THE HEALTH BELIEF AND SAFETY BEHAVIORS OF PARENTS WITH 3 - 6 YEAR OLD CHILDREN IN RAJATHEVI DISTRICT, BANGKOK

JIRAWAN KLOMMEK

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The purpose of this descriptive research was to investigate health beliefs and safety behaviors in parents of 3-6 year old children. This research also studied the ability to predict parental safety behaviors by measuring health beliefs on perceived susceptibility, perceived severity, perceived benefits, perceived barriers, age of parents, family income, and injury experience of parents. This study used Rosenstock's Health Belief Model using convenient sampling for 140 parents having 3-6 year old children studying in kindergarten schools of Bangkok Metropolitan Administration, Rajathevi district, between February and March 2000. Tools for data collection consisted of a demographic data form, parental safety behaviors questionnaires, and questionnaires on parental health belief regarding safety. Analysis was performed using the SPSS/PC computer program.

The results indicated that the parental safety behaviors had a highly appropriate ($\overline{X}$ = 99.17, S.D. = 9.76) and combination of health belief on perceived susceptibility, perceived barriers, perceived benefits, and family income variables accounted for 61.9 % of the variance in parental safety behaviors, of those were significant predictors of safety behaviors ($P < .001$).

Recommendations from this research are that nurses promote parent health beliefs regarding the safety of their children, especially for parents with perceived susceptibility, perceived barriers, perceived benefits, and low incomes. This will encourage parents to stress appropriate safety behaviors for their children and benefit the children's health by reducing injury incidents.

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จิราวรรณ กล่อมเมฆ : ความเชื่อด้านสุขภาพกับพฤติกรรมการดูแลความปลอดภัยแก่บุตรวัย 3-6 ปีของบิดามารดา เขตราชเทวี กรุงเทพมหานคร (THE HEALTH BELIEF AND SAFETY BEHAVIORS OF PARENTS WITH 3-6 YEAR OLD CHILDREN IN RAJATHEVI DISTRICT, BANGKOK). คณะกรรมการควบคุมวิทยานิพนธ์ วิไล ลีสุวรรณ, M.Ed., รุจา ภู่ไพบูลย์, D.N.S., อดิศักดิ์ ผลิตผลการพิมพ์, M.D., MPH. 98 หน้า. ISBN 974-664-399-1

การวิจัยเชิงบรรยายครั้งนี้ มีวัตถุประสงค์เพื่อศึกษาความเชื่อด้านสุขภาพและพฤติกรรมการดูแลความปลอดภัยแก่บุตรวัย 3-6 ปีของบิดามารดา พร้อมทั้งศึกษาอำนาจการทำนายของความเชื่อด้านสุขภาพ ด้านการรับรู้โอกาสเสี่ยง การรับรู้ความรุนแรง การรับรู้ประโยชน์ การรับรู้อุปสรรค อายุ รายได้ครอบครัว และประสบการณ์การเกิดอุบัติเหตุ ที่มีต่อพฤติกรรมการดูแลความปลอดภัยแก่บุตรวัย 3-6 ปีของบิดามารดา โดยใช้ Health Belief Model ของ Rosenstock เลือกกลุ่มตัวอย่างตามความสะดวก (convenient) เป็นบิดามารดาที่มีบุตรวัย 3-6 ปี และกำลังศึกษาชั้นอนุบาลในโรงเรียนสังกัดกรุงเทพมหานคร เขตราชเทวี ระหว่างเดือนกุมภาพันธ์ ถึงเดือนมีนาคม 2543 จำนวน 140 ราย เครื่องมือที่ใช้ในการเก็บรวบรวมข้อมูลประกอบด้วย แบบสอบถามข้อมูลส่วนบุคคล แบบสอบถามพฤติกรรมการดูแลความปลอดภัย และแบบสอบถามความเชื่อด้านสุขภาพเกี่ยวกับการดูแลความปลอดภัย วิเคราะห์ข้อมูลโดยใช้โปรแกรม SPSS/PC

ผลการวิจัยพบว่า บิดามารดามีพฤติกรรมการดูแลความปลอดภัยเหมาะสม ($\bar{X}$ = 99.17, S.D. = 9.76) และพบว่าตัวแปรที่สามารถทำนายพฤติกรรมการดูแลความปลอดภัยแก่บุตรของบิดามารดา คือความเชื่อด้านสุขภาพ ด้านการรับรู้โอกาสเสี่ยง การรับรู้อุปสรรค การรับรู้ประโยชน์ และรายได้ครอบครัว โดยสามารถร่วมกันอธิบายความแปรปรวนพฤติกรรมการดูแลความปลอดภัยแก่บุตรของบิดามารดาได้ร้อยละ 61.9 อย่างมีนัยสำคัญทางสถิติ ($P < .001$)

ข้อเสนอแนะจากการวิจัยครั้งนี้คือ พยาบาลควรส่งเสริมให้บิดามารดามีความเชื่อด้านสุขภาพเกี่ยวกับการดูแลความปลอดภัยแก่บุตรวัย 3-6 ปีถูกต้องมากขึ้น โดยเฉพาะกลุ่มบิดามารดาที่มีความเชื่อด้านสุขภาพ ด้านการรับรู้โอกาสเสี่ยง การรับรู้ประโยชน์ การรับรู้อุปสรรคไม่ถูกต้อง และบิดามารดาที่มีรายได้ครอบครัวน้อย อันจะส่งผลให้บิดามารดามีพฤติกรรมการดูแลความปลอดภัยแก่บุตรได้เหมาะสม ซึ่งจะเป็นประโยชน์ต่อสุขภาพของเด็ก และสามารถลดอุบัติการณ์การเกิดอุบัติเหตุกับเด็กได้

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CHAPTER I

INTRODUCTION

Background and Rationale

Thailand has been in the process of development and for the past 30 years, driven by the National Plan on Economic and Social Development. This has caused rapid development in all segments of the country and has improved the quality of life for Thai people. It is noticeable that more technological development has increased, more the incidences of injuries. From public health statistics between 1991- 1995, injuries and poisoning were the leading causes of death, second to heart disease. Deaths from injuries and poisoning increased from 45.6 to 61.7 per 100,000 (Bureau of Health Policy and Planning, Ministry of Public Health. Internet 1997). According to traffic statistics in Bangkok from January 1995 - March 1996 reported for 80,424 cases of injuries of which there are 1,627 deaths and property loss of 64.06 million baht (The Royal Thai Police Department, Ministry of Interior, 1996: 72). A study by Palitpolkarnpim, A., et al. (1999: 22) showed that between 1985 and 1996, Thai children between 1-4 years of age had an increased death rate from injuries from 18 to 25 per 100,000. Similar to the United States, it showed that the number of children who received treatment in hospital because of injury was about 600,000 cases per year and more than 30,000 cases became disabled because of injury (Rodriquez, 1990: 627). From the above statistics, it can be assumed that injury has an effect on body development, loss of property, life and national economics, amounting to several million baht per year (Chaisrisawadisuk, B., 1994: 63 ; Haggerty, 1996: 290). This is

an important problem for public health, economy and society; therefore, in the National Development Plan for Public Health VIII (1997-2001), reducing injury death rate from 61.6 to not more than 50 per 100,000 population has been included as a target (Office of the Prime Minister, 1997: 8).

Rajathevi district, Bangkok, has a population of 106,728. Of which, 3,983 are children between 3-6 years of age. There are 21 slum communities, 5,000 houses, and the majority of the population has unpermanent employment (Department of Local Administration, 2000). From this study, children who live in slum communities and have unpermanent employment parents, have a high risk of injuries (Tiempathom, S., 1994: 91-92). There were some reports from government hospitals in Rajathevi district which showed that children 3-6 year of age are high risk for injuries. For example Queen Sirikit National Institute of Child Health 1998-1999, reported three-hundred and forty one cases of injuried children (37%) was 3-6 year of age. Injuries in the 3-6 year old age group are mostly from falls, and bumps. The second highest cause of injuries are from animal bites, equipment, machines, and other sharp objects. From the annual report of Ramathibodi Hospital in 1999, eight-hundred and three children were visited in emergency department with injuries. Forty percent of those (324 cases) was in the age group 3-6 years. There were ninety one cases of children in this age group who received injury and had to be admitted to the hospital. Five-hundred and one of injuries children were reported from Phra Mongkutklao Hospital during February - December 1999. Forty-nine percent of those were in 3-6 year- age group.

Children aged 3-6 are very active, curious and eager to find things out and they want to be independent and creative. The central nervous system is not quite coordinated with various organ systems at this stage. Knowledge, ability, experience, and power of decision, are not good enough (Ashwill & Droske, 1997: 111-113 ; Wong, 1993: 368-370). Therefore, children in this age group are prone to injury. This is coupled with the fact that parents who think children can take care of themselves do not pay attention as closely as they should. The study of Tiempathom, S. (1994: 101) indicated that 55.3% of 320 pre-school children receive injuries at home. The most common injury was falling, followed by drowning and choking from foreign objects. From a case study of 50 children who received injury at home in Cambridge, the important risk related to factor injury in pre-school children was a lack of supervision (Bronzi and Johnson, 1967 cited by Haggerty, 1996: 292). The study can of 419 cases of children who received injury by poisoning in Australia indicated the same result that was 27% caused by unawareness of mothers in caring for children (Allan & Williams, 1956 cited by Haggerty, 1996: 292). Therefore, children in this age group need close attention from parents for injury prevention. Due to raising their children according parents beliefs, attitudes, and values (White & Watt, 1973: 240-241), safety behaviors of parents should depend on personal beliefs. Rokeach (1970: 112) indicated that the belief of a person in doing something is an important factor in helping an individual to develop behaviors to adjust to different situations suitably. Since human behaviors is complex, an understanding of the framework and theories connected with personal behavior is needed.

The important factors of Health Belief Model are perceived susceptibility, perceived severity, perceived benefits, perceived barriers, and modifying factors which consist of demographic factors, social psychological variables, structural variables and cue to action for explaining and predicting cooperative prevention behaviors in the general public. These factors help in understanding that persons who perceive that they are highly susceptible to diseases will have better preventive health behaviors than persons who have lower disease susceptibility perception. Perception of susceptibility for diseases alone does not guarantee that the persons will have preventive health behaviors, until the individual will perceived the seriousness of diseases that can destroy life or has effects on body, family, and society. Moreover, the individual must believe that his/her behaviors pattern will provide the highest benefits with least barriers in achieving it. This includes other modifying factors which are age, knowledge, personal relationship, experience, source of information, and social class or support. These factors will build a person preventive health behaviors (Rosenstock 1974: 330-333). From studying perceptions, safety behaviors, and learning needs of parents brought to an emergency department in Florida, it was found that more than 50% of parents believed that the majority of injuries could not be prevented, therefore, parents did not need to learn about safety behaviors even if they had inappropriate safety behaviors (Coffman, et. al, 1998: 135). A study of Ruiharad, J. (1995: 67) found that health belief positively correlated with maternal behaviors in the care of asthmatic pre-school children. Another study indicated that health belief, age of mothers, previous injury experience of mothers, knowledge of mothers, and birth position of children were significant predictors on safety behaviors at home (Russell &

Champion, 1996: 59). This aim to explore the correlation between the health belief and safety behaviors of parents with 3-6 year old children. The result will benefit nursing plans in promoting suitable safety behaviors of parents. That will reduce the number and danger of injury to children, which is an important problem of the country.

Conceptual Framework

This research study uses the Health Belief Model of Rosenstock (1974: 328-335) as a framework for explaining parental safety behaviors for 3-6 year old children.

The Health Belief Model was used to explaining and predicting preventive health behaviors. This is because in the early 1950s, the majority of people did not accept disease preventives or screening tests for the early detection of asymptomatic disease, provided by the government free of charge, or very low cost. Therefore, Hochbaum, Leventhal, Kegeles, and Rosenstock, who were social psychologists, analyzed the Health Belief Model for preventive health behaviors. It explained that a personal perceived susceptibility was reflected with degree of risk for developing a certain specific disease. Perceived severity of a given health problem can be judged either by the degree of emotional arousal created by the thought of the disease or the difficulties that individuals believe a given health condition would create for them. Perceived severity may include a broad implications of the illness for work, family life, or social relationship and commitments. Therefore, perceived susceptibility and perceived severity combine to determine the total perceived threat of a disease to specific individual. The extent of threat represents the negative valence of disease and predisposition to avoidance, which the combined effects of perceptions of susceptibility and severity on the performance of various preventive health action.

And two additional factors identified as affecting of preventive health action are perceived benefits and perceived barriers. In order to have an action on preventive health, a person will need to be aware of high benefits with least barriers. Perceived benefits had influence with recommended preventive actions. Perceived barriers meant barriers in having an action, which included cost, inconvenience, unpleasantness, or extent of life change.

Later, it was found that personal beliefs was correlated with modifying factors, which was a motivating factor for a person to make decisions about certain preventive health actions. In order for modifying factors to go through perceived threat, to preventive health action, it will include the following:

1. personal variables such as age, sex, race, ethnicity, economic status;
2. sociopsychological variables such as personality, social class, peer and reference groups pressure;
3. structural variables such as knowledge and experience;
4. cues to action (motivating factors for a person to have interpersonal relationships), which consist of internal and external cues, such as perception of bodily states, or external cues, such as interpersonal interactions, mass media, advice from family members, spouse, friends, posters, and reminder postcards from health professionals. These are summarized in figure 1.

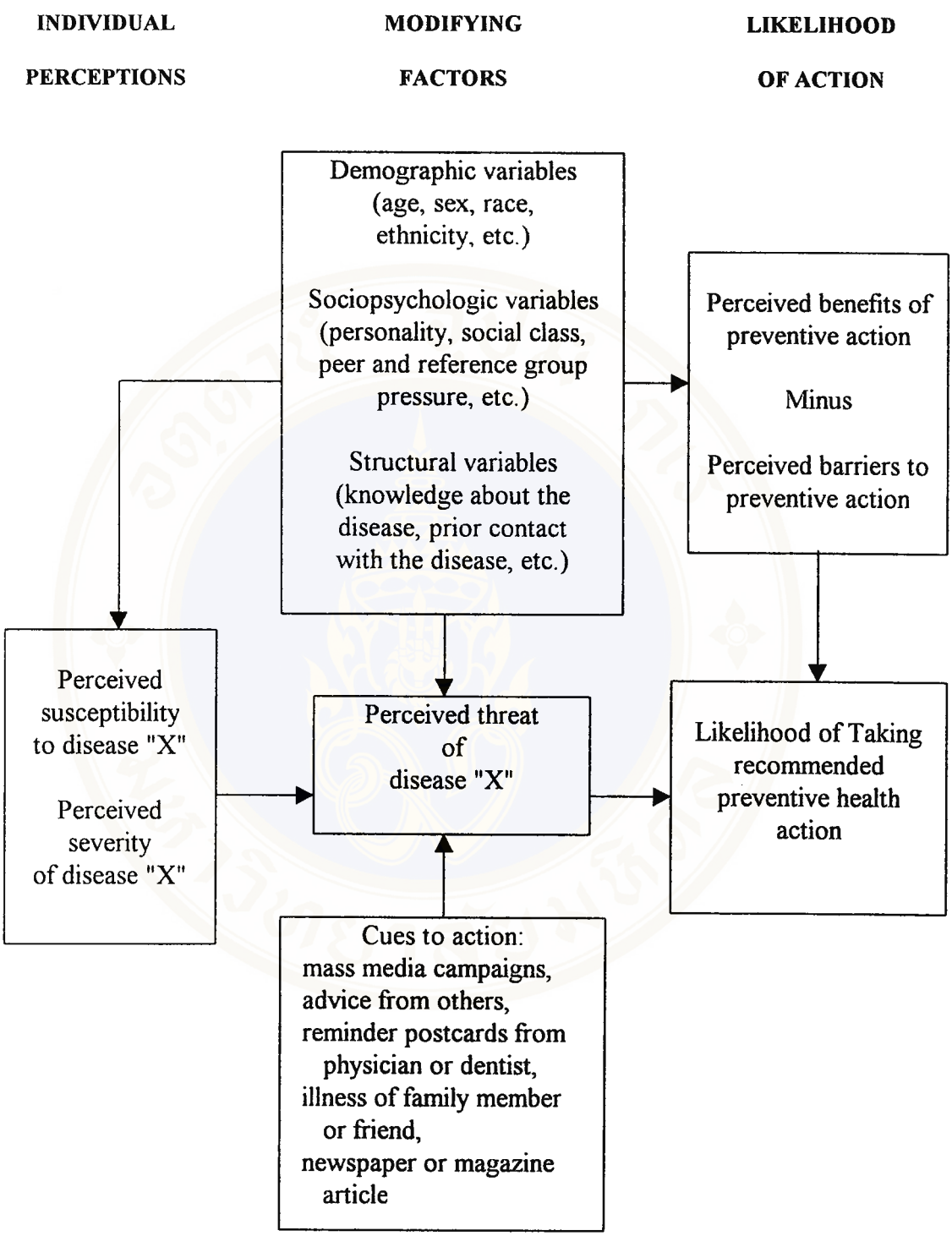

Figure 1: The "Health Belief Model" as predictor of preventive health behaviors

(Rosenstock, 1974: 334)

From this framework, if parents have correct health belief, they should have appropriate behaviors. This study examines the correlation between the health belief and safety behaviors of parents with 3-6 year old children, as indicated below.

The Health Belief in the study consists of:

1. **Perceived susceptibility of injury** is a personal belief in acknowledging that a person has a high risk of injury. This results in that person had safety behaviors from the cause of injury. The study of Jutaponlakul, W. (1995: iii) found that perceived susceptibility of injury from riding a motorcycle was positively correlated with safety behaviors of secondary school students. Therefore, parents who think their 3-6 year old children have a high risk of injury will have proper safety behaviors.

2. **Perceived severity of injury.** If parents do not believe that injury can cause loss of life and property, they have perception of injury susceptibility, they will not have safety behaviors. The study of Maneekham, B. (1995: iii) found that perceived severity was positively correlated with motorcycle riding behavior of people in Chiang Mai province. Therefore, if parents perceive that severity of injury could make their children suffer, disabled, or die, then the parents are more likely to have safety behaviors, such as providing a safe environment, watching children closely, and teaching their children about safety behaviors.

3. **Perceived benefits of safety behaviors** is an evaluation of parents regarding beneficial effects of safety behaviors. It is belief that a behavior, has an effect to prevent, and/or to reduce suffering, disability of children, expenses and time in curative care. The study of Gerhart (1992: 1) found that perceived benefits of using

child safety restraints while riding in motor vehicles was significantly correlated with parents' using safety restraints for children.

4. Perceived barriers of safety behaviors is an evaluation on barrier of safety behaviors, such as high costs, loss of time, not enough knowledge, beyond capability to follow. Russell & Champion (1996: 63) found that perceived barriers were significantly correlated with home safety hazards. Mothers who had limited information of safety behaviors, fatigue, and inefficient household management, were less likely to make their homes safe against potential injury hazards. Therefore, parents who perceived low barriers of safety behaviors would have proper safety behaviors.

5. Modifying factors do have effects on personal predisposition to take safety behaviors via knowledge and understanding. In this study, modifying factors chosen are age of parents, family income, and injury experience of parents.

5.1 Age of parents: Age has a correlation with past experience. Parents who are far apart in age, naturally have different amounts of learning time and different amounts of experience, which results in different thinking processes and different decisions for different actions. Becker & Maiman (1975: 19-20) found that an individual who is younger and has experience regarding family members who are not interested in health, will not be cooperative in taking medication.

5.2 Family income: This can be considered a resource which supports parental opportunity and choice in considerations and support in resource management capability for children's health. Rosenstock's study (1974: 355) has a similar conclusion; he looked at personal characteristics with usage of health services, and

found that high income individuals had a higher frequency of health service usage than low income individuals. This results in early diagnosis of diseases. Khainil, K. (1993: 69) found that diabetic pregnant women from high income families would have better self-care behaviors.

5.3 Injury experience of parents: Some parents may have gone through severe injury experience with their children, some may not be so severe, and some may not have gone through the experience at all. Past experience should have some effects on safety behaviors. The study of Russell & Champion (1996: 62) found that mothers who had injury experience could reduce hazard accessibility and hazard frequency to children.

For preventive health behaviors, Rosenstock (1974: 354-369) explains that an individual's preventive health behaviors depends on beliefs and modifying factors as mentioned through thinking processes and decisions for prevention of danger before it happens. A self-report study of health and safety behaviors of parents of pre-school children, found that more than 90% from all samples of 1,143 cases use a car seat, keep medicine out of reach, control hot water temperature, teach pedestrian safety and supervise when children are out of doors. Sixty percent to ninety percent of parents reported that they have working smoke alarms, teach stair safety, check safety on field trips, teach name, address, and telephone number, and keep matches out of reach. Less than 60% reported having the poison control center telephone number available, avoided giving hard candy, used safety plugs on outlets, had a working fire extinguisher, and kept guns and bullets stored separately and locked (Hendrick & Reichert, 1996: 248-249).

From all the thinking processes mentioned, it helps to know that the health belief model could be an important factor for parents in learning how to have safety behaviors. This should help parents to have safety behaviors appropriate to the age of the children and suitable for the family lifestyle. Therefore, the researcher is interested in studying the relationship between the health belief and safety behaviors of parents with 3-6 year old children, by summarizing the conceptual framework in the study as shown in figure 2.

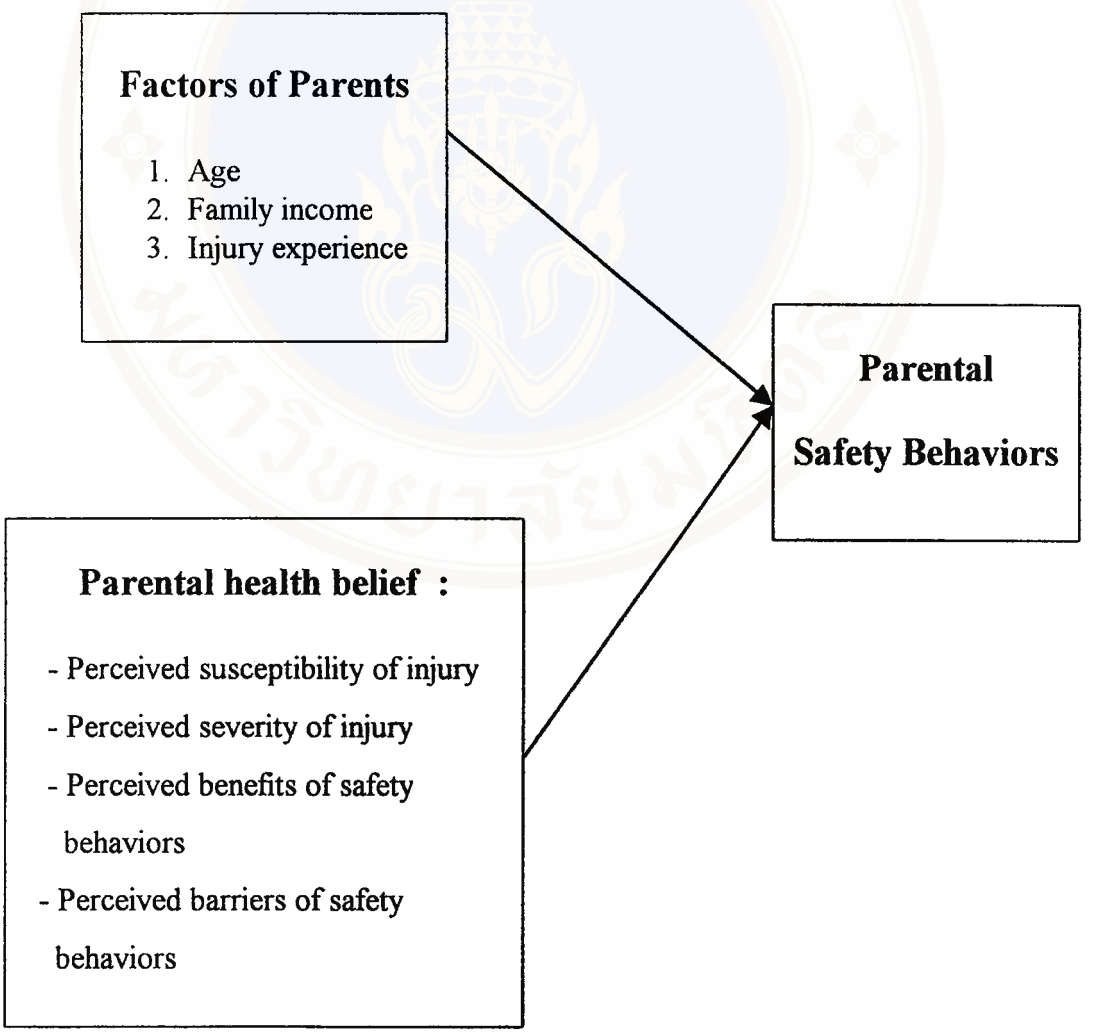

Figure 2: Conceptual framework for the study

Questions of the Study

1. What are parental health belief on perceived susceptibility, perceived severity, perceived benefits, perceived barriers, and parental safety behaviors for 3-6 year old children ?

2. How can parental health belief on perceived susceptibility, perceived severity, perceived benefits, perceived barriers, age of parents, family income, and injury experience of parents predict parental safety behaviors for 3-6 year old children ?

Objectives of the Study

1. To describe parental health belief on perceived susceptibility, perceived severity, perceived benefits, perceived barriers, and parental safety behaviors for 3-6 year old children.

2. To study the power of parental health belief on perceived susceptibility, perceived severity, perceived benefits, perceived barriers, age of parents, family income, and injury experience of parents as being able to predict parental safety behaviors for 3-6 year old children.

Hypothesis

The combination of parental health belief on perceived susceptibility, perceived severity, perceived benefits, perceived barriers, age of parents , family income, and injury experience of parents variables will predict parental safety behaviors for 3-6 year old children.

Scope of the Study

This research is a study undertaken to predict the power of relationship between health belief and safety behaviors of parents with 3-6 year old children. The population for this study are parents who have 3-6 year old children, and attend kindergarten classes in schools of Bangkok Metropolitan Administration, Rajathevi District, Bangkok. Data was collected from February to March 2000.

Potential Benefits

1. To help in understanding and providing information on the belief of parents, and to provide suitable guidelines in planning for parental support in having safety behaviors for 3-6 year old children.

2. To provide guidelines in learning and teaching nursing students on support for parents to have safety behaviors for 3-6 year old children.

3. To provide guidelines in nursing research on safety behaviors for 3-6 year old children.

Definition of Variables

1. Parental health belief means perception regarding safety of parents who have 3-6 year old children, which measured by using questionnaires which the researcher developed from Russell's (1991) questionnaire on health belief, and from the literature review. High total scores indicate that parents have correct health belief. If the scores are low, it means parents have incorrect health belief. These variables including :

1.1 perceived susceptibility of injury means understanding, having an opinion, or feeling of parents about the risk factors and precipitating factors of injury for children.

1.2 perceived severity of injury means understanding, having an opinion, or feeling of parents about impact of injury on growth and development, psychosocial, dangers, disability, and death of children

1.3 perceived benefits of safety behaviors mean understanding, having an opinion, or feeling of parents about benefits of safety behaviors.

1.4 perceived barriers of safety behaviors mean understanding, having an opinion, or feeling of parents about barriers for safety behaviors, which includes expenses, loss of time, and difficulties in having safety behaviors.

2. Factors of parents refer to factors which have effects on parental safety behaviors for 3-6 year old children. These are:

2.1 age of parents mean age in number of years, from birth until the date of the study. Fraction of years, i.e. less than 6 months, will not be counted. 6 months or more will be counted as 1 year.

2.2 Family income means average monthly income of family in baht.

2.3 Injury experience of parents mean parents who have or have not had the experience of injury in 3-6 year old children, which required doctor's attention.

3. **Parental safety behaviors** mean the actions of parents in order to provide safety for 3-6 year old children. These actions are ones which are integrated in the care of children until they become part of the family lifestyle. These include various safety behaviors as follows:

3.1 bumping, falling, or falling from high place;

3.2 drowning;

3.3 choking;

3.4 injuries from sharp objects, tools, or machines;

3.5 touching hot objects, scalding, or fire;

3.6 electric shock;

3.7 contact with or swallowing poison;

3.8 injuries from gunshots;

3.9 kidnapping or assault;

3.10 injuries from domestic animals;

3.11 Traffic injuries, such as car bumps or falling out from a car.

These variables are measured by questionnaire which the researcher developed from Hendricks & Reichert's (1996: 249) questionnaire on safety behaviors, interviewing parents (20 cases), and the literature review. High total scores indicate that parents have proper safety behaviors. If the scores are low, it means parents have inappropriate safety behaviors.

CHAPTER II

LITERATURE REVIEW

Injury can be prevented if a person has an awareness, carefulness, and appropriate behaviors. A factor which results in different safety behaviors is personal belief. In this study, the researcher has adapted the Health Belief Model for safety behaviors by expecting that it can be a tool in changing safety behaviors for parents who have children aged 3-6. Therefore, the researcher has studied related literature as follows:

1. effects of injury for 3-6 year old children.
2. parental safety behaviors for 3-6 year old children, and behaviors evaluation;
3. the relationship between the health belief and parental safety behaviors for 3-6 year old children, and health belief evaluation;
4. factors related to parental safety behaviors for 3-6 year old children.

1. Effects of Injury for 3-6 year old Children.

Injuries occur most frequently inside and outside the home to tolddlers and pre-school aged children (Russell, 1991: 164 ; Walsh & Loli, 1994: 266;). When children receive injury, they will have various effects which are as follow:

1.1 they will be physically abnormal or disabled, such as a certain part of the body or organ system will be disfigured or lose function.

1.2 they will be psychologically damaged. Especially children who receive injury for medical treatment, and have pain, suffering, unhappiness, fear, worry. These can be psychologically devastating.

1.3 loss of life. It was found that injury is a cause for the loss of children's lives mostly in this age group (Avery & Jackson, 1993: 6 ; Walsh & Loli, 1994: 268).

In the United States, it is found that each year an estimate of 60,000 children are hospitalized for injuries, almost 16 million are treated in emergency rooms, and more than 30,000 acquire permanent disability (Rodriquez, 1990: 627). Rahman, et. al. (1998: 215-217) studied health impact of injury in the Sherpur Sader Thana of Bangladesh. A survey of a total of 3,258 households was conducted in 1996. The questionnaires were used for data collection. Cases were included in the study when an injury occurred within 15 days preceding the date of interview. Data regarding injury and deaths were collected for the past five years. The study found that children up to the age of 14, and the elderly, experienced higher injury rates than others, and male children in the 5-14 age group had the highest incidence rates. Falls and cuts were the main cause of injuries and burns were the most common cause of injury in children up to 4 years old. The majority, or 55.7% of the falls caused moderate injuries, but more severe injuries were attributed to hits by contact with other objects. No severe burn cases were identified, and only 10% of burn cases were moderate. Most injuries in the up to 14 age group occurred in the home and leisure area. Coffman, et.al. (1998: 133) conducted the characteristics of injuries in children age 15 years old and younger, who were seen in the emergency department during a 1-year period at the Pediatric Trauma Center of Florida. The total number of children

experiencing trauma at all levels of acuity was 778. The number of injuries experienced by these children was overwhelming: 1,745 wounds, 557 fractures, 255 sprains and strains, 58 dislocations, 11 amputations, 382 head injuries, 81 internal organ injuries, and 158 burns with many children having multiple injuries. Sheridan, et al. (1997: 370) reviewed charts of 34 children who had serious burns related to camping and outdoor cooking during July 1990 through July 1995 at a pediatric burn unit in Boston. There were 21 boys and 13 girls, with an average age of 5.2 years and average burn size of 15%. Four children were cared for as outpatients and 30 as inpatients. Inhalation injuries occurred in five children, and four children required mechanical ventilation. Eighteen children had burns involving the hands, and nine children had burns involving the face. There was one fatality, sustaining a 98% burn, cerebral anoxia and severe inhalation injury. At present, in Australia, it is found that injury is the main cause of child deaths. 200 children are admitted to hospital daily because of injury, and each year more than 600 children died from injury at home such as choking from foreign objects, drowning, swallowing poison, falling, injury from sharp objects, burns from fire and boiling liquid (Riabriang, P, 1997: 10).

In Thailand, Palitpolkarnpim, A., et al.(1999: 6) studied trends and current status of child injury fatalities in Thailand, in comparison with Sweden and Japan. It was found that 4, 153 children aged 1 to 14 years died of injuries. High mortality rates were found in children under 6 years and over 13 years in 1996, of which two-thirds were due to drowning or transport accidents.

Data from injured patients who received treatment at the Accident and Emergency Department of Phra Mongkutklao Hospital, between February-December

1999, reported that 49% (246 cases) were in the 3-6 year old group. In this group, 88% received minor injuries and were treated as outpatients, 4% received moderate injuries and were admitted for observation, 0.4% received major injuries and needed surgery, and 4% died from injuries.

From this information on the effects of injury, it can be clearly seen that it causes physical and psychological damage, and loss of lives and property, which is a major problem for the country. Parents, who have an important role in safety behaviors for children, should have appropriate safety behaviors in order to safeguard or reduce the severity of injury for the children. This will help the children to grow up and develop properly in order to live a healthy and happy life.

2. Parental Safety Behaviors for 3-6 year old Children and Behaviors Evaluation.

Safety behaviors of parents for the children is something which can be transferred to the children directly and indirectly. Appropriate behavioral conduct should be taught when children are small. This is in order to have a good foundation for the children to learn appropriately about safety behaviors. Children in the 3-6 age group can partially help themselves, they can understand and start learning about appropriate and inappropriate behaviors. However, they still lack reasoning power, but wish to start taking responsibility for themselves (Ashwill & Droske, 1997: Wong, 1993: 368-370). Therefore, the parental a safety behaviors should be adjusted appropriately for maturity and development of the children. This should include appropriate action in order for the children to assimilate and learn appropriate safety behaviors for the future.

Coffman, et al. (1998: 134-135) studied perception, safety behaviors, and learning needs of parents who have children up to 12 years of age. The children were treated in pediatric emergency departments in Florida. The sample in the study was a convenient sample and included 211 parents of children up to 4 years of age. It was found that safety behaviors most frequently cited included knowing how to dial 911, using child seats in the car, keeping medicines and cleaning fluids out of reach, using smoke detectors, and covering unused electric outlets in the home. About half of the parents knew child CPR. Less than half of parents were reported to teach children how to cross the street, remembering their address and phone numbers, setting the hot water heater at 130 degrees fahrenheit or below, having gates for children on stairs or doors, having swimming lessons for children, and having syrup of ipecac in medicinal chests. Among 159 parents of children aged 5-12, safety behaviors most frequently cited included knowing how to call 911, using car seats and seat belts, having a workable smoke detector, teaching children pedestrian skills, and remembering address or telephone number. Bass, et al. (1985: 238-239) studied educating parents who had children under 6 years old about injury prevention. A total sample of 24 homes were included: 10 experimental who had received counseling about safety education programs, and 14 controls who did not receive counseling. This study found that the experimental homes had a higher percentage of safety for using electric outlet covers, safe storage of sharp objects and plastic bags, and keeping hazardous products out of reach.

Langley & Silva (1982: 248) studied childhood accidents with parents' attitudes to prevention. The sample comprised of 1,072 parents who had children

under 7 years of age. This study found that 36% of parents had restricted their child's activity, 29% instructed their child, 24% altered the environment in some way and 8% complained to an appropriate authority. The restriction of the child's activity included things as far as not allowing the child to cycle on the street and play in a park. Instruction ranged from admonishing the child to "be careful" to elaborate discussion, although this tended to be an exception. Modification of the environment ranged from removing a hazardous object from the immediate environment. Eichelberger, et al. (1990: 716) studied parental attitudes and knowledge of child safety by telephone survey of 404 parents who had children not more than 13 years old. This study found that safety behaviors included safety belts, car safety seats, removing or locking up poisons, bicycle safety, pedestrian safety and covering electrical outlets. Gallagher, et al. (1985: 108) found that the majority of parents who had knowledge of safety behaviors for children less than 6 years old, had additional appropriate safety behaviors regarding the use of electric outlet covers, had Ipecac syrup available, and had the Poison Information Center sticker on at least one telephone.

From the literature review, it was found that some safety behaviors of parents for children aged 3-6 were mentioned according to the kind of injury which could happen to children at this age (Crawley, 1996: 226-230 ; Gould, Internet 1997; Hendricks & Reichert, 1996: 248-250 ; Whaley & Wong, 1995: 167-175 ; Wong, 1993: 358-359) as follows:

2.1 bumping, falling, or falling from high place

2.1.1 At home. Parents should be orderly, no things scattered on the floor, and there should be enough light, especially on hallways and stairs.

Cupboards, tables, beds, and chairs should be away from windows and shelves. Care of children should be taken to avoid water or oil on the floor which will be slippery. Handrails should be installed for stairways which children should not be able to slip through. There should be hooks to hold windows open. Tables, beds, cupboards, or other furniture should not have sharp edges. The condition of the house should be often inspected and repaired right away if something is broken.

2.1.2 Playground or outdoors. The right clothing and shoes should be chosen for climbing, especially girls should be careful about skirts or ribbons for hair. Equipment should be checked carefully to assure it is sturdy enough before allowing children to play with it. Broken glass or sharp objects should be avoided, and children should be watched carefully and taught how to play safely.

2.2 drowning

2.2.1 Swimming pools. Parents should not let children swim by themselves, and they should follow the rules of the pool. Teaching children not to run, push, or carelessly play around and in the swimming pool. Every time, when going to a new swimming pool, the depth should be checked, along with slope, and spring board condition. Parents should teach the children how to swim.

2.2.2 Ponds. Watch carefully when children are near a pond. Fill the pond or put up a fence around the pool.

2.2.3 Bathrooms. Basins, buckets, or bathtubs should be emptied, and bathroom doors should be closed every time.

2.3 choking

2.3.1 Food. During eating, children should not speak, laugh, walk, or run. Foods like nuts, corn, fruits which have seeds, hard candy, should not be given

to children younger than 4 years old. Fruits with seeds should be sliced up into small pieces and seeds taken out before being given to children.

2.3.2 Toys. Quality toys should be chosen that are appropriate with age according to recommendations by the company. Warning labels should be heeded and care should be taken with broken toys. Plastic bags and balloons should be avoided, because if the children swallow it, it will obstruct the trachea and the children will not be able to breathe.

2.4 injuries from sharp objects, tools, or machines

2.4.1 Construction sites. Children should be taught not to go near construction go near the sites. If it is unavoidable, use leather bags, or hard objects, to protect or cover the head and walk fast, but be careful of nails and pieces of wood.

2.4.2 Lawnmowers. While mowing the lawn, do not allow children on the lawn. Turn off the machine every time when you are not around. Keep it out of reach of children, taking blades out and keeping cords tidy.

2.4.3 Knives. Knives should be kept in drawers with a safety latch. While using knives, parents should not allow children to come near. There should be no playing or fooling around when someone is holding a knife. Teach children how to use a knife safely.

2.4.4 Forks. Parents should not let children hold a fork while eating.

2.4.5 Food containers. Use unbreakable type containers such as plastic or melanin, which is heat-resistant and uses non-dangerous colors. If it is made of glass, this should be kept in a cupboard to prevent children from getting it and

appropriate materials should be chosen for children to be able to hold easily. Parents do not use cracked or broken containers.

2.5 touching hot objects, scalding, or fire

2.5.1 Fire. Parents should not leave children alone by themselves at home. Flamable materials such as matches, lighters, oil, should be kept in closed containers and kept out of the reach of children. There should be fire extinguishers at home.

2.5.2 Boiling water. While cooking food, pot-handles should be turned inwards, and should not be held by children. Care should be taken not to let children near hot objects such as irons, rice cookers, kettles. While holding a child, do not have a hot drink. Avoid using table cloths because children may pull them and will be harmed by things on top of the table cloth such as hot water, plates, and bowls. Parents should keep hot objects out of the reach of children.

2.5.3 Firecrackers, fireworks. Children should be taught not to play with firecrackers or fireworks and also not to come near when others are playing with them.

2.6 electric shock

2.6.1 Electrical cord. Cords should be kept neatly, not hanging loose and untidy on the floor until children can reach and play with them by putting them in the mouth or biting them. Check cords regularly and change them right away if they are torn or broken.

2.6.2 Electrical outlets. These should be kept out of reach of children and should have covers.

2.6.3 Electrical equipment. All electrical equipment should be unplugged when not in use, and cords should be kept neatly. Electrical equipment which may have leaks such as refrigerator, and water heaters should be properly earthed. Other equipment such as electrical saws, electrical drills, should be kept neatly out of reach of children. Children should be taught not to touch or use electrical equipment while the body or hands are wet.

2.7 contact with or swallowing poison

2.7.1 Chemical products. Chemical products should be stored in a high cabinet far from reach, including detergents, cleaning products, insecticide, oil, and cosmetics. When using chemicals, if it is necessary to do something else, the container should be taken along. Do not turn your back on children while they are near chemicals. Discard bottles, boxes, or empty cans in a safe place out of the house and make sure that children will not find them and play with them. Do not keep chemicals in food containers and do not put them near food because they may be inadvertently used as food. Do not put insecticide on the floor, because children may reach it and eat it.

2.7.2 Medicine. Medicines should be kept out of sight and out of reach. Store all medications in a locked cabinet, far from children's reach, and separate from food. Do not let children take medicine by themselves. Expired medication should be discarded. Medication prescribed by a physician for one child should not be given to another, thinking they have the same illness. Do not ever tell a child that medicine is candy because if children find it they may take it in large amount which can be dangerous to the child. Medication which is being kept in a refrigerator should

put on a higher shelf out of reach. Do not give medication where there is not enough light because it is possible to use the wrong medication or give an overdose amount.

2.8 injury from gunshots

2.8.1 Guns. Avoid keeping guns in your home and avoid exposing your children to households where guns are kept. Store guns in a securely locked case, out of children's reach. Make sure that children can not open security cases and will not be able to find the key. Parents should not allow children to see or touch a gun because that will motivate the children to try it. All guns should be stored unloaded and in the unlocked position. Store ammunition in a separate place, in a securely locked container out of children's reach. Guns should be cleaned out of sight of children and they should not be used to fool around, imitating movies or drama. Teach children to understand the danger while watching television or movies, to prevent imitation.

2.8.2 Pop guns or dart guns. Do not buy any type of guns for children to play with and do not allow children to play with children who have pop guns or dart guns.

2.9 kidnapping or assault

2.9.1 Strangers. Do not let strangers take care of children. Do not allow children to wander far from parents, or go to public restrooms by themselves. Do not let children wear jewelry. Teach children to remember home phone numbers, and do not go anywhere with strangers or eat food offered by strangers. If children get lost, teach them to stay in the same place. If strangers pick up or hold children, teach them to shout loudly, "This is not my father or mother".

2.10 injury from domestic animals

2.10.1 Home. Do not allow children to play with pets alone at home. When choosing a family pet, look for one with a calm disposition. Teach children never to tease a pet, pull its tail or ears, or bother it while it is eating or sleeping. Children should always stay away from pets with their young. Children should be taught never to take a toy or bone away from the pet's mouth. Teach children never to pet or try to play with an animal that they do not know.

2.10.2 Zoo. Do not feed the animals when there are sign saying so. Parents should watch the children not to put fingers, hands, or face too close to the cage of animals. Watch animals from a distance or in the area designated by the zoo authority. Do not allow children to climb up animal cages.

2.11 traffic injuries

2.11.1 Supervise children while playing outside. Do not allow children to play or ride bicycles on sidewalks or streets. Teach children to obey pedestrian safety rules and show them they should cross roads only at crosswalks and only when traffic signals indicate it is safe. They should stand back a step from the curb until it's time to cross, look right, left and right again, according to traffic direction in a given country or one way system. They should check for turning cars before crossing the street, use sidewalks, walk on the right, facing traffic (again, according to the traffic system of the country they live in), and wear light colors at night. When crossing the street, parents should hold hands with children. While sitting in the car, parents should insist that children wear seat belts. They should not extend heads, body, legs or arms outside the car while moving or stationary, if parked in a moving traffic zone.

Children should get out of the car on the walkway side. Do not leave children alone and do not leave car keys while children are in the car.

Children age 3-6 years of age need to be protected from injuries. Therefore parents' appropriate safety behaviors are important for them, such as teaching children, showing them appropriate behaviors, watching them closely, teaching them to have discipline and telling them to be careful all the time.

Behaviors evaluation

For behaviors evaluation on safety behaviors for 3-6 year old children, it was found that a study of Russell (1991:169-174) evaluated safety behaviors of mothers for 1-3 year old children through using Greaves' Home Safety Hazards Observation tool (1990). Potential safety hazards were observed in the home, which are presence or absence of safety hazards. However, measurement of maternal safety behaviors using this tool was limited to the presence or absence of potential safety hazards in the home. Frequency and severity of hazards were not measured. Later, Russell & Champion (1996: 60-61) took the Home Safety Hazards Observation tool (Greaves, 1990) and the Home Accident Prevention Inventory (Tertinger, Greene & Lutzker, 1984), to evaluate mother's safety behaviors for children age 1-3 years old. The observational tools were used to measure both hazard accessibility and hazard frequency in the home, by answering the number of times through observation for each statement. Hendricks & Reichert (1996: 248-249) evaluated parents' safety behaviors for pre-school age children by using the Parent Health Behavior Questionnaire. For each question the answer was self-reported as yes, no, or do not know.

In this study, the researcher developed the questionnaire from the Parent Health Behavior Questionnaire, the literature review, and interviews with parents who had 3-6 year old children. Each question had 3 levels on a Likert scale which were never, sometimes, and regularly. These questions were assigned 1-3 points and had both positive and negative statements.

3. The Relationship between the Health belief and Parental Safety Behaviors for 3-6 year old Children, and Health belief Evaluation.

The Health Belief Model extends the use of socio-psychological variables to motivate a person to express self-care behaviors, or taking care of someone as expected, and realizing the beneficial value of the action, in order for a person to be ready to take action (Maiman & Becker, 1974: 21). Therefore, it can be said that the Health Belief Model has strong influence on a person's making decisions and taking action to comply with advice and/or treatment (King, 1984: 53). From previous studies it has been found that the Health Belief Model can be used to predict preventive health behaviors. The study of Khainil, K. (1993: 70), who found that education level and health belief accounting for 54.88 % of the variance in self-care behaviors in diabetic pregnant women. This is in accordance with the findings of Pokasinjumroon, P. (1995: 79), which found that health belief accounting for 37.38 % of the variance in self-care behaviors in Thai-Muslim pregnant women with pregnancy induced hypertension. Satchapong, P. (1991: 64) found that health belief accounting for 21.94% of the variance in self-care of pulmonary tuberculosis patients. Moreover, it was found that important factors for the Health Belief Model are perceived

susceptibility, perceived severity, perceived benefits and perceived barriers, which are related to preventive behaviors as follows:

3.1 perceived susceptibility is a self-reflection on personal feelings about danger on health, which results in motivating that person to have preventive behaviors on risks for disease (Rosenstock, 1974: 330). A person may express a feeling that he/she is in real danger of contracting a disease or illness. In short, as it has been measured, susceptibility refers to the subject having risk of contracting a disease. The study of Pokasinjumroon, P. (1995: 73-74) focused on Thai-Muslim pregnant women with pregnancy induced hypertension. If they have perceived susceptibility regarding lack of rest, or not having the right diet during prenancy, it will result in hypertension during pregnancy, which has a statistically significant positive correlation with self-care behaviors. This also has similar result with a study by Hochbaum (1958, cited by Rosenstock, 1990: 42), in factors related to receiving chest x-ray for tuberculosis screening. This study includes more than 1200 adults in three cities, in an attempt to identify factors underlying the decision to obtain a chest x-ray for the detection of tuberculosis. Of the individuals accepting the susceptibility to tuberculosis, 64% had obtained prior voluntary x-rays. From a study of Sasitorn, R. (1993: 97), it was found that perceived susceptibility of construction workers was positively correlated with preventive accident behaviors. From the study of Elling, et al. (1960, cited by Becker & Maiman, 1975: 13), it was found that there was a significant positive association between a mother's belief in the susceptibility of her child in getting rheumatic fever again, and compliance in both administering the penicillin and in clinic attendance. From a study of Chaigosol, P. (1993: 52), it was found that mothers who took care of

nephrotic syndrome children, who perceived susceptibility about worsening disease, complications from infection, and salty diet, would agree mostly that both complications and salty diet would make the condition worse. The mothers would have preventive behaviors by avoiding those who have infection, and by cleaning regularly.

3.2 perceived severity is a personal decision about level of health condition severity or effects of contracting diseases such as illnesses, disability, or loss of life. This will make a person afraid of dangers (Rosenstock, 1974: 330). Convictions concerning the degree of seriousness of a given health problem may also vary from person to person. Person would thus be concerned with such questions as whether a disease could lead to his death, or reduce his physical or mental functioning for long periods of time, or become disabled permanently. A study by Becker, et al. (1974: 210) on mothers of 125 randomly chosen children being treated for otitis media with antibiotics, found that mothers who perceived severity of otitis media had a positive correlation with giving medication to a child. This is the same result with a study by Becker & Maiman (1975: 15), which found that perceived severity was consistently predictive of compliance with the prescribed medical regiment. A study on relationship between health belief and self-care behaviors of pregnancy induced hypertension in 93 Thai-Muslim pregnant women, found that those who had correct perceived severity about headache, blurred vision, chest pain, or worsening hypertension, which indicated risks for seizure and dying, had appropriate self-care behaviors (Pokasinjumroon, P. 1995: 74). Another study which applied the health belief model and social support to prevent pneumonia among mothers of children with

aged 2-5, found that mothers who had perceived severity of pneumonia had appropriate behaviors on pneumonia prevention (Kongpom, D. 1997: 70).

3.3 perceived benefits is a belief about the effectiveness of recommended preventive actions that appear to be important determinants of health-protecting behaviors. This is in order to prevent danger such as protection against, and/or reducing health threat, suffering, disability, difficulties (financial, physical, and psychological) which must be encountered or endured if such action is taken, and receiving compliments from immediate family members (Becker & Maiman, 1975: 16). From a study by Rosenstock (1974: 361), it was found that individuals accepting the benefits of early detection for tuberculosis, had prior voluntary chest x-rays. This is a similar result with a study by Nirattharadorn, M. (1996: 84), which studied perceived benefits, perceived barriers and health-promoting behaviors of 240 adolescent pregnant women. It found that 81.7% agreed strongly in perceived benefits of regular pregnancy follow up. This will help in continuous care by physicians and nurses in order to prevent complications which may happen to the unborn child and the mother. Ninety-five point four percent had health promoting behaviors in following up appointments. From a study on relationship between health belief and self-care behaviors of 80 diabetic pregnant women, it was found that perceived benefits on following medical care plans would prevent dangerous complications and would control the disease condition. As such, they cooperated by following various medical recommendations strictly (Khainil, K. 1993: 67). Punyalerdchai, C. (1993: 50) found that perceived benefits for a child's good nutrition, had positive a correlation with the mother's feeding pattern for the child.

3.4 perceived barriers is an evaluation on obstacles in a behaviors such as high cost, time consumption, not enough knowledge, beyond capabilities, etc. However, a person will choose to behave accordingly if he/she believes it will be of increased benefit. Champion (1991: 737) studied the relationship between the Health Belief Model and breast cancer detection behaviors in a sample of 322 women aged 35 and older. The women were contacted by telephone via random digit dialing, and data was collected through mailed questionnaires. This study found that women who perceived more barriers on practicing breast self-examination were the least likely to practice it. Women who were uncomfortable with the practice of breast self-examination, or found it embarrassing, or who had difficulties remembering how to do it, would be less likely to practice the procedure consistently. From a study on the relationship between health belief, spouse support and maternal behaviors in the care of asthmatic pre-school children in 112 cases, it was found that mothers who perceived more barriers in following treatment plans would be willing to cooperate more. Mothers who perceived more barrier in following treatment plans, would be less cooperative (Ruiharad, J. 1995: 69). This is a similar conclusion to a study by Weerakul, R. (1996: 74), which studied the relationship between perception of disease, social support and maternal behaviors in caring for Thalasemic children in 100 cases. It found that even though the mother had to face difficulties in medical expenses, taking time off from work, long waiting times or treatment times, and bad attitudes of certain staff, she agreed on bringing her child for medical appointments and taking care of the child according to the doctor's advice.

In Thailand, there are no studies on the relationship between health belief and safety behaviors of parents with 3-6 year old children. The study of Tiempathom, S. (1994: 100-111) focused on factors associated with home accidents in 3-5 year old children, in Bang Buatong district, Nontaburi province. This study surveyed injuries at home in the past 2 years in 320 cases. Data was collected by interview with mothers, or baby-sitters, and by observing home environment. The results of this study found that 55.3% of children in this age group had injuries at home. The most common kind of injury at home was falling, 46.3% of all sample size; the second most common injury was drowning and choking, 24.1%; injuries from equipment, machinery, and sharp objects, 22.8%; with the least common kind of injury being injury from explosives, guns, and fighting with friends, 0.6%. Statistically significant factors related to injury at home were specific characteristics of children such as moving all the time, disobedience, moodiness, and being easily agitated, maternal occupation, family membership and environment. If the mother is in impermanant employment (labor/agriculture/commerce), 32.5% of children have injuries; whereas the mother is a housewife, 18.4% have injuries. Environmental factors which can cause injuries at home include windows that do not have iron bars or protective screens, stairways that do not have rails or are broken, having medication for external use together with medication for internal use, no outlet covers, having pets at home, and having pools or drainage which children can have access to.

Pornpatkul, P. (1992: 90-92) studied risk factors for injury in children aged 5-14, who came for medical treatment at general and community hospitals in Nakornnayok province, from June to December 1990. From a total of 636 samples, it

was found that risk factors which had correlation with injury were: children who did not have formal education, children who had impaired vision and hearing, families who had more than 4 children, family monthly income of 2000 baht or less, family had sick persons, mother had just given birth or mother was sick, parents were in impermanant employment, commerce, or agriculture occupation, parents were separated, one of the parents passed away, and one of the parents was remarried.

Outside of Thailand, Russell (1991: 163-177) studied health belief about injury prevention behaviors in mothers with children aged 1-3, residing in public housing. Data was collected on 50 randomly selected mothers. The study found that perceptions of susceptibility, seriousness, benefits, and barriers were significantly correlated with maternal injury prevention behaviors. Mothers who had more perceived susceptibility of injuries, more perceived benefits in injury prevention, and less perceived barriers to engage in injury prevention measures, had fewer injury hazards observed in their homes than mothers with lower susceptibility, benefits, and more barriers. Russell & Champion (1996: 59-61) studied the relationship between health belief and home injury prevention behaviors of 140 low income mothers with children aged 1-3. The research instrument consisted of a questionnaire measuring health belief and observational tool measuring the presence of hazard accessibility and hazard frequency at home. All questionnaire scales were developed by Russell (1991). The results showed that the combination of health belief were statistically significant predictors of home safety practices. Perceived susceptibility, severity, and benefits increased, hazard accessibility decreased. As perceived barriers increased, hazard

accessibility increased. In a similar manner, as perceived severity increased, hazard frequency decreased. As perceived barriers increased, hazard frequency increased.

Health belief Evaluation

For evaluation of health belief regarding safety of parents with 3-6 year old children, Russell (1991: 166-168) used a questionnaire evaluating the health belief of mother's safety behaviors with children aged 1-3, who had low income, and resided in public housing, and had a high death rate from injury at home. The questionnaire had a 5 level Likert scale as follows: strongly disagree to strongly agree. This consisted of perceived susceptibility, perceived severity, perceived benefits, and perceived barriers. Later, Russell & Champion (1996: 60) adapted the evaluation of health belief of Russell and used it as an evaluating tool on health belief of mother's safety behaviors with 1-3 year old children. It was found that this evaluation had validity for a scale using the alpha method of factor analysis with varimax rotation. Factor loading for scale items ranged from 0.41 to 0.91 and counted for 50.2 percent of variance. Internal consistency reliability of perceived susceptibility, severity, benefits, and barriers, using Cronbach's alpha followed from 0.83, 0.94, 0.81, and 0.72.

In this study, the researcher developed from Russell's questionnaire on health belief, and used this tool for evaluation on health belief on parents' safety behaviors for children aged 3-6. This questionnaire has high consistency reliability, and the sampling group is similar to the population group in this study, which is children aged 3-6, low family income, and live in a slum community.

4. Factors Related to Parental Safety Behaviors for 3-6 year old Children.

Health belief is an important factor in preventive behaviors, and cooperation in medical treatment. From past studies it was found that modifying factors proposed in the Health Belief Model affected pre-disposition to take preventive action, and included a variety of demographical, sociopsychological, structural factors, and cues to action.

4.1 Demographic variables such as sex, age, education, income, and race, have been correlated with preventive behaviors. Rosenstock (1974: 355), who studied demographic variables of individuals who came to receive information on diseases prevention, found that the majority of people who came most often were white, female, young to middle aged, high education, and had a high income. This is in agreement with a study of Khainil, K. (1993: 70), which found that level of education and family income had a positive correlation with self-care behaviors of diabetic pregnant women. A study by Yungtong, R. (1994: 75-78) found that gender, age, education level, and family income, had a correlation with health behaviors in AIDS prevention. Family income accounted for 17.21% of the variance in health behaviors in AIDS prevention. Family income and education level accounted for 32.80% of the variance in health behaviors in AIDS prevention. Family income, education level and age accounted for 34.18% of the variance in health behaviors in AIDS prevention. The study by Champion (1991:737) did not find significant correlation between breast self-examination behaviors and demographic variables. In accordance with a study by

Chaigosol, P. (1993: 57-59) on mother's care behaviors in nephrotic syndrome children.

4.2 Sociopsychological variables such as personality, social class, peer and reference group pressure, appear to play a role in stimulating appropriate health actions. If the individual believes that specific persons or groups, termed referent others, think that the individual should perform the behaviors and the individual is motivated to comply, then the individual's subjective norms put pressure on him/her to perform the behaviors. Irwin, et al. (1993: 21) studied factors associated with follow-up appointment-keeping of 166 adolescents, and found that social class had a significant positive correlation with appointment-keeping. This is in accordance with Champion (1991: 736), who found that social support had a significant positive correlation with breast self-examination behaviors, and screening by mammography in women age 35 years old and up.

4.3 Structural variables include knowledge about the disease and prior contact with the disease. From a study by Danchai, K. (1997: 45) found that experience in taking care of 1-3 year old children had a positive correlation with mother's health promoting behaviors, but was not able to predict inconsistency of mother's health promoting behaviors. This was in accordance with a study by Supasilapa, S. (1984: iv), which found that mothers who had experience or had seen cases of diarrhea, would have a correlation with diarrhea prevention behaviors.

4.4 Cues to action. The general assumption is made that the higher the level of readiness to act, the lower the intensity of the cue needed to trigger behavior, or a negative relationship, is postulated between intensity of cue and level of readiness

to engage in preventive action. Cue can be either internal or external. Examples of internal cue include discomfort symptoms, and feelings of fatigue. External cues include mass media campaigns, advice from others, posters, billboards, newspapers or magazine articles, or reminder postcards from health professionals. A study by Punyalerdchai, C. (1993: 52) found that, receiving advice, or answering questions by a member of a health team, had a positive correlation with mother's feeding patterns for their children. The study of Supasilapa, S. (1984: vi) indicated that receiving advice from various sources was positively correlated with diarrhea preventive behaviors of the mother.

Certain modifying factors, which the researcher chose for studying power in predicting parental safety behaviors for 3-6 year old children, were age, family income, and injury experience.

Age of parents was correlated with developmental process level, and other life experience, which will result in differences about expressions regarding tolerance, understanding, reasoning, and decision making of individual behaviors (Orem, 1980: 154). A study by Bijur, et. al. (1988: 710) found that in a group of 30-34 year old mothers, children had less risk of injury, while in a group of 20-24 year old mothers, the children had higher risk of injury. Children of young mothers are explained to have 6.5 more injuries per 100 children in school-age groups. The study of Russell & Champion (1996: 61), found that the children with less hazard accessibility had older mothers. Therefore, mother's age was inversely related to hazard accessibility. Also the age of the mother had no significance with the regression of hazard accessibility. A study by Glik, et al. (1991: 285-291), focused on the relationship between parents'

perceived risk of childrens' injury, with familial, socio-cultural, and situational variables. Data was obtained through a random digit dial telephone survey of 1,200 mothers with children aged 6 months to 5 years. This study found that the age of the mother had no significant consistency with risk perceptions.

Family income : Schor (1995: 93) stated that low income family would indicate more difficulty in providing for childrens' material needs. Baldwin (1987: 1,014) found that low income families had incorrect safety prevention behaviors regarding poisoning, such as no poison control stickers on their phone, did not know the number to call, and did not know how to do first aid. Regarding safety for burns, parents did not turn down the temperature of the heaters, or install smoke detectors. This is in accordance with a study by Santer & Stocking (1991: 1,112-1,114) which found that the majority of low income families had incorrect safety prevention behaviors such as no fire extinguisher, windows in poor condition, open or no gate for stairways, no locked storage space for hazards (sharp objects, cleaning supplies and medicine), and children older than 3 years old bathing without supervision. A study of Glik, et al. (1991: 296), found that family income accounting for 11%, 13 %, and 15 % of the variance in perceived likelihood of hazards, perceived danger of hazards, and perceived risk of hazards respectively.

Injury experience of parents: parents whose 3-6 year old children had previous injury experience would know, or learn the process or mistakes on safety behaviors for children, which would result in adjusting behaviors on the part of parents regarding injury prevention for children. In a study by Russell & Champion (1996: 62), it was found that previous injury experience were able to predict the presence of

home-safety hazards with statistical significance. From the experience of the researcher it was found that mothers who had experience with nearly drowning children until the child was admitted in a hospital, was due to the mother turning her back to comb her hair without watching carefully the child who was in the water. After that, mothers had more careful behaviors and understood that injury could be prevented if careful.

From the literature review it could be summarized that the Health Belief Model was an important factor in safety behaviors, therefore, a study on health belief, personal factors, and parental safety behaviors for 3-6 year old children, are necessary to help nursing personnel realize the importance of using the results of the study to train and develop nursing staff regarding effective safety prevention for children. This will help children to have a healthy body and mind, prevent unnecessary suffering, reduce important causes of life lost from injury, and help parents to have appropriate safety prevention behaviors for children, which includes saving expenses and time in medical treatment.

CHAPTER III

METHODOLOGY

This is a descriptive research to study parental health belief on perceived susceptibility, perceived severity, perceived benefits, perceived barriers, and characteristic factors of parents such as age, family income, injury experience, and parental safety behaviors, for 3-6 years old children.

Population and Sample Group

The population group for this study are parents who have 3-6 year old children. The parents drop off and pick-up their children at kindergartens of Bangkok Metropolitan Administration schools in Rajathevi district. The schools are Kingpetch, Wat Dishongsaram, Wat Phrayayoung, and Wat Tasanaroonsoontrikaram.

The characteristics of the sample group are as follows:

1. parents who take care of children from birth and live in the same house;
2. parents who are able to communicate in the Thai language;
3. parents agree to cooperate in answering the questionnaire;

A convenient sampling was applied for 140 parents from February to March 2000, from all 4 schools; 45 parents from Kingpetch School, 37 parents from Wat Dishongsaram School, 33 parents from Wat Phrayayong School and 25 parents from Wat Tasanaroonsoontrikaram School. Sampling size was calculated from the Thorndike method (Thorndike, 1998, cited by Prescott, 1987: 130) as follows:

n (sampling size) = 50 + (10 x variable factors)

= 50 + (10 x 7)

= 120

Setting

Data collection was done at 4 schools of Bangkok Metropolitan Administration, in Rajathevi district, which include 152 kindergarten students from Kingpetch School, 129 students from Wat Dishongsaram School, 113 students from Wat Phrayayoung School, and 85 students from Wat Tasanaroonsoontrikaram School (Department of Education, Bangkok Metropolitan Administration, 1998: 4-5). Kindergarten students will be taught about safety behaviors according to the experiential demonstration plan (trial version) of Demonstrated Education Section, Department of Education, Bangkok Metropolitan Administration, 1997. Parents will receive knowledge on general safety behaviors, which is updated by nurses or public health nurses of the Public Health Center.

Research Tools for data collection consist of:

Part I: Demographic Data of Subject

A: The Demographic Children's Data Form such as age, gender, number of siblings and supervisors.

B: The Demographic Parental Data Form such as relationship with children, age, education level, occupation, family income, family socio-economic status, injury experience, how they drop off and pick-up their children from school, experience with motorcycles and cars.

Part II: Parental Safety Behaviors for 3-6 year old Children Questionnaire

The researcher developed this questionnaire from "Parents' Health Behaviors Questionnaire" from Hendricks & Reichert (1996: 249), which is a questionnaire for evaluation of parental behaviors essential to the health and safety of pre-school age children. This was conducted in order to find out in which areas the parents are aware, and in which areas they need more information and knowledge. This questionnaire was tested during the first two weeks of 1994-1995 school year, with 1,143 parents. There are 25 items in which the parents circle yes, no, or I do not know for each question. This questionnaire was developed in 1988 from staff of the Comprehensive Health Education Center for Kids and the Southeastern Child Safety Institute at The Children's Hospital of Alabama, who developed a home safety "checklist" designed to increase parents' awareness of potential home hazards and risk to children. The checklist was also reviewed for readability and consistency of response format. The questionnaire then was reviewed and finally checked by The Children's Hospital of Alabama Advisory Committee and by national and local Head Start staff.

In this study, the researcher chose only 9 items about safety behaviors, and adapted them into questions with 3 choices to choose from. Besides those questions, the researcher added more questions from the literature review and interviewed 20 parents who had children in the age group of 3-6 years old. This interview asked about safety behaviors and categorized them. The 40 items which described safety behaviors for 3-6 year old children according to 11 types of injury were as follows:

1. bumping, falling, or falling from high place	7 questions	(no.1 - 7)
2. drowning	2 questions	(no.8 - 9)
3. choking	3 questions	(no.10 - 12)

4. injuries from sharp objects, tools, or machines	5 questions	(no.13 - 17)
5. touching hot objects, scalding, or fire	5 questions	(no.18 - 22)
6. electric shock	5 questions	(no.23 - 27)
7. contact with or swallowing poison	3 questions	(no.28 - 30)
8. injuries from gunshots	2 questions	(no.31 - 32)
9. kidnapping or assault	3 questions	(no.33 - 35)
10. injuries from domestic animals	2 questions	(no.36 - 37)
11. traffic injuries	3 questions	(no.38 - 40)

In answering the questionnaire, parents have to evaluate frequency in his/her behavior for each question, by choosing the answer most closely to his/her regular action, sometimes, or never. Grading for each question has 3 levels, from never to regularly, which has 1-3 scores respectively. The questionnaire consists of 7 negative items, numbers 12, 15, 20, 26, 29, 31 and 32. Scores for these questions are given 3-1, from never to regularly, respectively. Other questions are 33 positive items, graded from never to regularly, with 1-3 scores, respectively. When the total of all the scores is added together, the lowest and highest will be 40-120 scores. High total scores indicate that parents have appropriate safety behaviors, while low total scores indicate that parents have inappropriate safety behaviors.

Part III: Parental Health Belief Regarding Safety for 3-6 year old Children Questionnaire

The researcher developed this questionnaire from Russell's instrument which was based on the Health Belief Model (1991: 170-172). This instrument measured maternal beliefs about injury prevention for 1-3 year old children, which consisted of maternal perceptions of injury susceptibility and seriousness in their children, and

benefits and barriers of engaging in injury prevention. Altogether there are 41 questions, and this research tool passed content validity test for scales. It was judged by a panel of six clinical and research experts with backgrounds in childhood injury prevention and health belief model research. Items were reviewed for their relevancy on a five-point Likert scale of "not at all relevant" to "extremely relevant". Items which reached 100% interrater agreement were retained as items judged to be moderate to extremely relevant. After using this tool in trial test, in a sample group of 50 mothers who had 1-3 year old children, residing in public housing, the precision value of internal consistency reliability, with Cronbach's alpha coefficiency, was in the range of 0.83 to 0.98 test-retest correlation, within 2-3 weeks, with p-value of less than .05, showed statistical significance.

In this study, the researcher developed this questionnaire to be suitable for parental health belief for 3-6 year old children by leaving out some similar items, and adapted items to be suitable and clearer for understanding. This questionnaire contained 4 categories with a total of 37 items, as follows:

1. perceived susceptibility of injury 11 questions (no.1-11)
2. perceived severity of injury 11 questions (no.12-22)
3. perceived benefits of safety behaviors 6 questions (no.23-28)
4. perceived barriers of safety behaviors 9 questions (no.29-37)

In answering this questionnaire, parents have to evaluate self-belief in each question, whether parents agrees more or less with the question, by choosing the answer most closely related to parents' understanding, having an, or feeling. It uses a five-point Likert scale, which has 5 levels, from strongly disagree to strongly agree, 1-5 scores respectively. This questionnaire consists of 9 negative item questions,

which are numbered 29-37, and graded from strongly disagree to strongly agree, 5-1 scores respectively. The rest of the questionnaire has 28 positive items, graded from strongly disagree to strongly agree, 1-5 scores respectively. When the total of all the scores is added together, the lowest and highest scores are between 37-185 scores. High total scores indicate that parents have correct health belief. If the scores are low, it means parents have incorrect health belief.

Validity and reliability of the tools

Validity of the tools

Content validity, language suitability, and criteria of measurement for Parental Safety Behaviors for 3-6 year old Children Questionnaire, and Parental Health belief Regarding Safety for 3-6 year old Children Questionnaire were judged by experts. The experts are: a Ambulatory-Emergency pediatrician; a faculty in health education and behavioral science; a faculty pediatric nursing; and 2 faculty in public health nursing (appendix H). The tools were revised according to the recommendations of the experts.

Reliability of the tools

Reliability of the Parental Safety Behaviors for 3-6 year old Children Questionnaire, and Parental Health belief Regarding Safety for 3-6 year old Children Questionnaire were tested using Cronbach's alpha. The testing was done in 30 parents of children aged 3-6 who had similar criteria of sampling in this study. The alpha value for the Parental Safety Behaviors for 3-6 year old Children Questionnaire was 0.82. Alpha values for Parental Health Belief Regarding Safety for 3-6 year old Children Questionnaire on perceived susceptibility of injury, perceived severity of

injury, perceived benefits of safety behaviors, and perceived barriers of safety behaviors are 0.83, 0.86, 0.77, and 0.84 respectively.

The tools were tested with 140 samples and have an alpha value for the Parental Safety Behaviors for 3-6 year old Children Questionnaire was 0.85, and Alpha values for Parental Health Belief Regarding Safety for 3-6 year old Children Questionnaire on perceived susceptibility of injury, perceived severity of injury, perceived benefits of safety behaviors, and perceived barriers of safety behaviors are 0.91, 0.91, 0.75, and 0.87 respectively.

Data Collection

Data was collected by the researcher. Data collection procedures are described as follows:

1. Getting permission for this study from the Graduate Studies of Mahidol University.

2. Contacting the school's director to clarify the objectives of the research, and get their permission to collect data during school hours everyday, from 7:00 - 08:30 a.m., and 1:30 p.m. to 3:30 p.m.

3. Selecting the parents who fitted the criteria of the study.

4. Explaining the purpose of the study, potential benefits, asking for cooperation in the study, and protecting the rights of privacy (appendix A).

5. When parents agreed to be included in the study, the researcher would arrange for a private section in the school, and explained the process in answering 3 sets of questionnaires with parents, to make sure they understood completely. After that, the researcher would allow time for the parents to answer the questionnaires

respectively on Demographic Data Form, Parental Safety Behaviors for 3-6 year old Children Questionnaire, and Parental Health belief Regarding Safety for 3-6 year old Children Questionnaire. While answering questionnaires, if the parents did not understand certain questions, they could ask for clarification at any time from the researcher. Usually it would take 20-30 minutes to complete the 3 sets of questionnaires. After completion of the questionnaires, the researcher would check to see if all questions were answered. If some questions were not answered, the researcher then would ask the parents to answer all the questions.

Data Analysis Using SPSS/PC computer program, data analysis was conducted as follows:

1. Demographic data was analyzed using frequency and percentage.

2. Scores of parental safety behaviors and parental health belief were analyzed using interval range, means, standard deviation, and skewness.

3. The relationship between predictable factors including parental health belief on perceived susceptibility, perceived severity, perceived benefits, perceived barriers, age of parents, family income, injury experience of parents and parental safety behaviors were analyzed using Pearson's product-moment correlation coefficient.

4. Stepwise Multiple Regression Analysis was applied to examine the explanation of parental safety behaviors for 3-6 year old children by selected factors including parental health belief on perceived susceptibility, perceived severity, perceived benefits, perceived barriers, age of parents, family income, and injury experience of parents.

The assumption on Stepwise Multiple Regression Analysis that the variables which would be analyzed had to be measured in interval scale, and since certain independent variables were in lower measurement than interval scales, it was necessary to arrange for Dummy variables (Polit & Hungler, 1995: 502). The researcher chose to indicate injury experience as 0 for never, and 1 for yes.

CHAPTER IV

RESULTS

This descriptive research was carried out to study parental health belief on perceived susceptibility, perceived severity, perceived benefits, perceived barriers, and parental safety behaviors for 3-6 year old children, and to determine whether parental safety behaviors could be predicted by selected factors including health belief on perceived susceptibility, perceived severity, perceived benefits, perceived barriers, age of parents, family income, and injury experience of parents. The findings are presented in five parts with tables and descriptions

Part I Demographic data of children and parents were presented in Table 1-2

Part II Parental safety behaviors for 3-6 year old children were presented by description

Part III Parental health belief on perceived susceptibility, perceived severity, perceived benefits, and perceived barriers were presented in table 3

Part IV The relationship between predictable factors and parental safety behaviors were presented in table 4

Part V The predictors of parental safety behaviors for 3-6 year old children were presented in table 5

Part I Demographic data of children and parents

Table 1 Frequency and percentage of childrens' demographic data (n = 140).

Variable	Frequency	Percentage
Age (years)		
3 - 4	22	15.71
5 - 6	118	84.29
$\bar{X}$ = 5.26, S.D. = 0.72, Min = 4, Max = 6		
Gender		
Male	64	45.71
Female	76	54.29
Number of siblings		
No siblings	21	15.00
1 - 3	114	81.43
4 - 8	5	3.57
Supervisor		
No	95	67.86
Yes	45	32.14

Table 1 showed that one hundred and eighteen (84.29%) of children, ranged in age from 5 to 6 years ($\bar{X}$ = 5.26, S.D. = 0.72). For gender, 45.71 % were male, and 54.29 % were female. Most of the children had 1 - 3 siblings (81.43%). Ninety-five, (67.86 %) of children had no supervisor.

Table 2 Frequency and percentage of parental demographic data (n = 140).

Variable	Frequency	Percentage
Relationship with child		
Father	30	21.43
Mother	110	78.57
Age (years)		
20 – 30	48	34.28
31 – 40	79	56.43
40 - 50	13	9.29
$\bar{X}$ = 33.14, S.D. = 5.75, Min = 21, Max = 47		
Educational level		
No formal education	3	2.14
Primary education	73	52.14
Secondary education	38	27.14
Vocational or undergraduate	21	15.00
Graduate or higher	5	3.57
Occupation		
No job	49	35.00
Employee	57	40.71
Commerce	23	16.43
Government service	8	5.71
Business person	3	2.14
Total family income/month (baht)		
5,000 - 10,000	63	45.00
10,001 - 15,000	63	45.00
15,001 - 20,000	14	10.00
$\bar{X}$ = 10,868.93, S.D. = 2989.04, Min = 5,000, Max = 20,000		

Table 2 Frequency and percentage of parental demographic data (n = 140). (Continued).

Variable	Frequency	Percentage
Family Economic Status		
Income equal to expenses	62	44.29
Income more than expenses	28	20.00
Income less than expenses	50	35.71
Injury experience		
Never	48	34.29
Yes	92	65.71
If yes (number of times)		
1 - 2 times	79	85.87
3 - 4 times	13	14.13
Dropping off, and picking up children to school		
Walking	79	56.43
Bus	15	10.71
Bicycle	6	4.29
Motorcycle	34	24.28
Private car	6	4.29
Letting children ride on motorcycle		
Never	34	24.29
Yes, but did not wear helmet	89	63.57
Yes, and wore helmet	17	12.14
Riding in private car		
Never	29	20.71
Yes, but did not wear seat belt	84	60.00
Yes, and wore seat belt	27	19.29

Table 2 showed that 78.57% of the sample who answered the questionnaire were mothers and 56.43% ($\bar{X}$ = 33.14, S.D. = 5.75) were aged between 31-40 years. The majority of the sample (52.14%) had primary education, and 27.14% had secondary education. By occupation, 40.71% were employees, and 35.00 % had no job. The total family income was 5,000 - 20,000 baht; 45.00% had family income ranging from 5,000 - 10,000 baht and 10,001 - 15,000 baht ($\bar{X}$ = 10,868.93, S.D. = 2,989.04); 44.29% had family income equal to expenses; 35.71% had income less than expenses. Ninety two (65.71%) of parents had injury experience. In this group, seventy-nine (85.87%) of the children had injury 1 - 2 times. The majority of the parents (56.43%) drop off and picked up children in school by walking, and 24.28% by motorcycle. One hundred and six (75.71%) of parents let the child ride on a motorcycle. In this group, eighty-nine (63.57%) let the child ride on a motorcycle without a helmet. One hundred and eleven (79.29%) of parents let the child ride in a car. In this group, eighty-four (60.00%) let the child ride in a car without wearing a seat belt.

Part II Parental Safety Behaviors for 3-6 Year Old Children

The actual ranged scores of parental safety behaviors were between 40-120, with the possible ranged score were between 80-117. Parental safety behaviors had a mean of 99.17 (S.D. = 9.76) with skewness to the left (skewness = -.170).

Part III Parental Health Belief on perceived susceptibility, perceived severity, perceived benefits, and perceived barriers.

Table 3 **Interval range, mean, standard deviation, and skewness of parental health belief regarding safety for 3-6 year old children for each category (n = 140).**

Variables	Interval Range		$\bar{X}$	S.D.	Skewness
	Actual Range	Possible Range			
- Perceived susceptibility	11 - 55	18 - 55	42.77	9.01	- .597
- Perceived severity	11 - 55	17 - 55	43.91	8.52	- .801
- Perceived benefits	6 - 30	17 - 30	25.29	3.39	- .364
- Perceived barriers	9 - 45	9 - 43	26.31	7.74	- .165

Table 3 showed that the perceived susceptibility had a mean of 42.77 (S.D. = 9.01, skewness = - .597), perceived severity had a mean of 43.91 (S.D. = 8.52, skewness = - .801), perceived benefits had a mean of 25.29 (S.D. = 3.39, skewness = - .364), and perceived barriers had a mean of 26.31 (S.D. = 7.74, skewness = - .165).

Part IV The relationship between predictable factors and parental safety behaviors

Table 4 Pearson's product-moment correlation coefficients between independent variables and independent variables, and independent variables and parental safety behaviors were presented by correlation coefficient matrix (n = 140).

Variables	1	2	3	4	5	6	7	8
1. age	1.000							
2. family income	.095	1.000						
3. injury experience	.044	-.174*	1.000					
4. perceived susceptibility	.098	.207*	-.025	1.000				
5. perceived severity	.016	.214*	-.029	.787**	1.000			
6. perceived benefits	.160	.193*	-.059	.416**	.416**	1.000		
7. perceived barriers	.156	.234**	-.109	.057	-.038	.087	1.000	
8. safety behaviors	.197*	.408**	-.142	.619**	.355**	.510**	.411**	1.000

Injury experience of parents 0 = never, 1 = yes

* P < .05, ** P < .01

Table 4 described that the age of parents were positively correlated with parental safety behaviors ($r = .197$, $P < .05$). The family income was positively correlated with perceived susceptibility, perceived severity, perceived benefits, perceived barriers, and parental safety behaviors ($r = .207$, $P < .05$, $r = 214$, $P < .05$, $r = .193$, $P < .05$, $r = .234$, $P < .01$ and $r = .408$, $P < .01$ respectively) but negatively correlated with injury experience ($r = -.174$, $P < .05$). Perceived susceptibility was positively correlated with perceived severity, perceived benefits and parental safety behaviors ($r = .787$, 416, and .619, $P < .01$ respectively). Perceived severity was positively correlated with perceived benefits and parental safety behaviors ($r = .416$ and .355, $P < .01$). Perceived benefits were positively correlated with parental safety behaviors ($r = .510$, $P < .01$). And perceived barriers were positively correlated with parental safety behaviors ($r = .411$, $P < .01$).

Part V The Predictors of parental safety behaviors for 3-6 year old children.

Table 5 The predictors of parental safety behaviors for 3-6 year old children analyzed by stepwise multiple regression (n = 140).

Predictor	RSQ	RSQ Change	F Change	Beta	t
Perceived susceptibility	.383	.383	85.516	.454	7.707***
Perceived barriers	.524	.141	40.687	.318	5.817***
Perceived benefits	.587	.063	20.891	.256	4.355***
Family income	.619	.032	11.514	.190	3.393**

Overall $F_{(4, 135)} = 55.015$, $P < .001$ ** $P < .01$, *** $P < .001$

Table 5 described that independent variable entered into the equation was perceived susceptibility, accounting for 38.3 % of the variance in parental safety behaviors ($F_{1,138} = 85.516$, $P < .001$). Perceived barriers accounted for an additional 14.1 % of the variance in parental safety behaviors ($F_{2,137} = 40.687$, $P < .01$). Perceived benefits accounted for an additional 6.3 % of the variance in parental safety behaviors ($F_{3,136} = 20.891$, $P < .01$). And family income accounted for an additional 3.2 % of the variance in parental safety behaviors ($F_{4, 135} = 11.514$, $P < .01$). This means that the combination of perceived susceptibility, perceived barriers, perceived benefits, and family income variables accounted for 61.9 % of the variance in safety behaviors, ($F_{4, 135} = 55.015$, $P < .001$). Therefore, the result of hypothesis testing was partially supported.

CHAPTER V

DISCUSSION

The discussion of the results will be presented in the following order: parental safety behaviors for 3-6 year old children, parental health belief regarding safety for 3-6 year old children on perceived susceptibility, perceived severity, perceived benefits, perceived barriers, and results of the hypothesis.

Parental Safety Behaviors for 3-6 year old Children

In this study, the mean score on parental safety behaviors is 99.17 (S.D. = 9.76, skewness = -.170, Min = 80, Max = 117) which means that the majority of parents have appropriate safety behaviors for children.

Considering mean score by each individual statement (appendix E), it was found that the highest mean score of the parental safety behaviors was in the item "turning off the stove or gas after use" (X = 2.97, S.D. = 0.17). From the case of 136 (97.1 %) parents who answer "regulary", for which parents gave the reason that they had to do it regularly for the safety of people and property. The next highest mean score was in the item "making sure that children did not extend head, arms, or legs out of a car" (X = 2.82, S.D. = 0.40). From the case of 116 (82.9 %) parents who answer "regulary", for which parents gave the reason that most of the time they rode on buses and regularly saw warnings written on the buses. If they did not watch children carefully, the bus driver or conductor would warn them. There are also news reports about children falling or getting injured from extending head, arms, or legs out of cars. The safety behaviors aspects which had mean scores of less than 2.00 were "buying

tables or beds with non-sharp edges or putting rubber protection around sharp edges". This had the lowest mean score ($\bar{X}$ = 1.64, S.D. = 0.75). From the case of 74 (52.97%) parents who answer "never", and 43 (30.7%) of parents who answer "sometimes", for which parents gave the reason that the place where they lived was just a small room which had no tables, and no bed; or furniture which had no sharp edges was hard to find and was very expensive. The next lowest mean score was in the item "earthing of all electrical appliances, which might have leakage such as refrigerators or water heaters" ($\bar{X}$ = 1.77, S.D. = 0.90). From the case of 76 (54.3 %) parents who answer "never", for which parents said they did not do this since they rent the upper floor of a house, and did not know that they had to earth electrical appliances. Safety behaviors about "arranging cupboards, tables, and chairs away from windows and shelves", which had a mean of 1.86 (S.D. = 0.81). From the case of 57 (40.7%) parents who answer "never", and 46 (32.9%) of parents who answer "sometimes", for which the majority of parents said they could not do this since their rented room was very small. Another statement was in the item "talking to children while eating" ($\bar{X}$ = 1.99, S.D. = 0.66). From the case of 79 (56.4 %) parents who answer "sometimes", for which parents gave the reason that their children were at a talkative age and liked to ask questions because of curiosity, and also because parents had to talk to children in order to encourage them to eat.

When adding analyses about the behavior of letting the children ride on motorcycles, it was found that 106 of parents (75.71%) had allowed the child to ride on a motorcycle. In this group, 89 (63.57%) cases did not make their children wear helmets, for which parents gave the reason that it was a short distance and they rode

the motorcycle slowly, therefore it was not considered necessary to wear a helmet. Another reason was that children did not like to wear the helmet because it was annoying, or parents did not know where to buy the standard helmet, because the majority of helmets were adult size, and not fit for children. From observation by the researcher, it was found that children wore plastic helmet. The behavior of letting the children ride in a car, it was found that 111 (79.29%) cases had allowed the child to ride in a car. In this group, 84 (60.00%) cases did not make children wear seat belts. The parents gave the reason that their children were small and it was not necessary to wear a seat belt. Since, the children were seated in the back, they did not realize that it was necessary for people who sit in the back to wear seat belts, some parents did not realize that it was required for children to wear seat belts because they did not know, or had not seen anyone doing that before.

Parental Health Belief Regarding Safety for 3-6 year old Children on perceived susceptibility, perceived severity, perceived benefits, and perceived barriers

From this study it was found that parents had health belief regarding safety for 3-6 year old children on perceived susceptibility had a mean of 42. 77 (S.D. = 9.01, skewness = - .597, Min = 18, Max = 55); perceived severity had a mean of 43.91 (S.D. = 8.52, skewness = - .801, Min = 17, Max = 55); perceived benefits had a mean of 25.29 (S.D. = 3.39, skewness = - .364. Min = 17, Max = 30); and perceived barriers had a mean of 26.31 (S.D. = 7.74, skewness = - .165, Min = 9, Max = 43). This means that the majority of parents have correct health belief regarding safety for children.

Considering the mean score by each individual statement (appendix F), it was found that the highest mean score of perceived susceptibility was in the item "traffic injuries such as car bumps or falling out from a car" ($\bar{X}$ = 4.29, S.D. = 0.97). From the case of 38 (27.1 %) parents who answer "agree" and 77 (55.0%) of parents who answer "strongly agree". The highest mean score of perceived severity was in the item "traffic injuries such as car bumps or falling out from a car" ($\bar{X}$ = 4.39, S.D. = 0.94). From the case of 36 (25.7 %) parents who answer "agree" and 85 (60.7%) of parents who answer "strongly agree". The highest mean score of perceived benefits was in the item "children not being injured, disabled, or dying" ($\bar{X}$ = 4.50, S.D. = 0.77) From the case of 41 (29.3 %) parents who answer "agree" and 78 (62.1%) of parents who answer "strongly agree". The highest mean score of perceived barriers was in the item "having too many things in the house to keep tidy" ($\bar{X}$ = 3.23, S.D. = 1.08). From the case of 38 (27.1 %) parents who answer "agree" and 48 (34.3%) of parents who answer "strongly agree". For which parents gave the reason that the place where they lived was to high way or a side road which many car, many traffic injury happen to children. Since their children liked to run outside for buying and playing without looking at cars, Therefore parents realized that their children had risk for traffic injury, and could be dangerous to life.

On the lowest mean score of perceived susceptibility was in the item "injury from gunshots" ($\bar{X}$ = 3.30, S.D. = 1.41). From the case of 76 (54.3 %) parents who answer " strongly disagree", "disagree, and "uncertainly". The lowest mean score of perceived severity was in the item "injury from gunshots" ($\bar{X}$ = 3.47, S.D. = 1.33). From the case of 74 (52.1 %) parents who answer "strongly disagree", "disagree", and

"uncertainly", of those parents gave the reason that there were no guns at home, and did not buy pop guns or dart guns for children because the price was high. The lowest mean score of perceived benefits was in the item "receiving compliments from family members or friends" ($\bar{X}$ = 3.72, S.D. = 0.94). From the case of 76 (54.3 %) parents who answer "strongly disagree", "disagree", and uncertainly", for which parents gave the reason that they received a few compliments from family members or friends for always supervising their children. The lowest mean score of perceived barriers was in the item "injuries happening all the time, which could not be prevented" ($\bar{X}$ = 2.53, S.D. = 1.23). From the case of 80 (57.1 %) parents who answer "strongly disagree" and "disagree", for which parents gave the reason that injuries just happen, or although they try to be more careful, their children received injuries, because their children are very naughty or they needed their children to learn by themselves.

Hypothesis of the Study: The combination of health belief on perceived susceptibility, perceived severity, perceived benefits, perceived barriers, age, family income, and injury experience variables will explain parental safety behaviors for 3-6 year old children.

The health belief on perceived susceptibility had a significantly positive correlation with parental safety behaviors for 3-6 year old children ($r = .619$, $P < .01$), in which variables accounted for 38.3 % of the variance in parental safety behaviors ($F_{1,138} = 85.516$, $P < .001$). The perceived susceptibility was the strongest indicator of parental safety behaviors. The results of this study are in accordance with other studies on the relationship between perceived susceptibility and safety behaviors, such as Jutaponlakul, W. (1995: iv), who studied secondary school student., Russell (1991:

168) and Russell & Champion (1996: 60), who studied mothers with children aged 1-3, residing in public housing., and Sasitorn, R. (1993: 97), who studied construction workers. These studies found that perceived susceptibility had a significantly positive correlation with safety behaviors. Parents with greater correct health belief regarding safety for children on perceived susceptibility of injury were more likely to have appropriate safety behaviors.

The health belief on perceived barriers had a significantly positive correlation with parental safety behaviors for 3-6 year old children ($r = .411$, $P < .01$), and accounted for an additional 14.1 % of the variance in parental safety behaviors ($F_{2,138} = 40.687$, $P < .001$). The results of this study indicated that the health belief on perceived barriers increased parental safety behaviors increased. In accordance with Punyalerdchai, C. (1993: 50), Ruiharad, J. (1995: 66), Russell & Champion (1996: 61), and Weerakul, R. (1996: 74). These study found that perceived barriers had a significantly positive correlation with matenal behaviors in caring for children. The study by Sasitorn, R (1993: iv), it found that perceived benefits-barriers accounted for 10.1 % of the variance in preventive accident behaviors of construction worker. However, this study was not consistent with Chaigosol, P. (1993: 54), it was found that perceived barriers did not significantly correlate with maternal behaviors in caring for children with nephrotic syndrome. And study by Yencham, N. (1992: 48), it was found that perceived barriers did not significantly correlate with health practice to quit smoking men.

The health belief on perceived benefits had a significantly positive correlation with parental safety behaviors for 3-6 year old children ($r = .510$, $P < .01$),

and accounted for an additional 6.3 % of the variance in parental safety behaviors ($F_{3, 137}$ = 20.891, P < .001). The results of this study are in accordance with those of Chaigosol, P. (1993: 53), Punyalerdchai, C. (1993: 50), and Ruiharad, J. (1995: 66). Of these study it was found that perceived benefits had a significantly positive correlation with maternal behaviors in caring for children. However, this study was not consistent with Yencham, N. (1992: 48), it was found that perceived benefits did not significantly correlate with health practice to quit smoking men.

Family income had a significantly positive correlation with parental safety behaviors for 3-6 year old children (r = .408, P < .01) and accounted for an additional 3.2 % of the variance in parental safety behaviors ($F_{4, 135}$ = 11.514, P < .01). The results of this study are in accordance with those of Danchai, K. (1997: 45), Rachawat, P. (1993: 72), Srangnok, S. (2000: 58) and Weerakul, R. (1996: 80). Of these studies it was found that family income had a positive correlation with maternal behavior in caring for children. However, this study was not consistent with Chaigosol, P. (1993: 59) found that family income did not have a statistically significant correlation with maternal behavior in caring for children with nephrotic syndrome. Also, Pokasinjumroon, P. (1995: 78), who found that family income did not have a statistically significant correlation with self-care behavior in Thai-Muslim pregnant women with pregnancy induced hypertension.

The health belief on perceived severity had a significantly positive correlation with parental safety behaviors for 3-6 year old children. As parental health belief on perceived severity increased safety behaviors increased. This study was in accordance with Rosenstock (1974: 332), who described the person's perceived

susceptibility and perceived severity of a disease provided the energy to preventive health behaviors. And the study by Asumpinzabm U. (1997: 91), Rachawat, P. (1993:67), Supasilapa, S. (1984: v), and Weerakul, R. (1996: 73). Of these studied it was found that perceived severity had a significantly positive correlation with maternal behavior in caring for children. This study was not consistent with Chaigosol, P. (1993: 53) and Punyalerdchai, C. (1993: 50), it was found that perceived severity did not have a statistically significant correlation with maternal behaviors in caring for children. However perceived severity was not able to explain parental safety behaviors, because it was low correlation level ($r = .355$, $P < .01$), but perceived susceptibility, perceived barriers, perceived benefits, and family income had a moderate correlation level ($r = .619$, .411, .510 and.408, respectively) (Luecha, Y., et al., 1997: 278). In stepwise multiple regression analysis, the selection of the variables will be chosen from the highest correlated factor with the dependent factor (Punpruk, S. 1996: 106). Thus, perceived severity did not have enough influence and significance to explain parental safety behaviors.

Age of parents had a significantly positive correlation with parental safety behaviors for 3-6 year old children. Older-aged parents had more appropriate safety behaviors than younger parents. In accordance with Asumpinzab, U. (1997: 94), Prombuasri, P. (1994: 71), Rachawat, P. (1993: 71), and Weerakul, R. (1996: 79), it was found that age of parents had a significantly positively correlation with maternal behaviors in caring for children. However age of parents were not able to explain parental safety behaviors, because it was low correlation level ($r = .197$, $P < .05$), but parental health belief on perceived susceptibility, perceived barriers, perceived benefits,

and family income had a moderate correlation level (r = .619, .411, .510 and.408, respectively) (Luecha, Y., et al., 1997: 278). Thus, age of parents did not have enough influence and significance to explain parental safety behaviors.

Injury experience of parents had no correlation and were not able to explain parental safety behaviors. In accordance with Chaigosol, P. (1993: 58), Srangnok, S. (2000: 48), and Weerakul, R. (1996: 79), it was found that the duration of a child' s illness did not significantly correlate with maternal behaviors in caring for children. Parents who had, or did not have injury experience showed no differences in parental safety behaviors. This study was not consistent with Rosenstock (1974: 333-334), who described that structural variables, such as experience, served to condition both individual perception and the perceived benefits of preventive action. The study by Danchai, K. (1997: 45) and Russell & Champion (1996: 63), found that experience of parents was correlated with maternal behaviors in caring for children.

The results of this study were in accordance with Rosenstock' s Health Belief Model conceptual framework, which described that the combination of health belief and modifying factors were able to predict preventive health behaviors, which focuses on health belief. This study found that the combination of parental health belief on perceived susceptibility, perceived barriers, perceived benefits, and family income variables accounted for 61.9 % of the variance in parental safety behaviors ($F_{4, 135}$ = 55.015). The remaining 38 % of other influencing factors were not covered in the research incorporated in this study.

CHAPTER VI

CONCLUSION AND RECOMMENDATION

Conclusion of Study

This descriptive study was aimed to study the health belief and safety behaviors of parents with 3-6 year old children, by using Rosenstock's Health Belief Model. The subjects were 140 parents of children aged 3-6. All of the subjects dropped off and pick-up their children at kindergarten schools of Bangkok Metropolitan Administration, Rajathevi District. The data was collected from February to March 2000. The sample was chosen as convenient by following criteria of parents who took care of their children from birth and lived in the same house. Another criteria for choosing samples was that they must be able to communicate in the Thai language, and be willing to cooperate in answering questionnaires.

The instruments used in this research consisted of 3 sets of questionnaires which are: Demographic Data Form for both children and parents; the Parental Safety Behaviors for 3-6 year old Children Questionnaire, which the researcher developed from Hendricks & Reichert's Parents Health Behavior Questionnaire (1996: 249), literature review, parents interviews; and the Parental Health belief Regarding Safety for 3-6 year old Children Questionnaire, which the researcher developed from Russell's questionnaire on health belief (1991: 170 - 172). All the instruments were tested and passed validity test by 5 experts. The instruments were then used in a trial run with a group of 30 parents who had 3-6 year old children and had similar

characteristics to the real samples for reliability test. The test had an alpha value of 0.82 on the Parental Safety Behaviors for 3-6 year old Children Questionnaire. The Parental Health belief on Safety for 3-6 year old Children Questionnaire had an alpha value of perceived susceptibility, perceived severity, perceived benefits, and perceived barriers were equal to 0.83, 0.86, 0.77, and 0.84 respectively.

The results of the research indicated that the sampling group had a high mean score on perceived susceptibility ($\bar{X}$ = 42.77, S.D. = 9.01), perceived severity ($\bar{X}$ = 43.91, S.D. = 8.52), perceived benefits ($\bar{X}$ = 25.29, S.D. = 3.39), perceived barriers ($\bar{X}$ = 26.21, S.D. = 7.74), and parental safety behaviors ($\bar{X}$ = 99.17, S.D. = 9.76). Stepwise multiple regression included variables of parental health beliefs on perceived susceptibility, perceived severity, perceived benefits, perceived barriers, age of parents, family income, and injury experience of parents, to determine their relationship with parental safety behaviors. The regression analysis shows that the combination of parental health belief on perceived susceptibility, perceived barriers, perceived benefits and family income variables accounted for 61.9 % of the variance in parental safety behaviors ($F = 55.015$, $p < .001$). which were significant predictors of safety behaviors. The results of this study support the frame of thought of Rosenstock's Health Belief Model.

Research Limitations

1. Some characteristics of children such as gender, hyperactivity, present illness, or environmental factors such as living environment characteristics, supervisor,

and family life changes, may result in parental safety behaviors for children, which can cause irregularities in relationships.

2. Some of the questions on Parental Safety Behaviors for 3-6 year old Children Questionnaires, were limited to answers, "never". For example, the question "watching your child carefully while in water" may be answered as "never" because some parents never took their children swimming at all. As another question about "earthing of all electrical appliances which might have leakage of electricity". Most who answered "never" were mothers who did not know about earthing at all.

Recommendations

From the results of this study, it can be concluded that parental health belief on perceived susceptibility, perceived benefits, perceived barriers, and family income are able to explain the variance of parental safety behaviors for 3-6 year old children with statistical significance. The researcher has the following recommendations:

Nursing care aspects.

1. The nurses should further explore parents' feelings about their belief to perform safety behaviors. In this study, parents expressed feelings of tiredness as a frequent barriers to engage in safety behaviors. The nurses should further investigate parents' feelings of tiredness to determine if these feelings have a psychological basis such as depression or stress. Parents who are not overly anxious or under great stress are more likely to expect successful performance on safety behaviors tasks and, thus would be more willing to perform these tasks.

2. Nursing intervention should focus on correct perceived susceptibility, perceived benefits, and perceived barriers. The nursing intervention should create

model on safety behaviors, which parents observe others demonstrate the safety behaviors tasks. The people who model the safety behaviors should be similar to the parents in demographic and ability characteristics. The nurses should involve significant others who may have influence on parents to perform safety behaviors such as friends or relatives or community outreach workers.

3. For the family income, nurses should support parents who have a low family income, by setting up village safety center, to provide equipment such as helmet for children, or provides volunteers on counseling about safety precaution, or provides swimming instructors.

4. For safety behaviors, it was found that some parents were inappropriate in providing safety for children, such as buying tables or beds which had no sharp edges or putting rubber protection around sharp edges, earthing electrical appliances, letting the child ride on a motorcycle with a helmet, and letting the child ride in a car without wearing a seat belt for child. These result indicated that parents underestimate their children' s risks for injury. Therefore, nurses should support the parents in realizing the importance of providing appropriate safety behaviors for 3-6 year old children. Government should pass laws on the issues of children safety behaviors, while community or society should pressure parents to take responsibility regarding safety behaviors for children.

Nursing education aspects.

The results of this research could be used for teaching materials for nursing students in order to make them realize the importance of promoting parental safety

behaviors for 3-6 year old children. This could be done by emphasizing health belief and modifying factors which would have results on safety behaviors for children.

For future research.

1. Research should be studied for various other factors such as parents' education level, self-efficacy of parents, and social influences.

2. Research should be controlled characteristics of children or environment factors, which may effect on safety behaviors such as hyperactive children or family life changes.

3. Research should be improved on certain questions of Parental Safety Behaviors for 3-6 year old Children Questionnaires in order to be able to use with other populations.

4. Research should be a experimental study in order to provide more appropriate safety behaviors of parents.

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APPENDICES

APPENDIX A

Consent Form

I, Jirawan Klommek, am a master student in Nursing Department, Faculty of Medicine, Ramathibodi Hospital, Mahidol University. I am studying the health belief and safety behaviors of parents with 3-6 year old children.

This research is to help children aged 3-6 to receive more appropriate safety from injuries. Therefore, I request your cooperation in answering 3 sets of questionnaire which are: demographic data form, parental safety behaviors for 3-6 year old children questionnaire, and parental health belief on safety for 3-6 year old children questionnaire. This will take 20-30 minutes. Data from these questionnaires will be presented in general, not in specific individual cases. You have the right to agree or refuse in answering questionnaire. This will have no effect on you and your child.

Thank you very much

Jirawan Klommek

Researcher

APPENDIX B

Demographic Data Form

Questionnaire number.....

School.....

Part 1. **Instruction:** fill in the blank or make ✓ in ( ) to the real situation.

A. Demographic of child.

1. Age.....years
2. Gender ( ) male
   ( ) female
3. Number of siblings .....
4. Dose your child has a supervisor? ( ) No
   ( ) Yes, the name is.....

B. Demographic of parents.

1. Relationship with child ( ) father
   ( ) mother.
2. Age: father.....years old.
   Mother.....years old.
3. Educational level: father.....
   mother.....
4. Occupation: father.....
   mother.....

5. Total family income per month.....baht.

6. Family economic status

( ) income is equal to expenses.

( ) income is more than expenses.

( ) income is less than expenses.

7. Does your child, aged 3-6 have injury experience which require physician's attention?

( ) Never

( ) Yes. How many times?.....

The kind of injury.....

8. How do you drop off and pick up your child at school?

( ) walking ( ) motorcycle

( ) bus ( ) car

( ) bicycle ( ) boat

9. Have you ever let your child ride on a motorcycle?

( ) Never.

( ) Yes, but did not wear helmet.

( ) Yes, and wore helmet.

10. Did you ever let your child ride in a car?

( ) Never.

( ) Yes, but did not wear seat belt for a child.

( ) Yes, and wore seat belt for a child.

APPENDIX C

Parental Safety Behaviors for 3 - 6 year old children

Questionnaire

Part 2. **Instruction:** Questions in this part are to evaluate frequency regarding your safety behaviors for 3-6 year old children. Please choose the answer to the real situation of your behaviors. Please read each question and make ✓ in the answer blocks. You may choose only one answer, even though there are 3 choices for each level as followed:

Never means you never do or do not have the mentioned behaviors.

Sometimes means you do or have the mentioned behaviors once in a while.

Regularly means you do or have the mentioned behaviors every time.

Example

Safety behaviors for children	Never	Sometimes	Regularly
0. You arrange cupboard, table, chairs, or bed, away from window or shelves.	✓		

Explanation : This statement you never arrange cupboard, table, chairs, or bed, away from window or shelves.

Safety behaviors for children	Never	Sometimes	Regularly
1. You arrange cupboards, tables, chairs, or bed, away from window or shelves.			
2. You teach a child to keep toys neatly after playing.			
3. You wipe bathroom floor or house floor when wet.			
. . . . .			
39. You make sure a child did not extend head, arms, or legs outside a car			
40. You carry or hold hand of child when crossing streetor going up or down a bus.			

APPENDIX D

Parental Health Belief Regarding Safety

for 3 - 6 year old Children Questionnaire

Part 3. **Instruction:** This questionnaire is to assess your understanding, having an opinion, or feeling concern with safety behaviors for 3-6 year old children. Please choose the answer most closely to your understanding, having an opinion, or feelings. Please read each question carefully and make ✓ only one choice. Each question has 5 choices for each level as followed:

Strongly disagree	means	this statement not correspond with your understanding, having an opinion, or feeling at all.
Disagree	means	this statement correspond with your understanding, having an opinion, or feeling a little.
Uncertainly	means	this statement is half correspond with your understanding, having an opinion, or feeling.
Agree	means	this statement correspond with your understanding, having an opinion, or feeling much.
Strongly agree	means	this statement correspond with your understanding, having an opinion, and feeling at all.

Example :

Statement	Strongly Disagree	Disagree	Uncertainly	Agree	Strongly Agree
0. You can not remember all safety methods for children.				✓	

Explanation : This statement correspond with your understanding, having an opinion, or feeling much.

Statement	Strongly Disagree	Disagree	Uncertainly	Agree	Strongly Agree
You understand, have an opinion, or feel that your child has risks for injuries as the following					
1. bumping, falling, or falling high place					
2. drowning					
3. choking					
.					
.					
.					
.					
.					
.					
.					
.					
.					
.					
36. Injury happens all the time, it can not be prevented.					
37. An effort to prevent injury will make the child has less time and opportunity in playing and learning.					

APPENDIX E

Mean and standard deviation of parental safety behaviors for 3-6 year old children by each item from highest mean to lowest

Safety Behaviors	$\bar{X}$	S.D.
You turn off stove or gas, after.....	2.97	.17
You make sure children did not extend head	2.82	.40
You carry or hold hand of the child	2.81	.41
You tidy electrical cord, cover outlets	2.81	.43
You keep children away while ironing	2.79	.47
You don't let children touch or use	2.75	.58
You don't let children play near water	2.72	.52
You watch the child carefully while in	2.71	.54
You watch the child carefully while lighting	2.70	.56
You keep knives in drawers, shelves	2.69	.54
You keep medication or chemicals out of reach	2.65	.60
You dropping up or picking up the child from	2.65	.52
You teaching the child not to go with strangers	2.65	.71
You discard empty chemical bottles, boxes	2.63	.58
You teach the child to hold on to handrail	2.62	.58
You keep rice cooker or thermos bottle	2.60	.63
You make sure the child wears shoes	2.59	.57
You take out fruit seeds, fish bones, ...	2.58	.65
You teach a child to keep toys nicely	2.58	.59
You allow children to play with scissors, ...	2.57	.64
You allow child to play with children	2.57	.59
You buy pop guns or dart guns for	2.56	.59

Safety Behaviors	$\bar{X}$	S.D.
You wipe bathroom floor or house floor	2.51	.62
You teach a child about crossing streets, ...	2.51	.67
You do not let your child play with	2.49	.70
You be careful not to let your child play	2.48	.63
You do not scold your child when playing	2.45	.82
You watch your child closely while inside	2.41	.55
You ask your child to plug in or unplug	2.38	.66
You install electrical outlets and switches	2.31	.87
You check the house and fix it when repairs	2.31	.63
You teach your child not to annoy pets or	2.29	.78
You give medication to your child by telling	2.26	.76
You use unbreakable plates such as plastic, ...	2.25	.72
You teach your child to remember home	2.20	.85
You let your child wear sneakers or shoes	2.04	.69
You talking with your child while	1.99	.66
You arrange cupboards, tables, and	1.86	.81
You make sure electrical appliances such as	1.77	.90
You buy tables, or beds, with no sharp edges, ...	1.64	.75
Total	**$\bar{X}$ = 99.17,**	**S.D. = 9.76**

APPENDIX F

Mean and standard deviation of parental health belief regarding safety for 3-6 year old children on perceived susceptibility, perceived severity, perceived benefits, and perceived barriers by each item from highest mean to lowest

Perceived susceptibility	$\bar{X}$	S.D.
Traffic injuries such as car bumps or falling out from a car	4.29	.97
Electric shock	4.27	1.00
Bumping, falling, or falling from high place	4.16	.89
Touching hot objects, scalding, or fire	4.15	1.05
Injury from sharp objects, tools, or machine	4.07	.99
Choking	3.89	1.07
Drowning	3.86	1.13
Injury from domestic animals	3.67	1.03
Contact with or swallowing poison	3.64	1.30
Kidnapping or assault	3.49	1.29
Injury from gunshots	3.30	1.41

Total $\bar{X}$ = 42.77, S.D. = 9.01

perceived severity	$\bar{X}$	S.D.
Traffic injuries such as car bumps or falling out from a car	4.39	.94
Electric shock	4.32	.95
Touching hot objects, scalding, or fire	4.18	.95
Bumping, falling, or falling from a high place	4.15	1.01
Drowning	4.05	1.09
Choking	4.01	.97
Contact with or swallowing poison	3.96	1.14
Injury from sharp objects, tools, or machine	3.96	.96
Injury from domestic animals	3.74	1.06
Kidnapping or assault	3.70	1.17
Injury from gunshots	3.47	1.33

Total $\bar{X}$ = 43.91, S.D. = 8.52

perceived benefits	$\bar{X}$	S.D.
Children do not get injured, disabled, or die	4.50	.77
Children have less injuries	4.30	.78
Saving on medical expenses	4.29	.78
Feel proud	4.19	.93
Time is not wasted taking children to hospital when they have injuries	4.19	.84
Receiving compliments from family members or friends	3.72	.94
Total	**$\bar{X}$ = 25.29,**	**S.D. = 3.39**

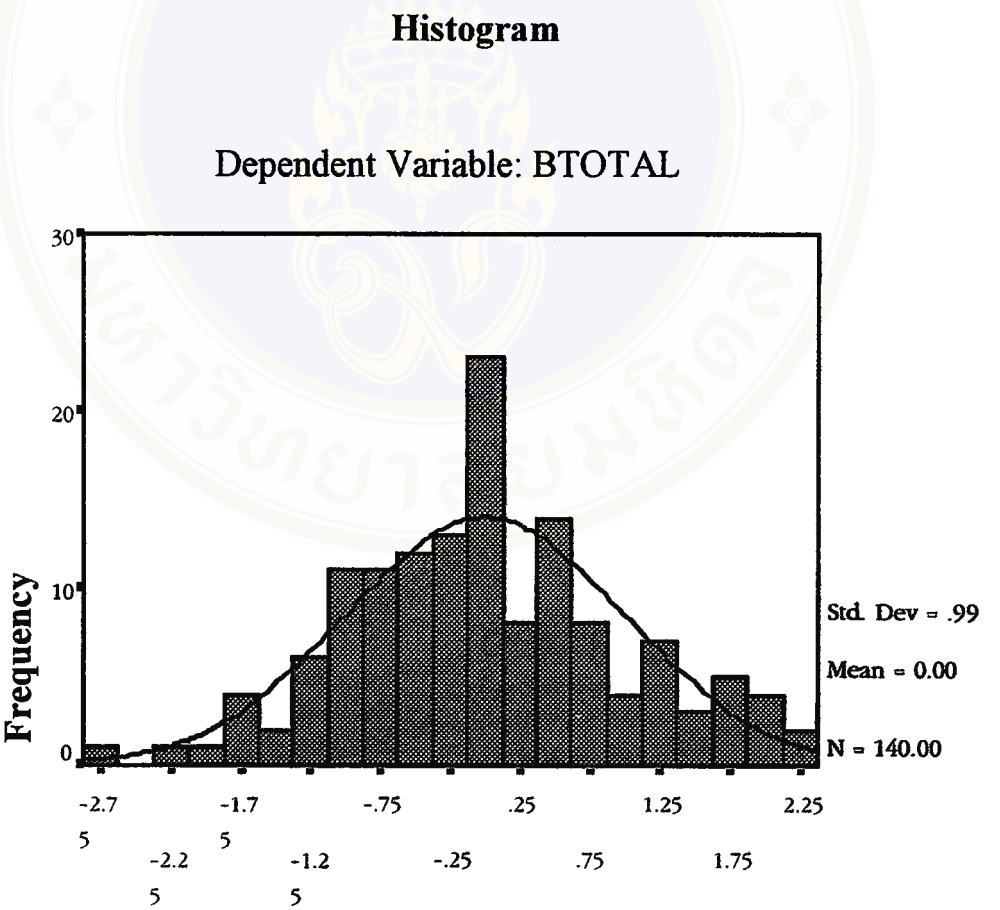
perceived barriers	$\bar{X}$	S.D.
House has too many things to be kept tidy	3.23	1.08
It is difficult to maintain effort to prevent children from injury	3.09	1.24
It is difficult to seek knowledge about safety behaviors for 3-6 year old children	3.09	1.22
No time to take care of injured children	3.06	1.29
An effort to prevent injury will cause the child to have less time and opportunity in playing and learning	2.92	1.19
Higher expenses for providing such a secure safety environment	2.84	1.12
Cannot remember all the safety methods for children	2.66	1.08
Children are disobedient when told not to go near dangerous things	2.64	1.16
Injuries happen all the time and cannot be prevented	2.53	1.23
Total	**$\bar{X}$ = 26.31,**	**S.D. = 7.74**

APPENDIX G

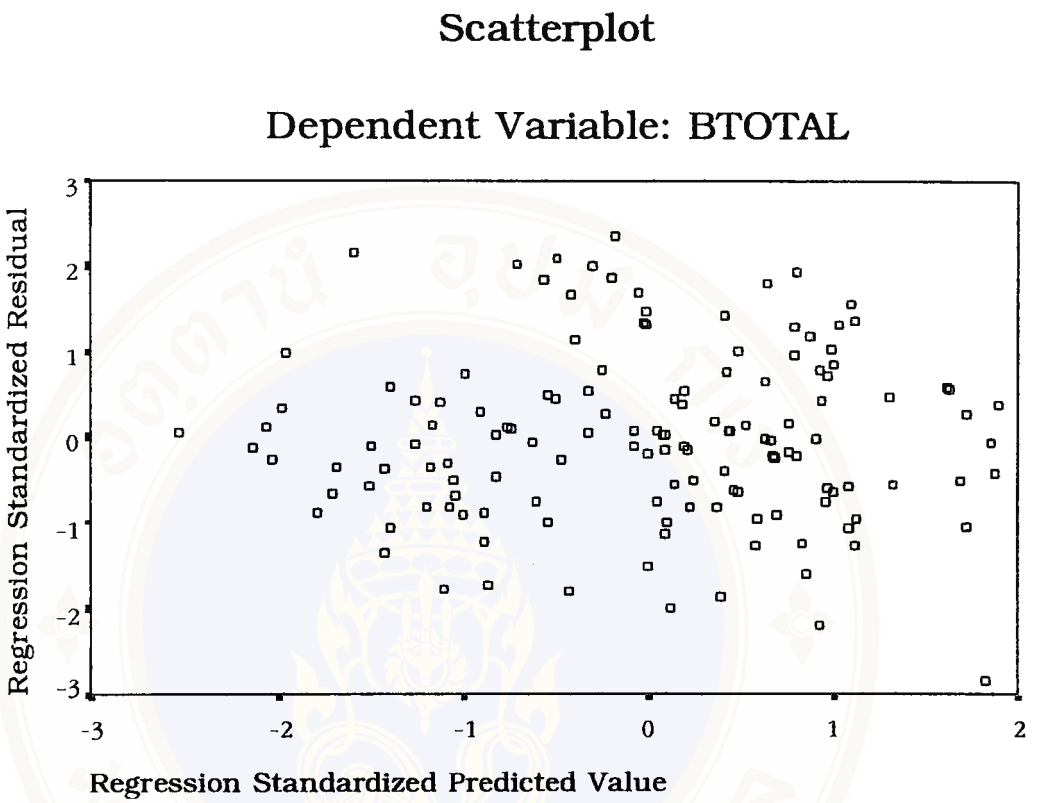
Test of Residual

Independent variables were parental health belief on perceived susceptibility, perceived severity, perceived benefits, perceived barriers, age of parents, family income and injury experience of parents. Dependent variable was parental safety behaviors.

1. Normality



2. Homoscedasticity



3. Autocorrelation

Durbin-Watson = 1.931

4. Collinearity Statistics Tolerance

Perceived susceptibility = .810

Perceived barriers = .943

Perceived benefits = .813

Family income = .897

Excluded Variables

Age = .952

Perceived severity = .360

LIST OF EXPERTS

In the study of " The health belief and safety behaviors of parents with 3-6 year old children in Rajathevi district, Bangkok" the involved study tools were tested for their validity.

Following is the list of experts :

1. Associate Professor Jariyawat Kompayak
   Faculty of nursing,
   Huachiew Chalermprakiet University.
2. Lect. Nantawon Suwonnaroop
   Department of Public Health Nursing,
   Faculty of Nursing, Mahidol University.
3. Lect. Renu Pookboonmee
   Department of Nursing, Faculty of Medicine,
   Ramathibodi Hospital, Mahidol University.
4. Associate Professor Vason Silpasuwan
   Department of Health Education and Behavioral Science,
   Faculty of Public Health, Mahidol University.
5. Lect. Adisak Plitponkarnpim, M.D.
   Department of Pediatrics, Faculty of Medicine,
   Ramathibodi Hospital, Mahidol University.

BIOGRAPHY

NAME	Mrs. Jirawan Klommek
DATE OF BIRTH	21 January 1962
PLACE OF BIRTH	Bangkok, Thailand
INSTITUTIONS ATTENDED	Bangkok Adventist Hospital School of Nursing, 1981-1984: Certificate of Nursing and Midwifery Srinakharinwirot University, 1988-1990: Bachelor of Nursing Education
POSITION & OFFICE	1996-Present, Dept of Medical and Surgical, Faculty of Nursing, Mission College, Bangkok, Thailand. Position : Instructor