CHAPTER II

LITERATURE REVIEW

Theories, articles, existing researches and also the Internet were used in this research. The following topics are what the researcher would like to represent:

1. The Knowledge about Physical Activities
    - 1.1 Meaning of physical activities
    - 1.2 Benefits of physical activities
    - 1.3 Types of physical activities
    - 1.4 Principles of physical activities

2. The Attitudes on Physical Activities
    - 2.1 Feeling
    - 2.2 Beliefs
    - 2.3 Intentions

3. The Health Behaviors
    - 3.1 Ideas for health behaviors
    - 3.2 The relation of knowledge, attitudes and practices related to health
    - 3.3 The influencing factors on health behaviors

4. The Physical Fitness
    4.1 Meaning of physical fitness
    4.2 General physical fitness
    4.3 Special physical fitness
    4.4 The physical test
    4.5 The influencing factors on physical fitness

5. Related Theory
    5.1 Ideas changing health behaviors
    5.2 Self-Efficacy theory

6. The Family Health Leaders
    6.1 Background of the family health leaders
    6.2 Duties and responsibilities of the family health leaders

7. Related Research
    7.1 Overseas researches
    7.2 Internal researches

Definition of Physical Activities

Physical activities mean the movement of our muscles to burn up energy, when it is higher than the basal level.

MET (Metabolic Equivalent) is a measurement standard that measures the quantity of oxygen, which our body needs for energy during activities, compared to the needs of the basal oxygen. Whereas, 1 MET equals the basal oxygen (3.5 ml-O_2/kg/min).

Physical activities are our daily tasks, which include office work, housekeeping, hobbies and also any everyday exercises. A U.S.A. health organizations once promoted and provided advice about physical activities for everyone's good health: people need to do physical activities regularly at a moderate intensity for a total of 30 minutes per day. This particular practice might consume 200 kcal of energy per day, and it was suggested to do this activity everyday. (JAMA, 1996 ; referred to by Rakpanich, 2001)

Physical activities are not only formal activities, but also include our physical movement in our daily lives, such as walking to the office or fields, walking the dog, working at regular occupation, gardening, playing with the children and housekeeping. The above examples will keep your body physically fit. (Ministry of Public Health, 2002)

In conclusion, physical activities are activities which consume energy higher than the basal level. The practices of exercise for good health do not mean only structured and formal patterns, but also includes our daily tasks, which should be kept at both an appropriated level and appropriate duration.

Benefits of Physical Activities

Some of the benefits of having a strict schedule of exercise to improve and maintain the quality of life include:

1. Cardiovascular endurance: decreasing the risk of cardiovascular disease by approximately 50% and protecting us from risk factors such as obesity and hypertension.
2. Control of cholesterol: increase levels of HDL, which is good cholesterol, and decrease triglycerides.
3. Increasing muscle mass: building up and retaining muscle mass, which increases when using energy to reduce fat.
4. Bone mass: decreasing of osteoporosis, which reduces the chances of bone fractures in the elderly.
5. Increasing insulin's efficiency: the use of insulin becomes more efficient and protects the body against diabetes mellitus in adults.
6. Reducing risk of cancer: controlling obesity, which can decrease the risk of cancers such as CA. Breast, CA. Colon and CA Corpus.
7. Improving aerobic energy: decreasing the degeneration of aerobic energy that is caused by senility, and promoting the health of the heart and lungs.
8. Control of weight: having simple and useful meals can help to control weight and protection against obesity.
9. Changing attitudes: avoiding anxiety and depression, increasing pride, and eliminating stress. (Ministry of Public Health, 2002)

Types of Physical Activities

Some common types of physical activities include: Washing the car, cleaning or mopping the floor or windows, playing volleyball, gardening, playing basketball, fast dancing, raking tree leaves, swimming, jumping rope and joggling 2.4 km. per day. (Rakpanit, 2002).

Other types of activities include: walking to the office and getting around, using the stairs instead of the lifts, playing with the children, walking the dog, walking to lunch, walking home and using a cycling station while watching TV. (Ministry of Public Health, 2002).

Intensity of activities can be categorized as follows:

Low intensity activities: (Low intensity < 4 METS) mopping floor, washing dishes, general house keeping, ironing, walking 3.2 km per hour, bowling, slow dancing, playing golf (using a golf cart), yoga.

Moderate intensity activities: (Moderate intensity 4-6 METs) cleaning floor, mowing, gardening, raking tree leaves, digging, washing the car, walking 6.4 km. per hour, cycling 16 km per hour, fast dancing, playing golf (carrying your own golf bag), playing doubles tennis.

High intensity activities: (High intensity: > 6 METs) cutting trees, roller skating, jumping rope, playing football, running 1.6 km. within 12 minutes, cycling 20

km per hour, judo, swimming, playing singles tennis. (Center for Disease Control, 1996)

Principles of Physical Activities

Intensity: Working at least at a moderate level (taking deep breaths without becoming too tired and still being able to speak with other people) in which the heart rate is approximately 60-80% of the peak (220 – ages).

Frequency: everyday or nearly everyday each week (at least 5 days per week).

Duration: at least 30 minutes per day or accumulate a total of 30 minutes per day. This depends on the intensity of the exercise; high intensity might require less time than low intensity. (Ministry of Public Health, 2003)

Endurance: Beginners, who are at a low efficiency, need to start with 55-65 % of their peak heart rate that equals to 220 minus their age in years. (Ministry of Public Health, 2003)

Accumulative exercise: accumulating a walking or running distances of 15 km per week, spread out over at least 3 days, 25 weeks continuously for 6-7 months, or accumulating a total of 150 minutes per week, 30 minutes per session for 5 days a week or 15 minutes per session twice a day 5 days a week.

People who rarely do exercises need to pay more attention to exercises that can increase the endurance of their heart and lungs. Even people who normally do hard work, such as agriculturists, fruit gardeners and labors, need to do exercise to increase their muscle flexibility. For examples, doing physical activities or exercising at a moderate intensity, such as walking 2.8 km in 35 minutes, burns about 150 Calories per session. (Ministry of Public Health, 2002)

Physical activities also help to protect our bodies from diseases and decrease the risks of coronary heart disease. However, over activity or incorrect use of physical activities, may cause ill effects, such as exhaustion or muscle injury, especially for home or office workers who are not used to strenuous work or where the same pattern is repeated over a long period of time or the work is not properly performed, such as lifting heavy objects. Also, people who are employed as laborers need to have regular exercise to benefit from relaxation and maintaining of balances.

Attitudes on Physical Activities

Attitudes always relates to behaviors of the affective domain, which includes interests, feelings, attitudes, changing older persons mind set, or changing behaviors that are difficult to explain, because they are related to mental issues. Attitudes on behaviors can be categorized by the following:

1. Receiving or attending: People who are pushed by a circumstance or condition, which they recognize with pleasure or undoubted acceptance with satisfaction. Acceptance is also comprised of:

1.1 Realization: if you realize that something is true, you become aware of that fact or understand it.

1.2 Willingness: a feeling of enthusiasm that you must depend on.

1.3 Choice of paying attention and acceptance: some people accept things that favor them and do not accept unfavorable things.

2. Responses: Behaviors that follow the first step. People will pay full attention and become in touch with the things and places that they are interested in, and be willing and satisfied to accept those things. However, this is only a fundamental step that cannot specify what concerns people's attitudes or their beliefs
3. Evaluation: The step when people react to something or express their acceptance for something that is judged to be of valuable to them. This shows their interest as well.
4. Grouping of interests: The necessity of grouping is measured by the relationship among those interests.
5. People's acceptance: This can reflect on their personal characteristics, establishing their own philosophy, running the rules and practices which rely on causes and effects both morally and democratically. (Prapapen Suwan,1989)

According to the above paragraph, it can be concluded that the behaviors of each people's attitudes are quite different in both types and quantity. Some people have many more positive behaviors in support of good physical activities, where as some people are more negative and that obstructs good physical activities.

Health Behaviors

Ideas for health behaviors

The World Health Organization defined "health" as the state in which people have a healthy and wealthy condition of both physical and mental abilities, as well as social well being. In addition, being healthy means being free of illness and disability (S. Supannatus & K. Kanjanapuranon, 1989). The word "behaviors" means the expression of any activities which can be noticed by other people and includes mental reaction to any circumstance, such as attitudes, interests and knowledge that sometime cannot be expressed explicitly.

Behaviors mean the reaction of activities, in which humans perform, whether they can be noticed or not. (Prapapen Suwan, 1989)

Health behaviors mean the ability to perform, according to the person's health, such as knowledge, attitudes, practices and skills. (Suchart Soamprayoun, 1997)

Health behaviors mean changes in covert and overt behaviors. Health behaviors also include practices, which can be noticed and mental changes, which are difficult to notice but are assessable.

From the above ideas and the various meanings of health behaviors, it is concluded that health behaviors means personal performances, which are related to our health, and which are concerned with knowledge, attitudes, and practices that can be measured.

Relation Among Knowledge, Attitudes and Practices Relating to Health

The behaviors of knowledge, attitudes and practices might be closely related and always rely on each other. Creating a behavior also induces other behaviors to commence; the evolution of any behavior might influence indirectly the development of other behaviors as well. (Suchart Soamprayoun, 1982)

Knowledge, attitudes and practices always work together or become involved with each other. Whenever any part shows a distinction, it can be represented as a specific target. (Thawatchai Chaijirachayakul, 1984)

The changing knowledge on health might have an effect on attitudes, practices or health conditions, which may affect other health behaviors as well. (Nipa Manunpiju, 1985)

With the above ideas, it is concluded that the changing of behaviors concerning knowledge, attitudes and practices is closely related to becoming permanent behaviors.

The Influencing Factors on Health Behaviors

There are 3 influencing factors, which affect health behaviors including knowledge, attitudes and practices. Moreover, the origination of behaviors is quite complicated and compounded by many factors that have effects on personal health behaviors such as:

1. Psychological factors: such as seniority, needs, attitudes, personal beliefs, social beliefs, interests, inspiration, oppression.

2. Social and cultural factors, which have an influence on the health behaviors such as families, people with social status, cultures and religions. These factors have affects on learning, thinking criterion, beliefs and practices on people's health.

   2.1 Families: Health behaviors are mainly influenced by families. In some families, parents establish eating patterns for their children, such as non-meat food products (vegetarian), non-vegetable foods, under cooked foods, etc. Moreover, families also influence the daily practices of their children such as sleeping, leisure, exercising, bathing, etc. Therefore, the influences on the practices by the parents or other family's members might affect the health behaviors of family's members.

   2.2 People in the community: People in the community also influence health behaviors. People from the same generation usually have similar thoughts, beliefs and practices. In fact, their health behaviors may improve or deteriorate their health. What takes place between the people and their group, might effect changes of behaviors that are highly reflective on knowledge, attitudes and practices.

   2.3 Social status: Examples include: position, educational level, financial level. The difference in social status might lead to differences in people's health behaviors.

   2.4 Cultures: The people's heritage reflects on their ways of life, which may differ in each community. There are many Thai

cultures, and some of these cultures may contribute to health problems such as the hill tribes that avoid taking baths because they are afraid their clothes and decoration may easily get worn out. Another culture avoids some foods that are necessary and useful for heath, especially noticed among sick people or new mothers who are allowed to eat only boiled rice with salt. These rules and prohibitions, for people who still believe and practice, directly affect people's health behaviors. However, some of the rules have advantages such as new mothers are allowed to drink only boiled water.

2.5 Religions: Much religious influence is places on certain people's lifestyles and health behaviors. The Buddhist doctrine says to eat moderately, (don't overeat or under eat), which is one of the scruples to reform the mind and feelings. Moreover, the practice of Islam is that the body must be cleaned prior to praying. Therefore, the doctrine and practices have been reasonable for health purposes and personal health behaviors.

3. Economic factors: The people's economy has a direct relationship to their educational levels and a direct affect on their health behaviors. For the group of people with a low income, their knowledge, attitudes and the practices on heath appear to be lower too. In contrast, people with a higher income have a better opportunity to be educated which supports them with valuable knowledge in terms of good health behavior.

4. The educational factor for health behaviors: The different levels of people's education might have an effect on their knowledge, attitudes and practices concerning their health conditions.
5. The political factors for health behaviors: Political policies might affect people's health behaviors towards their knowledge, attitudes and practices. The policies can indicate the numbers and sufficiency of services, nursing care, health activities and laws, which are enacted to promote good health. (Prapapen Suwan, 1989)

The Physical Fitness

Meaning of physical fitness

"Physical fitness is the ability to control our bodies and perform proper functions while working steady for a long period," Thomas R. Cureton, Illinois University gave for the meaning of physical fitness.

Somchai Prasertsiripan also said "Physical fitness or healthy condition means capacity, like a sportsman, who performs sports or does exercise intensively." In his additional comments, he stated physical fitness means the capacity of the physical body and minds of people to perform fully any activities comprise of important factors such as power, speed, agility, endurance and health.

Vichai Ungpinijpong defined physical fitness as the physical ability to work effectively, as referenced to heart–lung endurance, muscle strength, the flexibility and the balance of our body.

Samroun Rattanajan said physical fitness is the main objective of physical growth by being physically prepared to handle daily activities effectively. If anyone can use their body parts such as arms, legs, torso, etc. in their daily activities with full effectiveness, we can say that they are highly physically fit.

Clark (1967) also said, physical fitness means the ability to work actively without being too tired or exhausted and also there should be enough energy remaining to do other things for leisure or in an emergency.

Har & Say (1967) 14, physical fitness means the physical status, which enables us to work, and is able to be measured on specific levels by a test of physical fitness that is comprised of strength, endurance, speed, agility and flexibility. Anyone who exercises at a high level seems to take daily tasks effectively without much trouble. Especially for students who study for long periods of time, their physical fitness might have a positive effect on their studying results.

Coachman (1969) also said, physical fitness means the ability to work for a long time and have enough remaining strength to work on other tasks without getting tired.

Minler (1965) said physical fitness means the ability to use strength, speed, endurance and energy without getting tired easily and also be enable to join in on exercise for leisure as well.

In conclusion, physical fitness means the physical ability to perform on any physical activities effectively. It is comprised of muscle strength, muscle endurance, muscle power, muscle flexibility, agility, and speed of muscle functions and endurance of blood circulation.

General Physical Fitness

The International Committee for the Standardization of Physical Fitness Test classified physical fitness into 7 categories:

1. Speed
2. Muscle power
3. Muscle strength
4. Muscle endurance, anaerobic capacity
5. Agility
6. Flexibility
7. General endurance, aerobic capacity

Special Physical Fitness

Special physical fitness is very important for athletes who perform their specific sports; for example, swimmers have different special physical fitness needs than football players or athletic men. Therefore, the building of special physical fitness needs to have special training which differs from general training. For example, football players need to emphasize on special training for strengthening their legs, shoulders and trunks, while boxers need to have special training on their arms, shoulders, chests, legs, and trunks.

The Physical Test

The general physical fitness test, which was prepared by The International Committee for the Standardization of Physical Fitness, has aimed to become the worldwide standard test by compiling the results of the study of physical fitness, divided into different ages and genders. The test comprises of 8 categories as follows:

1. Speed running 50 meters for the speed test.
2. Distance jumping for the test of muscle power.
3. Grip strength for the muscle strength test.
4. Sit-ups for 30 seconds for the test of muscle endurance.
5. Wrist lifting (males age above 12 years) and arm hanging (females for all ages and males ages under 12 years) for the test of muscle endurance.
6. Running and picking up stuff for the agility test.
7. Sitting and doing sit-ups for the flexibility test.
8. Marathon race for general endurance.

The Influencing Factors on Physical Fitness

The exercise levels

Exercises have a direct effect on physical fitness in which the exercises help to strengthen the muscles by improving muscle mass. The long period exercise (not too difficult but continuous for a long time) can improve endurance in such cases as the improvement of the respiratory system and blood circulation system. People, who lack regular exercise, trend to become less physically fit than people who regularly get exercises. In addition, low efficiency on sharing functions of the muscular and neural systems results in a low capacity to avoid risks. The lack of exercise might lead to a

loss in the proper functions of muscles, and the flexibility of the tissue. Moreover, lack of exercise might increase fat that results in a decrease of flexibility. In contrast, getting regular exercise might help to improve flexibility and maintain its existence.

Age

The heart rates of newborns are about 130 beats per minute and become lower as they grow into their youth hood. Naturally, the flexibility is significantly high in primary school students and decreases as they grow up until the ages of 12-13 years old. After that, the flexibility still increases slightly until they become youths, when it will decrease proportionally with the increase in age.

The physical ability of children might be less than their parents, so exercise for children might be aimed at fundamental steps. Children who are under 8 years old seem to have a low capacity of muscle functions, so the exercises that are needed for them should be basic ones.

For adults, the most suitable ages for concentrating on muscle strength, speed and agility is between 25 and 30 years of age. In addition, the practices of endurance may continue to show increases, even when they get older than 30 years. However, the ability to practice that level of exercise to keep physically fit will decline when they get to be about 35 to 40 years old.

Gender

The differences between males and females of physical fitness are obviously clear both in appearance and comparison ratio (weight ratio in kg). Normally, the body structures of females show less strength than males and the average weight of females is also lower than that of males, as well as lower muscle mass in females.

The endurance of girls, from their childhood to their youth, does not seem different than that of boys. However, girls can reach their peak quicker if they had regularly practiced moderate exercises. Normally, the endurance of females is lower than that of males, and if they practice intensive exercises, females seem to have less endurance than males. Morehouse & Miller (1976) mention that the endurance of females while running was half of that of males and listed some factors that limited the females' endurance:

1. The heart rates of females are quicker than males' (10%).
2. The heart capacity is smaller.
3. The chest size is smaller and that results in a lower capacity of the lungs.
4. The capacity to carry oxygen is lower in females, because there is a lower number of red blood cells

However, the flexibility of females (from their childhood through their maturity) is higher than males.

Weather conditions

Weather conditions have obvious effects on the efficiency of exercise. Higher temperatures may result in lower endurance, affecting heat exchange due to the working of the muscles. The statistic of a marathon man who performed at 25°C had approximately 5% better results than performing at 35°C. However, hot weather may help the body during exercise, because it can help the body warm up faster and also reduce the risks that are caused by the inability to warm up, such as muscle injury, arthritis, etc. Training to improve endurance in hot weather might produce less time and quantity than in cold weather and is less beneficial to improvements in physical fitness as well. Since the temperatures in the morning are lower than during the daytime, mornings are a much better time to practice endurance, while speed and agility are best practiced during the afternoons.

Humidity also affects our body's heat exchange while doing exercise. Weather with high humidity results in lower evaporation from the skin surface, which will produce more perspiration and weigh less on endurance. However, exercising in dry weather (low humidity) may have a bad influence on people, who are used to exercising during high humidity weather, causing them to feel tired, thirsty and out of breath.

Related Theory

In an American research: PRECEDE – PROCEED MODEL by Lawrence W. Green and Marshall W. Kreuter (Green and Kreuter, 1991), practices and support are very important. Educational activities encouraged changes in behaviors in terms of quality and quantity as well as existence to obstruct unhealthy behaviors. Emphatic

behaviors are personal behaviors that are relevant to the health problems in the present and for the future. Also, the same importance can be applied to personal behaviors, like the behaviors of people in groups, such as community leaders, parents, employers, friends, teachers and health service staff, which have the authority to control the resources and reward people for good behaviors towards exercise.

The main ideas of "support" are directly related to their environments that encourage individual people in their communities to continuously promote good practices or changes in behaviors relating to exercise. Clearly, the choices of new policies, rules, criterion and also reorganization, are a part of that support. Knowledgeable people, legislators, teachers who promote good health, employers who are understandable and parents who have good health care skills, are all examples of people needed to establish a health study process, as well as political interventions. Good attitudes of the people need to learn from their surroundings that sustain it in term of supporting factors and additional factors.

The model is comprised of 2 parts: the first one is the diagnostic phase, called PRECEDE (Predisposing, Reinforcing and Enabling Constructs in Educational and Environmental Diagnosis and Evaluation) and the second part is the planning phase which comes after the diagnostic to bring out the practices and evaluation. This section is called PROCEED (Policy Regulatory and Organizational Constructs in Education and Environment Development.)

PRECEDE – PROCEED Model can be categorized as shown below:

1st step: The social diagnosis becomes a tool to research the social problems of the target, which enables us to study the demands and personal expectations.

2nd step: The epidemiological diagnosis studies the specific health area that will affect the targets or social problems. The outcomes of this research are living statistic, medical information and epidemiology.

3rd step: The behavioral and environmental diagnosis is comprised of environmental and health-related behavioral factors, which relates to the health problems. Where as, the environmental factors do not rely on people, but can be kept to adjust and support health behaviors and quality of life of individual persons.

4th step: The educational and organizational diagnosis, according to the fundamental knowledge of behavioral studies, had shown that there are many factors, which influence health behaviors and can be classified into 3 main groups: predisposing factors, reinforcing factors and enabling factors. Where as, the predisposing factors are comprised of knowledge, attitudes, beliefs, social beliefs and acknowledgement of people that can convince other people to change their behaviors. Next, reinforcing factors are comprised of the utilization of resources or the removal of obstructions, which induce behavioral and environmental changes. They can either be positive (encouragement) or negative (interruption), that can be caused by social forces in their system, facilities and personal resources and either an abundance of supply or a short

supply. Lastly, enabling factors mean the award or feedback of data by other people, after they have been applies, either positively or negatively to their behaviors (Ministry of Public Health, 2002)

Self-Efficacy Theory: Perceived self-efficacy was developed from a social intellect self-learning theory by Albert Bandar (1977), and was concerned with the adjustment of behaviors on internal changes without any response. However, learning could take place, whenever it was accessed by new knowledge and also the behaviors could reflect on that learning. (EamSupasit, 1996) Although knowledge had become more influential on their behaviors, it cannot stand alone to fully characterize personal behaviors. Some examples of the study show that knowledge might come through with people's self-referent thoughts before applying it to real situations. (Schunk & Cabonari, 1984)

Perceived self-efficiency is a part of the thinking process and the link between knowledge and their behaviors (Lawrence & McLeroy, 1986), which became important to people's beliefs and brought on the feeling of "I can do" (Ross, 1992) for some specific situations, especially intensive conditions or critical situations. It gives people a chance to choose suitable behaviors and practice as considered necessary.

Bandura gave the meaning of perceived self-efficacy as a decision of the person's ability for whatever reason to arrange or not arrange their skills to perform successfully behavioral activities. This is done by combining social learning and cognitive behaviors, which are a concern to personal behaviors by 3 associated factors,

personal factors, behavioral factors and environmental factors, in which the association was reasonably related. Those 3 factors take control of each other unequally, some factors having more influence than others and appear at different time, in which the time for the appearance of any factor would affect other factors' characteristics. (EamSupasit, 1998 ; Bandara, 1997)

As mention above, personal behaviors may be influenced by the environment and personal factors, such as learning and beliefs. Personal factors are influenced by personal behaviors and environmental factors. In contrast, the environment is changing, due to their personal behaviors and beliefs, which control personal behaviors. So, all of these 3 factors might be closely related in terms of the interlocking system, in which has an effect on their behaviors and personal learning. As seen from above, it can be concluded that people, who take on any behavior, should have perceived self-efficacy and learn about the effects of that behavior. As a result of the perceived self-efficacy and the effects of it on behaviors, it is reversed to have an influence on other behaviors as well. (Bandara, referred to by Sirisuk, 1991) So that, the decision on any personal behavior is introduced by their perceived self-efficacy, which is comprised of efficacy beliefs in which it shown their perceived self-efficacy to perform on behaviors completely and get the successful results they needed. In addition, the outcome expectancy means the forecast of the behaviors to resulting in what they had expected.

Background of the Family Health Leaders

The health promotion policy of The Ministry of Public Health and The Universal Coverage of Health Insurance directly affected hospitals and many health centers, in terms of preparation, protection and health improvement for more effectively. In the past, a lot of money was spent on treatment, that needed social and political forces to alter people's attitudes and change their minds, as well as local organizations and leaders

to accept the fact that fundamental self-care had become very important among the people, their families and their community.

The development of roles for the people within their community was counted as the main aspect of the development. The community's roles were divided into 2 types: personal roles in their community and the role of community organizations, which were established by the government and community, such as locally administration agencies, committees etc. The personal roles in these was an area that needed to be developed and Thai people need to participate in health, especially their own health care such as learning, data exchange, self-practices in all areas concerning such things as food, air, exercise, personal health care, diagnosis of problems, environmental treatment, cooperation with the social rules, etc. The method developed was to set up family health leaders, authorized by local health volunteers, in terms of selection of people who are able to grow in mind and lead with the trust of the people by presenting themselves to the people and explaining the information to them. This information may sometimes also be reported by mass media, publicizing the knowledge of the family

health leaders and improving activities, especially fundamental personal process. (Division of Health Support for People, 2003)

Duties and responsibilities of the family health leaders

The family health leaders are a key factor for health care of the family's members and lead the members towards good practices for other family's members. Moreover, they also become coordinators to participate in solving problems and improving their family's public health.

Related Research Works

Overseas researches

Herris and Guten, (1979) studied the behaviors of practicing health care, according to their beliefs. From the sample group of 842 samples, the result showed that educated people tended to pay more attention to their health care activities, such as doing regular exercises and diet control, than uneducated people.

Coburn and Pope, (1974) did studies on the socioeconomic status and preventive health behavior from a sample group of 1,143 men from Victoria and Columbia in Canada using a questionnaire. The study showed that educational levels were related to their behaviors directly and indirectly, as the educated people seem to be more aware of their preventive behaviors than the uneducated people.

Silman (1979) did research on the survey of attitude towards health among people who left school, in which the results showed that knowledge, attitudes and

health care practices were not relevant, however only prominent behavior was related to attitude.

Ann (1977) studied and surveyed the needs and interests in activities which involved through the lives of elders who lived in Tennessee. The survey focused on 36 different activities, in which people had been involved for their whole lives and was divided into 3 main types. The survey included 94 elders whose ages were between 55-65 years. The scope of this survey emphasized the interests and participation in the activities and the demand for additional practices. The outcome of this research showed that most universities, institutes and organizations needed to promote learning of the applicable activities, and prepare the youths as they grow up to become accustomed to the importance of exercise for their future. Moreover, schools need to prepare programs with a variety of exercise to include applicable activities as well.

Brahce (1970) did research on the influence of mass media in adult educational programs, in which the aims of this study was the importance of radio, television, newspaper and periodicals as learning tools. From a sample group of 511 samples, the result of the research showed that television and radio had quite a lot of influence, but students relied more on print (newspapers and periodical) to search for information. Clearly, the students had an interest in searching for information, and the mass medium had reflected their interests, especially the report news because it was closely related to their daily living, and also the mass medium had originally responded to the needs directly and become a huge resource for data and knowledge training.

A Ph.D. student from the University of Illinois at Chicago (2003) did research on the correlation of physical activity on urban Midwestern Latinas using 300 samples from Latina volunteers. They found that only 36% showed an interest in physical activities, whereas 52.3% indicated an insufficient amount of practice and 11.7% ignored exercising altogether. Physical activities were found to be highly favored by female elders, married people and also women who were involved in a support program. Most people agreed that they would practice physical activities nearby their homes, which can serve their demands easily especially in crowded communities.

Covey (1979) studied the results of practicing different work loads control by measuring heart rates to find the effect on the efficiency of the heart functions and the respiratory system. A sample group of 50 male students from the university was divided into 5 groups of 10 students each. The 1st through 4th groups did the regular test, whereas the 5th group used intensive exercise on a motor driven treadmill for the distance of 1 mile. Different speeds were used in the different groups, such as the 1st-4th group had limited speed which resulted in a maximum heart rate at exercise of 60%, 70%, 80% and 90% respectively. This training lasted for 6 weeks at 4 days per week, whereas the exercises in the first and last weeks of the 6 weeks training was applied to all trainees, to measure their heart capacity such as heart rates and respiratory rates which were significant to the maximum oxygen carrier, the maximum heart rate, the resting heart rate and the changes of tasks for exercises. The result showed that the changes of tasks, which stimulated an increase in the heart rate 70%, would reduce the resting heart rate, the maximum heart rate and also increase the volume and the capacity of oxygen carrier as well. So the level of exercise that was considered the most

beneficial to the resting heart rate, the maximum heart rate and the maximum oxygen carrier, needed to start at 70% of the maximum heart rate. The exercise level, which had an effect on increasing the task, had started at the heart rate of 70% as well.

Dumrong Kitkusol (Practicing of Exercise, 2002) talked about an exercise in Finland called "Pepstep Program," which was comprised of step up and walking. The tests were administered by Dr. Richard B. Stuart, who studied people who planned to lose weight. These 1,500 people were divided into 2 groups, with the first group being kept on a controlled diet, and the other group also was on a controlled diet and used the Pepstep Program. The results after 6 weeks showed that the first group lost an average of 3.22 lbs., whereas the second group which had been on the Pepstep Program, lost an average of 5.29 lbs.

Internal researches

Support of sports and exercise by the government and private sectors was promoted for the improvement of people's health condition following The National Economy and Society Development Plan, edition 8-9, which encouraged people to exercise. The examples of physical activities that were established by the government and private sectors included Ramintara playground and aerobic zone at shopping areas such as Golden Place Shop and Big C. Moreover, health parks became very popular, such as Thonburirom Park which provided people leisure and other sporting facilities along with aerobic dancing. The 3rd health festival: "Thai Health Practices 2000, Thais Getting Stronger than Foreigners," was organized by the local assembly through the cooperation of Thai Medical Research Institute, The Science of Healing School and

Thai Ancient Massage Medical School, was held in October, 2001 at Wat-Prachatupol located at the University of Srinakarintaraviroj, Prasamit. A "Health Market" was established for the first time by a group from a private radio station called "Green Wave 106.5" on March 3, 2002 at Rama Garden Hotel. It was comprised of many activities such as sports for health, physical examinations, foods for health, games, and talk shows by Jatupol Chompunid, etc. The aim of this program was to promote health for people. Another program was established in October 2002, whose aim was to get people to do their exercises, and was organized by The Department of Public Prosecution, Ministry of Public Health. The main activities included member's registration, promoting of aerobic exercise by community health centers all over the country to promote good health. The program was introduced with an exercise video led by Pornchita Na Songkha (a famous superstar) and also included publication on television, radio, posters and handbills. This project was a result of The Yearly Health Promotion Program 2002, which encouraged people to keep a healthy balance, to reduce the risk of contracting a chronic disease such as diabetes mellitus, hypertension, heart disease, CA colon, etc. The program encouraged people to do exercises regularly for their good health. Moreover, The Department of Public Prosecution had worked together for the promotion of health in the central area and as well as upcountry areas such as "Happy Park Project (Suan Ruenrom)," which had benefited people and created good relationships among those family's members and the community's members for the expansion of the community health promotion network. The 1st National Health Unity Festival, which was located at Sanamluang, on November 23, 2002, created a new world record of 47,700 people who gathered to perform aerobic exercise. The highlight of this program was the record-breaking number of people who got together

to do their exercise, and was recorded in the Guinness Book of Records. Many well-known people from the government and private sectors joined in this program showing their interests in the importance of exercise. (Sukanya Dokpud, 2003)

Pattama Rodthung's (1997) abstract, did research on the amount of time people spent on sports during their spare time and getting exercise for people in the lower north area of Thailand. The sample group was comprised of 200 males and 200 females, which were selected by multi-stage sampling. A questionnaire was used for collecting data, and data analysis used average values and standard deviation values and then performed the t-test independent, one-way analysis of variance and the difference test by using the Scheffe method. This research found that people who spent most of their spare time on sports were a group ages between 15-25 years old and had an educational level of junior high school, no occupation or income. They mostly knew about the program through television and played sports everyday for an average of 1-2 days per week, 15-30 minutes per time between the hours of 16.00-19.00 at schools in their villages. They aimed to achieve their physical fitness by playing sports. The biggest problems were found to be an insufficient amount of spare time for exercise, a high demand for places, tools, facilities and staff to oversee the services.

Pradit Nadvichai's (1997) abstract, was involved with the health situation and the exercise behavior of teachers in Chainad Province. The samples were those teachers who worked under the Provincial Primary Education Office in Chainad Province and the Provincial Elementary Education Office for the semester year 1996. A total of 340 teachers aged between 20-40 years were studied. The result of this research showed that

the general health situation of the teachers was satisfactory, their body mass index (BMI) was quite good, pulse rates and blood pressure remained at a satisfactory to good level, abdominal muscle strength was at a satisfactory level and the strength of arm and shoulder muscles was at an unsatisfactory to satisfactory level. Moreover, the behavior towards exercise was generally low, the number of days they did exercise was only 1-2 days per week and lasted only 5-15 minutes per session, the exercise were not fully performed, only light exercise was done such as walking, joggling and easy exercises, and the most popular time for exercise was in the evening. According to gender factors, males had been more consistent with their exercise behaviors in terms of the numbers of day, duration and types of activities with significant at P value = 0.001, and the significant at P value = 0.01 for the duration. Whereas, ages and income had been relevant to the types of activity with the significant at P value = 0.001 and 0.01 respectively.

Pensri Jungthanacharoenlerd's (1998) abstract, studied the knowledge, attitudes and practices on exercise for good health of 449 nursing students, at the Nursing College of Boromrajchonne, Saraburi. The sample was comprised of 30 males and 419 females, which were chosen by using the layer sampling. The tools for collecting data were a questionnaire, which measured the knowledge, attitudes and practices on exercise and then the data was analyzed with the f-test and the relative coefficient of Pealson. The study showed that the nursing students had knowledge of the importance of exercise for health at a satisfactory level, and their attitudes and practice with exercise was at quite a good level. The differences in seniority was apparent by the differences of knowledge, attitudes and practices for exercise with significant at P =

0.001, 0.05 and 0.001 respectively, whereas the relation between the attitudes and exercises had significant s and exercises had significant between knowledge and attitudes and the relation between knowledge and practices was insignificant.

Jutikarn Charoensuk's (2001) abstract studied the knowledge, attitudes, and behaviors of exercise and personal physical fitness at the Sirinthorn Centre (Report for National Medical Recovery). The group sample was comprised of the staff that worked in the Sirinthorn Centre in 2001 with a total of 136 people. The questionnaire was used for collecting data, in which the measurement was focused on knowledge, attitude and behavior of exercise, and then they received the physical efficiency test by the Sport Medicine Centre, Sport and Activity Organization of Thailand. Next the analysis of the data was by average value, deviation value, percentages and the relative coefficient of Pealson. The results of the study showed that the staff of the Sirinthorn Centre had knowledge of exercise at a satisfactory level, whereas their attitudes were at quite a good level, the behavior of exercise was at a satisfactory level and their physical fitness was at a good level. The knowledge of exercise had been relevant to the attitudes of exercise with significant at P = 0.05, while the attitudes and behaviors of exercise had been relevant to the physical fitness with significant at P value = 0.05.

Napaporn Watthanapiboon (2001) studied the knowledge, attitudes and practices of exercise in elders, which comprised of a sample group of elders who lived at the Elder Obligation Institute in Ayuthaya Province. A total of 130 people were studied, 38 of them males and 92 were females. The result of the study showed that the elders had their own knowledge about exercises at a satisfactory satisfied level, and

their attitudes was shown at quite a good level, whereas the practices was at a satisfactory level.

According to the importance of the above, it led the researcher to do this research, which focused on knowledge, attitudes and behavioral practices of physical activities on family health leaders. This study will provide benefits and encouragement for family health leaders to continue their promotion of physical activities to other family's members and also people in their community.