High-school Exercise Intention in Bangkok: An application of Health Belief Model

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Abstract
The objective of this research is to study the intention teenagers' exercise in Bangkok by applying the Health Belief Model. The data is collected with structured open-ended interviews with male and female teenagers aged between 12-18 years for 50 persons (25 male teenagers and 25 female teenagers). 75% of the sample group had the intention to exercise. 17.71% of the sample group recognized that if they do not exercise, they were at risk of becoming obese with unhealthy muscles (16.67%) and osteoporosis (13.54 percent). 46.67% of the sample group perceived severity of diseases caused by not exercising, loss of physical fitness, in the treatment of illness (45.16%), negative impacts on learning, family relationships, friends, society and mind (38%). All of the samples perceived that exercise makes good mental health, build good relationships with others (60.61%), and benefit to the body (43.36%). 69.70% of the sample groups had personality traits as barriers to exercise, such as laziness and lack of time (50.46%). 75% of the sample group was confident that they can exercise as they want and personal influences were cues to action of teenagers' exercise.
Keywords: Teenagers, Exercises, Health Belief Model

Introduction
Adolescence is a transition age between childhood and adulthood and is the age of transition from health care by parents to be responsible for their own health (Pender, Murdaugh, & Parson, 2006). At present, teenagers have daily life that is full of stress and tension. They have less relaxation activities including less exercise affecting more physical and mental health causing them to face chronic diseases which is possibly an important factor of illness leading to the costs of treatment (Goel, 2006). Moreover, even for teenagers who have knowledge about exercise for health at very good level and have positive attitude towards exercise, there is no difference in exercise behaviors (Kongchiwasakun, Klanarong, and Sathirapanya, 2014). Exercise is related to various factors according to the Health Belief Model which emphasizes the importance of perception of the persons following the 4 cognitive determinants without ignoring personal and environmental variables to explain health behaviors. It is believed that the intention of action is close to the actual behavior (Rosenstock, 1974). Awareness of the benefits of exercise, receiving of information and social support are found to have positive correlation with exercise behaviors.

The families with support to exercise and the families without support for exercise result in different physical activity for teenagers. The perception of barriers to exercise is negatively correlated with exercise behaviors (Pholnil, 2012). However, if teenagers are confident that they can divide time for exercise even if there are other activities to do or confident that they can exercise even if they have to go to exercise alone, the awareness of self-efficacy in exercising will help to encourage them to exercise more (Ar-yuwat, Clark, Hunter, & James, 2013). In addition, female teenagers who exercise regularly will have higher perceived scores on the risk of disease and severity of disease from not exercising much than those who do not exercise (Ramezankhani, Tavassoli, Ghafari, Alidosti, Daniali, & Gharlipour, 2016). Therefore, creating sufficient and accurate exercise regularly since adolescents will help teenagers have healthy body, control blood pressure, have better mood, and create satisfaction in their figures. This can resist the development of health at risk of heart disease and stroke, high blood pressure, obesity, diabetes, osteoporosis and cancer (2015). Thus, this research aims to study the willingness to exercise of Thai teenagers both male and female in Bangkok according to the concept of health belief theory.

Literature Reviews

From the study of related researches, it is found that Health belief theory has been used to describe and predict various health behaviors as it can explain changes in health behaviors such as smoking, sexual intercourse, body movement, use of condoms, healthy eating, helmet wearing, vaccination prevention, common behaviors between eating and exercise, and study about diabetes, etc. (Glanz, Rimer, & Viswanath, 2008). The researches related to exercise can be summarized as follows.

Rhodes, Jones, & Courneya (2002) studied the variables of Social Support and Subjective Norm to predict the intention of exercise of the group of teenagers who are 192 university students having Social Support. It is the individual perception on the support from parents, family, and friends in exercising. Meanwhile, the Subjective Norm is the perception that the persons important to themselves or reference group have the influence motivating them to exercise. The social support is found to have greater influence than the Subjective Norm in predicting exercise behaviors when controlling the influence of attitude towards exercise. The perception of ability to control behaviors and demographic variables are stable. Huppertz, Bartels, Bartels, Beijsterveldt, Willemsen, Hudziak, & Genus (2015) conducted the study on regular exercise in adolescents of identical twins (monozygotic twins / dizygotic twins) aged 14-18 years for 458 persons. The research was conducted as Cross-section and was longitudinally study. The research of Cross-section is found to have no difference between regular exercise and low body mass index. The twins with regular exercise do not have a lower body mass index than the twins who do not exercise regularly. As for long-term studies, there is no difference between regular exercise and body mass index ($p>.05$). This means when the transition period passed, different exercises did not change the BMI. In addition, Downes (2015) conducted the study to determine the relationship between eating habits and exercise of 106 university students. The perceived barriers were related to eating snacks ($r=.29$) and exercise ($r=-.29$). The perceived benefits were correlated with exercise ($r=.24$), eating snacks ($r=-.21$), and eating vegetables ($r=.23$). Similarly, the research of Kim, Ahn, and No (2012) was conducted to predict the intention of eating for health and fitness of 251 male and female university students. It was found that the perceptions on benefits and barriers directly influenced the prediction of intention to eat health food and fitness of teenagers. This is the variable transiting influence between knowledge about correct food consumption according to nutrition principles and knowledge about exercise as well as the intention to eat healthy food and intention to exercise. However, the perceived susceptibility of the risk cannot predict the intention of eating healthy food and the intention of exercising of the teenagers while perceived severity has a direct influence to predict healthy eating behaviors.

Research conceptual framework

This research has the conceptual framework following the health belief model as follows.

The Health Belief Model is the theory developed in 1950 by the group of 3 American social psychologists, namely, Hochbaum, Kegel, and Rosenstock in order to explain the preventing disease or detecting disease at the asymptomatic stage consisting of 4 main structures (Rosenstock, 1974; Janz & Becker, 1984) as follows.

1. Perceived Susceptibility is that the person will act on health behavior depending on the perception of the chance or risk of having disease. This makes that person aware that such behavior is harmful to health and there must be the change in the behaviors to strengthen the health.

2. Perceived Severity or Seriousness is the perception of disease severity of the individual resulting in the death, loss of physical and mental ability, medical and clinical consequences of such person. This includes the financial and social consequences.

3. Perceived Benefits is the perception that the health behaviors can benefit, reduce risks, reduce the fear from illness, reduce the severity of diseases, reduce the personal loss both physical and mental as well as money or other expenses. How people behave depends on the methods that must be the way believed to benefit the most and has the least obstacles. A person will choose to find a way to heal from disease or prevent disease based on the belief that the method is useful and appropriate to cure such disease.

4. Perceived Barriers is to consider the negative outcomes which are the barriers possibly occurring from the health behaviors, namely, expenses, harm, undesirable side effects, pain, iatrogenic outcomes, unpleasant, difficulties, inconvenience, time, including the personalities of the individual.

That the persons will show the health behaviors depends on the Perceived Susceptibility and Perceived Severity called in combination as Perceived Threat making people aware that their behavior is harmful to health and must be changed. Then, the person will make the Behavioral Evaluation by assessing the perceived benefits of healthy behavior how much it can benefit and reduce the severity of illness. This can be evaluated from perceived barriers which are predictions of individual obstacles whether physical, mental, financial aspects, time or other expenses that prevent the action of such health behavior.

However, if the persons do not recognize that they are threatened by the risk of disease and are not aware of the severity of the disease whether there are obstacles to doing health behavior or not and they do not perceive that health behaviors can be useful or valuable to health or not, those people need to have a stimulus or persuasion called Cues to Action to allow people to consider and realize their behavior changes. The stimulus will be different in each gender and age (Rosenstock, 1966) divided into 2 aspects; 1) internal stimuli or internal cues that change the state of the body according to the symptoms of the disease or symptoms of illness including a better sense of physical and mental change, 2) external cues which are interaction with friends, interact with other people, communicate news, receive messages from doctors to monitor progress in treatment for getting better health care and warning or support from people who are loved or respected such as husbands, wives, parents, relatives, etc. In addition, Perceived Self-Efficacy which is the main structure of Social Cognitive Theory (SCT) (Bandura, 1977; Rosenstock, Strecher, & Becker, 1988) is added to the Health Belief Theory (HBM) believing that a person has the ability to act and behave which does not occur and changes with the environment only. It also has interaction between three factors; 1) Personal factor (P), 2) behavioral conditions (B), and 3) environment condition (E). This determines the performance of behavioral expression depending on the Expectancies and incentives or reinforcement.

Research Method

The sample of this research consists of 50 male and female teenagers aged between 12-18 years old studying in Matthayom 1-6 in Bangkok. The data is collected by using Purposive

sampling and focus group using structured open-ended interviews based on the theory of Health Belief Model (HBM) and from the review of related literatures and researches. The interview form is divided into 2 parts. Part 1 is the general information of the sample group and part 2 is the exercise interview. The data is analyzed for finding the frequencies and percentages.

Research Results

1. The general information of the sample group consists of 25 male and 25 female teenagers. Among them, 25 persons are secondary school students and 25 persons are high school students, aged between 12-18 years. The average age is 15.64 years. The weight is between 38-90 kg. The average weight is 58.24 kilograms. The height is between 150-181 centimeters. The average height is 167.54 centimeters. Most of the samples have a normal body mass index of 24 persons. 14 have light weight (thin). 8 persons are obese and 4 persons are overweight. In addition, the income they receive from parents, relatives or from work is between 2,000-6,000 baht with the average of 3,740 baht. 47 persons live with parents and 3 persons live with relatives. Most of them for 33 persons have brothers and sisters. 17 persons are the sole child. 45 persons have lovers while 5 persons have none.
2. For the intention to exercise, the results showed that 75 percent of the respondents of the entire sample group have exercise by continuous body movements such as brisk walking, running, cycling, aerobic dancing, swimming, etc. They exercise at least 30 minutes / time and at least 3 times / week. They warm up before exercising and stretch the muscles after exercising.
3. Perception of the risk of disease if not exercising: The results showed that 17.71% of the respondents of the entire sample group perceived the risk of obesity if not exercising. This is followed by unhealthy muscles (16.67%), osteoporosis (13.5%), cardiovascular disease (12.50%), blood clots in the arteries (10.42%), diabetes (8.33%), and hypertension (6.25%), respectively.
4. Perception of the severity of the disease if not exercising: The results showed that 46.67% of the respondents of the entire sample group perceived the negative effects of subsequent problems if suffering from non-exercise in the loss of physical fitness, illness, disability and death, followed by in the treatment of illness (45.16%) and negative impacts on learning, relationship with family, friends, society and mind (33.33%), respectively.
5. Perception of benefits of exercise: The research found that the entire sample group perceived that exercise made good mental health and relieved stress. This is followed by a good relationship with others (60.61%) and benefits for health (43.36%), respectively.
6. Perception of of barriers to exercise: The results showed that 69.70% of the respondents of the entire sample group perceived barriers obstructing the exercise which are personality and characteristics of each person such as laziness, sleepiness, desire to rest. This is followed by difficulty, inconvenience, and unavailability (50.46%). The followings are dissatisfaction, undesired, body not ready, injuries from previous exercise, and bad weather (43.58%), respectively.
7. Perception of self-efficacy in exercise: The results showed that 75% of the entire sample group was confident that they were able to exercise. It is easy for them to go to exercise and they believe that exercise will be beneficial to health as they want.
8. Cues to action in exercise: The results showed that 53.57% of respondents from the entire sample group recognized that media such as Facebook, Instagram, review before-after, public relations board, and new exercise machines motivate them to exercise. This is followed by personal influences (30.77%) i.e. having good body, wanting to lose weight, feeling of strong body, having neither cold nor contegenious disease (allergy), stress reduction, refreshing, feeling fun, support, and reminders from parents, teachers, friends, lovers (27.03%).

Table 1 Percentage of answers from the entire sample groups regarding various perceptions according to the concept of health belief model (N = 50)

Perception	Percentage	Perception	Percentage
Perception of disease if not exercising		**Perception of of barriers to exercise**	
-Obesity	17.71	-Personality characteristics of each person	69.70
-Weak muscles	16.67	-Difficulties, inconvenience, lack of time	50.46
-Osteoporosis	13.54	-Dissatisfaction, non-desire	43.58
-Cardiovascular disease	12.50		
-Blood clots in the arteries	10.42		
-Diabetes	8.33		
-High blood pressure	6.25		
Perception of the severity of the disease if not exercising		**Perception of self-efficacy in exercise**	
-Loss of physical fitness, illness, disability and death	46.67	-Confidence in exercise. Exercise is easy for them as they believe that they will have good health effects as they desire.	75
-Treatment when having illness and disease	45.16		
-Negative impact on learning, relations with family, friends, society, and mind	33.33		
Perception of benefits of exercise		**Cues to action in exercise**	
-Good mental health, stress relief	100.00	-Media	53.57
-Create good relationships with others	60.61	-Support, recommendation, and reminders	30.77
-Be useful to the body	43.36	-Personal influences	27.03

Note: one person of the sample group can answer more than one answer.

Research Discussion

This research studies the health promotion in the exercise of Thai teenagers by studying the intention to exercise related with previous researches conducted by Luszczynska, Gibbon, Poko, & Tekozel (2007). The self-efficacy affected to the exercise of teenagers. The male and female teenagers have some difference exercises and the perception of self-efficacy in exercise consists of the factors that affect the exercise of adolescents best compared to other factors (Monge-Roja, Nunez, Garita, & Chen-Mok, 2002). The perceived barriers to exercise have direct impact on the exercise intentions of both male and female teenagers (Kim, Ahn, & No, 2012; Rahmati-Najarkolaei, Tavafian, Fesharaki, and Jafari, 2015). It the teenagers have confidence in exercise, they will go to exercise even if there are obstacles, limitations in exercise, whether it is time, environment in exercise, non-support from parents, or various inconveniences such as being unfamiliar with strangers when exercising, having no friends to exercise, unfavorable weather, there is a lot of homework or work to do. (Lovell, Ansari, & Parker, 2010; Dambros, Lops, & Santos, 2011). The results of this research reveal that personality traits of teenagers such as laziness, sleepiness, desire to relax are obstacles to exercise. In accordance with the

researches in Thailand, Naphaphorn Chiwarangsini (2016) found that perceived self-efficacy in exercise directly affects the exercise behaviors and intention in exercising teenagers and receiving Knowing their own ability to exercise is the most important factor affecting the exercise of male and female teenagers followed by perceived barriers to exercise which together explain the exercise of teenagers for 26% (Senasuthiphan and Nukhong, 2015). In addition, Huang, Kuo, Wang, Wang, & Tsai (2016) found that the perceived risk to disease if not exercising could explain the intention of exercising of teenagers. The results of this research revealed that the teenagers perceived the risks of disease if not exercising including obesity, unhealthy muscles, osteoporosis, cardiovascular disease, diseases of the blood clots in vessels, diabetes, and hypertension. The teenagers also perceive the severity of consequences if they become sick from the lack of physical exercise, loss of physical fitness, illness, disability, and death. The body can cause changes in exercise behaviors from the point of inadvertence to action (Juniter, Oman, Hamm, & Kerby, 2004). Nevertheless, this research reveals that stimulation in the exercise of teenagers includes advertising media, personal influence, and the support of parents, family and friends. This is in accordance with the researches of Courneya, Plotnitkoff, & Birkett (2000) and Rhodes, Jones, & Courneya (2002).

Research Recommendations

Health promotion is the behavior that persons practice for good health, maintain, or increase the well-being as well as promoting the health of teenagers in exercise. This is one way that can be applied for youth development which results in good health behavior in adulthood. If a person behaves continuously and consistently, it will become part of the way of life to promote the quality of life of such person. The lifestyle plan and health habits will tell the person's ability to maintain or enhance good health. Understanding the behaviors of teenager's health promotion then cannot be used to refer to the existing knowledge in adulthood. Moreover, the teenagers today have health problems more than their parents when being teenagers. The study of health promotion behaviors during adolescence is therefore a starting point for healthy behavior patterns rather than education in order to change behaviors that are not healthy during adulthood. Thus, the following researches should be conducted as quantitative researches whose results can refer to the group of population such as the study to compare the differences of exercise between genders, relationship, and differences between exercise behaviors and healthy eating of teenagers or the study of causal relationship models, etc.

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