. The most obvious way to split a sufficiently large sample is to halve it. However, if the sample is too small to yield adequately large halves, you can split unevenly. The large subsample can be used for the more crucial process of item evaluation and scale construction and the smaller for cross-validation.

Based on the studies of healthy family's traits, health promotion, family health assessment model indicated guideline of the components of family health promoting behavior as follows: nutrition, exercise and recreational activity, stress control and management, sleep, family spirituality, family support, environmental awareness, and family responsibility.

The steps of scale development was conducted to develop family health promoting behavior scale. First, the components of family health promoting behavior (FHPB) from studies review was searched with in-depth interviews. Second, item pools were generated for the Family Health Promoting Behavior Scale (FHPBS) and rating scale was used to rate the level of FHPB. Third, the content validity of FHPBS was tested by 7 experts. Fourth, the FHPBS was adjusted in some items in accordance with the experts' comments. Fifth, the FHPBS was administered with family samples as a Pre-testing and received data were analyzed with descriptive statistics, item analysis, item and scale reliability, discrimination power, factor analysis, and MTMM. Sixth, some items were added or deleted appropriately before administering the scale with the final large samples. Seven, the data were analyzed for demographic data with descriptive statistics; item characteristics with item analysis, and item and scale reliability; discrimination power; construct validity with factor analysis, and MTMM; and test of measurement model with LISREL. The conceptual framework of the development of Family Health Promoting Behavior Scale is shown in Figure 1.

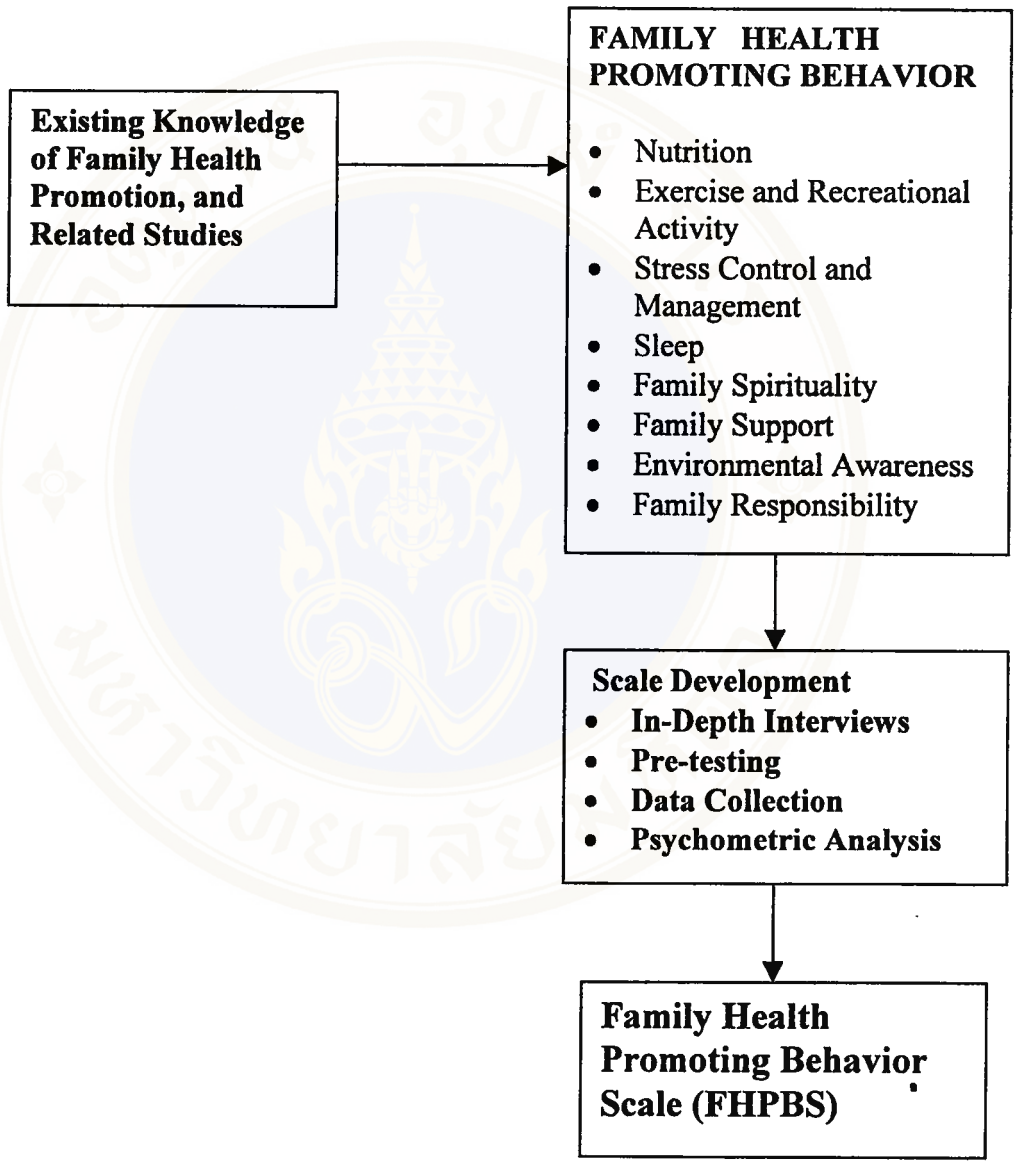

Figure 1. Conceptual Framework of the study

CHAPTER III

MATERIALS AND METHODS

This methodological study was a development and psychometric analysis of the Family Health Promoting Behavior Scale (FHPBS) which measures health promoting behaviors of Thai families. This chapter described the research methodology including population, sample, instrument, step of developing instrument, data collection, protection of human subjects, and data analysis.

A. Population

The population of this study was families with parent and adolescent child studying in Mathayomsuksa 2 at schools under the Department of General Education, Ministry of Education, who live in Bangkok. There are 114 schools that were distributed in 3 areas and located in 50 districts of Bangkok as follows: (Appendix A)

1. **Inner City** is composed of 22 districts and 53 schools.
2. **Urban Fringe** is composed of 22 districts and 46 schools.
3. **Suburb** is composed of 6 districts and 15 schools.

B. Sample and Sample Size

The sample was the families of students who were randomly selected from the school sample and from the district sample.

The inclusion criteria for the selected sample were as follows:

1. The families consisted of at least one parent and one child.

2. The families were composed of at least one child studying in Mathayomsuksa 2.

3. The families were willing to participate in the study.

Sample size

The sample size in this study was determined by 2 methods:

1. From the formula:

$$n = \frac{Z^2_{\alpha/2}\ \sigma_x{}^2}{d^2}$$ (Daniel, 1995: 178)

When n = Sample size

$Z^2_{\alpha/2}$ = The standard estimate under normal curve

$\alpha = .05,\ \alpha/2 = .025,\ Z = 1.96$

$\sigma_x{}^2$ = Variance of family health promoting behavior score from the pretest study $= (28.6)^2$

d^2 = Error allowed for estimating family health promoting behavior score $= 0.1\sigma = (0.1 \times 28.6) = (2.86)^2$

The calculation in the formula is

$$N = \frac{(1.96)^2\ (28.6)^2}{(2.86)^2} = 384.16 \approx 385$$

2. As for another method to determine the sample size, the sample size was put in ratio with the number of variables. Nunnally (1987: 402) recommends 10 subjects per variable being an absolute minimum and 20 being a much more comfortable number. In this study, the number of items of FHPBS was 72, so at least 720 subjects were needed.

From two methods of estimating sample size, 385 subjects was accepted as representative of the population but at least 720 was needed for factor analysis. But a common problem of using self-reported questionnaire is returning the data, so in order to receive enough sample size, about 40 percent of the minimum sample size or approximately 280 subjects were added to the sample, resulting in the total of 1000 subjects.

C. Sampling Procedure

In developing FHPBS, there were two groups of sample: pre-testing sample, and data collection sample. Each group was selected appropriately in the following manners:

1. The Sampling for Pre-Testing

The sample consisted of the families who were indirectly randomized from the students' families by using three-stage random sampling from district, school, and student.

1.1 Two districts were randomly selected from the Inner City: Din Daeng, and Chatuchak Districts and one district was randomized from the Urban Fringe: Taling Chan District.

1.2 Three schools were randomly selected from each district of the three districts as follows: Kunnathee Rutharamwittayakom School from Din Daeng District, Hor Wang School from Chatuchak District, and Mahannaparam School from Taling Chan District.

1.3 One hundred and ten students' families were randomly recruited from each school. So, the sample consisted of 330 students' families.

2. The Sampling for Data Collection

The sample consisted of families who were indirectly selected from the students' families by using three-stage random sampling from district, school and student as shown in Figure 2.

2.1 As for district sampling, the district sample was proportionally randomized as 2:2:1 in relation to the proportion of the districts in 3 areas of Bangkok Metropolitan (Inner City, Urban Fringe, and Suburb as 22:22:6). So, the district sample consisted of 5 districts (Chatuchak, Huay Khwang, Bung Kum, Phasi Charoen and Lat Krabang Districts).

2.2 Regarding school sampling, one school was randomly selected from schools in each of five districts which resulted in 5 schools.

2.3 As regards student sampling, two hundred students and their families were randomized from each school of the five schools, and this resulted in 1000 families.

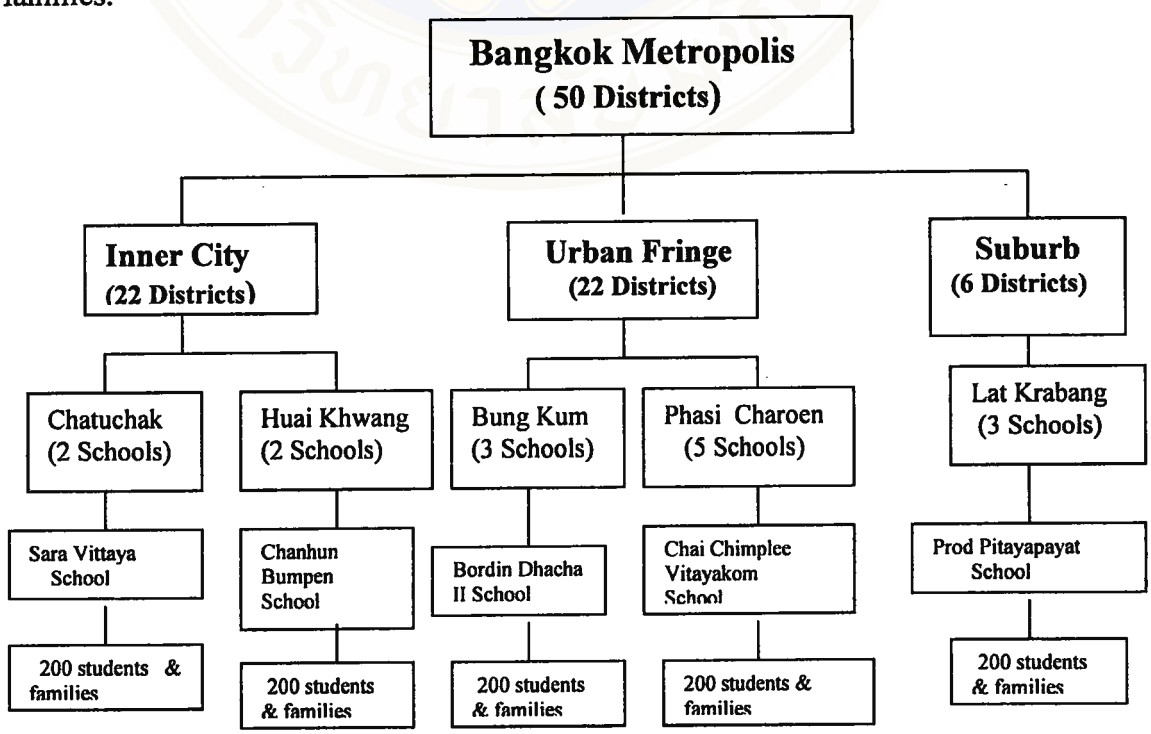

Figure 2. Three-Stage Sampling for Data Collection

D. Instrument Development

In developing the Family Health Promoting Behavior Scale (FHPBS), related theories and research were reviewed the eight hypothesized components of the family health promoting behavior, in-depth interview in search for family health promoting behavior were conducted to develop FHPBS (see Figure 3). The detail of the development of FHPBS is as follows:

1. Conducting an In-depth Interview

The sample was families that were composed of at least one parent and a child studying in Mattayomsuksa 2 who lived in Bangkok. The families were selected by purposive sampling underlying various socioeconomic statuses. The number of families depended on saturated data that were recommended as 6-8 data units by research texts regardless of lack of rigid rules when the sample consisted of a homogeneous group, and 12-20 was suffice for a heterogeneous sample (Holloway & Wheeler, 1996: 78).

The In-depth interviews of 15 Thai families were conducted by the investigator based on a semi-structured questionnaire. The study was designed to collect the family's health behaviors that promoted family members' health and overall family health. All families at least consisted of one parent and a child that was studying in Mattayomsuksa 2. The families were asked to describe health promoting behaviors of the family based on a semi-structured questionnaire. Each family also received one in-depth interview. In each interview, the interviewer tried to meet with all family members or as much as possible to seek complete family health promoting behavior. Each interview lasted 1-2 hours. When no new information could be identified, the interview was ended.

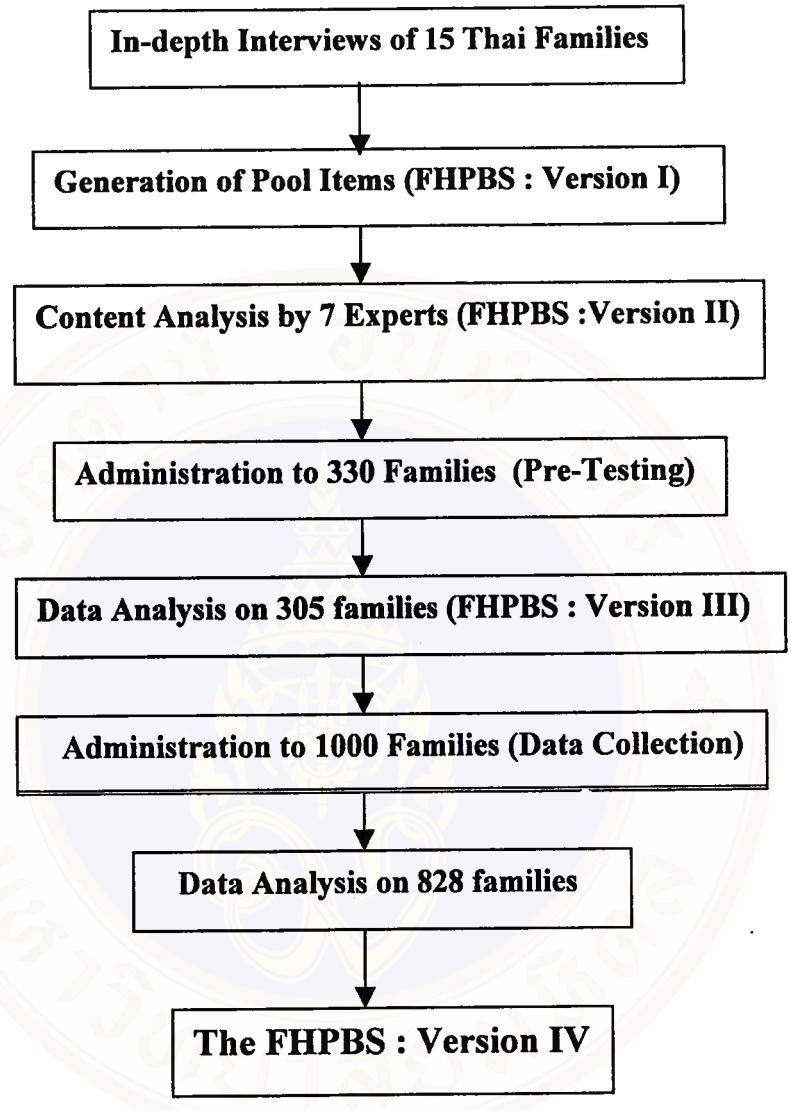

Figure 3. Steps in the Instrument Development of the FHPBS

1.1 Guidelines of the semi-structured questionnaire consisted of:

a. The concept and characteristics of healthy family

b. What are the behaviors/practices that you believe promote your family health status?

c. Please describe your family members' health practices in the following topics:

1). Nutrition

- Describe number of meals per day.
- Describe mealtime: Who is present, when, where, and what is the atmosphere like?
- Does mealtime serve a particular function for the family?
- What is the family's favorite food?
- What kind protein, fat, and carbohydrate do your family members eat per day and what is the amount?
- What type of taste do your family members like?
- Describe bowel and urinary patterns.

2). Exercise and Recreational Activity

- Is there a predetermined family day in each week?
- What types of recreational activities do family members engage in?
- Do family members have time to talk to each other daily?
- Describe family members' exercise patterns (type, frequency, and duration).
- How many members exercise regularly?
- How do family members reinforce others to exercise?
- Describe family members' physical activities in daily living?

3). Stress Control and Management

- How much stress, frustration, or anxiety do family members meet in daily life?

- What kind of methods do your family members use to solve them?
- Describe the feelings of your family members when they meet stressors.
- When family members have different in the opinions, how does your family solve them?
- Is problem solving different or similar among spouses, parent-child, and sibling-sibling?

4). Sleep

- What are the usual sleeping habits of family members on both weekdays and weekends?
- How do family members wake up? How do they feel in the morning?
- Do family members have sleeping problems? What do they do to sleep better?
- Where do family members sleep? Do bedroom environments advocate sleep?
- Do family members take regular naps during the day? Do they have signs of sleepiness?

5). Family Spirituality

- Do all family members have in the same religion?
- What are religious beliefs, practices, or rituals that are important for your family?
- Do you prey as a family? Do you prey for each other?
- What is the source of your hope?

- What is the purpose of your family life? Do all family members share this purpose?
- How do you feel about your family?

6). Family Support

- How well do family members have a sense of closeness?
- Do they talk about what has happened during the day?
- How often do family members spend time together in each day?
- How often do families contact their relatives?
- How well are families familiar with neighbors?
- How often does each member contact close friends?
- In case of emergency, whom families ask for help first?

7). Environmental Awareness

- Does the interior of the house encourage family members' health?
- What are hazards within and around your house? How does your family manage them?
- What do family members do to keep a healthy environment?

8). Family Responsibility

- What are your family's methods to acquire health news, and health information?
- When any member receive health knowledge, do they share it with other members or not?
- When any members are ill, how will the family take care of them?
- When any members visit the doctor, do other members pay attention to treatment and look after them?

1.2 The Result of In-depth Interviews

The families who took part in the in-depth interviews consisted of 15 families had at least one parent and an adolescent child. Number of family members ranges from 3 to 7 persons. Most of the parents were traders, officers, and employees, and most of parents completed college or secondary and primary schools with family incomes ranging from 8,000 to 30,000 baht per month, thus representing low to high socioeconomic status. Each family had one interview and almost family members were requested to join with the interviewing. An important information were as follows:

a. The Family's Perception of "Healthy Family"

Eleven of the families defined healthy family as a family consisted of family members who were complete physical and mental health with no illness. Six families viewed bonding, cohesiveness, love and affective function of family as part of being healthy, while took into account taking care of each other, performing their roles, living in a healthy environment, having a good economic status, and having relationship with others.

Some examples of families' perceptions of being healthy are "Healthy family should eat 5-food-group diet, have good mental health, live in a clean house and quiet surrounding," "Healthy family means members have good mental health, are successful in family life, have no family problems, have no economic problems, have good physical health, and have regular exercise," "Healthy family consists of members who are happy, fulfilled in everything, and live together including parents, child, and relatives."

b. The Healthy Promoting Behavior of Family

Eleven families identified health practices to promote family health as eating useful diet, especially 5-food-group diet; exercising regularly; having good relationship within family. Three families identified having adequate sleep, good relations with friends, neighbors and relative and living in a healthy environment.

Some families said that "Members eat 5-food-group diet especially vegetables rather than meat, having regular exercise, sharing activities together, and sharing decision making."

"Members eat useful diet especially foods without chemical substances, having annual check-up, being open minded among family members, using democratic parenting, and having adequate sleep of no less than 5 hours and no more than 8 hours at night."

c. The components of Family Health Promoting Behavior

The eight components of Family Health Promoting Behavior developed based on the semi-structured questionnaire have yielded many beneficial information for the development of FHPBS as follows:

1). Nutrition

All families realized that eating behavior could promote or destroy their health as said in the old adge "we are what we eat," but they still had some negative eating behaviors because they couldn't control their like or dislike of foods. Living in a rapidly changing society have brought about changes in food practices from cooking the family meal at home to buying ready-to-eat, already cooked or ready to cook food. Some families chose any food according to convenience, good taste, quantity or cost rather than proper nutrients.

Some examples of positive family's eating habits are as follows:

"We eat a variety of food, with no frequent repetition," "We always eat fruits and vegetables," "We eat unpolished rice mixed with polished rice," "We choose food free from chemical toxin," "We drink one glass of milk every day," "We eat mild taste foods,"and "We read the labels such as expiration date."

Some examples of negative family's eating habits are as follows:

"We usually eat high fat diet," "We dislike fruit and vegetable," "We drink less than 6 glasses of water," "We eat more than 3 meals daily," "We always have a dish of fish sauce on the dining table," "We choose foods by considering taste rather than cleanliness and value," "The family provides fruits everyday but sometimes nobody eats them," "We have desserts everyday," "We never control eating habits and body weight."

2). Exercise and Recreational Activity

Most of the families agreed that they knew the benefits of exercise but some families never had pattern of exercise (exercise in leisure time). In addition, some families had only mild and not regular exercise. Some families bought exercise equipment but members seldom used them. Children in some families stated that they liked playing football or riding a bicycle with their friends every evening. In a few families, the father and son played various types of sport i.e. basketball, badminton together. Some families persuaded their members to exercise with similar or different types of exercise depending on individuals' preferences. Some families viewed activities in daily living i.e. housework, walking as substitute for exercise. The shared-time activities of most families were having dinner, watching TV, and outing on holiday. Some families in the middle social class had a private TV in their

bedrooms so family members didn't spend time watching TV together but they had dinner at weekends.

3). Stress Control and Management

Regarding stress control and management in the family, most of the families recognized in many ways of interaction among family members and pattern of family's problem solving in order to maintain their healthy being.

Some example of positive ways of stress control and management are as follows:

"We create humor within family," "We spare time to talk together daily," "We are open and tell everything to the family," "We have positive views towards any problems," "When we confront any problems (i.e. quarrels, unpleasing situations or being too tired to take a role etc.), family members have their own to solving the problems such as being silent and returning to talk after no longer moody, talking face-to-face with reasons, sharing roles to reduce stress, or releasing tension by consultation," and "We share ideas from all members to more decision especially about important things of the family."

Some negative ways of stress control and management are as follows:

"In weekdays, some family members don't talk together," "the father or mother makes important decision by her/himself so children learn this pattern of decision making and follow through which makes the parents regret," and "the father and son don't talk face-to-face but talk through the mother."

4). Sleep

Most of the families agreed that an adequate sleep affected the health of the family members. Some families tried to set bedrooms for individual members. In

some families, all members slept together in the same room because of limited space. Members' behavior affected the sleep of other members. For example, when any member came home late, others would lose their sleep. When a member had sleep problem, there are a variety ways of coping such as by turning on a radio all night, taking a sedative, lying in bed awake, getting up and doing housework, and taking a daytime nap.

5). Family Spirituality

Although information concerning spirituality may be difficult to elicit clearly, but families could still give useful information. Family members that revealed they valued love, cohesion, and bonding among family members. They shared the purpose of life in the future especially about dwelling, children's education, family's economic status. They believed in the same religion such as a belief in Law of Karma. But most of families said a similar thing that "Family members seldom had religious activities and went to the temple, we made virtue by giving money or things to underprivileged people or offering food to a monk in the morning."

6). Family Support

Most of the families started that they usually helped themselves when encountering with problems and seldom asked for help from their relatives. Most of the families didn't have a close relationship with their relatives because they lived far from each other. For some families, they seldom met although they stayed in Bangkok. Close friends of each family member met in the office or school rather than at home. Most of the families were familiar with their neighbors, and they could ask for assistance i.e. keeping an eye on the home in the daytime, and sharing some foods etc. Children usually exercised and played games with friends in the neighborhood.

7). Environmental Awareness

Most of the families viewed that environment was an important factor for family health. They described that good or healthy environment meant an environment that was clean, tidy, both inside and outside the home, and quiet, and safe. Around the home, there should be some trees or some plant-pots to refresh the air. Home should be located far from the main street to avoid air pollution from cars and motorcycles. To maintain healthy environment, each family should correctly separate and collect garbage, rubbish, or harmful disposal. Some families said that the parents indoctrinated the children to be careful when using running water and electricity. As for the use of harmful household chemicals, some families chose natural substance while other families used them as less as possible, and the rest strictly used them by following the prescribed label. Some families said that family members felt annoyed from smoke caused by their neighbor's burning dry grass. Some families avoided foam and material which was hard to be destroy to protect the environment.

8). Family Responsibility

Most of the families said that family members received health information from watching TV. Almost all families said that taking care of family members was both a family responsibility and individual responsibility. A few families said that each member sought treatment by him/herself when he/she was sick with a fever, common cold, or diarrhea. Some families supported their members in a variety of methods such as buying health foods, vitamins, herbs; introducing health news; encouraging annual health check-up; taking care of them when members are ill; and asking physician to care for ill members.

The summary of the in-depth interviews, most families identified three components of family health promoting behavior: nutrition, exercise and recreational activity, and stress control and management. Some families showed that sleep and environmental awareness enhance their family health. The information of eight components of FHPB were received based on semi-structured questionnaire that they were beneficial for the generation of pool items.

2. Generation of Pool Items

After taking the information from in-depth interviews, the items were generated for the Family Health Promoting Behavior Scale (FHPBS): Version I. The Family Health Promoting Behavior Scale: Version 1 consisted of 8 components and 85 items. Each component consisted of 7-16 items according to coverage of content. Component 1(Nutrition) consisted of 16 items, component 2 (Exercise and Recreational Activity) consisted of 10 items, component 3 (Stress Control and Management) consisted of 15 items, component 4 (Sleep) consisted of 8 items, component 5 (Family Spirituality) consisted of 11 items, component 6 (Family Support) consisted of 10 items, component 7 (Environmental Awareness) consisted of 7 items, and component 8 (Family Responsibility) consisted of 8 items.

This scale was designed to measure health promoting behavior in families using a five-point rating scale as follows:

1 = Not True

2 = Slightly True

3 = Moderately True

4 = Mostly True

5 = Extremely True

3. Determining Content Validity

To determine content validity of how well the specific items represented the universe of items that could be asked, seven experts were consulted to review the FHPBS: Version I. The experts included (1) three nursing faculty members who had taught health promotion, (2) one educator in the field of behavioral and health education, (3) one physician in the field of public health especially nutrition, (4) one physician in the field of family health, and (5) one researcher in the field of health promotion (Appendix B.). The experts were asked to identify:

- Appropriateness of the components of the Family Health Promoting Behavior Scale using open-ended statements.
- Relevance of items to the content addressed by the objectives using the following four-point rating scale:

  1 = Not Relevant

  2 = Somewhat Relevant

  3 = Quite Relevant

  4 = Very Relevant

Scores from the relevance scale were computed for the content validity index (CVI) using a formula described by Waltz, Strickland, & Lenz (1991). The FHPBS Version I was revised according to the experts' suggestions and it was then called the FHPBS: Version II (Appendix D). The content validity index was equal to 0.95. Considering the suggestions from 7 experts, some items were rephrased, 2 items were deleted, and 2 items were added. In component 1 (Nutrition), one item was deleted and one item was added which resulted in the total of 16 items. For component 2 (Exercise and Recreational Activity), one item was deleted which resulted in the total

of 9 items. In component 5 (Family Spirituality), one item was added which resulted in the total of 12 items. In component 7 (Environmental Awareness), one item was added which resulted in the total of 8 items. In component 8 (Family Responsibility), one item was deleted which resulted in the total of 7 items. Component 3 (Stress control and management), component 4 (Sleep), and component 6 (Family Support) were not changed terms of the number of items. Therefore, the total items of the FHPBS: Version II remained 85 items with the items of each component ranging from 7 to 16 items.

The demographic data form was revised according to the experts' suggestions. The following demographic variables were measured by the self-reported items as follows: (1) family member status of the informants, (2) the number of family members, family composition, and each family members' age, (3) occupation of the informants, (4) education of the informants, (5) family income, (6) type of residence of the family, and (7) occupancy status.

4. Pre-Testing Study

In the pre-testing study, a packet of questionnaires consisting of a cover letter, and two questionnaires that consist of two copies of demographic data form, two copies of FHPBS: Version II (Appendix D), and two copies of perception of family health status questionnaire was used. The two copies serve for the parent and for the child. Three hundred and thirty packets of questionnaires were distributed to 330 families through the coordinator in the schools.

Of the 330 questionnaires distributed, 308 were returned and 305 (92.4%) were completely filled out. More than half of the parent informants were mothers (59.0%), and 38.0% were fathers and more than half of the child informants were daghters

(59.3%), and were sons 40.7%. The average number of family members was 4.42 (2-12 persons); the average age of fathers was 43.75 years (30-65 years), the average age of mothers was 40.39 years (24-54 years). In terms of occupation, the parents were laborers (33.1%), officers (20.3%) and traders (20.0%). As regards the parent informants' education, they graduated from university (27.2%), primary school (24.6%) and secondary school (23.3%). As for family income, 21.6% had a monthly income 5,001-10,000 baht/month and 20% had more than 30,000 baht/month.

Before analyzing the data, the parents' scores on FHPBS and the children's scores were computed into family mean scores. The result of Pre-testing indicated that FHPBS's reliability was 0.96 with the alpha high above 0.90, DeVellis (1991: 85) suggested that in this case, the scale should be shortened.

The result of item analysis identified that: (1) inter-item correlation ranged from .0004-.7706. Moreover, there were 5 items which had corrected item-total correlation less than 0.2 which should be discarded (Streiner & Norman, 1995: 62). The content of these five items (items 9, 12, 14, 25 and 34) concerned the amount of meat consumption, having vegetables in each meal, adding fish sauce into food, daily activities not sedentary, and recognizing stress in life as normal state.

From the analysis of discrimination power, it was found that all items and scales could significantly be discriminated into higher group and lower group except for an item concerning adding fish sauce into food (item 14).

From item analysis and exploratory factor analysis, the scale was adjusted as follows:

- For 16 items of component 1 (Nutrition), 5 items were deleted, 1 item was moved to component 2, and 1 item was moved from component 8 which resulted in the total of 11 items.
- For 9 items of component 2 (Exercise and Recreational Activity), 2 items were deleted, and 1 item was moved from component 1 which resulted in the total of 8 items.
- For 15 items of component 3 (Stress Control and Management), 4 items were deleted which resulted in the total of 11 items.
- Eight items of component 4 (Sleep) remained unchanged.
- For 12 items of component 5 (Family Spirituality), 2 items were deleted, and 1 items was moved from component 6 which resulted in the total of 11 items.
- For 10 items of component 6 (Family Support), 3 items were deleted, 1 item was moved to component 5, and 2 items were added which resulted in the total of 8 items.
- Eight items of component 7 (Environmental Awareness) remained the same.
- For 7 items of component 8 (Family Responsibility), 1 item was moved to component 1, and 1 item was added which resulted in the total of 7 items.

Therefore, the total items of the FHPBS: Version III became 72 items with items in each component ranging from 7 to 11 items. These were reordered and the heading of each component was removed before using in the data collection.

Table 2. Numbers of Item in Each Component of the FHPBS: Versions I-III

Components	FHPBS: Version I	FHPBS: Version II	FHPBS: Version III
Nutrition	16	16	11
Exercise and Recreational Activity	10	9	8
Stress Control and Management	15	15	11
Sleep	8	8	8
Family Spirituality	11	12	11
Family Support	10	10	8
Environmental Awareness	7	8	8
Family Responsibility	8	7	7
Total	**85**	**85**	**72**

From the analysis of correlation of the parent's family health promoting scores and the children's family health promoting scores, the result was 0.652 which showed moderate correlation. The correlated components ranked from high to low are as follows: family spirituality, family support, stress control and management, sleep, exercise and recreational activity, family responsibility, nutrition, and environmental awareness (0.653, 0.607, 0.558, 0.555, 0.547, 0.529, 0.514, 0.472), respectively.

As for the demographic data form, the investigator found some missing data because some informants misunderstood some demographic variables and some variables should be added for completion of family data. So, the revised demographic data form was developed specifically for parents and children.

So a packet of questionnaires for data collection consist of (1) a cover letter, (2) The parent-questionnaire consisting 3 sections: a revised demographic data form for parent, a 72-item FHPBS: Version III, and a perception of family health status questionnaire (3) the child-questionnaire consisting 3 sections: a revised demographic data form for child, a 72-item FHPBS: Version III and a perception of family health

status questionnaire (Appendix E). The 72-item FHPBS is self-administered, using a five-point rating scale as follows:

1 = Not True 2 = Slightly True

3 = Moderately True 4 = Mostly True

5 = Extremely True.

E. Data Collection

During the data collection, after receiving the written permission (Appendix C.), the investigator cooperated with the assistant director of the five schools to collect data. A packet questionnaires were distributed to 1,000 families. The families were asked to return the completed questionnaires to the assistant director or the representative of each school within 2 weeks after they received the questionnaires. After the questionnaires were returned, they would be analyzed in the data analysis process.

F. Protection of Human Subjects

A cover letter was distributed to each family. The letter included the statements describing (1) the purpose of the study, (2) assurance of the subjects' anonymity, (3) the subjects' voluntary participation in the study, (4) the name and student status of the investigator, and (5) the usefulness of the results of the study. (Appendix F)

G. Data Analysis

When the questionnaires were returned to the investigator, each questionnaire was checked for completeness. Before data analysis took place, each parents' FHPBS scores and each child's FHPBS scores would be computed into family mean scores. The data analysis would be executed by the Software Package of SPSS/PC.

Descriptive statistics were used to examine (1) the demographic data of families in the forms of mean, standard deviation, and percentage and (2) the distribution of FHPB scores in the forms of mean, standard deviation, skewness, kurtosis, and normal distribution.

Analytic statistics were used to examine the quality of the FHPBS as follows:

1. Item Analysis consisted of scale mean if the item was deleted, corrected item-total correlation, squared multiple correlation, and alpha if the item was deleted.
2. Scale reliability by Cronbach's alpha method
3. Item and scale discrimination power by Independent t-test
4. Construct validity by Factor Analysis and Multitrait Multimethod Matrix
5. Correlation between FHPBS and family health status by Pearson Product Moment correlation coefficient
6. LISREL program would be also used to test goodness of fit of the measurement model with second-order Confirmatory Factor Analysis.

CHAPTER IV

RESULTS

The purpose of this methodological investigation was to investigate the components of family health promoting behavior, to develop the structure of family health promoting behavior scale and to examine a psychometric analysis of the scale.

The results of the development of the Family Health Promoting Behavior Scale will be presented in the following topics:

- Characteristics of the Family
- The Result of Item Analysis
- The Result of Item and Scale Discrimination Power
- The Result of Exploratory Factor Analysis
- The Result of Multitrait Multimethod Matrix
- The Result of Second Order Confirmatory Factor Analysis
- Standard Score and the Level of Family Health Promoting Behaviors
- The Correlation of FHPB Scores and Perception of Family Health Status

Of the distributed 1,000 questionnaire, 929 (92.9%) were returned. Of the 929 families which responded to the questionnaire, 92 families returned only the children's questionnaires but the parents' questionnaires were missing, and 9 families returned incomplete questionnaire. Thus, the families were composed of 828 families (82.8%) which was equal to a response rate of 75 percent and above was accepted as good (Bowing, 1999: 233). The sample size of 828 resulting in 11.5 subjects per item was judged as adequate for the study purpose. Nunnally (1987: 402) recommend 10

subjects per variable as an absolute minimum and 20 as a much more comfortable number.

1. Characteristics of the Family

The demographic data form was to identify in the characteristics of the families as shown in Tables 3-7. The parent informants of the families were mothers (60.1%) and fathers (39.9%), or in the proportion of 3 mothers to 2 fathers. The child informants were daughters (55.4%) and sons (44.6%) or in the proportion of 5 daughters and 4 sons as shown in Table 3.

Table 3. Informant's Status in the Families

	Informant	n	%
Parent	Mother	498	60.1
	Father	330	39.9
	Total	**828**	**100.0**
Child	Daughter	459	55.4
	Son	369	44.6
	Total	**828**	**100.0**

Table 4 shows the average number of family members was 4.6 and the average number of children in the family was 2.3. The ages of the fathers range from 30 to 70 years, with an average age of 43.9 years. Ages of the mothers range from 29 to 60 years, with an average age of 40.9 years. The age of children range from 11 to 16 years, with an average age of 13.5 years.

Table 4. Family Demographic Data

Demographic Data	n	Min	Max	Mean	S.D.
Number of Family Members	828	2	9	4.6	1.3
Number of Children	807	1	8	2.3	0.9
Age of Fathers	679	30	70	43.9	6.2
Age of Mothers	736	29	60	40.9	5.3
Age of Children	828	11	16	13.5	1.9

Table 5. Number and Percentage of Parents Classified by Occupation and Education

Classification	Father		Mother	
	n	%	n	%
Occupation				
Government/State Enterprise Officer	197	25.5	127	15.6
Trader	149	19.3	196	24.0
Laborer	220	28.4	136	16.7
Employee	118	15.2	90	11.0
Housewife	20	2.6	223	27.4
Others	70	9.0	43	5.3
Total	**774**	**100.0**	**815**	**100.0**
Education				
No Education	2	0.3	8	1.0
Primary School	272	35.1	360	44.3
Secondary School	172	22.2	159	19.5
Certificate	98	12.7	101	12.4
Undergraduate	191	24.7	161	19.8
Graduate	32	4.1	20	2.5
Others	7	0.9	4	0.5
Total	**774**	**100.0**	**813**	**100.0**

Table 5, 28.4% of the fathers were laborers and 25.5% were government/state enterprise officer, while 27.4% of the mothers were housewives and 24.0% were traders. As for education, 35.1% of the fathers finished primary school and 24.7% held an undergraduate degree, whereas almost half of the mothers (44.3%) finished primary school

Table 6, illustrates that 22.5% of the families had a family income between 5,001 and 10,000 baht while 20.0% earned above 30,000 baht a month. The figures of family income and level of parents' education suggest that the samples were diverse in terms of socioeconomic status.

As shown in Table 7, half of the families lived in a detached house and almost a quarter (20.4%) lived in a townhouse. In addition, most of the families (60.9%), own their residence, and some of them rented a residence.

Table 6. Number and Percentage of Families Classified by Family Monthly Income

Level of Family Income (Baht)	n	%
Less than 5,000	144	17.6
5,001-10,000	184	22.5
10,001-15,000	131	16.0
15,001-20,000	68	8.3
20,001-25,000	57	7.0
25,001-30,000	70	8.6
More than 30,000	164	20.0
Total	**818**	**100.0**

Table 7. Number and Percentage of Families Classified by Type of Residence

Type of Residence	n	%
Detached House	420	50.7
Townhouse	169	20.4
Room or Rooms	110	13.3
Apartment	75	9.1
Flat	36	4.3
Mansion/Condominium	18	2.2
Total	**828**	**100.0**

2. The Result of Item Analysis

From the item analysis, the 72-item FHPBS had a standardized alpha of 0.96 (n = 828), indicating a highly reliable internal consistency. The inter-item correlation ranged from 0.02-0.83. The item-total correlation were examined and indicated that all items had item-total correlation above 0.30, the usual cutoff (Nunnally & Bernstein, 1994: 501). So, no item was dropped at this point.

Analyzing the distribution of family mean scores did not result in normal distribution for most of the items as well as the total scores that are usually found when using the rating scale. Therefore, each item in the 72-item FHPBS was carefully examined to discard some items that were severely skew and/or were severe kurtosis. There were 2 items that were severe kurtosis (>3) and were discarded from the scale (item 61, item 67). And the result of the first-order of confirmatory factor analysis in each factor found that some items had less item-factor correlation, so the items which had factor loading less than 0.45 were discarded. After already viewing completeness of the content, these items were deleted 6 items--item 2, item 3, item 8, item 13, item16, and item 62-- and now the FHPBS consisted of 64 items to be analyzed in the next step.

3. The Result of Item and Scale Discrimination Power

The analysis of discrimination power of 40-item FHPBS: Version IV by using technique 27% higher and lower groups found that all items and the scale itself could significantly discriminated between higher score group and lower scores group (α <.001) as shown in Table 8.

Table 8. Discrimination Power of Each Item and Total Scale of FHPBS: Version IV

Item	Higher Group (n=221)		Lower Group (n=223)		t	df	p-value
	Mean	S.D.	Mean	S.D.			
1	4.27	.559	3.28	.700	16.609	443	<.001
4	4.08	.828	2.70	.972	16.106	432	<.001
5	4.35	.685	2.94	.859	19.129	442	<.001
6	4.16	.767	2.77	.873	17.800	442	<.001
7	3.53	.852	2.49	.863	12.756	442	<.001
9	3.95	.889	2.68	.966	14.443	442	<.001
11	4.38	.637	3.17	.809	17.42	421	<.001
12	4.63	.568	3.52	.986	14.568	355	<.001
14	4.16	.976	2.63	.205	14.713	425	<.001
15	4.05	.795	2.33	.993	20.134	423	<.001
17	3.75	.851	2.10	.972	19.024	442	<.001
18	3.99	.783	2.31	.949	20.392	428	<.001
19	3.98	.893	2.22	.925	20.321	442	<.001
20	4.61	.490	3.19	.945	19.781	334	<.001
21	4.71	.469	3.40	.943	18.510	326	<.001
22	4.76	.389	3.37	.889	21.447	305	<.001
23	4.48	.588	2.84	.856	23.440	394	<.001
25	4.57	.518	3.16	.992	18.727	335	<.001
27	4.48	.534	3.01	.875	21.465	368	<.001
28	4.65	.508	3.21	.955	19.769	339	<.001
29	4.62	.464	3.13	.830	23.302	349	<.001
30	4.67	.570	3.63	1.070	12.803	339	<.001
39	4.70	.441	3.55	.863	17.697	331	<.001
40	4.70	.430	3.33	.794	22.585	343	<.001
41	4.80	.342	3.54	.858	20.327	291	<.001
42	4.73	.400	3.58	.954	16.487	298	<.001
43	4.85	.305	3.58	.847	21.011	279	<.001
44	4.75	.404	3.33	.888	21.689	311	<.001
45	4.44	.537	2.94	.970	20.170	347	<.001
49	4.68	.470	3.49	.851	18.188	347	<.001
50	4.71	.393	3.38	.734	23.788	340	<.001
53	4.74	.451	4.00	.888	11.049	330	<.001
54	4.60	.570	3.71	.952	12.011	364	<.001
57	4.65	.492	3.67	.892	14.440	346	<.001
65	4.72	.450	4.07	.785	10.717	355	<.001
66	4.56	.516	3.26	.841	19.670	369	<.001
69	4.73	.461	3.62	.902	16.275	331	<.001
70	4.67	.507	3.63	.912	14.967	348	<.001
71	4.79	.353	3.75	.823	17.336	302	<.001
72	4.76	.395	3.74	.838	16.287	317	<.001
FHPB	**179.38**	**6.419**	**128.28**	**13.902**	**49.804**	**313**	**<.001**

4. The Result of Factor Analysis

The 64-item FHPBS was analyzed using the Principal Axis Factoring (PAF) and the Maximum Likelihood extraction in accordance with the reason of the relation of items using the components as a common model. Examination of initial solution

yielded 12 factors with eigenvalue greater than 1. Consideration of the scree plot (Figure 4) indicated 4 factors that should be examined by empirical data. Because the Family Health Promoting Behavior Scale was hypothesized to have 8 components, 4 to 8 factors were examined by using the Oblimin and Promax rotation because all behaviors correlated to (Nunnally, & Bernstein, 1994: 507) and represented the Family Health Promoting Behavior. The factor loading cutoff point was set at 0.40 in order to reduce complex loading and to prevent too many factors loading in developing a new scale. When considering conceptual base, parsimonious and interpretable solution were considered from the Principal Axis Factoring Extraction and Promax with Kaiser Normalization Rotation as 4 factors.

The 4 factors consisted of 40 items and explained a total of 47.1% of variance. The resulting 4 factors included (1) Family Mental Health, (2) Family Physical Health, (3) Family Responsibility, and (4) Family Social Relation.

Factor I consisted of 15 items with factor loading ranging from 0.42-0.87 and accounted for 35.2% of variance with an Eigenvalue of 14.1. An examination of the content of each item as shown in Table 9 revealed that these items cover the items concerning stress control and management, cohesiveness, and spirituality within the family according to components of the 72-item FHPBS. Thus, this factor should be renamed as "Family Mental Health."

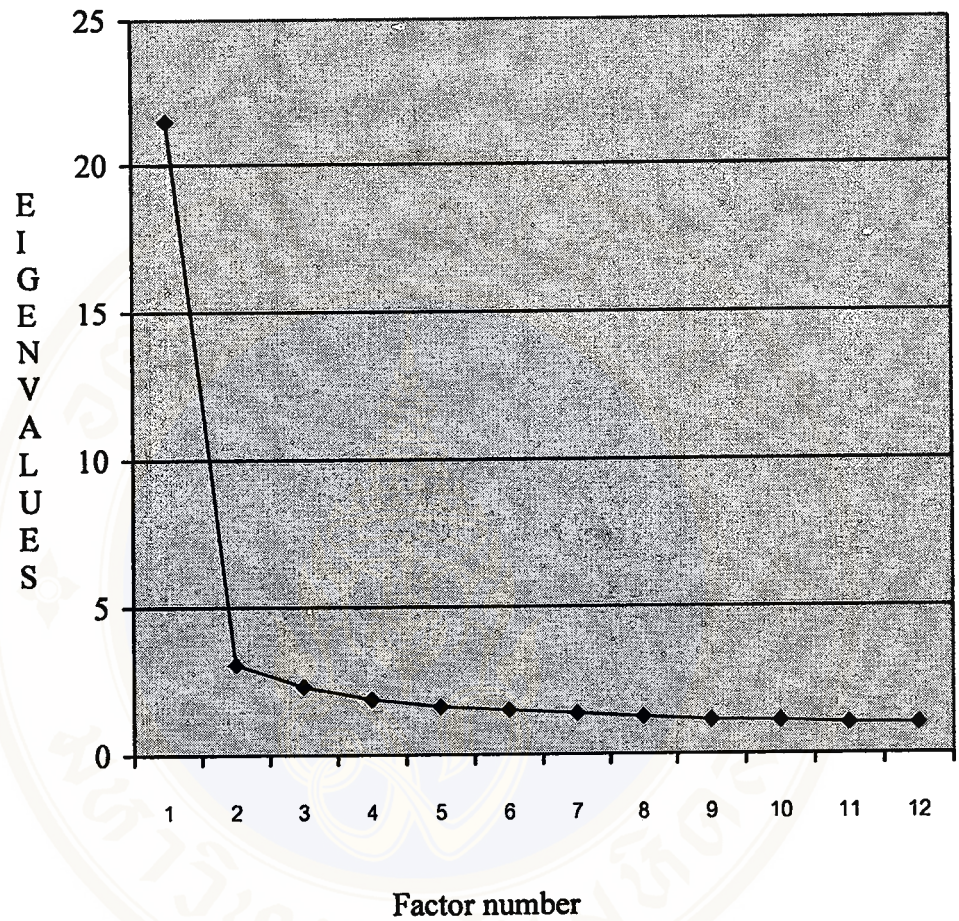

Figure 4. Scree Plot for Principal Axis Factoring

Note Break in size of Eigenvalues occurs between the fourth and fifth factors

Table 9. Items, Factor loading, Communalities, Eigenvalues, and Percent of Variance of Factor 1: Family Mental Health

Items	Factor Loading	Communalities
Factor I : Family Mental Health		
(12)In each day, members take some time to talk together.	.429	.289
(20)My family is enjoyable and good-humored.	.659	.470
(21)The members can talk about everything with each other.	.865	.547
(22)When any member is worried, others are pleased to pay attention to and care for them.	.716	.577
(23)The members always ask for joy and sadness of each other.	.507	.515
(25)When the members are worried about studying or working, they tell others rather than keep it themselves.	.424	.388
(27)When there are disagreements within the family, members usually argue with reasons rather than expression of emotion.	.699	.517
(28)When children disagree with parents, they use a rational discussion rather than blaming others and escaping the problems.	.734	.522
(29)Parents and children are good models for problem solving in the family (such as having humor, using reasons etc.).	.703	.579
(30)When quarreling within the family, the members argue with words but not trying to hurt each other.	.513	.251
(41)The members corporate to keep family relations.	.549	.585
(42)The members are satisfied with the family, and notcompare it with others.	.728	.455
(43)The members always exhibit love and care for each other.	.684	.615
(44)The members work together not boringly but lively.	.694	.587
(45)When the family meets any problem that isn't changeable, the family solve them with love or stick to the Lord Buddha's preaching.	.449	.530
Eigenvalue	14.1	
% of Variance Explained	35.2	

Factor II consisted of 12 items with factor loading ranging from .430 to .737 and accounted for 5.2 % of variance with an eigenvalue of 2.1. An examination of the content of each item, as shown in Table 10, revealed that these items combined "Nutrition" and "Exercise and Recreational Activity." Thus, this factor should be renamed as "Family Physical Health."

Factor III consisted of 10 items with factor loading ranging from .409 to .742 and accounted for 3.8 % of variance with an eigenvalue of 1.5. An examination of the content of each item, as shown in Table 11, revealed that these items integrated most of the "Family Responsibility" items, some of the "Family Spirituality" items, one of the "Environmental Awareness" item. Most of the items geared to caring and providing available resources for family members. Therfore, this factor should be labeled "Family Responsibility".

Factor IV consisted of 3 items with factor loading ranging from .719 to .833 and accounted for 2.9 % of variance with an eigenvalue of 1.1. An examination of the content of each item, as shown in Table 12, revealed that these items focused on social support especially neighborhood and community that close-up with the families in everyday life. As the result this factor should be renamed as "Family Social Relation".

When determining Cronbach's coefficient alpha reliabilities of the four factors, and the total scale ranged from .85 to .95, as shown in Table 13. Consequently, all factors and the FHPBS were satisfied with internal consistency reliability.

Table 10. Items, Factor loading, Communalities, Eigenvalues, and Percent of Variance of Factor II: Family Physical Health

Items	Factor Loading	Communalities
Factor II : Family Physical Health		
(1)The family's daily diet is full of five-nutrient food groups.	.441	.320
(4)The members take at least 6-8 glasses of water daily.	.524	.351
(5)The family provides some fruits to the members everyday.	.680	.486
(6)The members eat some fruits daily.	.657	.455
(7)The members usually avoid high fat diet.	.512	.242
(9)The family always finds health-promoting diet.	.557	.323
(11)When any members get information about healthy foods, they usually share it with other members.	.435	.385
(14)The members take a trip together at least once a month.	.430	.274
(15)On holidays, the members have leisure activities together.	.596	.455
(17)The members exercise vigorously at least three times a week.	.737	.468
(18)The members usually persuade each other to exercise.	.716	.518
(19)The family provides instrumental assistance to support the members' exercise habits.	.718	.513
Eigenvalue	1.5	
% of Variance Explained	5.2	

Table 11. Items, Factor loading, Communalities, Eigenvalues, and Percent of Variance of Factor III: Family Responsibility

Items	Factor Loading	Communalities
Factor III : Family Responsibility		
(39)The members talk each other about long-term goals in the future.	.442	.426
(40)The family cooperates to improve family life better.	.440	.548
(49)When any member has some trouble, he/she will first inform other family members	.409	.470
(50)The members are the model for each other when it comes to health	.469	.572
(65)The family encourages members to use materials effectively and economically.	.506	.251
(66)The family always inquires current information to promote members' health.	.606	.516
(69)When any members go to see the doctor, the family always ask about the illness and treatment.	.501	.412
(70)The family tries to seek the way to gain more health information.	.588	.405
(71)The family usually encourage each member to take care of him/herself.	.742	.558
(72)All members have an awareness that family members' health is an important task.	.719	.520
Eigenvalue	1.5	
% of Variance Explained	3.8	

Table 12. Items, Factor loading, Communalities, Eigenvalues, and Percent of Variance of Factor IV: Family Social Relation

Items	Factor Loading	Communalities
Factor IV : Family Social Relation		
(53)The family has a good relationship with the neighbors.	.777	.626
(54)The family and neighbors are familiar with each other enough to ask for help, if necessary.	.833	.706
(57)In the community, people are familiar with and ready to help each other, if there is an emergency.	.719	.603
Eigenvalue	1.1	
% of Variance Explained	2.9	

Table 13. Cronbach's Coefficient Alpha Internal Consistency Reliabilities for the Four Factors and FHPBS: Version IV

Factor	Number of Items	Standardized Alpha
I Family Mental Health	15	.88
II Family Physical Health	12	.93
III Family Responsibility	10	.89
IV Family Social Relation	3	.85
FHPBS	40	.95

5. The Result of Multitrait Multimethod Matrix

The Multitrait Multimethod Matrix is a method used to examine construct validity. Table 14 shows the correlation of the parent's scores and child's scores in each of four factors whose validity diagonal values (bolded number) are the highest value in the same row and column of the monotrait-heteromethod. This result indicates that the answers of the parents and children in the same factors were more related than those in the different factors.

Table 14. Construct Validity by Multitrait Multimethod Matrix

	PFMH	PFPH	PFRE	PFSR	CFMH	CFPH	CFRE	CFSR
PFMH	1.000							
PFPH	.599	1.000						
PFRE	.768	.565	1.000					
PFSR	.517	.576	.492	1.000				
CFMH	**.678**	.450	.509	.334	1.000			
CFPH	.469	**.732**	.435	.418	.594	1.000		
CFRE	.552	.436	**.643**	.339	.735	.569	1.000	
CFSR	.278	.220	.266	**.551**	.398	.290	.409	1.000

Note: PFMH = Parent Family Mental Health, PFPH = Parent Family Physical Health, PFRE = Parent Family Responsibility, PFSR = Parent Family Social Relation, CFMH = Child Family Mental Health, CFPH = Child Family Physical Health, CFRE = Child Family Responsibility, CFSR = Child Family Social Relation.

The result of the Multitrait-Multimethod Matrix was examined by Campbell and Fiske's four criteria of correlation coefficient for construct validity through the assessment of convergent and discriminant validity of measures (Sullivan & Feldman, 1979: 22). The first criterion is that the validity coefficient should be significantly different from zero and sufficiently large to encourage further examination of validity. In Table 14, all of validity coefficient are between .55 and .73 which are significant (α=.01). Therefore, the convergent validity is already accepted. The second criterion is that each validity coefficient should be larger than all of the different-trait, different-method correlations which are in the same row or column as the validity coefficient, so this criterion is accepted. The third criterion is that each validity coefficient should be larger than the different-trait, same-method correlations, these comparisons are also in Table 14, fully 10 of the 12 comparisons are met except for 2 comparisons. This result, then, shows the correlation of family mental health and family responsibility. The last criterion is that the same pattern of correlations should be evidenced within each of the triangles, and in Table 14 all triangles have the pattern of decreasing magnitude of correlation.

6. The Result of Second Order Confirmatory Factor Analysis

To further examine the nature of the relationships among the four factors, the matrix of covariance among the four factors was entered to confirmatory factor analysis by using the LISREL software program to test the measurement model.

The Family Health Promoting Behavior Scale as a hypothesized model could be explained by four first-order factors (Family Mental Health, Family Physical Health, Family Responsibility, and Family Social Relation), and one second-order factor (Family Health Promoting Behavior).

The result of assessing measures of absolute fit are as follows (Table 15):

Likelihood-Ratio Chi-Square Statistics. The low chi-square values, which result in significance levels greater than .05 or .01, indicate that the actual and predicted input matrices are not statistically different. The result of chi-square in this model was 2171.05 with 723 degrees of freedom and p-value .000. Although this value indicated unacceptable fit, the use of chi-square is appropriate for sample sizes between 100 and 200, with the significant test becoming less reliable with sample size outside this range (Anderson, et al, 1998: 655). Wheaton (1987: 127) has proposed a χ^2/df ratio of 5 or less as a rough indication of reasonable fit for these models. Thus, the sample size of 828 and χ^2/df ratio of 3 may be considered a reasonable fit in this measure.

Goodness-of-Fit Index (GFI). The goodness-of-fit index range from 0 (poor fit) to 1.0 (perfect fit). It represents the overall degree of fit (the squared residuals from prediction compared with the actual data), but it is not adjusted for the degree of freedom. Higher values indicate better fit, but no absolute threshold levels for acceptability have been established (Anderson, et al, 1998: 655). Therefore, the GFI of .88 of this model should be accepted.

Adjusted Goodness-of-Fit Index (AGFI). The adjusted goodness-of-fit index is an extension of the GFI, adjusted by the ratio of degree of freedom for the proposed model to the degree of freedom for the null model. A recommended acceptance level is a value greater than or equal to .90 (Anderson, et al, 1998: 657). As Cole (1987: 586) has stated that values greater than .9 for GFI and .8 for AGFI, respectively, usually indicate good fit. The value .87 for AGFI in this model should be also accepted.

Table 15. Selected LISREL Output: Goodness-of-Fit Statistics

Goodness of Fit Statistics	Value
Normal Theory Weighted Least Squares Chi-Square	2171.05 (P = 0.0)
Estimated Non-centrality Parameter (NCP)	1448.05
Root Mean Square Error of Approximation (RMSEA)	0.049
Expected Cross-Validation Index (ECVI)	2.86
Standardized Root Mean Square Residual	0.043
Goodness of Fit Index (GFI)	0.88
Adjusted Goodness of-Fit Index (AGFI)	0.87
Parsimony Goodness of Fit Index (PGFI)	0.78
Comparative Fit Index (CFI)	0.92

Root Mean Square Error of Approximation (RMSEA). This measure attempts to correct the tendency of the chi-square statistics to reject any specified model with a sufficiently large sample. It is the discrepancy per degree of freedom. Values ranging from .05 to .08 are deemed acceptable (Anderson, et al, 1998: 656). As a consequence, the value of .049 for RMSEA in this model should also be accepted.

Based on all of the above measures of absolute fit, this measurement model is considered acceptable and with respective fit.

According to the model, it has been found that each factor could predict Family Health Promoting Behaviors: Family Mental Health, .94; Family Physical Health, .76; Family Responsibility, .95; and Family Social Relation, .49 as shown in Figure 5.

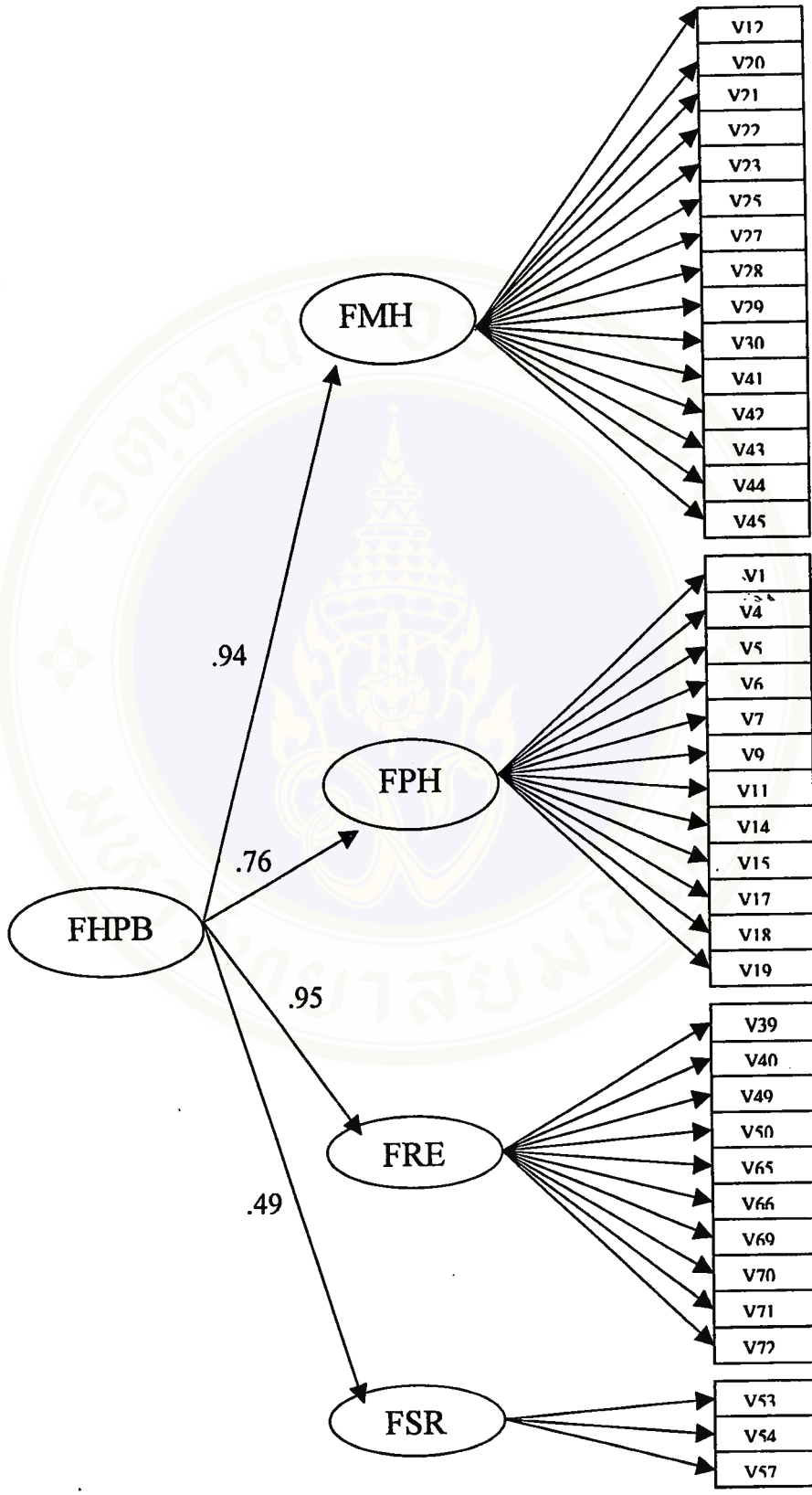

Figure 5. Second Order Factor Analysis of Family Health Promoting Behavior

In summary, four factors consisted of Family Mental Health with 15 items, Family Physical Health with 12 items, Family Responsibility with 10 items, and Family Social Relation with 3 items, all reflect Family Health Promoting Behavior. The detail of completely standardized solution of each factor is shown in Appendix 9.

7. Standard Score and the Level of Family Health Promoting Behavior

Since an important benefit of the scale is the application of the scale, the scores of FHPBS should be classified into the level of family health promoting behaviors. There are two approaches of score that could be used to in such classification—factor-based scales and calculating factor scores. Along with many authors, factor scores were believed to be of limited usefulness, of greater potential is the application of factor analysi for the purpose of constructing factor-based scales (Pedhazur & Schmelkin, 1991: 625). Scores on factor-based scales are obtained most often by summing the scores on the items comprising them. Regardless of their factor loadins, therefore, items included in a given scale are, in effect, assigned a weight of 1, whereas those not included in the scale are assigned a weight of 0. This practice seems justified, as reviews of the literature indicate that differential weight, particularly when dealing with items (indicators), is not worth the trouble (Pedhazur & Schmelkin, 1991: 626). The factor-based scales are the raw score of each factor and total scale. The results of both raw score and factor score were not different in level of FHPB and correlation of both scores was .978. When the distribution of raw scores were presented in histogram, it showed negative skewness. So, before classification of the scores into level of FHPB, they should be transformed into normal distribution.

The scores resulting from the Family Health Promoting Behavior Scale of 828 families could be transformed into normalized T-score. The normalized T-score

showed normal distribution of FHPB and could be classified into three groups: good, fair, and poor family health promoting behavior by using range of scores and considering the acceptable criterion. The raw score of good level of the FHPB is 176.5 and above which it is more than 85% of total score, as acceptable criterion. The raw score of fair level of the FHPB is 134.5-176 which it is more than 65% of total score, while the poor level is 76.5-134 of raw score and be less than 65% of total score. The result of the level of the family health promoting behavior classified by factors and overall family health promoting behavior are shown in Table 16. The 828 families were classified as having good family health promoting behavior (17%), fair family health promoting behavior (68%), and poor family health promoting behavior (15%). The criterion of raw score and T-score in each factor and total scale is shown in the manual of the FHPBS (Appendix H).

Table 16. Number and Percentage of Families Classified by Level of the Family Health Promoting Behavior

Factor	Level of FHPB			Total
	Poor	Fair	Good	
Family Mental Health	118 (14.3%)	568 (68.6%)	142 (17.1%)	828 (100%)
Family Physical Health	143 (17.3%)	523 (63.2%)	162 (19.5%)	828 (100%)
Family Responsibility	165 (19.9%)	487 (58.8%)	176 (21.3%)	828 (100%)
Family social relation	194 (23.4%)	414 (50.0%)	220 (26.6%)	828 (100%)
FHPB	124 (15.0%)	564 (68.1%)	140 (16.9%)	828 (100%)

8. The Correlation of FHPB Scores and Perception of Family Health Status

The parent's FHPB scores and parent's perception of family health status are significantly correlated as follows: for taking care of each other (r =.536), for having family relationship (r = .515), for having mental health (r = .455), for having family health status as a whole (r = .390), and for having physical health (r = .338) as shown in Table 17.

The child's FHPB scores and child's perception of family health status have significantly correlated as follows: for taking care of each other (r =.535), for having family relationship (r = .540), for having mental health (r = .475), for having family health status as a whole (r = .408), and for having physical health (r = .324) as shown in Table 17.

Table 17. Correlation between FHPB Scores and Perception of Family Health Status

Dimensions of Family Health Status	Parent's FHPB Scores	Child's FHPB Scores
Physical Health	.338**	.324**
Mental Health	.455**	.475**
Family Relationship	.515**	.540**
Taking care of each other	.536**	.535**
Family Health Status as a Whole	.390**	.408**

** Correlation is significant at the 0.01 level (1 tailed)

The result of the study indicated that the Family Health Promoting Behavior consisted of four components: family mental health, family physical health, family responsibility, and family social relation with 40-item questionnaire. The parents'

scores and children's scores moderately correlated each other both each component and total scale based on MTMM. But based on paired t-test in each component and total scores of FHPBS, the parents' scores were significantly different from the children' scores exception in family social relation. The moderate correlation of FHPB scores and parents' perception, and the moderate correlation of FHPB scores and children's perception of family health status supported that the components of FHPBS expressed taking care of each other, family responsibility, mental health, and physical health. The FHPBS can be classified in three level of FHPB: good, fair, and poor in order to screen health promoting behavior of the family.

CHAPTER V

DISCUSSION

This chapter describes the discussion of the findings of the study include the components of the Family Health Promoting Behavior (FHPB), the structure and pattern of the FHPBS, the result of second order factor analysis by using LISREL, the result of Multitrait Multimethod Matrix, and the correlation of the FHPB scores and the perception of family health status.

The Components of the Family Health Promoting Behavior (FHPB)

The objective of this study was to develop the Family Health Promoting Behavior Scale (FHPBS) that included to identify the components of the family health promoting behavior (FHPB) and to examine the psychometric analysis of the scale. The initial step of scale development, the components of the FHPB were identified in eight components based on the concept of health promotion, family assessment model, and the application of knowledge from the studies of health promotion. The knowledge base for understanding family health promotion is still in the formative stage (Loveland-Cherry In Bomar, 1996: 27). Although the importance of family health promotion has been emphasized, little documentation of intervention strategies or their effectiveness is evident. So the components of the FHPB were like guideline or hypothesized components to develop this scale that is a new scale.

The results of in-depth interviews found that it was difficult elicit to all components of family health promoting behavior from families with open-ended

questions, the in-depth interview was conducted with a semi-structured questionnaire by starting with open-ended questions. It was found that eleven families usually revealed only two or three health promoting behaviors i.e. eating food, exercising, and having family relationship. Some families mentioned a relationship with others (neighbors, close friend, and relatives), and environmental awareness. Although the 15-family interviews gave the information according to 8 components of the FHPB but it was more useful for generating item pool than for identifying the components of FHPB. Seven experts who confirmed the content validity, suggested an adjustment to some items and a maintenance of the number of the components.

From the Pre-testing, some items were discarded when the inter-item correlation was less than 0.2. When testing discrimination power in each item and the total scale, all items passed this criterion. The test of construct validity by factor analysis identified about 5-6 components of FHPBS with some overlaps, and one component (sleep) disappeared. Interestingly, the negative statements such as adding fish source into food, having moody in daily life were not grouped into any component and were not found to fit empirically with the health promoting behaviors. This finding was similar to the development of the Health-Promoting Life Style Profile (HPLP) was found that health-damaging behaviors had to be deleted because health promotion and prevention are different phenomena (Pender, 1987: 144). Besides, the statements that indicated the amount of food such as the amount of protein consumption per day were suggested to delete with item-total correlation under 0.2. This finding may be caused on a difficult answer for the informants. The health promoting behavior assessment in the family level may be available more the overall

aspects of health promoting behaviors than the specific details as well as in the individual level.

Although the result of factor analysis suggested 5-6 components of FHPB, but the scale still were kept the 8 components and some items were revised to better fit in this step as the FHPBS with 8 components had already been approved by the experts and 305 families (ratio of subject : item = 3.6 : 1) of pre-testing and thus may insufficiently judge the components of the FHPBS.

As for the data analysis, the two informant members were composed of one parent (father or mother) and an adolescent child (daughter or son). They came from any place in Bangkok and were diverse in socioeconomic status when considering parents' education, parents' occupation, and family income. This suggested that the difference in socioeconomic status of the families that may influence family health.

Although it was hypothesized that family health promoting behavior was composed of 8 separate but related components, only 4 factors were supported by the factor analysis and reliability estimates. Each of the four factors was conceptually equivalent to one of the hypothesized components or a combination of two or three of them. The two hypothesized components, sleep and environmental awareness, does not appear as a factor on the FHPB because no item of sleep, and only one item of environmental awareness was retained for factor analysis. This finding was similar to the study of Walker, et al (1987) that found sleep and environmental control in 10-component of Lifestyle and Health Habits Assessment (LHHA) did not appear in development of the Health Promoting Lifestyle Profile (HPLP); and the suggested areas for assessment of family health-related lifestyle that consists of 6 components but not sleep and environmental awareness (Pender, 1996: 138). The finding of pre-

testing also supported that sleep was the disappeared component. This finding suggested that sleep and environmental awareness may be the important aspects of family health but may be not the strong components of the family health promoting behavior.

The four factors of family health promoting behavior are noticeably similar, though not strictly parallel, to the Travis's four components of wellness lifestyle (self-responsibility, nutrition, physical awareness, and stress management) are rather clearly parallel to three factors identified in the current study. The four factors of FHPB are parallel to the 6 components of Health Promoting Lifestyle for family (nutrition, physical activity, stress control and management, health responsibility, family resilience and resources, and family support) (Pender, 1996: 138), but it is different in grouping of factors under empirical data of this sample.

The Structure and Pattern of the Family Health Promoting Behavior Scale

The four factors of FHPB are composed of family mental health, family physical health, family responsibility, and family social relation.

Factor I : Family Mental Health consisted of 15 items with factor loading from .424 to .865. It combined items from three hypothesized components of the 72-item FHPBS. It encompassed nine items from stress control and management, five items from family spirituality, and one item from exercise and recreational activity. This factor is labeled "Family Mental Health" based on the reason that the majority of items (n=9) are drawn from 'stress control and management,' which were items concerning adjustment, adaptation, problem-solving of family both in normal and

critical events; some items (n=5) are drawn from 'family spirituality' which concerned love, cohesion, bonding, and unity of the family; and one item of 'exercise and recreational activity' indicated an activity of shared time of family in everyday life. Therefore, all items in this factor focused on the actions that family members take within the family to maintain balance and return to equilibrium or to attain good mental health. All families experience stress, some of which is increasing ability for coping, however; when stressors exert unusual efforts on the family system, the family must cope to return to equilibrium. Stressors may be internal to the family system or from external sources (Mealey, Richardson, & Dimico, In Bomar, 1996: 228). Families and individuals within families already have a repertoire of coping behaviors that they use when stress arises (Smith & Meurer, 2000: 272). This factor is supported by the study of Astedt-Kurki, et al.(1999: 708) which found that families have different ways of coping with different problems in their everyday life. These coping strategies serve to maintain and promote family health: they are important tools in the everyday effort to overcome problems and difficult situations, an important resource in the family's everyday life. They also found that the experience of health in families derives from a spiritual unity, a sense of 'us' or 'our family' and spending time to do as many as things together as possible provides an opportunity for family members to cope with their problems (Astedt-Kurki, et al., 1999: 707). A basic goal for mental health promotion is to assist healthy, functioning families to maintain and enhance the health of both the family and family members (Hanson & Boyd, 1996: 313).

Factor II: Family Physical Health consisted of 12 items with factor loading ranging from .430 to .737. It combined two hypothesized components of the 72-item FHPBS. It encompassed 7 items of nutrition, and 5 items of exercise and recreational

activity. All items concerned eat behavior of the family which was calorie consumption and exercise and recreational activity was calorie expenditure that both of them correlated in nature. The regular exercise and a balanced diet were an important and easy way of promoting one's health (Astedt-Kurki, et al., 1999: 707). When some people eat too much, they would have leisure-time exercise or increased lifestyle exercise to compensate for calorie consumption. Many people try to keep balance of two behaviors because they perceive benefits of nutrition and exercise, yet the success of existing behaviors depends on self-control. The correlation of component 1 (nutrition) and component 2 (exercise and recreational activity) was .643 with the answer of parent informants, and .599 with the answer of child informants. The correlation of both components was moderate correlation and more correlated than others. This suggested that nutritional behaviors positively correlated with exercise and recreational activity.

Besides, factor analysis of both pre-testing and data collection steps resulted in discard of items concerning consuming vegetables daily, consuming a variety of meats and vegetables and warning to avoid consuming sweet and salty foods. These items had low correlation with others in the same factor, so families may have these practices in everyday life but they may not necessarily accompany with other behaviors.

Factor III: Family Responsibility consisted of 10 items with factor loading ranging from .409 to .742. It combined items from various components of the 72-item FHPBS. It encompassed five items of family responsibility, three items of family spirituality, one item of environmental awareness and one item of family support. All items reflected family roles and tasks that included looking after family members'

health, both seeking health information and helping when they are ill, raising family member's awareness of social environment, planning to improve family life, and having family members as a good model for each other on how to enhance health. These family behaviors could be called "family responsibility." The items concerning purpose of life in the future are one of tasks that the families undertake to maintain the unity of family. The health care function of Friedman's family health assessment model also includes home environment, and health responsibility of family members (Friedman, 1992: 405-406). Astedt-Kurki, et al. (1999: 707) found that a quiet, safe living environment has a beneficial impact on the family's sense of well-being. And families need a strong sense of accountability to create a home environment where health behaviors are promoted (Friedman, 1992: 30). The only one item of the environmental awareness, concerning to encourage family members to use the earth resources wisely, was an family responsibility for larger society. .

Factor IV: Family Social Relation consisted of 3 items with factor loading ranging from .719 to .833. It came from some items of family support of the 72-item FHPBS. Based on a review of studies of social support, it is suggested that relationship and communication within families is important and social networking should be composed of relatives, close friends or peers, neighbors, and groups in the community to support information, material, aid, trust etc. However, when family is regarded as a client, the relationship and communication within families should be a foundation for family coping strategy in order to maintain family unity and change family to achieve equilibrium. So, family support should be external support that really influences families. This study found that most of the external support came from neighbors and community, and this was correlated with in-depth interviews when

many families said they usually solved their problems by themselves rather than asking for help from the relatives or family of origin. Therefore, these items about the support from relatives and family of origin were omitted from the FHPBS because of the fact they lived far from each other and in present society every family tries to work hard, so they have less time to contact their relatives and family of origin. Nowadays, people meet their relatives during important events i.e. wedding day, the Songkran festival day, the New Year's day, religious ceremonies, a funeral ceremony. The relatives and family of origin are good sources of family support in critical events but not in everyday life. The relationship between families and their neighbors and people in the community is important if the families have friendly neighbors, they would feel safe and secured. Good neighbors and community are more important surrounding than others. Good neighbors are like a good fence of the home, especially in the Bangkok Metropolis.

This factor is a small factor consisting three items and it predicted the FHPB with .49. The items of this factor should be reexamined to increase the prediction to the FHPB.

The test of second-order confirmatory factor analysis by LISREL program was used to examine the measurement model, FHPB. The result indicated that the FHPB model could be accepted as fairly well-fitting model underlying goodness of fit measures (Byrne, 1998: 242). The FHPB model was confirmed with the four components in second order factor analysis. This result supported the four components yielding the Family Health Promoting Behavior.

The Results of an Analysis of Multitrait Multimethod Matrix

The results of an analysis of Multitrait Multimethod Matrix revealed that FHPBS have acceptable convergence validity and closely enough of discrimination validity that confirmed construct validity of FHPBS. It showed the parent's FHPB scores and child's FHPB scores were moderately correlated, both for each factor and for total scale ranging from .551 to .732 which was acceptable. This finding showed that perception of parents and children were both shared perceptions and unique individual perceptions. This result indicated that the parent's answer and the child's answer correlated in the same trait more than the different trait and reflected the quality of the scale. But the exception in this study, the correlation between parent's family responsibility and parent's family mental health was higher than the correlation of parent and child in family mental health, and the correlation between child's family responsibility and child's family mental health was higher than correlation of parent and child in family responsibility. These results indicated that family responsibility and family mental health correlated strongly each other. In the perception of the parents and children, they rated the family mental health and the family responsibility in the positively relation. The families who had good family mental health, they would be also good in famiiy responsibility. Interestingly, the items of family mental health and family responsibility should be reconsidered in some similar items. When parent's scores and child's scores were compared with each factor and total scale by paired t-test, it was indicated the scores of two groups were significantly different ($\alpha < .05$) except 'family social relation.' This finding suggested that the family data should be collected from more than one family member. When the group of father' FHPB scores were compared with the group of mother' s FHPB scores by using

independent t-test, there was no significant difference (α>.05). When the group of daughter's FHPB scores were compared with the group of son's FHPB scores, there was also no significant difference (α>.05). This finding suggested that the key informant members may be an adult who is either father or mother and a child who is daughter or son, if complete family data needs to be obtained.

The four components of family health promoting behavior indicated that it focus on psychosocial aspects rather than physical aspect. The family mental health is the strongest component of this scale, the family responsibility related to family mental health so as to the result of MTMM, and the family social relation is the relationship between the families and external support.

The Correlation of FHPB Scores and the Perception of Family Health Status

The parent's FHPB scores and the parent's perception of family health status have correlated for taking care of each other, having family relationship, having mental health, having family health status as a whole, and having physical health, when sorting by size of the correlation. While The child's FHPB scores and the child's perception of family health status have correlated for having family relationship, taking care of each other, having mental health, having family health status as a whole, and having physical health, when sorting by size of the correlation. This finding supports that the family health promoting behavior scale measures family relationship, taking care within family, family mental health, and family physical health. The families' answer of FHPBS relate their subjective evaluations of family health status.

Summary, the scale development showed four components of the FHPBS which consisted of six of eight hypothesized components. The family mental health combined stress control and management, and family spirituality. The family physical health combined nutrition, and exercise and recreational activity. The family responsibility showed oneself and added some items of family spirituality. The family social relation showed some items concerning relationship with neighbors of family support. Although the two components: sleep, and environmental awareness were not identified as factor of FHPBS, but they should still be collected when the health promotion education is carried out. Besides, the decision of level of FHPB should be viewed in the scores of all factors rather than total scale scores because all factors yielded the family health promoting behavior. The family who is good FHPB should have fair and good level of all factors of FHPB.

CHAPTER VI

CONCLUSION

This chapter consists of the conclusion of steps of developing the Family Health promoting Behavior Scale (FHPBS), the structure and pattern of Family Health promoting Behavior Scale, recommendation for implications and applications, and recommendation for further studies.

Conclusion

This study purposed to develop the reliable and validated Family Health promoting Behavior Scale. In the process of the study showed steps of scale development as below.

First, the Family Health Promoting Behavior Scale (FHPBS) was initially developed from reviewing literatures and studies related to health promotion, family assessment model, and existing family tools that guided 8 components of Family Health Promoting Behavior: Nutrition, Exercise and Recreational Activity, Stress Control and Management, Sleep, Family Spirituality, Family support, Environmental Awareness, and Family Responsibility.

Second, the in-depth interviews were undertaken in order to search components of FHPB. The result of In-depth interviews supported 8 components of the Family Health Promoting Behavior and the statement of interviews guided for pooling items of the scale. The FHPBS: Version I consisted of 85 items in 8 components.

Third, the FHPBS was validated the content validity by seven experts that the experts supported 8 components of FHPBS with 0.95 of content validity index(CVI) and suggested that some items should be added, some should be discarded, and some should be reworded and resulted in 85 items for FHPBS: Version II .

Fourth, the FHPBS: Version II was tested with 305 families. After analyzing pre-testing data with item analysis, exploratory factor analysis, reliability, and discrimination power, some items were discarded and 5-6 factors were suggested by statistically but the components of the FHPBS still remained by conceptually. So the FHPBS: Version III consisted of 8 components and 72 items.

Fifth, the FHPBS: version III was tested in 828 families. The data was analyzed with item analysis, exploratory factor analysis, Multitrait Multimethod Matrix, second order confirmatory factor analysis. The result of analysis suggested the four factors of family health promoting behavior. The FHPBS: Version IV, the last version, consists of 40 items with four factors: (1) Family Mental Health, (2) Family Physical Health, (3) Family Responsibility, and (4) Family Social Relation. The number of items in four factors are 15 items in Family Mental Health, 12 items in Family Physical Health, 10 items in Family Responsibility, and 3 items in Family Social Relation. The 40-item Family Health Promoting Behavior Scale has 0.95 reliability and could predict 47.1% of family health promoting behavior.

When comparing the 40-item FHPBS with 72-item FHPBS found that 6 components of 72- item FHPBS still remain but are combined and renamed into 4 factors and some items were discarded. And two components of 72-item FHPBS, sleep, and environmental awareness disappeared. Therefore, the results imply that eight hypothesized health promoting behavior according to in-depth interviews and

supported content validity by the experts were important components of the family health promoting behavior scale, but they should be grouped into four factors based on empirical data and statistical analyses.

The FHPBS reflected psychosocial aspects of family unit rather than physical aspect because of three factor of the scale showed family relationship, communication within family and with external support.

Recommendation for Implications and Applications

The implications and applications of the study focus on utilizing the Family Health Promoting Behavior Scale. There are recommendations for implications and applications as follows:

1. The Family Health Promoting Behavior Scale can be conducted with Thai families consisting at least one parent and an adolescent child and the family living in Bangkok.

2. Underlying the concept of family is a unit of analysis and a family is more than sum of individuals. This instrument should be taken into consideration for assessment of family health promoting behavior with at least two family members (one parent and a child). Each member identified health promoting behavior of his/her family based on his/her perception. The individual score consists of common perception of his/her family and unique perception. So, the answer of family members should be computed in family mean scores before analyzing in further step.

3. The Family Health Promoting Behavior Scale can apply to other family types. This scale could be conducted with families in other developmental stages such as families without children, families with pre-school children, families with school

children etc. based on the same components of family health behavior but it may be essential to adjust some items for specifying with those family types. For example, families with late adolescent children, all family members may not take a trip at least once a month.

4. This study is a starting point of the development of family health promotion model. To develop a family health promotion model, this instrument can be used to assess family health promoting behavior and the scale encourage the researcher to search the knowledge to support health promotion plan in the family level.

Recommendation for Further Studies

Due to the diversity of family forms, this study was limited in terms of generalized population. This scale is appropriate with the families that consist of at least one parent and one adolescent child living in Bangkok. Owing to the fact that the sample of this study was randomly selected from student's families through the Department of General Education, Ministry of Education, they may be not representative for all families living in Bangkok. Most of families came from middle to low class of socioeconomic status, it may be the different result if the scale was used with high class families

From the study, there are some suggestions for further study as follows:

1. From the second order factor analysis, the components of family social relation have low predicted correlation (.49) and there are only three items in this factor that showed some problems in the content. Further studies should take this point into thorough consideration with adding some items concerning this component.

2. The Family Health Promoting Behavior Scale should be conducted in the same type of families with this study in order to confirm the components of the family health promoting behavior.

3. Since the socioeconomic influence health and family health, so to take the heterogeneity sample, the socioeconomic status should be classified before sampling.

4. In general, the family forms are diverse such as nuclear family, single-parent family, extended family, family in the developmental stages of life cycle, it is an important obstacle of scale development and it is difficult to collect complete family data. Owing to it is difficult to develop the generalized tool for all types of family, the family health promoting scale should be conducted with different types of families (i.e. families in different area, families in rural area, family in a variety of developmental stages) to help perfect the Family Health Promoting Behavior Scale.

5. Based on this study, the four-factor with 40-item of the Family Health Promoting Behavior Scale could only explained 47.1% of FHPB, this finding may be caused the FHPBS was especially shaped to health promoting behavior. So health protective and preventive behaviors may be essentially added to increase the explanation of FHPB and they should be favorable statements.

6. In the step of data collection, the questionnaire is good for taking independent answer and low cost, but the interviewing and observation at home may be better to study real family health behaviors.

7. To test the potential applicable of the family health promoting behavior scale, the families may be assessed family health promoting behavior follow in time series or cohort study. The cross-sectional studies may be used to compare the application with different types of family.

The family health promoting behavior scale will be a good family assessment tool if it is repeatedly conducted in many times. Then, the good family health promoting scale will be a tool for developing a good family health promotion model.

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APPENDIX A

DISTRICT AND SCHOOL IN THE POPULATION

The Districts of Bangkok Metropolitan and Secondary School under the Department of General Education, Ministry of Education

The number of districts and schools in 3 areas of Bangkok Metropolitan:

1. **Inner City** is composed of 22 districts and 53 schools. They are

1.1 Phra Nakhon district (7 schools)

1.2 Pom Prap Sattru Phai district (3 schools)

1.3 Samphanthawong district (1 school)

1.4 Pathum Wan district (0)

1.5 Rachathewi district (3 schools)

1.6 Bang Rak district (2 schools)

1.7 Dusit district (3 schools)

1.8 Phaya Thai district (1 school)

1.9 Sathorn district (3 schools)

1.10 Yan Nawa district (2 schools)

1.11 Bang Khao Laem district (0)

1.12 Bang Sue district (3 schools)

1.13 Chatuchak district (2 schools)

1.14 Huai Khwang district (2 schools)

1.15 Din Daeng district (2 schools)

1.16 Khlong Toei district (2 schools)

1.17 Vadhana district (2 schools)

1.18 Bang Phlat district (2 schools)

1.19 Bangkok Noi district (6 schools)

1.20 Bangkok Yai district (3 schools)

1.21 Khlong San district (0 school)

1.22 Thon Buri district (4 schools)

2. **Urban Fringe** is composed of 22 districts and 46 schools. They are

2.1 Don Mueang district (2 schools)

2.2 Laksi district (1 school)

2.3 Bang Khen district (1 school)

2.4 Sai Mai district (1 school)

2.5 Lat Phrao district (2 schools)

2.6 Bang Kapi district (3 schools)

2.7 Bung Kum district (3 schools)

2.8 Wang Thonglang district (2 schools)

2.9 Khan Na Yao district (2 schools)

2.10 Saphan Sung district (3 schools)

2.11 Phra Khanong district (2 schools)

2.12 Bang Na district (1 school)

2.13 Prawet district (3 schools)

2.14 Suan Luang district (1 school)

2.15 Taling Chan district (5 schools)

2.16 Thawi Watthana district (2 schools)

2.17 Phasi Charoen district (5 schools)

2.18 Bang Khae district (2 schools)

2.19 Nong Khaem district (1 school)

2.20 Rat Burana district (2 schools)

2.21 Thung Khru district (2 schools)

2.22 Chom Thong district (3 schools)

3. **Suburb** is composed of 6 districts and 15 schools. They are

3.1 Min Buri district (2 schools)

3.2 Khong Sam Wa district (2 schools)

3.3 Nong Chok district (3 schools)

3.4 Lat Krabang district (3 schools)

3.5 Bang Bon district (2 schools)

3.6 Bang Khun Thian district (3 schools).

APPENDIX B

LIST OF EXPERTS

LIST OF EXPERTS

There are seven experts who have validated the content of the Health Promoting Behavior Scale.

1. Professor Dr. Somchit Hanuchareonkul
   Department of Nursing, Faculty of Medicine, Ramathibodi Hospital, Mahidol University

2. Professor Dr. Dusanee Suttapreyasri
   Department of Nutrition, Faculty of Public Health, Mahidol University

3. Associate Professor Dr. Prapapen Suwan
   Department of Health Education and Behavioral sciences, Faculty of Public Health, Mahidol University

4. Associate Professor Dr. Jariyawat Kompayak
   Faculty of Nursing, Hua Chiew Charoemprakiat University

5. Associate Professor Dr. Sirikul Isaranuruk
   Department of Family Health, Faculty of Public Health, Mahidol University

6. Assistant Professor Dr. Prakin Suchaxaya
   Department of Pediatric Nursing, Faculty of Nursing, Chiang Mai University

7. Assistant Professor Dr. Warinee Iemsawasdikul
   School of Health Science, Sukhothai Thammathirat Open University

APPENDIX C

A LETTER PERMISSION OF DATA COLLECTION

Kanogwan Suwanpatikorn

Appendix / 138

ที่ ศธ 0806/ 8164

กรมสามัญศึกษา
กระทรวงศึกษาธิการ
กทม. 10300

9 มิถุนายน 2543

เรื่อง ขอความร่วมมือในการวิจัย

เรียน

ด้วย นางสาวกนกวรรณ สุวรรณปฏิกรณ์ นักศึกษาบัณฑิตวิทยาลัย มหาวิทยาลัยมหิดล หลักสูตรปริญญาเอก สาขาวิชาเอกการพยาบาลสาธารณสุข คณะสาธารณสุขศาสตร์ กำลังดำเนินการวิจัย เพื่อเสนอเป็นวิทยานิพนธ์ เรื่อง "มาตรวัดพฤติกรรมส่งเสริมสุขภาพของครอบครัว : การพัฒนาและการวิเคราะห์" ในการนี้ ผู้วิจัยมีความประสงค์ขอนำเครื่องมือวิจัยเก็บรวบรวมข้อมูลกับนักเรียนชั้นมัธยมศึกษาชั้นปีที่ 2 และครอบครัวของนักเรียนในโรงเรียนนี้

กรมสามัญศึกษาได้พิจารณาแล้ว เห็นว่าการวิจัยดังกล่าวจะเป็นประโยชน์ต่อการเรียนการสอนในโรงเรียนมัธยมศึกษา และเป็นประโยชน์ต่อวงการศึกษาเป็นส่วนรวม สมควรให้การสนับสนุน

จึงเรียนมาเพื่อพิจารณาให้ความอนุเคราะห์

ขอแสดงความนับถือ

(นายประพัฒน์พงศ์ เสนาฤทธิ์)
รองอธิบดี ปฏิบัติราชการแทน
อธิบดีกรมสามัญศึกษา

กองการมัธยมศึกษา
โทร. 2828466
โทรสาร 2824096

APPENDIX D

THE 85-ITEM FAMILY HEALTH PROMOTING BEHAVIOR SCALE: VERSION II

- THAI VERSION

เลขที่แบบสอบถาม .....

แบบสอบถามพฤติกรรมส่งเสริมสุขภาพของครอบครัว

คำชี้แจง แบบสอบถามฉบับนี้เป็นแบบสอบถามที่จัดทำขึ้นเพื่อสำรวจพฤติกรรมการส่งเสริมสุขภาพที่เป็นอยู่ในครอบครัวไทย ในฐานะที่ท่านเป็นสมาชิกคนหนึ่งที่มีความสำคัญอย่างยิ่งต่อครอบครัว โปรดให้คำตอบที่ตรงกับสิ่งที่ครอบครัวของท่านกระทำอยู่ให้มากที่สุด คำตอบของท่านจะเป็นประโยชน์และมีค่าอย่างยิ่งต่อแนวทางการส่งเสริมครอบครัวให้มีสุขภาพดีต่อไป

ตอนที่ 1 ข้อมูลทั่วไป

1.. สถานภาพของท่านในครอบครัว คือ

O พ่อ O แม่ O ลูกชาย O ลูกสาว (ถ้าผู้ตอบเป็นลูกให้ข้ามไปตอบตอนที่ 2 เลย)

2. จำนวนสมาชิกในครอบครัว ..... คน ประกอบด้วย สมาชิกที่เป็น

O พ่อ อายุ ..... ปี O แม่ อายุ ..... ปี

O ลูก จำนวน .....คน อายุ .....ปี (โปรดระบุทุกคน)

O อื่นๆ (โปรดระบุความเกี่ยวข้อง) .....อายุ.....ปี

3. อาชีพของท่าน

O รับราชการ O พนักงานรัฐวิสาหกิจ

O ค้าขาย O รับจ้าง

O แม่บ้าน O อื่นๆ (โปรดระบุ) .....

4. การศึกษาสูงสุดของท่าน

O ระดับประถมศึกษา O ระดับมัธยมศึกษา

O ระดับประกาศนียบัตร O ระดับปริญญาตรี

O สูงกว่าปริญญาตรี O อื่นๆ (โปรดระบุ) .....

5. รายได้ของครอบครัวต่อเดือน

O น้อยกว่า 5,000 บาท O 5,001-10,000 บาท

O 10,001-15,000 บาท O 15,001-20,000 บาท

O 20,001- 25,000 บาท O 25,001-30,000 บาท O มากกว่า 30,000 บาท

6. ลักษณะที่อยู่อาศัยของครอบครัวในปัจจุบัน

O บ้านเดี่ยว O ทาวเฮาส์หรือบ้านแฝด O แฟลต

O ห้องชุด O ห้องแบ่งเช่า O อื่นๆ .....

7. ลักษณะการครอบครองที่อยู่อาศัยของครอบครัวในปัจจุบัน

O เป็นของตนเอง O เช่า

O อาศัยอยู่กับญาติ O อื่นๆ (โปรดระบุ).....

ตอนที่ 2 ข้อมูลพฤติกรรมส่งเสริมสุขภาพของครอบครัว

คำชี้แจง คำว่า "สมาชิก" ในที่นี้ หมายถึง สมาชิกในครอบครัวของท่าน โปรดอ่านข้อความแต่ละข้อแล้วใส่เครื่องหมาย √ ลงในช่องคำตอบที่ท่านเห็นว่าตรงกับครอบครัวของท่านมากที่สุด

"เป็นจริง" หมายถึง ข้อความนั้นเป็นจริง 100% สำหรับครอบครัวของท่าน

"ส่วนใหญ่เป็นจริง" หมายถึง ข้อความนั้นเป็นจริง 75 % สำหรับครอบครัวของท่าน

"เป็นจริงบ้างไม่เป็นจริงบ้าง" หมายถึง ข้อความนั้นเป็นจริง 50% ไม่เป็นจริง 50% สำหรับครอบครั่วของท่าน

"ส่วนใหญ่ไม่เป็นจริง" หมายถึง ข้อความนั้นเป็นจริงเพียง 25 % สำหรับครอบครัว ของท่าน

"ไม่เป็นจริง" หมายถึง ข้อความนั้นไม่เป็นจริงเลย สำหรับครอบครัวของท่าน

ข้อความ	เป็นจริง	ส่วนใหญ่จริง	จริงบ้างไม่จริงบ้าง	ส่วนใหญ่ไม่จริง	ไม่เป็นจริง
การรับประทานอาหาร					
1. อาหารที่ครอบครัวเลือกรับประทานในแต่ละวัน เป็นอาหารที่มีคุณค่าทางอาหารครบทั้ง 5 หมู่					
2. ในการเลือกซื้ออาหาร สมาชิกเลือกประโยชน์ที่จะได้รับจากอาหารเป็นอันดับแรก					
3. ก่อนเลือกซื้ออาหารที่มีฉลาก สมาชิกจะดูส่วนประกอบอาหาร วันผลิต และวันหมดอายุเสมอ					
4. ครอบครัวรับประทานอาหารร่วมกันอย่างน้อย 1 มื้อทุกวัน					
5. เมื่อสมาชิกคนใดน้ำหนักเกินหรือน้อยไป สมาชิกคนอื่นๆ จะเตือนให้ควบคุมน้ำหนักให้อยู่ในเกณฑ์					
6. สมาชิกกระตุ้นกันและกันให้ดื่มน้ำสะอาดอย่างน้อยวันละ 6-8 แก้ว					
7. ครอบครัวจัดหาผลไม้ไว้ให้สมาชิกได้รับประทานทุกวัน					
8. สมาชิกรับประทานผลไม้ทุกวัน					
9. สมาชิกแต่ละคนรับประทานเนื้อสัตว์ไม่เกินวันละ 9 ช้อนกินข้าวหรือเทียบเท่า 1 ขีด					
10. ครอบครัวเลือกใช้น้ำมันพืชที่มีไขมันอิ่มตัวต่ำ เช่น น้ำมันดอกคำฝอย น้ำมันดอกทานตะวัน น้ำมันถั่วเหลือง น้ำมันรำข้าวในการปรุงอาหาร					
11. สมาชิกในครอบครัวมักหลีกเลี่ยงการซื้ออาหารที่มีไขมันสูง เช่น ขาหมู ไก่ทอด เป็นต้น มากินกันในครอบครัว					
12. อาหารที่ครอบครัวรับประทานในแต่ละมื้อ มีผักเป็นส่วนประกอบสำคัญเสมอ					
13. ครอบครัวเลือกรับประทานเนื้อสัตว์ ผัก หลากหลายชนิด มากกว่ารับประทานชนิดใดเพียงชนิดเดียว					
14. สมาชิกมักจะเติมน้ำปลาในอาหารเพิ่มเสมอ แม้อาหารจะผ่านการปรุงรสมาแล้ว					
15. เมื่อสมาชิกรับประทานอาหารที่ไม่มีประโยชน์ เช่น ขนมขบเคี้ยวที่หวานหรือเค็มมาก สมาชิกคนอื่นๆ จะเตือนมิให้รับประทานมากเกินไป					
16. เมื่อสมาชิกคนใดได้รับความรู้เรื่องอาหารที่ดีต่อสุขภาพ จะแนะนำหรือหามาให้สมาชิกในครอบครัวรับประทาน					
การออกกำลังกายและนันทนาการ					
17. ในแต่ละวัน สมาชิกครอบครัวมีเวลาที่ได้พบพูดคุยพร้อมหน้ากัน					
18. สมาชิกออกไปเที่ยวนอกบ้านด้วยกันทั้งครอบครัวอย่างน้อยเดือนละครั้ง					
19. ครอบครัวมีกิจกรรมวันหยุดร่วมกัน เช่น ปลูกต้นไม้ เล่นกีฬา ทำอาหาร เป็นต้น					
20. กิจกรรมร่วมของสมาชิกในแต่ละวัน คือ การดูโทรทัศน์					
21. สมาชิกทำกิจกรรมที่ช่วยบริหารร่างกายอยู่ในกิจวัตรประจำวัน เช่น เดินแทนการใช้ลิฟท์ ทำงานบ้าน เดินในระยะใกล้ๆแทนการขึ้นรถ เป็นต้น					
22. สมาชิกออกกำลังกาย เช่น วิ่งเหยาะ เดิน ปั่นจักรยาน เล่นกีฬา เต้นแอโรบิค เป็นประจำอย่างน้อยสัปดาห์ละ 3 ครั้ง					

ข้อความ	เป็นจริง	ส่วนใหญ่จริง	จริงบ้างไม่จริงบ้าง	ส่วนใหญ่ไม่จริง	ไม่เป็นจริง
23. สมาชิกมักชักชวนหรือกระตุ้นกันและกันให้ออกกำลังกาย					
24. ครอบครัวสนับสนุนให้สมาชิกออกกำลังกายโดยการจัดหาอุปกรณ์ให้ เช่น อุปกรณ์กีฬาต่างๆ					
25. ในแต่ละวัน สมาชิกจะทำกิจกรรมที่ต้องยืน เดิน ไม่นั่งอยู่กับที่นานๆ					
การควบคุมและการจัดการกับความเครียด					
26. ครอบครัวของเราเป็นครอบครัวอารมณ์ดี มีอารมณ์ขัน					
27. สมาชิกในครอบครัวพูดคุยกันได้ทุกเรื่อง					
28. ในครอบครัวมีเรื่องหงุดหงิดใจทุกวัน					
29. เมื่อสมาชิกคนใดมีเรื่องทุกข์ร้อนใจ สมาชิกคนอื่นๆ จะรับฟังและช่วยเหลือ					
30. แต่ละวัน สมาชิกจะได้ถามทุกข์สุขของกันและกันเสมอ					
31. เมื่อใดที่เผชิญปัญหา สมาชิกจะยึดคติว่าทุกปัญหาสามารถแก้ไขได้					
32. เมื่อสมาชิกกลุ้มใจเรื่องเรียน หรือการทำงาน จะระบายให้กันฟังมากกว่าเก็บไว้คนเดียว					
33. เมื่อสมาชิกคนใดมีพฤติกรรมผิดแปลกไป เช่น เงียบไม่พูดจา เก็บตัว สมาชิกคนอื่นๆ จะสังเกตเห็นได้และถามหาสาเหตุ					
34. ความเครียดที่เกิดขึ้นในชีวิตประจำวัน เช่น ฝนตก รถติด ความขัดแย้งกับผู้ร่วมงานหรือกับสมาชิกในครอบครัว สมาชิกมักจะมองว่าเป็นเรื่องปกติ					
35. เมื่อมีเรื่องผิดใจกันในครอบครัว สมาชิกเลือกที่จะพูดกันด้วยเหตุผลมากกว่าใช้อารมณ์					
36. เมื่อสมาชิกมีความเห็นไม่ตรงกัน เช่น เรื่องความนิยมในตัวนักการเมือง หรือนักร้อง สมาชิกมองว่าเป็นความเห็นส่วนตัว ไม่ใช่เรื่องต้องถกเถียงกัน					
37. เมื่อลูกมีความคิดเห็นไม่ตรงกับพ่อแม่ เช่น เรื่องการแต่งกาย การคบเพื่อน พ่อแม่ลูกจะใช้เหตุผลค่อยๆ พูดกัน มากกว่าหนีปัญหา หรือตำหนิ					
38. พ่อแม่จะไม่เปรียบเทียบลูกตนเองกับลูกคนอื่น					
39. พ่อแม่ลูก เป็นแบบอย่างที่ดีต่อกันในการแก้ปัญหาในครอบครัว เช่น ใช้อารมณ์ขัน ใช้เหตุผลพูดกัน ช่วยกันทำงานบ้าน จัดสรรเวลาใหม่ เป็นต้น					
40. เมื่อมีเรื่องทะเลาะกันในครอบครัว สมาชิกจะเถียงกันด้วยคำพูด แต่ไม่เคยทำร้ายร่างกายกัน					
การนอนหลับ					
41. ครอบครัวถือปฏิบัติว่าการนอนหลับให้เพียงพอเป็นสิ่งสำคัญของสมาชิก					
42. ห้องนอนเป็นห้องที่ครอบครัวให้ความสำคัญในเรื่องความสะอาดและความสะดวกสบาย					
43. สมาชิกเอาใจใส่กันและกันเรื่องการเข้านอนและตื่นนอนเป็นเวลา					
44. สมาชิกนอนหลับเพียงพอตามวัยของสมาชิก					
45. ครอบครัวจัดหาเครื่องนอนที่สะอาดและสบายสำหรับสมาชิกทุกคน					

ข้อความ	เป็นจริง	ส่วนใหญ่จริง	จริงบ้างไม่จริงบ้าง	ส่วนใหญ่ไม่จริง	ไม่เป็นจริง
46. ถ้าสมาชิกคนใดนอนไม่หลับเนื่องจากมีเหตุรบกวน เช่น เสียงกรน เสียงดังจากวิทยุ โทรทัศน์ แสงไฟ ครอบครัวจะช่วยกันแก้ไข					
47. ครอบครัวจัดสถานที่นอนให้สมาชิกไว้เป็นสัดส่วน					
48. ถ้าสมาชิกนอนไม่หลับ สมาชิกคนอื่นๆ จะไต่ถามหาสาเหตุและช่วยหาทางแก้ไข					
จิตวิญญาณของครอบครัว					
49. สมาชิกปรึกษาหารือกันถึงเป้าหมายชีวิตในอนาคต เช่น เรื่องที่อยู่อาศัย การเรียน หรืออาชีพการงาน					
50. ครอบครัวยึดมั่นความเชื่อทางศาสนาที่เหมือนกัน					
51. ครอบครัวช่วยกันเปลี่ยนแปลงชีวิตไปในทางที่ดีขึ้นกว่าแต่ก่อน เช่น เรื่องสุขภาพ เศรษฐกิจ					
52. สมาชิกช่วยกันประคับประคองความเป็นครอบครัว เช่น การเอาใจใส่กัน การให้โดยไม่หวังสิ่งตอบแทน					
53. สมาชิกไม่เปรียบเทียบครอบครัวของเรากับครอบครัวอื่น					
54. สมาชิกมีการยอมรับฟังความคิดเห็นของกันและกัน และสามารถตกลงกันได้ด้วยดี					
55. สมาชิกแสดงความรัก ความห่วงใยต่อกันเสมอ					
56. สมาชิกช่วยกันทำให้ครอบครัวมีชีวิตชีวา ไม่น่าเบื่อ					
57. เมื่อพบปัญหาที่ไม่สามารถเปลี่ยนแปลงได้ ครอบครัวจะใช้ ความรักในครอบครัว หรือยึดถือธรรมะ ช่วยทำให้ใจสงบและไม่เป็นทุกข์					
58. ถ้าสมาชิกคนใดจะทำสิ่งที่นอกลู่นอกทาง จะเปลี่ยนใจเมื่อคิดว่าครอบครัวจะเสียใจ					
59. สมาชิกนับถือและปฏิบัติตามคำสอนของศาสนาเดียวกัน					
60. เมื่อสมาชิกมีปัญหา จะนึกถึงคนในครอบครัวเป็นสิ่งแรก					
แรงสนับสนุนของครอบครัว					
61. เมื่อใดที่สมาชิกรู้สึกเหงา จะเลือกกลับบ้านเพราะรู้ว่ามีคนที่รักรออยู่					
62. เมื่อสมาชิกเล่าเรื่องราวที่พบมาในแต่ละวันให้ฟัง สมาชิกคนอื่นๆ จะรับฟังด้วยความสนใจ					
63. สมาชิกเป็นตัวอย่างที่ดีแก่กัน ในการปฏิบัติตนเพื่อให้สุขภาพดี					
64. เมื่อครอบครัวต้องการความช่วยเหลือ ครอบครัวรู้ว่ามีคนที่ครอบครัวสามารถขอความช่วยเหลือได้					
65. สมาชิกแต่ละคนมีเพื่อนสนิทอย่างน้อย 1-2 คนที่ไปมาหาสู่กันเสมอ					
66. ครอบครัวมีสัมพันธภาพที่ดีต่อเพื่อนบ้านเสมอ เช่น พูดคุยทักทาย แบ่งปันของกิน ฝากดูแลบ้าน เป็นต้น					
67. ครอบครัวคุ้นเคยกับเพื่อนบ้านมากพอที่จะพึ่งพาได้ยามต้องการความช่วยเหลือ					
68. ครอบครัวติดต่อหรือไปมาหาสู่ญาติพี่น้องเป็นประจำ					

ข้อความ	เป็นจริง	ส่วนใหญ่จริง	จริงบ้างไม่จริงบ้าง	ส่วนใหญ่ไม่จริง	ไม่เป็นจริง
69. เมื่อสมาชิกคนใดในครอบครัวทำความดี สมาชิกคนอื่นๆ จะชมเชยและสนับสนุน					
70. ในครอบครัว สมาชิกทุกคนแสดงความรู้สึกของตนได้อย่างเปิดเผย					
การเอาใจใส่ต่อสิ่งแวดล้อม					
71. ครอบครัวทำความสะอาดในบ้าน เช่น กวาดถูบ้าน ทุกวัน					
72. สมาชิกช่วยกันรักษาความสะอาดและความเป็นระเบียบรอบบ้าน					
73. ที่บ้าน มีการปลูกไม้ดอก ไม้ใบที่ให้ความสดชื่นแก่ครอบครัว					
74. ครอบครัวใช้สารเคมีในบ้าน เช่น น้ำยาล้างห้องน้ำ ยาฆ่าแมลง โดยศึกษาวิธีการใช้ที่ถูกวิธีก่อนใช้					
75. สมาชิกช่วยกันแยกขยะเปียก ขยะแห้ง ขยะที่นำกลับมาใช้ใหม่ และขยะอันตรายก่อนนำไปทิ้ง					
76. ครอบครัวช่วยลดมลพิษในสิ่งแวดล้อม เช่น ไม่เผาขยะ ไม่ใช้ภาชนะที่ทำจากโฟมเป็นต้น					
77. สมาชิกช่วยกันดูแลไม่ให้มีน้ำขังบริเวณโดยรอบบ้าน					
78. ครอบครัวสนับสนุนให้สมาชิกใช้ของอย่างคุ้มค่า และ ประหยัด เช่น น้ำ ไฟ เป็นต้น					
ความรับผิดชอบของครอบครัว					
79. ครอบครัวสนใจหาความรู้ใหม่ๆ มาใช้ในการส่งเสริมสุขภาพของสมาชิกเสมอ					
80. ครอบครัวดูแลสมาชิกที่เจ็บป่วย เช่น เช็ดตัว จัดหาหรือเตือนให้รับประทานยา จัดอาหารที่เหมาะกับการเจ็บป่วย หรือ พาไปพบแพทย์					
81. ครอบครัวมักหาอาหารที่ส่งเสริมสุขภาพ เช่น ข้าวกล้อง ผักปลอดสารพิษ สมุนไพร มาให้สมาชิก					
82. ครอบครัวสนับสนุนให้สมาชิกได้รับการตรวจสุขภาพประจำปี					
83. เมื่อได้รับการรักษาจากแพทย์ ครอบครัวจะสนใจซักถามแพทย์ถึงรายละเอียดการเจ็บป่วยและการดูแลสมาชิกที่ป่วยเสมอ					
84. ครอบครัวพยายามหาวิถีทางให้สมาชิกได้รับข่าวสารเพื่อสุขภาพ เช่น ทางโทรทัศน์ วิทยุ นิตยสาร เป็นต้น					
85. สมาชิกถือว่าเป็นหน้าที่ของทุกคนในการเอาใจใส่ต่อสุขภาพของคนในครอบครัว					

<u>ตอนที่ 3 สุขภาพครอบครัวของท่านในปัจจุบัน</u>

<u>คำชี้แจง</u> โปรดใส่เครื่องหมาย √ ในช่องคำตอบที่ท่านเห็นว่าตรงกับภาวะสุขภาพของครอบครัวของท่านมากที่สุด

ข้อความ	ดีมาก	ดี	พอใช้	ควรแก้ไข
1. สุขภาพกายของสมาชิกโดยรวม				
2. สุขภาพจิตของสมาชิกโดยรวม				
3. สัมพันธภาพที่มีต่อกันในครอบครัว				
4. การดูแลสุขภาพของกันและกันในครอบครัว				
5. สุขภาพครอบครัวของท่าน				

APPENDIX E

THE 72-ITEM FAMILY HEALTH PROMOTING BEHAVIOR SCALE: VERSION III

- **ENGLISH VERSION**
- **THAI VERSION**

The 72-Item Family Health Promoting Behavior Questionnaire: Version III

Instructions: This questionnaire developed to survey health promoting behaviors of Thai families. As you are an important family member, please give the correct answers about your family health behaviors in the following items:

Section I: Demographic data

1. Your status in the family
   ☐ Father ☐ Mother ☐ Others (Please specify)

2. Number of family members..... consisting of
   ☐ Father aged.....years ☐ Mother aged.....years
   ☐ Child number.....persons, age.....years(please specify)
   ☐ Others (Please specify).....

3. Your occupation
   ☐ Government/state enterprise officer ☐ Trader
   ☐ Laborer ☐ Employee
   ☐ housewife ☐ Others (Please specify).....

4. Your highest education
   ☐ Primary school ☐ Secondary school
   ☐ Certificate ☐ Undergraduate degree
   ☐ Graduate degree ☐ Others (Please specify).....

5. Your monthly family income
   ☐ less than 5,000 baht ☐ 5,001-10,000 baht
   ☐ 10,001-15,000 baht ☐ 15,001-20,000 baht
   ☐ 20,001-25,000 baht ☐ 25,001-30,000 baht
   ☐ more than 30,000 baht

6. Type of the residence
   ☐ Detached house ☐ Townhouse
   ☐ Flat ☐ Apartment
   ☐ Mansion/Condomenium ☐ Room
   ☐ Others (Please specify).....

7. The owner of the residence
   ☐ Self ☐ Rented
   ☐ Relatives ☐ Others (Please specify).....

Section II : The 72-Item FHPBS (Version III)

Instruction Please read each statement and put a "√" sign in the space which you mostly agree about your family.

"Extremely True" means the statement is 100% of real in your family.

"Mostly True" means the statement is 75% of real in your family.

"Moderately True" means the statement is 50% of real in your family.

"Slightly True" means the statement is 25% of real in your family.

"Not True" means the statement is unreal in your family.

Statement

1. The family's daily diet is full of five nutrient food groups.
2. The family's diet has adequate vegetables for each meal.
3. When any member has overweight or underweight, other members tell them to diet.
4. The members encourage each other to take 6-8 glasses at least daily.
5. The family provides some fruits for all members everyday.
6. The members eat some fruits daily.
7. The members usually avoid food high in saturated fat (i.e. pig knuckle, fried chicken, food with coconut cream).
8. The family eats a variety of meats and vegetables rather than only one kind.
9. The family always finds health-promoting diet (i.e. milled but unpolished rice, vegetables free from chemical substances, herbs etc.) when cooking family's food.
10. When any member eats valueless food (i.e. too sweet or too salty snack), other members forewarn no over eating.
11. When any member gets information about healthy foods, he/she usually share it with other members.
12. In each day, members take some time to talk together.
13. The family's members have at least a meal daily.
14. The members take a trip together at least once a month.
15. In holiday, the members join in leisure-time (i.e. gardening, playing sports, cooking etc.).
16. In each day, the members watch television together.

17. The members exercise vigorously (i.e. jogging, brisk walking, bicycling, aerobic dancing) at least three times per week.

18. The members usually persuade or urge each other to exercise.

19. The family provides instrumental assistance (i.e. sports equipment) to support member's exercise habits.

20. My family is enjoyable and good sense of humor.

21. The members can talk everything together.

22. When any member is worried, others are pleased to pay attention and caring.

23. The members always talk about what had happened during the day.

24. When the family confronts any problem, members hold that all problems can be solved.

25. When the members are worried about studying or working, they tell rather than keep it themselves.

26. When any member has unusual behaviors (i.e. silent and not saying, solitude), others are usually noticeable and ask for causes.

27. When there are an unpleasant disagreement within family, members usually argue with reason rather than emotional express.

28. When children disagree with parents (i.e. dressing, selecting friends), they use a rational discussion rather than blame and escape from solving problems.

29. Parents and children are good models each other for solving problems in family (such as having humor, using reason, assisting housework, revising timetable etc.).

30. When quarreling within family, the members argue with words but not hurt each other.

31. The family values adequate sleeping that is important for all members.

32. Bedrooms are clean and comfortable rooms for the family.

33. The members take care of sleeping and waking up time.

34. Each member sleeps as enough as his/her age.

35. The family provides clean and comfortable bedroom suit for all members.

36. The family always help any member can't sleep because of annoying (i.e. snoring sound, radio noisy, television sound).

37. The family provides a part of private bedroom for each member.

38. When any member is sleepless, the others ask for the sake and help them.

39. The members talk together about purpose of life in the future (i.e. residence, studying, work a job).

40. The family cooperates to change family life better (i.e. health, economic status).

41. The members corporate to keep family relations (i.e. to pay attention, devotion).

42. The members satisfy with the family, not to compare with other families.

43. The members always exhibit love and caring each other.

44. The members work together for not boring but lively family.

45. When the family meets any problem that isn't changeable, the family would be solved them with love or hold thamma to keep emotion and not despair.

46. Whenever any member thinks to do any mistake, they will change of heart if the family may be sad.

47. The members usually share some religious activities (i.e. to put food in the bowls of Buddhist priests in the morning, practicing religious precepts).

48. When any member makes a virtue, other members admire and encourage.

49. When any member has some trouble he/she will first remind the family members.

50. The members are the model each other about doing anything for health.

51. When the family needs assistance, we know someone is ready to give some help.

52. Each member has at least 1-2 close friends who connect and assist each other.

53. The family has a good relationship with neighbors (i.e. to say hello, share some foods, like neighborhood watch).

54. The family and neighbors familiar enough to ask for help, if necessary.

55. The family usually contacts with cousins.

56. The family and original family always meet or assist each other.

57. In the community, people are familiar together and ready to help each other, if emergency.

58. The family cleans the house up daily (i.e. sweep and wipe the floor).

59. The members keep clean and tidy around the house.

60. Although the house has limited area the family planted some trees or potted plants for enhancing fresher.

61. The family uses harmful household chemicals (i.e. chemical cleaner, pesticides) under considering indication usage.

62. The members cooperate to split garbage, rubbish, reusable disposal, and hazardous wastes before throwaway.

63. The family reduces environmental pollution by a variety methods (i.e. not burning refuse, avoid to use container with foam rubber.

64. The members keep around the house without filled water.

65. The family encourages members to use the earth's resources wisely.

66. The family always inquires current information to promote members' health.

67. The family takes after ill member by taking care for fever, providing or reminding to have a medicine, prepare a meal, or carry to see the doctor.

68. The family encourages all members to check-up for health yearly.

69. When any members come to see the doctor, the family always follows to ask for illness and how to care them.

70. The family tries to seek the way that members gain health information (i.e. TV, radio, magazine).

71. The family usually indoctrinates each member take care oneself.

72. All members hold awareness of family members' health is the important task.

Section 3 The perception of Family Health Status questionnaire

Please put √ in the blank that you mostly agree about your family health status.

Family health status	Very good	Good	Fair	Bad
1. Physical health of all members				
2. Mental health of all members				
3. Family relationship				
4. Taking care of each other				
5. Family health status as a whole				

(ฉบับผู้ปกครองนักเรียน) เลขที่แบบสอบถาม .....

แบบสอบถามพฤติกรรมส่งเสริมสุขภาพของครอบครัว

<u>คำชี้แจง</u> แบบสอบถามฉบับนี้เป็นแบบสอบถามที่จัดทำขึ้นเพื่อสำรวจพฤติกรรมการส่งเสริมสุขภาพที่เป็นอยู่ในครอบครัวไทย ในฐานะที่ท่านเป็นสมาชิกคนหนึ่งที่มีความสำคัญอย่างยิ่งต่อครอบครัว โปรดให้คำตอบที่ตรงกับสิ่งที่ครอบครัวของท่านกระทำอยู่ให้มากที่สุด คำตอบของท่านจะเป็นประโยชน์และมีค่าอย่างยิ่งต่อแนวทางการส่งเสริมครอบครัวให้มีสุขภาพดีต่อไป

<u>ตอนที่ 1 ข้อมูลทั่วไป</u>

1.. สถานภาพของท่านในครอบครัว คือ

O พ่อ O แม่ O อื่นๆ(โปรดระบุ).....

2. จำนวนสมาชิกในครอบครัว ..... คน ประกอบด้วย สมาชิกที่เป็น

O พ่อ อายุ ..... ปี O แม่ อายุ ..... ปี

O ลูก จำนวน .....คน อายุ .....ปี (โปรดระบุทุกคน)

O อื่นๆ (โปรดระบุความเกี่ยวข้อง) .....อายุ.....ปี

3. อาชีพของท่าน

O รับราชการ/พนักงานรัฐวิสาหกิจ O ค้าขาย

O รับจ้าง O ลูกจ้างบริษัท

O แม่บ้าน/พ่อบ้าน O อื่นๆ (โปรดระบุ) .....

4. การศึกษาสูงสุดของท่าน

O ระดับประถมศึกษา O ระดับมัธยมศึกษา

O ระดับประกาศนียบัตร O ระดับปริญญาตรี

O สูงกว่าปริญญาตรี O อื่นๆ (โปรดระบุ) .....

5. รายได้ของครอบครัวต่อเดือน

O น้อยกว่า 5,000 บาท O 5,001-10,000 บาท

O 10,001-15,000 บาท O 15,001-20,000 บาท

O 20,001- 25,000 บาท O 25,001-30,000 บาท

O มากกว่า 30,000 บาท

6. ลักษณะที่อยู่อาศัยของครอบครัวในปัจจุบัน

O บ้านเดี่ยว O ทาวเฮาส์ O แฟลต O ตึกแถว/อาคารพาณิชย์

O ห้องชุด O ห้องแบ่งเช่า O อื่นๆ .....

7. ลักษณะการครอบครองที่อยู่อาศัยของครอบครัวในปัจจุบัน

O เป็นของตนเอง O เช่า

O อาศัยอยู่กับญาติ O อื่นๆ (โปรดระบุ).....

(ฉบับสำหรับนักเรียน) เลขที่แบบสอบถาม .....

แบบสอบถามพฤติกรรมส่งเสริมสุขภาพของครอบครัว

คำชี้แจง แบบสอบถามฉบับนี้เป็นแบบสอบถามที่จัดทำขึ้นเพื่อสำรวจพฤติกรรมการส่งเสริมสุขภาพที่เป็นอยู่ในครอบครัวไทย ในฐานะที่ท่านเป็นสมาชิกคนหนึ่งที่มีความสำคัญอย่างยิ่งต่อครอบครัว โปรดให้คำตอบที่ตรงกับสิ่งที่ครอบครัวของท่านกระทำอยู่ให้มากที่สุด คำตอบของท่านจะเป็นประโยชน์และมีค่าอย่างยิ่งต่อแนวทางการส่งเสริมครอบครัวให้มีสุขภาพดีต่อไป

ตอนที่ 1 ข้อมูลทั่วไป

1. สถานภาพของท่านในครอบครัว O ลูกชาย O ลูกสาว O หลาน
2. ปัจจุบันท่านมีอายุ ..... ปี
3. จำนวนสมาชิกในครอบครัว ..... คน
4. อาชีพของบิดา
   - O รับราชการ/พนักงานรัฐวิสาหกิจ
   - O ค้าขาย
   - O รับจ้าง
   - O ลูกจ้างบริษัท
   - O พ่อบ้าน
   - O อื่นๆ (โปรดระบุ) .....
5. อาชีพของมารดา
   - O รับราชการ/พนักงานรัฐวิสาหกิจ
   - O ค้าขาย
   - O รับจ้าง
   - O ลูกจ้างบริษัท
   - O แม่บ้าน
   - O อื่นๆ (โปรดระบุ) .....
6. การศึกษาสูงสุดของบิดา
   - O ระดับประถมศึกษา
   - O ระดับมัธยมศึกษา
   - O ระดับประกาศนียบัตร
   - O ระดับปริญญาตรี
   - O สูงกว่าปริญญาตรี
   - O อื่นๆ (โปรดระบุ) .....
7. การศึกษาสูงสุดของมารดา
   - O ระดับประถมศึกษา
   - O ระดับมัธยมศึกษา
   - O ระดับประกาศนียบัตร
   - O ระดับปริญญาตรี
   - O สูงกว่าปริญญาตรี
   - O อื่นๆ (โปรดระบุ) .....
8. รายได้ของครอบครัวต่อเดือน
   - O น้อยกว่า 5,000 บาท
   - O 5,001-10,000 บาท
   - O 10,001-15,000 บาท
   - O 15,001-20,000 บาท
   - O 20,001- 25,000 บาท
   - O 25,001-30,000 บาท
   - O มากกว่า 30,000 บาท

ตอนที่ 2 ข้อมูลพฤติกรรมส่งเสริมสุขภาพของครอบครัว

คำชี้แจง คำว่า "สมาชิก" ในที่นี้ หมายถึง สมาชิกในครอบครัวของท่าน โปรดอ่านข้อความแต่ละข้อแล้วใส่เครื่องหมาย √ ลงในช่องคำตอบที่ท่านเห็นว่าตรงกับครอบครัวของท่านมากที่สุด

"เป็นจริง" หมายถึง ข้อความนั้นเป็นจริง 100%

"ส่วนใหญ่เป็นจริง" หมายถึง ข้อความนั้นเป็นจริง 75 %

"เป็นจริงบ้างไม่เป็นจริงบ้าง" หมายถึง ข้อความนั้นเป็นจริง 50% ไม่เป็นจริง 50%

"ส่วนใหญ่ไม่เป็นจริง" หมายถึง ข้อความนั้นเป็นจริงเพียง 25 %

"ไม่เป็นจริง" หมายถึง ข้อความนั้นไม่เป็นจริงเลย สำหรับครอบครัวของท่าน

ข้อความ	เป็นจริง	ส่วนใหญ่จริง	จริงบ้างไม่จริงบ้าง	ส่วนใหญ่ไม่จริง	ไม่เป็นจริง
1. อาหารที่ครอบครัวเลือกรับประทานในแต่ละวัน เป็นอาหารที่มีคุณค่าทางอาหารครบทั้ง 5 หมู่					
2. อาหารที่ครอบครัวรับประทาน มีผักเป็นส่วนประกอบสำคัญทุกมื้อ					
3. เมื่อสมาชิกคนใดน้ำหนักเกินหรือน้อยไป สมาชิกคนอื่นๆ จะเตือนให้ควบคุมการรับประทานอาหาร					
4. สมาชิกกระตุ้นกันและกันให้ดื่มน้ำสะอาดอย่างน้อยวันละ 6-8 แก้ว					
5. ครอบครัวจัดหาผลไม้ไว้ให้สมาชิกได้รับประทานทุกวัน					
6. สมาชิกรับประทานผลไม้ทุกวัน					
7. สมาชิกในครอบครัวมักหลีกเลี่ยงการรับประทานอาหารที่มีไขมันสูง เช่น ขาหมู ไก่ทอด อาหารที่ใส่กะทิ เป็นต้น					
8. ครอบครัวเลือกรับประทานเนื้อสัตว์ ผัก หลากหลายชนิด มากกว่ารับประทานชนิดใดเพียงชนิดเดียว					
9. ครอบครัวหาอาหารที่ส่งเสริมสุขภาพ เช่น ข้าวกล้อง ผักปลอดสารพิษ พืชสมุนไพร มาประกอบอาหารให้สมาชิกเสมอ					
10. เมื่อสมาชิกรับประทานอาหารที่ไม่มีประโยชน์ เช่น ขนมขบเคี้ยวที่หวานหรือเค็มมาก สมาชิกคนอื่นๆ จะเตือนมิให้รับประทานมากเกินไป					
11. เมื่อสมาชิกคนใดได้รับความรู้เรื่องอาหารที่ดีต่อสุขภาพ จะแนะนำหรือหามาให้สมาชิกในครอบครัวรับประทาน					
12. ในแต่ละวัน สมาชิกในครอบครัวมีเวลาที่ได้พบพูดคุยพร้อมหน้ากัน					
13. ครอบครัวรับประทานอาหารร่วมกันอย่างน้อยวันละ 1 มื้อ					
14. สมาชิกออกไปเที่ยวนอกบ้านด้วยกันทั้งครอบครัวอย่างน้อยเดือนละครั้ง					
15. ครอบครัวมีกิจกรรมวันหยุดร่วมกัน เช่น ปลูกต้นไม้ เล่นกีฬา ทำอาหาร เป็นต้น					
16. กิจกรรมร่วมของสมาชิกในแต่ละวัน คือ การดูโทรทัศน์					
17. สมาชิกออกกำลังกาย เช่น วิ่งเหยาะ เดิน ปั่นจักรยาน เล่นกีฬา หรือเต้นแอโรบิค เป็นประจำอย่างน้อยสัปดาห์ละ 3 ครั้ง					
18. สมาชิกมักชักชวนหรือกระตุ้นกันและกันให้ออกกำลังกาย					
19. ครอบครัวสนับสนุนให้สมาชิกออกกำลังกายโดยการจัดหาอุปกรณ์ให้ เช่น อุปกรณ์กีฬาต่างๆ					
26. เมื่อสมาชิกคนใดมีพฤติกรรมผิดแปลกไป เช่น เงียบไม่พูดจา เก็บตัว สมาชิกคนอื่นๆ จะสังเกตเห็นได้และถามหาสาเหตุ					
27. เมื่อมีเรื่องผิดใจกันในครอบครัว สมาชิกเลือกที่จะพูดกันด้วยเหตุผลมากกว่าใช้อารมณ์					

ข้อความ	เป็นจริง	ส่วนใหญ่จริง	จริงบ้างไม่จริงบ้าง	ส่วนใหญ่ไม่จริง	ไม่เป็นจริง
28. เมื่อลูกมีความคิดเห็นไม่ตรงกับพ่อแม่ เช่น เรื่องการแต่งกาย การคบเพื่อน พ่อแม่ลูกจะใช้เหตุผลค่อยๆ พูดกัน มากกว่าตำหนิหรือหนีปัญหา					
29. พ่อแม่ลูก เป็นแบบอย่างที่ดีต่อกันในการแก้ปัญหาในครอบครัว เช่น ใช้อารมณ์ขัน ใช้เหตุผลพูดกัน ช่วยกันทำงานบ้าน จัดสรรเวลากันใหม่ เป็นต้น					
30. เมื่อมีเรื่องทะเลาะกันในครอบครัว สมาชิกจะเถียงกันด้วยคำพูดแต่ไม่เคยทำร้ายร่างกายกัน					
31. ครอบครัวถือปฏิบัติว่าการนอนหลับให้เพียงพอเป็นสิ่งสำคัญของสมาชิก					
32. ห้องนอนเป็นห้องที่ครอบครัวให้ความสำคัญในเรื่องความสะอาดและความสะดวกสบาย					
33. สมาชิกเอาใจใส่กันและกันเรื่องการเข้านอนและตื่นนอนเป็นเวลา					
34. สมาชิกนอนหลับเพียงพอตามวัยของสมาชิก					
35. ครอบครัวจัดหาเครื่องนอนที่สะอาดและสบายสำหรับสมาชิกทุกคน					
36. ถ้าสมาชิกคนใดนอนไม่หลับเนื่องจากมีเหตุรบกวน เช่น เสียงกรน เสียงดังจากวิทยุ โทรทัศน์ ครอบครัวจะช่วยกันแก้ไข					
37. ครอบครัวจัดสถานที่นอนให้สมาชิกไว้เป็นสัดส่วน					
38. ถ้าสมาชิกนอนไม่หลับ สมาชิกคนอื่นๆ จะไต่ถามหาสาเหตุและช่วยหาทางแก้ไข					
39. สมาชิกปรึกษาหารือกันถึงเป้าหมายชีวิตในอนาคต เช่น เรื่องที่อยู่อาศัย การเรียน หรืออาชีพการงาน					
40. ครอบครัวช่วยกันเปลี่ยนแปลงชีวิตไปในทางที่ดีขึ้นกว่าแต่ก่อน เช่น เรื่องสุขภาพ เศรษฐกิจ					
41. สมาชิกช่วยกันประคับประคองความเป็นครอบครัว เช่น การเอาใจใส่กัน การให้โดยไม่หวังสิ่งตอบแทน					
42. สมาชิกพอใจในครอบครัวของตน ไม่นำไปเปรียบเทียบกับครอบครัวอื่น					
43. สมาชิกแสดงความรัก ความห่วงใยต่อกันเสมอ					
44. สมาชิกช่วยกันทำให้ครอบครัวมีชีวิตชีวา ไม่น่าเบื่อ					
45. เมื่อพบปัญหาที่ไม่สามารถเปลี่ยนแปลงได้ ครอบครัวจะใช้ ความรักในครอบครัว หรือยึดหลักธรรมะ ช่วยทำให้ใจสงบและไม่เป็นทุกข์					
46. ถ้าสมาชิกคนใดจะทำสิ่งที่นอกลู่นอกทาง จะเปลี่ยนใจเมื่อคิดว่าจะทำให้ครอบครัวเสียใจ					
47. สมาชิกทำกิจกรรมทางศาสนาร่วมกัน เช่น ตักบาตร ทำบุญ เป็นประจำ					
48. เมื่อสมาชิกคนใดในครอบครัวทำความดี สมาชิกคนอื่นๆ จะชมเชยและสนับสนุน					
49. เมื่อสมาชิกมีปัญหา จะนึกถึงคนในครอบครัวเป็นสิ่งแรก					
50. สมาชิกเป็นตัวอย่างที่ดีแก่กัน ในการปฏิบัติตนเพื่อให้สุขภาพดี					
51. เมื่อครอบครัวต้องการความช่วยเหลือ เรารู้ว่ามีคนที่พร้อมจะให้ความช่วยเหลือครอบครัวของเรา					
52. สมาชิกแต่ละคนมีเพื่อนสนิทอย่างน้อย 1-2 คน ที่พึ่งพาอาศัยกันได้					
53. ครอบครัวมีสัมพันธภาพที่ดีต่อเพื่อนบ้านเสมอ เช่น พูดคุยทักทาย แบ่งปันของกิน ฝากดูแลบ้าน เป็นต้น					
54. ครอบครัวคุ้นเคยกับเพื่อนบ้านมากพอที่จะพึ่งพาได้ยามต้องการความช่วยเหลือ					

ข้อความ	เป็นจริง	ส่วนใหญ่จริง	จริงบ้างไม่จริงบ้าง	ส่วนใหญ่ไม่จริง	ไม่เป็นจริง
55. ครอบครัวติดต่อหรือไปมาหาสู่ญาติพี่น้องเป็นประจำ					
56. ครอบครัวพบปะหรือให้ความช่วยเหลือซึ่งกันและกันกับครอบครัวเดิม (ปู่ย่า ตายาย)เสมอ					
57. ในชุมชนที่ครอบครัวอาศัยอยู่ คนที่อยู่บ้านใกล้เรือนเคียงจะคุ้นเคยกันและพร้อมให้ความช่วยเหลือกันหากมีเหตุฉุกเฉิน					
58. ครอบครัวทำความสะอาดในบ้าน เช่น กวาดถูบ้าน ทุกวัน					
59. สมาชิกช่วยกันรักษาความสะอาดและความเป็นระเบียบรอบบ้าน					
60. ที่บ้านแม้มีพื้นที่จำกัด ก็มีการปลูกต้นไม้หรือไม้กระถางที่ให้ความสดชื่นแก่ครอบครัว					
61. ครอบครัวใช้สารเคมีในบ้าน เช่น น้ำยาล้างห้องน้ำ ยากันยุงหรือแมลงสาบ โดยศึกษาวิธีการใช้ที่ถูกต้องก่อนนำมาใช้					
64. สมาชิกช่วยกันดูแลไม่ให้มีน้ำขังบริเวณโดยรอบบ้าน					
65. ครอบครัวสนับสนุนให้สมาชิกใช้ของอย่างคุ้มค่า และ ประหยัด เช่น การใช้น้ำ ใช้ไฟ ใช้กระดาษ เป็นต้น					
66. ครอบครัวสนใจหาความรู้ใหม่ๆ มาใช้ในการส่งเสริมสุขภาพของสมาชิกเสมอ					
67. ครอบครัวดูแลสมาชิกที่เจ็บป่วย เช่น เช็ดตัว จัดหาหรือเตือนให้รับประทานยา จัดอาหารที่เหมาะกับการเจ็บป่วย หรือ พาไปพบแพทย์					
68. ครอบครัวสนับสนุนให้สมาชิกได้รับการตรวจสุขภาพประจำปี					
69. เมื่อได้รับการรักษาจากแพทย์ ครอบครัวจะสนใจซักถามแพทย์ถึงรายละเอียดการเจ็บป่วยและการดูแลสมาชิกที่ป่วยเสมอ					
70. ครอบครัวพยายามหาวิถีทางให้สมาชิกได้รับข่าวสารเพื่อสุขภาพ เช่น ทางโทรทัศน์ วิทยุ นิตยสาร เป็นต้น					
71. ครอบครัวปลูกฝังให้สมาชิกแต่ละคน เอาใจใส่ดูแลสุขภาพของตนเองเสมอ					
72. สมาชิกถือว่าเป็นหน้าที่ของทุกคนในการเอาใจใส่ต่อสุขภาพของคนในครอบครัว					

<u>ตอนที่ 3 สุขภาพครอบครัวของท่านในปัจจุบัน</u>

<u>คำชี้แจง</u> โปรดใส่เครื่องหมาย √ ในช่องคำตอบที่ท่านเห็นว่าตรงกับภาวะสุขภาพของครอบครัวของท่านมากที่สุด

ข้อความ	ดีมาก	ดี	พอใช้	ควรแก้ไข
1. สุขภาพกายของสมาชิกโดยรวม				
2. สุขภาพจิตของสมาชิกโดยรวม				
3. สัมพันธภาพที่มีต่อกันในครอบครัว				
4. การดูแลสุขภาพของกันและกันในครอบครัว				
5. สุขภาพครอบครัวของท่าน				

ขอขอบคุณทุกท่านที่ให้ความร่วมมือในการตอบแบบสอบถาม

APPENDIX F

A COVER LETTER

สิงหาคม 2543

เรื่อง ขอความร่วมมือในการตอบแบบสอบถาม

เรียน ท่านผู้ปกครองนักเรียนและนักเรียนชั้นมัธยมศึกษาปีที่ 2

สิ่งที่ส่งมาด้วย 1. แบบสอบถามพฤติกรรมส่งเสริมสุขภาพของครอบครัว ฉบับผู้ปกครองนักเรียน
2. แบบสอบถามพฤติกรรมส่งเสริมสุขภาพของครอบครัว ฉบับสำหรับนักเรียน

เนื่องด้วยดิฉัน นางสาวกนกวรรณ สุวรรณปฏิกรณ์ นักศึกษาหลักสูตรสาธารณสุขศาสตรดุษฎีบัณฑิต สาขาการพยาบาลสาธารณสุข มหาวิทยาลัยมหิดล กำลังทำวิทยานิพนธ์เรื่อง มาตรวัดพฤติกรรมส่งเสริมสุขภาพของครอบครัว : การพัฒนาและการวิเคราะห์ ซึ่งเป็นงานวิจัยที่ศึกษาพฤติกรรมส่งเสริมสุขภาพของครอบครัวไทย เพื่อนำมาพัฒนาเครื่องมือที่จะใช้ประเมินการส่งเสริมสุขภาพของครอบครัว อันจะเป็นแนวทางในการส่งเสริมสุขภาพในระดับครอบครัวให้ครอบครัวไทยเป็นครอบครัวที่มีสุขภาพดี

อนึ่งในการศึกษาวิจัยครั้งนี้ ไม่อาจสำเร็จได้หากไม่ได้รับข้อมูลที่มีคุณค่าจากครอบครัวของท่าน ดังนั้นผู้วิจัยจึงขอความร่วมมือจาก**ท่านผู้ปกครอง ซึ่งอาจเป็นคุณพ่อ หรือคุณแม่ ช่วยกรุณาให้ข้อมูลสุขภาพครอบครัวของท่านโดยการตอบแบบสอบถาม 1 ฉบับ และขอความร่วมมือจากนักเรียน ช่วยตอบแบบสอบถามอีก 1 ฉบับ** ข้อมูลที่ได้รับจากครอบครัวของท่านจะถูกเก็บเป็นความลับ และจะเปิดเผยในลักษณะที่เป็นภาพรวมเท่านั้น

ผู้วิจัยหวังเป็นอย่างยิ่งว่าจะได้รับความร่วมมือจากครอบครัวของท่านเป็นอย่างดี ขอขอบคุณท่านผู้ปกครองนักเรียนและนักเรียนทุกท่าน ไว้ ณ ที่นี้

ด้วยความนับถือ

(นางสาวกนกวรรณ สุวรรณปฏิกรณ์)

หมายเหตุ หากท่านไม่ขัดข้อง ผู้วิจัยขอรับแบบสอบถามกลับคืน 2 สัปดาห์หลังจากที่ท่านได้รับแบบสอบถาม

APPENDIX G

THE 40-ITEM FAMILY HEALTH PROMOTING BEHAVIOR SCALE: VERSION IV

- ENGLISH VERSION
- THAI VERSION

The 40-item Family Health Promoting Behaviors Scale

Instructions: This questionnaire is developed to survey health promoting behaviors of Thai families. As you are an important family member, please give the correct answers about your family health behaviors in the following items:

Section I: Demographic data

1. Your status in the family
   ☐ Father ☐ Mother ☐ Son ☐Daughter ☐Others (Please specify).....

2. Number of family members..... consisting of
   ☐ Father aged.....years ☐ Mother aged.....years
   ☐ Children number.....persons, age.....years(please specify)
   ☐ Others (Please specify).....

3. Your occupation
   ☐ Government/State enterprise officer ☐ Trader
   ☐ Laborer ☐ Employee ☐ housewife
   ☐ Others (Please specify).....

4. Your highest education
   ☐ Primary school ☐ Secondary school
   ☐ Certificate ☐ Undergraduate degree
   ☐ Graduate degree ☐ Others (Please specify).....

5. Your monthly family income
   ☐ less than 5,000 baht ☐ 5,001-10,000 baht
   ☐ 10,001-15,000 baht ☐ 15,001-20,000 baht
   ☐ 20,001-25,000 baht ☐ 25,001-30,000 baht
   ☐ more than 30,000 baht

6. Type of your residence
   ☐ Detached house ☐ Townhouse
   ☐ Flat ☐ Apartment
   ☐ Mansion/Condomenium ☐ Room
   ☐ Others (Please specify).....

7. The owner of residence
   ☐ Self ☐ Rented
   ☐ Relatives ☐ Others (Please specify).....

Section II : The 40-Item FHPBS (Version IV)

Instruction: Please read each statement and put a "√" sign in the space which you mostly agree with about your family.

"Extremely True" means the statement is 100% real in your family.

"Mostly True" means the statement is 75% real in your family.

"Moderately True" means the statement is 50% real in your family.

"Slightly True" means the statement is 25% real in your family.

"Not True" means the statement is unreal in your family.

Statement

1. Each day, members take some time to talk together.
2. My family is enjoyable and has a good sense of humor.
3. The members can talk about everything together.
4. When any member is worried, others pay attention and show their concern.
5. The members always talk about what has happened during the day.
6. When the members are worried about studying or working, they talk to others rather than keeping it to themselves.
7. When there are an unpleasant disagreement within the family, members usually argue with reason rather than emotions.
8. When children disagree with parents (i.e. dressing, selecting friends), they use a rational discussion rather than blaming and escaping from solving problems.
9. Parents and children are good role models for each other when solving problems in the family (such as having humor, using reason, assisting housework, revising timetable etc.).
10. When quarreling within the family, the members argue with words but not hurting each other physically.
11. The members cooperate to keep family relations (i.e. paying attention, having devotion).

12. The members are satisfied with the family, not comparing it with other families.

13. The members always exhibit love and care for each other.

14. The members work to make the family lively and happy, not boring.

15. When the family meets any problem that isn't changeable, the family would solve it with love or hold on to the Lord Buddha's teaching rather than using emotional and despair.

16. The family's diet daily is full of five nutrient food groups.

17. The members encourage each other to take 6-8 glasses at least daily.

18. The family provides some fruits for all members everyday.

19. The members eat some fruits daily.

20. The members usually avoid food high in saturated fat (i.e. pig knuckle, fried chicken, food with coconut cream).

21. The family always finds health-promoting diet (i.e. milled but unpolished rice, vegetables free from chemical substances, herbs etc.) when cooking family's food.

22. When any member gets information about healthy foods, he/she share it with other members.

23. The members take a trip together at least once a month.

24. On holidays, the members join leisure-time activities (i.e. gardening, playing sports, cooking etc.).

25. The members exercise vigorously (i.e. jogging, brisk walking, bicycling, aerobic dancing) at least three times a week.

26. The members usually persuade or urge each other to exercise.

27. The family provides instrumental assistance (i.e. sports equipment) to support member's exercise habits.

28. When any member has some trouble, he/she will first inform the family members.

29. The members talk with each other about purpose of life in the future (i.e. residence, studying, work).

30. The family cooperates to make family life better (i.e. health, economic status).

31. The members are role models for each other on how to do anything for health.

32. The family encourages members to use the earth's resources wisely.

33. The family always asks for new information to promote members' health.

34. When any members come to see the doctor, the family always follows to ask about the illness and treatment.

35. The family tries to seek for the way that members gain health information (i.e. TV, radio, magazine).

36. The family usually encourage each member can to take care of him/herself.

37. All members have an awareness that family members' health is an important task

38. The family has a good relationship with neighbors (i.e. saying hello, sharing some foods, participating in a neighborhood watch).

39. The family and neighbors are familiar with each other enough to ask for help, if necessary.

40. In the community, people are familiar with and ready to help each other, in case of emergency.

Section 3 The Perception of Family Health Status Questionnaire

Please put √ in the blank that you mostly agree about your family health status

Family health status	Very good	Good	Fair	Bad
1. Physical health of all members				
2. Mental health of all members				
3. Family relationship				
4. Taking care of each other				
5. Family health status as a whole				

เลขที่แบบสอบถาม .....

แบบสอบถามพฤติกรรมส่งเสริมสุขภาพของครอบครัว

<u>คำชี้แจง</u> แบบสอบถามฉบับนี้เป็นแบบสอบถามที่จัดทำขึ้นเพื่อสำรวจพฤติกรรมการส่งเสริมสุขภาพที่เป็นอยู่ในครอบครัวไทย ในฐานะที่ท่านเป็นสมาชิกคนหนึ่งที่มีความสำคัญอย่างยิ่งต่อครอบครัว โปรดให้คำตอบที่ตรงกับสิ่งที่ครอบครัวของท่านกระทำอยู่ให้มากที่สุด คำตอบของท่านจะเป็นประโยชน์และมีค่าอย่างยิ่งต่อแนวทางการส่งเสริมครอบครัวให้มีสุขภาพดีต่อไป

<u>ตอนที่ 1 ข้อมูลทั่วไป</u>

1.. สถานภาพของท่านในครอบครัว คือ

O พ่อ O แม่ O ลูกชาย O ลูกสาว

2. จำนวนสมาชิกในครอบครัว ..... คน ประกอบด้วย สมาชิกที่เป็น

O พ่อ อายุ ..... ปี O แม่ อายุ ..... ปี

O ลูก จำนวน .....คน อายุ .....ปี (โปรดระบุทุกคน)

O อื่นๆ (โปรดระบุความเกี่ยวข้อง) .....อายุ.....ปี

3. อาชีพของท่าน

O รับราชการ O พนักงานรัฐวิสาหกิจ

O ค้าขาย O รับจ้าง

O แม่บ้าน O อื่นๆ (โปรดระบุ) .....

4. การศึกษาสูงสุดของท่าน

O ระดับประถมศึกษา O ระดับมัธยมศึกษา

O ระดับประกาศนียบัตร O ระดับปริญญาตรี

O สูงกว่าปริญญาตรี O อื่นๆ (โปรดระบุ) .....

5. รายได้ของครอบครัวต่อเดือน

O น้อยกว่า 5,000 บาท O 5,001-10,000 บาท

O 10,001-15,000 บาท O 15,001-20,000 บาท

O 20,001- 25,000 บาท O 25,001-30,000 บาท O มากกว่า 30,000 บาท

6. ลักษณะที่อยู่อาศัยของครอบครัวในปัจจุบัน

O บ้านเดี่ยว O ทาวเฮาส์หรือบ้านแฝด O แฟลต

O ห้องชุด O ห้องแบ่งเช่า O อื่นๆ .....

7. ลักษณะการครอบครองที่อยู่อาศัยของครอบครัวในปัจจุบัน

O เป็นของตนเอง O เช่า O อาศัยอยู่กับญาติ O อื่นๆ (ระบุ).....

ตอนที่ 2 ข้อมูลพฤติกรรมส่งเสริมสุขภาพของครอบครัว

คำชี้แจง คำว่า "สมาชิก" ในที่นี้ หมายถึง สมาชิกในครอบครัวของท่าน โปรดอ่านข้อความแต่ละข้อแล้วใส่เครื่องหมาย √ ลงในช่องคำตอบที่ท่านเห็นว่าตรงกับครอบครัวของท่านมากที่สุด

"เป็นจริง" หมายถึง ข้อความนั้นเป็นจริง 100% สำหรับครอบครัวของท่าน

"ส่วนใหญ่เป็นจริง" หมายถึง ข้อความนั้นเป็นจริง 75 % สำหรับครอบครัวของท่าน

"เป็นจริงบ้างไม่เป็นจริงบ้าง" หมายถึง ข้อความนั้นเป็นจริง 50% ไม่เป็นจริง 50% สำหรับครอบครัวของท่าน

"ส่วนใหญ่ไม่เป็นจริง" หมายถึง ข้อความนั้นเป็นจริงเพียง 25 % สำหรับครอบครัวของท่าน

"ไม่เป็นจริง" หมายถึง ข้อความนั้นไม่เป็นจริงเลย สำหรับครอบครัวของท่าน

ข้อความ	เป็นจริง	ส่วนใหญ่จริง	จริงบ้างไม่จริงบ้าง	ส่วนใหญ่ไม่จริง	ไม่เป็นจริง
1. ในแต่ละวันสมาชิกในครอบครัวมีเวลาที่ได้พบพูดคุยพร้อมหน้ากัน					
2. ครอบครัวของเราเป็นครอบครัวอารมณ์ดี มีอารมณ์ขัน					
3. สมาชิกในครอบครัวพูดคุยกันได้ทุกเรื่อง					
4. เมื่อสมาชิกคนใดมีเรื่องทุกข์ร้อนใจ สมาชิกคนอื่นๆจะรับฟังและช่วยเหลือ					
5. แต่ละวันสมาชิกจะไต่ถามทุกข์สุขของกันและกันเสมอ					
6. เมื่อสมาชิกกลุ้มใจเรื่องเรียนหรือการทำงานจะระบายให้กันฟังมากกว่าเก็บไว้คนเดียว					
7. เมื่อมีเรื่องผิดใจกันในครอบครัวสมาชิกเลือกที่จะพูดกันด้วยเหตุผลมากกว่าใช้อารมณ์					
8. เมื่อลูกมีความคิดเห็นไม่ตรงกับพ่อแม่ เช่นเรื่องการแต่งกาย การคบเพื่อน พ่อแม่ลูกจะใช้เหตุผลค่อยๆพูดกันมากกว่าตำหนิหรือหนีปัญหา					
9. พ่อแม่ลูกเป็นแบบอย่างที่ดีต่อกันในการแก้ปัญหาในครอบครัว เช่นใช้อารมณ์ขัน ใช้เหตุผลพูดกัน ช่วยกันทำงานบ้าน จัดสรรเวลาใหม่ เป็นต้น					

ข้อความ	เป็นจริง	ส่วนใหญ่จริง	จริงบ้างไม่จริงบ้าง	ส่วนใหญ่ไม่จริง	ไม่เป็นจริง
10. เมื่อมีเรื่องทะเลาะกันในครอบครัว สมาชิกจะเถียงกันด้วยคำพูดแต่ไม่เคยทำร้ายร่างกายกัน					
11. สมาชิกช่วยกันประคับประคองความเป็นครอบครัว เช่นการเอาใจใส่กัน การให้โดยไม่หวังสิ่งตอบแทน					
12. สมาชิกพอใจในครอบครัวของตน ไม่นำไปเปรียบเทียบกับครอบครัวอื่น					
13. สมาชิกแสดงความรัก ความห่วงใยต่อกันเสมอ					
14. สมาชิกช่วยกันทำให้ครอบครัวมีชีวิตชีวา ไม่น่าเบื่อ					
15. เมื่อพบปัญหาที่ไม่สามารถเปลี่ยนแปลงได้ครอบครัวจะใช้ความรักในครอบครัว หรือยึดหลักธรรมะ ช่วยทำให้ใจสงบและไม่เป็นทุกข์					
16. อาหารที่ครอบครัวรับประทานในแต่ละวันเป็นอาหารที่มีคุณค่าทางอาหารครบทั้ง 5 หมู่					
17. สมาชิกกระตุ้นกันและกันให้ดื่มน้ำสะอาดอย่างน้อยวันละ 6-8 แก้ว					
18. ครอบครัวจัดหาผลไม้ไว้ให้สมาชิกได้รับประทานทุกวัน					
19. สมาชิกรับประทานผลไม้ทุกวัน					
20. สมาชิกในครอบครัวมักหลีกเลี่ยงการรับประทานอาหารที่มีไขมันสูง เช่น ขาหมู ไก่ทอด อาหารที่ใส่กะทิ เป็นต้น					
21. ครอบครัวหาอาหารที่ส่งเสริมสุขภาพ เช่น ข้าวกล้อง ผักปลอดสารพิษ พืชสมุนไพร มาประกอบอาหารให้สมาชิกเสมอ					
22. เมื่อสมาชิกคนใดได้รับความรู้เรื่องอาหารที่ดีต่อสุขภาพจะแนะนำหรือหามาให้สมาชิกในครอบครัวรับประทาน					
23. สมาชิกออกไปเที่ยวนอกบ้านด้วยกันทั้งครอบครัวอย่างน้อยเดือนละครั้ง					

ข้อความ	เป็นจริง	ส่วนใหญ่จริง	จริงบ้างไม่จริงบ้าง	ส่วนใหญ่ไม่จริง	ไม่เป็นจริง
24. ครอบครัวมีกิจกรรมวันหยุดร่วมกัน เช่นปลูกต้นไม้ เล่นกีฬา ทำอาหาร เป็นต้น					
25. สมาชิกออกกำลังกาย เช่น วิ่งเหยาะ เดิน ปั่นจักรยาน เล่นกีฬา หรือเต้นแอโรบิค เป็นประจำอย่างน้อยสัปดาห์ละ 3 ครั้ง					
26. สมาชิกมักชักชวนหรือกระตุ้นกันและกันให้ออกกำลังกาย					
27. ครอบครัวสนับสนุนให้สมาชิกออกกำลังกายโดยการจัดหาอุปกรณ์ให้ เช่น อุปกรณ์กีฬาต่าง ๆ					
28. เมื่อสมาชิกมีปัญหา จะนึกถึงคนในครอบครัวเป็นสิ่งแรก					
29. สมาชิกปรึกษาหารือถึงเป้าหมายชีวิตในอนาคต เช่นเรื่องที่อยู่อาศัย การเรียน หรืออาชีพการงาน					
30. ครอบครัวช่วยกันเปลี่ยนแปลงชีวิตไปในทางที่ดีขึ้นกว่าแต่ก่อน เช่น เรื่องสุขภาพ เศรษฐกิจ					
31.สมาชิกเป็นตัวอย่างที่ดีแก่กันในการปฏิบัติตนเพื่อให้สุขภาพดี					
32. ครอบครัวสนับสนุนให้สมาชิกใช้ของอย่างคุ้มค่าและประหยัด เช่น การใช้น้ำ ใช้ไฟ ใช้กระดาษ เป็นต้น					
33. ครอบครัวสนใจหาความรู้ใหม่ๆมาใช้ในการส่งเสริมสุขภาพเสมอ					
34. เมื่อได้รับการรักษาจากแพทย์ ครอบครัวจะสนใจซักถามแพทย์ถึงรายละเอียดการเจ็บป่วยและการดูแลสมาชิกที่ป่วยเสมอ					
35. ครอบครัวพยายามหาวิถีทางให้สมาชิกได้รับข้อมูลข่าวสารเพื่อสุขภาพ เช่นทางโทรทัศน์ วิทยุ นิตยสาร เป็นต้น					
36. ครอบครัวปลูกฝังให้สมาชิกแต่ละคนเอาใจใส่ดูแลสุขภาพตนเองเสมอ					
37. สมาชิกถือว่าเป็นหน้าที่ของทุกคนในการเอาใจใส่ต่อสุขภาพของคนในครอบครัว					

ข้อความ	เป็นจริง	ส่วนใหญ่จริง	จริงบ้างไม่จริงบ้าง	ส่วนใหญ่ไม่จริง	ไม่เป็นจริง
38. ครอบครัวมีสัมพันธภาพที่ดีต่อเพื่อนบ้านเสมอ เช่น พูดคุยทักทาย แบ่งปันของกิน ฝากดูแลบ้าน เป็นต้น					
39. ครอบครัวคุ้นเคยกับเพื่อนบ้านมากพอที่จะพึ่งพาได้ยามต้องการความช่วยเหลือ					
40. ในชุมชนที่ครอบครัวอาศัยอยู่ คนที่อยู่บ้านใกล้เรือนเคียงจะคุ้นเคยกันและพร้อมให้ความช่วยเหลือกันหากมีเหตุฉุกเฉิน					

ตอนที่ 3 สุขภาพครอบครัวของท่านในปัจจุบัน

คำชี้แจง โปรดใส่เครื่องหมาย √ ในช่องคำตอบที่ท่านเห็นว่าตรงกับภาวะสุขภาพของครอบครัวของท่านมากที่สุด

ข้อความ	ดีมาก	ดี	พอใช้	ควรแก้ไข
1. สุขภาพกายของสมาชิกโดยรวม				
2. สุขภาพจิตของสมาชิกโดยรวม				
3. สัมพันธภาพที่มีต่อกันในครอบครัว				
4. การดูแลสุขภาพของกันและกันในครอบครัว				
5. สุขภาพครอบครัวของท่าน				

ขอขอบคุณในความร่วมมือของท่านและครอบครัว

APPENDIX H

MANUAL OF THE FAMILY HEALTH PROMOTING BEHAVIOR SCALE

Manual of the Family Health Promoting Behavior Scale

The Family Health Promoting Behavior Scale is developed to assess health promoting behavior of family units living in Bangkok Metropolitan and to be a guideline in setting up health promotion programs for Thai families.

Definition and Components of Family Health Promoting Behavior Scale

The knowledge base used in developing FHPBS came from concepts of health promotion, concepts of family health, family health assessment models, concepts of family assessment and the results of in-depth interviews conducted with Thai families living in Bangkok. The definition and components of FHPB are as follows:

Family means Thai families consisting of at least one parent and one adolescent child studying in Mattayomsuksa 2. The families live in Bangkok.

Family Health Promoting Behavior means family members' activities in everyday life including similar actions, interactions, and supportive actions to promote positive health behaviors, and to stop disturbing actions related to family health promoting behaviors. The activities support physical, mental, emotional, spiritual, and social well-being of all family members and the whole family. The FHPB consists of 4 factors:

Family Mental Health means family behaviors that work to achieve and maintain balance over time in response to stressors. They are adjustment and adaptation in everyday life. Families use love, cohesion, bonding, good communication and several problem-solving methods to return to equilibrium and enhance healthy family.

Family Physical Health means family behaviors that lead family members to eat healthy foods to promote family health, accompanied with sharing family time together including leisure activity and leisure-time exercise.

Family Responsibility means family behaviors that work to respond to family members' needs and to improve family health. They support many resources that promote family members' health: looking after ill member, seeking health information, planning to make the family future better, and maintaining healthy environment of the family.

Family Social Relation means family behaviors that express relationships and social supports from social networks especially neighbors in the residential community. The family's interaction with neighbors may help in everyday life and in case of emergency.

Structure of the Family Health Promoting Behavior Scale (FHPBS)

Four components of the 40-item FHPBS comprise the number of items and scores as shown in Table 18.

Table 18. Number of Items and Scores of FHPBS and Four Components

Component	Number of items * score	Total scores
Family Mental Health	15 * 5	75
Family Physical Health	12 * 5	60
Family Responsibility	10 * 5	50
Family Social Relation	3 * 5	15
Family Health Promoting Behavior	**40 * 5**	**200**

Properties of FHPBS

The Family Health Promoting Behavior Scale is a 40-item self-administered questionnaire using the 5-point rating scale that consists of 3 sections: Demographic Data Form; The Family Health Promoting Behavior Questionnaire; and the Perception

of Family Health Status questionnaire (Appendix G). The Family Health Promoting Behavior Questionnaire is composed of 4 factors: Family Mental Health consisting of item 1-15 (15 items), Family Physical Health consisting of item 16-27 (12 items), Family Responsibility consisting of item 28-37 (10 items), and Family Social Relation consisting of item 38-40 (3 items).

Statistic Properties of FHPBS

Factor I : Family Mental Health accounts for 35.2 % of variance explained with an eigenvalue of 14.1 and reliability of .88.

Factor II : Family Physical Health accounts for 5.2 % of variance explained with an eigenvalue of 2.1 and reliability of .93.

Factor III: Family Responsibility accounts for 3.8 % of variance explained with an eigenvalue of 1.5 and reliability of .89.

Factor IV: Family Social Relation accounts for 2.9 % of variance explained with an eigenvalue of 1.1 and reliability of .85.

The FHPBS accounts for 47.1 % of variance explained and .95 Cronbach's coefficient alpha reliability.

Thus, all factors and the FHPBS are satisfied with internal consistency reliability.

Standard score

When the FHPBS is used to assess family health promoting behaviors, scores could be transformed to normalized T-score and translated to three levels of FHPB as shown in Tables 19- 24.

Table 19 Scores of Each Component and Total FHPBS Classified by the Level of FHPB

					Level of FHPB		
Component	Min	Max	Mean	S.D.	Poor	Fair	Good
Family Mental Health	21.5	75	60.49	9.29	21.5-52.0	52.5-68.5	69-75
Family Physical Health	16.5	59	40.44	8.10	16.5-31	31.5-48.5	49-59
Family Responsibility	13.5	50	42.05	5.42	13.5-37.5	38.0-46.5	47-50
Family Social Relation	3	15	12.64	2.13	3.0-11.0	11.5-14.0	14.5-15.0
FHPB	76.5	195.5	155.62	21.09	76.5-134	134.5-176	176.5-195.5

Table 20 Criteria for FHPBS in Normalized T-score

Raw score	T-score	Raw score	T-score	Raw score	T-score
76.5	18	136.5-138.5	41	178-178.5	61
78	21	139-140.5	42	179-180	62
91	23	141-143	43	180.5-181	63
93	24	143.5-145.5	44	181.5-182	64
95.5	25	146-147.5	45	182.5-184.5	65
96.5-97.5	26	148-149.5	46	185-186	66
98.5-99.5	27	150-152	47	186.5-187	67
100-102	28	152.5-154	48	187.5-188.5	68
103.5-104.5	29	154.5-156.5	49	189-190	69
105-106.5	30	157-159	50	190.5	70
107-108.5	31	159.5-160.5	51	191	72
109-111	32	161-163.5	52	192	73
111.5-115.5	33	164-165	53	193	74
116-118.5	34	165.5-167.5	54	194	75
119-121	35	168-169.5	55	195	77
121.5-125	36	170-170.5	56	195.5	82
125.5-129	37	171-172.5	57		
129.5-131.5	38	173-174	58		
132-134	39	174.5-176	59	Mean =155.62	
134.5-136	40	176.5-177.5	60	S.D.= 21.09	N = 828

Table 21 Criteria for Family Mental Health in Normalized T-score

Raw score	T-score	Raw score	T-score	Raw score	T-score
21.5	18	48.5-50	38	66-66.5	55
25	21	50.5-51	39	67	56
27	23	51.5-52	40	67.5-68	57
28	24	52.5-53	41	68.5	58
29-30.5	25	53.5-54	42	69	59
33	26	54.5-55.5	43	69.5-70	60
33.5-34.5	27	56-56.5	44	70.5	61
35	28	57	45	71	62
36	29	57.5-58	46	71.5	63
37.5	30	58.5-59	47	72	64
38-39	31	59.5-60	48	72.5	65
40-41.5	32	60.5-61	49	73	66
42-43	33	61.5-62	50	73.5	68
43.5-44	34	62.5-63	51	74	69
44.5-45	35	63.5-64	52	74.5	72
45.5-46.5	36	64.5	53	75	74
47-48	37	65-65.5	54	Mean = 60.49 S.D. = 9.29 N = 828	

Table 22 Criteria for Family Physical Health in Normalized T-score

Raw score	T-score	Raw score	T-score	Raw score	T-score
16.5	18	33.5-34	42	50	62
17	21	34.5-35	43	50.5	63
18	23	35.5-36	44	51	64
19	25	36.5-37	45	51.5	65
20-20.5	26	37.5	46	52	66
21-21.5	27	38-38.5	47	52.5	67
22	28	39-39.5	48	53	68
23	29	40-40.5	49	53.5-54	69
23.5	30	41-41.5	50	54.5	70
24-24.5	31	42	51	55	71
25	32	42.5-43	52	55.5	72
25.5	33	43.5	53	56	73
26-26.5	34	44-44.5	54	57	75
27	35	45-45.5	55	57.5	77
27.5-28.5	36	46	56	59	79
29-29.5	37	46.5-47.5	57		
30	38	48	58	Mean = 40.44	
30.5-31	39	48.5	59	S.D. = 8.10	
31.5-32	40	49	60	N = 828	
32.5-33	41	49.5	61		

Table 23 Criteria for Family Responsibility in Normalized T-score

Raw score	T-score	Raw score	T-score	Raw score	T-score
13.5	18	35-35.5	38	45.5	56
14	21	36	39	46-46.5	57
23	23	36.5-37	40	47	59
24	24	37.5	41	47.5	60
24.5-25.5	25	38	42	48	61
26	26	38.5	43	48.5	63
28	27	39-39.5	44	49	65
28.5	28	40	45	49.5	68
29	29	40.5	46	50	71
29.5	30	41	47		
30	31	41.5-42	48		
30.5	32	42.5	49		
31-31.5	33	43	50		
32-32.5	34	43.5	51		
33-33.5	35	44	52		
34	36	44.5	53	Mean = 42.05	
34.5	37	45	54	S.D. = 5.42 N = 828	

Table 24 Criteria for Family Social Relation in Normalized T-score

Raw score	T-score	Raw score	T-score	Raw score	T-score
3	21	8.5	33	12.5	48
4	24	9	34	13	50
4.5	25	9.5	36	13.5	52
5-5.5	26	10	38	14	55
6	27	10.5	39	14.5	57
6.5	28	11	42	15	63
7	30	11.5	43	Mean = 12.64	
7.5-8	31	12	46	S.D.= 2.13	
				N = 828	

Application of the Scores

The Family Health Promoting Behavior Scale is a 40-item, self-administered questionnaire. It can be appropriately performed with key informant family members who are literate, completing grade 6 and higher. The score of each item ranges from 1

to 5, from not true to extremely true when it comes to their family health promoting behaviors. The scale should be performed with at least two family members. Each score of items should be computed to family mean scores and the sum of scores before translating with the criterion.

BIOGRAPHY

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