FALL RISK ASSESSMENT IN PATIENTS WITH EYE DISEASES

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A THEMATIC PAPER SUBMITTED IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR
THE DEGREE OF MASTER OF NURSING SCIENCE
(ADULT NURSING)
FACULTY OF GRADUATE STUDIES
MAHIDOL UNIVERSITY
2001

ISBN 974-665-977-4

Thematic paper

entitled

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Was submitted to the Faculty of Graduate Studies, Mahidol University

For the degree of Master of Nursing Science (Adult Nursing).

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ACKNOWLEDGEMENT

I wish to express my deepest gratitude and sincere appreciation to Assistant Professor Orapan Thosingha, my major advisor, and Assistant Professor Suporn Danaidutsadeekul, my co-advisor for their helpful guidance, invaluable advice, supervision, encouragement, and constructive criticism, which have enabled me to carry out this thematic paper successfully. I gratefully appreciate their kindness and support that helped relieve my stress.

My appreciation and gratitude are also extended to Assistant Professor Suvimol Kimpee, and Associate Professor Dr. Soranit Siltharm, my committee member for valuable comments and suggestions.

I would like to thank all of experts who gave helpful suggestions as to the instrument. Special thanks to personal of Siriraj Hospital, for their helping facilitation and kindness extending to me during the entire study. I am deeply, indebted in patients with eye diseases who willingly participated in my study.

Greatest thanks to Out Patient Department Nursing Division, Siriraj Hospital, Mahidol University that allowed me to study.

I am very grateful to my mother, my sisters, my brothers for their continuous understanding, encouragement and support throughout the period of my study.

Finally, I would like to thank all of my friends for their encouragement, mutual sharing the misery and happiness, and confidence in my ability to succeed throughout this study.

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4237312 NSAN/M : MAJOR : ADULT NURSING ; M.N.S (ADULT NURSING)
KEY WORDS : FALL / RISK ASSESSMENT / PATIENTS WITH EYE DISEASES

KANJANEE NITIRUANGJARUS : FALL RISK ASSESSMENT IN PATIENTS WITH EYE DISEASES : THEMATIC PAPER ADVISORS : ORAPAN THOSINGHA, D.N.S., SUPORN DANAIDUTSADEEKUL, D.N.S., 65 p., ISBN 974-665-977-4

The occurrence of falls among hospitalized patients has a significant impact on the quality of patient care. The outcomes of falls not only increase health care costs and negatively affect patients' well being, but also demonstrate the liability of health care providers. Efforts to prevent patient falls generally depend on an individual assessment of each patient at risk of falling. The most common risk factors include intrinsic factors for which each patient is measured individually and extrinsic factors which include environmental conditions. Patients with eye diseases causing visual problems, common among the elderly, are at fall risk due to both intrinsic and extrinsic factors.

This clinical study aimed to study fall risk factors and fall risk level in patients with eye diseases who were admitted to the Ophthalmic Department of Siriraj Hospital. The sample was composed of 20 adult patients with eye diseases. Data was obtained by utilizing a fall risk assessment tool which included demographic data, intrinsic and extrinsic factors, and outcome of fall. Data was analyzed using frequency distribution and percentage.

The result of the study revealed that the essential factors that contributed to fall risk among patients with eye diseases were : visual impairment, being aged over 60, medication use, and ambulatory and gait. The majority of patients demonstrated low fall risk level. Generally, the environmental conditions were relatively safe and did not cause falls. However, there were extrinsic factors that might contribute to falls which included the height of the bed, the narrowness of space between each bed, the narrowness of the entrance to the bathroom, the height of the transom, no grab rail, and patient gown and slippers that are too big.

The results from this study suggest that nurse should employ practices that will prevent patients from falling. Nurses should collaborate with health care providers on fall risk assessment of patients, provide patients'safety by implementing nursing strategies for fall prevention, and by arranging environmental safety. Furthermore, nurses should promote to practitioner measures to prevent patient falls.

4237312 NSAN/M : สาขาวิชา : การพยาบาลผู้ใหญ่ ; พย.ม. (การพยาบาลผู้ใหญ่)

กาญจนี นิติเรืองจรัส : การประเมินปัจจัยเสี่ยงต่อการพลัดตกหกล้มในผู้ป่วยโรคตา (FALL RISK ASESSMENT IN PATIENTS WITH EYE DISEASES) คณะกรรมการควบคุมสารนิพนธ์ : อรพรรณ โตสิงห์, พย.ด., สุพร ดนัยดุษฎีกุล, พย.ด., 65 หน้า ISBN 974-665-977-4

การพลัดตกหกล้มของผู้ป่วย เป็นปัญหาสำคัญอย่างหนึ่ง ที่ส่งผลกระทบต่อผู้ป่วยและคุณภาพของการให้ดูแล ซึ่งผลของการพลัดตกหกล้มนอกจากจะก่อให้เกิดความสูญเสียทั้งในด้านค่ารักษาพยาบาล และภาวะสุขภาพที่ดีของผู้ป่วยแล้ว ยังแสดงให้เห็นถึงหน้าที่ความรับผิดชอบของผู้ดูแลด้วย จึงได้มีความพยายามในการหาวิธีป้องกันการพลัดตกหกล้มอย่างมีหลักการ ทั้งนี้ขึ้นอยู่กับการประเมินปัจจัยเสี่ยงต่อการพลัดตกหกล้มในผู้ป่วยแต่ละราย แต่โดยทั่วไปปัจจัยเสี่ยงที่อาจทำให้เกิดการพลัดตกหกล้ม ประกอบด้วยปัจจัยภายในซึ่งจะต้องประเมินจากสภาพของผู้ป่วย และ ปัจจัยภายนอก คือ ปัจจัยด้านสิ่งแวดล้อมที่เอื้อต่อการพลัดตกหกล้ม ผู้ป่วยโรคตาซึ่งส่วนมากเป็นผู้ป่วยสูงอายุ และมีปัญหาด้านการมองเห็น เป็นผู้ป่วยอีกกลุ่มหนึ่งที่อาจมีโอกาสเสี่ยงต่อการพลดตกหกล้มได้ด้วยปัจจัยเสี่ยงดังกล่าว

การศึกษาครั้งนี้เป็นการศึกษาเชิงบรรยาย เพื่อศึกษาปัจจัยเสี่ยง และระดับความเสี่ยงต่อการพลัดตกหกล้มของผู้ป่วยโรคตา ที่มารับการรักษาที่หอผู้ป่วยแผนกตา โรงพยาบาลศิริราช เลือกกลุ่มตัวอย่างแบบเฉพาะเจาะจง อายุตั้งแต่ 13 ปี ขึ้นไป จำนวน 20 ราย เก็บรวบรวมข้อมูลโดยใช้เครื่องมือประเมินปัจจัยเสี่ยงต่อการพลัดตกหกล้ม ซึ่งประกอบด้วยข้อมูลส่วนบุคคล, แบบประเมินปัจจัยภายในและภายนอก, และ ผลของการพลัดตกหกล้ม วิเคราะห์ข้อมูลโดยใช้ ความถี่และร้อยละ

ผลการศึกษาพบว่า ผู้ป่วยโรคตาส่วนใหญ่มีระดับความเสี่ยงต่อการพลัดตกหกล้มอยู่ในระดับต่ำ ปัจจัยสำคัญที่อาจทำให้ผู้ป่วยโรคตาเสี่ยงต่อการพลัดตกหกล้ม คือ การบกพร่องด้านการมองเห็น, อายุที่มากกว่า 60 ปี, การใช้ยา, และท่าทางการเดิน ส่วนปัจจัยภายนอกหรือปัจจัยสิ่งแวดล้อม ส่วนใหญ่ถูกจัดให้อยู่ในสภาพที่เหมาะสม แต่มีส่วนที่ควรปรับปรุงคือความสูงของเตียงที่ค่อนข้างสูงเกินไปและควรเป็นเตียงที่สามารถปรับระดับความสูงได้ พื้นที่ระหว่างเตียงผู้ป่วยค่อนข้างแคบ ประตูทางเข้าห้องน้ำแคบและมีธรณีประตูสูง ผู้ป่วยอาจสะดุดหกล้มได้ ในห้องอาบน้ำไม่มีราวสำหรับยึดจับ ห้องส้วม ไม่มีราวยึดจับเช่นเดียวกัน

ฉะนั้นผู้ปฏิบัติพยาบาล จึงควร มีการประเมินปัจจัยเสี่ยงและระดับความเสี่ยงของผู้ป่วยทุกคนที่เข้ารับการรักษาในโรงพยาบาล และควรมีการเผยแพร่ปัญหาการพลัดตกหกล้มของผู้ป่วยตลอดจนการป้องกันและแก้ไข เพื่อให้ผู้ป่วยได้รับความปลอดภัยในขณะอยู่โรงพยาบาล

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CHAPTER I

INTRODUCTION

Background and significant of the study.

Patient falls are a problem that still occur among hospitalized patients. In the United States, falls are a leading cause of injury and death among the elderly, especially the elderly in the hospital. In hospitals, falls are related to increase treatment costs and length of patients' stay. Falls are estimated to increase health care costs as much as $ 2 billion per year (Benner et al., 1992 cited in Lane, 1999:37). Even though most falls are not fatal, they may cause patient discomfort, injury, significant risk for disability, immobility, litigation, decreased confidence, increased morbidity, and death (Lund & Sheafor, 1985 : 37 ; Grant & Hamilton, 1987:74 ; Kilpack et al., 1991:50 ; Ruckstuhl et al., 1991:25 ; Ryan et al., 1993:24 ; MacAvoy et al., 1996 : 213 ; Schoenfelder &Why, 1997:383 ; Mosley et al., 1998:38; Bezon et al., 1999:112). The outcomes of these falls are one of the important issues that nurses should be concerned with. Nurses have to be concerned not only for health care costs and patient's well-being, but also the increasing provider liability (Grant & Hamilton, 1987:74).

Now, it is understood that patient falls are a predictable event and a preventable occurrence by searching for factors contributing to falls and the recommending strategies for prevention. In general, a patient fall may be caused by a myriad of factors, such as pathophysiologic, psychologic, social, or environmental, or it may be caused from a cumulative effect of two or more factors within these categories. Patient falls have serious ramifications and the consequences of falls cross

disciplinary boundaries. Thus, the problem of falling has been concerned from these disciplinary boundaries, such as nurses, gerontologists, physicians, physical therapists, bioengineers, psychologists, and social workers. Nurses have concentrated on assessing the fall-prone patient to identify the cause of the fall, and have tended to use a comprehensive approach, incorporating physical, psychologic, social, and environmental factors for fall prevention. This is an approach that reflects the holistic philosophy of the nursing discipline (Morse & Morse, 1988 cited in Morse, 1993:300). However, there has been less attention given to research evaluating recommended interventions. Nursing has tended to move directly to application, implementation, and evaluation of fall-prevention programs.

In Thailand, falls are the most common kind of accident and cause of injury that led to hospitalization among the elderly (Hanjangsit, K., 1994 ;Threeyavuthevad, S., 1991 ; Thosingha et al., 1992 ; Tunmookhayakul, A., 1983). In 1998, a survey by physical examination of Thai Public Health Research Institution reported that in the elderly population, 69.3 % of age between 60-69 years had a chronic disease. Prevalence of chronic diseases among the elderly are the most common knee pain and inflammation, back pain, hypertension, visual disorder, diabetes mellitus, heart disease, weakness, and headaches (Chuprapawon, J., 2000:178). All these chronic diseases may contribute to patient falls. Thus, hospitalized patients, especially patients with eye diseases who are common in the elderly (Yenjit, V., 1999) have more probability to fall or fall risk. Most patients with eye diseases have visual impairment such as blurred or decreased vision, and some are blind. Sometimes, they should cover their pathologic eyes with eye pads. Using one eye, these patients decrease their visual field and it affects their postural control. Consequently, the result of aging,

chronic diseases, and visual impairment may contribute to an increase in fall risk among patients with eye diseases.

Today in Thailand, patient falls are a nursing care problem that is concealed. In the review of the literature, no study of patient falls has been addressed. Therefore, there is not accurate evident data enough to explore this problem. Although, the incidence of patient falls occurs, this problem has not been concerned. Recognizing the role and responsibility of nurses in the prevention of falls must be important to provide patient's safety and to be in line with risk management in the hospital or the hospital's policy. Thus, patient falls, a part of risk management in the hospital must be administrated by searching risk identification, risk assessment and analysis, risk management, and risk control in order to demonstrate the quality of care which leads to hospital accreditation.

Thus, nurses must take and accept responsibility for the nurse's role in the prevention of falls by conducting a literature review of fall research in order to compile a checklist of significant factors. This is a fall risk assessment tool that forms the basis of a care plan for ensuring the safety of a patient at risk for falling. Then interventions to prevent the fall can be planned.

As mention above, the investigator interests in studying the factors contributing to the falls in patients with eye diseases. This study must logically begin with identification of the characteristics of these patients by assessing fall risk factors and risk of falls. The investigator hopes that this study will encourage nurses to be concerned with the problem of patient falls and contribute to nursing strategies to prevent falls.

Questions of the study.

1. What were the risk factors that contribute to falls in patients with eye diseases?
2. What was level of fall risk in patients with eye diseases?

Purpose of the study.

To study fall risk factors and level of fall risk in patients with eye diseases.

Conceptual framework.

Patients with eye diseases, usually the elderly, have visual impairments. Furthermore, these patients may have other health problems due to the aging process, chronic diseases and medication use. Medications that these patients often take are sedative drug use before an operation and therapeutic drugs for chronic diseases. These medications may affect their mental status, muscle weakness and elimination. These factors of age, visual disorder, aging process, chronic diseases, medication use, mental status, muscle weakness and elimination were found in the literature that contribute to fall risk. All of these factors were categorized by intrinsic factors which were used to measure for identification of fall risk in patients. In addition, the extrinsic factors which include environmental conditions, improper use of ambulation and transfer devices, faulty equipment, improper patient gown and slippers may also contribute to patient fall.

It is necessary to develop a fall risk assessment tool for measuring both intrinsic and extrinsic factors. The fall risk of patients then must be identified for prediction and prevention. In this study, an assessment tool was developed by using The Fall Risk Assessment Tool that was developed by MacAvoy et al. (1996) as a

guideline. Some fall risk factors and extrinsic factors were added from the literature. Thus, the conceptual framework of this study was constructed (Diagram 1).

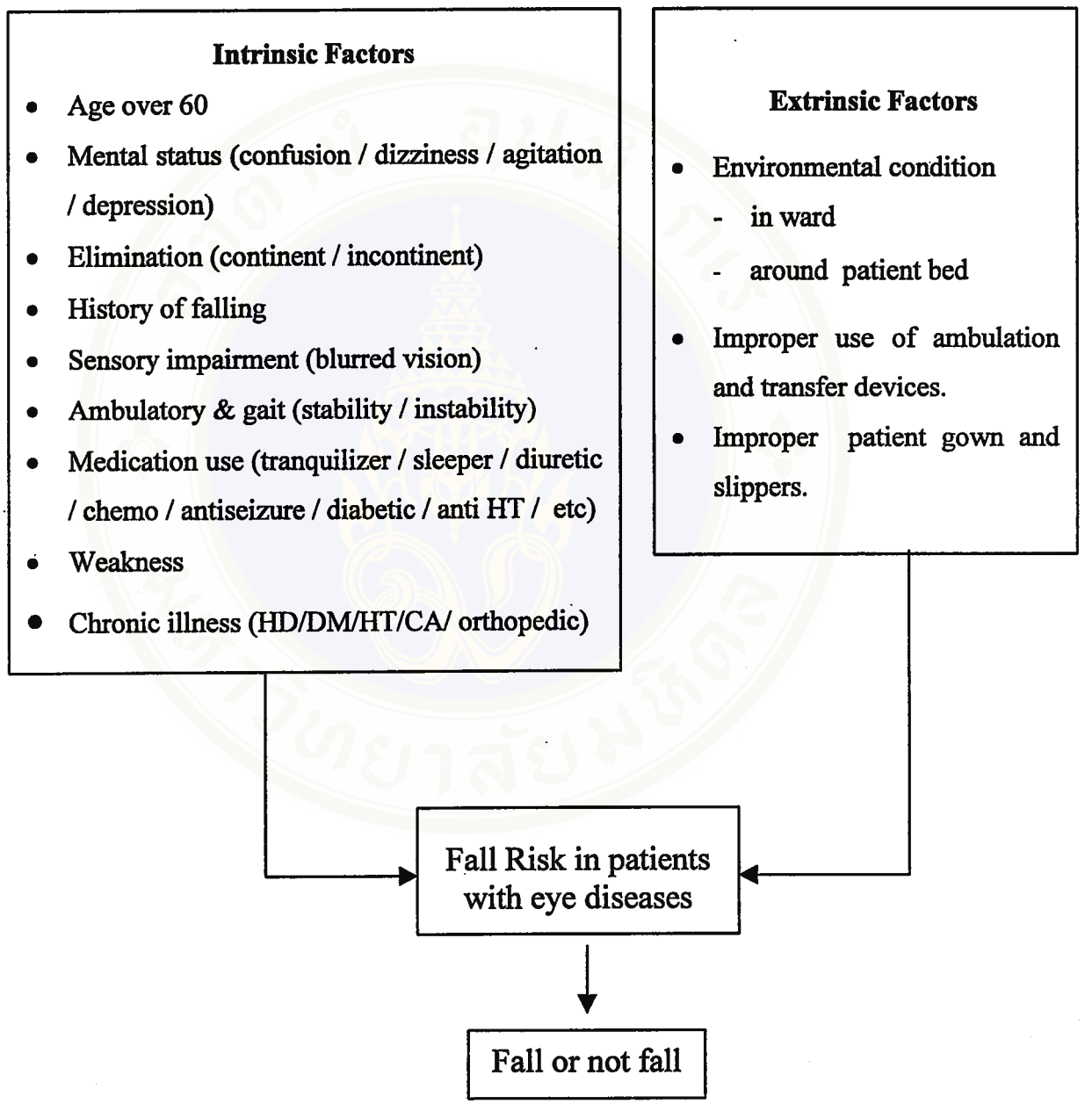

Diagram 1 Conceptual framework of fall risk in patients with eye diseases.

Scope of the study.

This study was a study of fall risk factors and the level of fall risk in patients with eye diseases who were admitted to the Ophthalmic Department, at Siriraj Hospital.

Definition of terms.

Fall risk assessment was defined as the identification of patients who had a chance of falling or fall risk by identifying risk factors that contributed patients to fall with the fall risk assessment tool.

Fall risk was the chance of an uncontrolled and undirected occurrence in which a patient comes to rest on the floor or another surface lower than the patient, whether injury was sustained or not. Risk of fall in this study was measured by The Fall Risk Assessment Tool.

Fall risk factors were defined as the physiological conditions of patients and environmental conditions in the ward or around the patients that increase patients' chance of fall. In this study, fall risk factors were measured from The Fall Risks Assessment Tool which included intrinsic factors and extrinsic factors.

Intrinsic factors are physiological conditions of patients that include age over 60, mental status, elimination, history of falling, sensory impairment, ambulatory & gait, medication use, weakness, and chronic illness.

Extrinsic factors are environmental conditions in the ward (floor surface and pathway, bathroom, and light) and around the patient bed (bed and space between beds) which include improper use of ambulation and transfer devices and improper patient gown and slippers.

Outcome of fall was defined as the result of patient observation if the patients slipped, fell or not fallen.

Outcome expectation and potential benefit.

It was expected that the results of this study could contribute to :

1. Providing evident base data for nurses to contribute and develop a fall risk assessment tool and a fall prevention program.
2. A guideline for nurses in other settings to contribute and develop a fall risk assessment tool and a fall prevention program.
3. Nursing concern in regard to the problem of patient falls and provide cooperation to systematically prevent this problem based on research.

CHAPTER II

LITERATURE REVIEW

This study aims to study fall risk factors and level of fall risk in patients with eye diseases. The related literature was reviewed and categorized as follows :

1. Situation of fall accidents.
    1.1 Situation in foreign countries.
    1.2 Situation in Thailand.
2. Fall risk of patients with eye diseases.
    2.1 The characteristics of patients with eye diseases.
    2.2 Fall risk factors in patients with eye diseases.
3. Fall risk assessment.

1. Situation of fall accidents.

1.1 Situation in foreign countries.

Falls are a significantly health problem that often occur among the elderly and the patients who are admitted into the health care agencies. This is because they have deterioration or dysfunction of organs. For many years, the dilemma of patient falls has been addressed in the literature in a wide range of settings and with all age groups. Falls have been described in all settings that include hospitals of all sizes, (Lane, 1999: 37-43 ; Huda & Wise, 1998:55-63 ; Mosley et al., 1998:38-44 ; MacAvoy et al., 1996:213-218 ; Nyberg et al., 1996:156-160 ; Hendrich et al., 1995:129 -139 ; Mahoney et al.,1994:269-274 ; Kilpack et al.,1991:50-56), nursing homes (Schoenfelder & Why, 1997:383-390 ; Capezuti et al., 1996:627-633 ; Thapa

et al., 1996:273-278 ; Friedman et al., 1995:1237-1242 ; Lipsitz et al., 1994:953-959 ; Ryan et al., 1993:23-28), community (Topp et al., 1997:11-17 ; Tinetti et al., 1995: 1214-1221 ; Langlois et al., 1995:275-278 ; Craven & Bruno,1986:27-33), and private homes (Porter,1999: 201-205).

A number of researchers have studied the etiologic factors and risk factors for falling in the adult and elderly population. Ignatavicius (2000: 27) reported that about one-third of all the elderly people fall at least once. Half of them fall during their stay in a hospital or nursing home because they are sicker or frailer than the general elderly population. Bezon et al. (1999: 112) remarked that 25% to 30% of people aged 65 to 70 years who are living in the community fall each year. This rate increases to 35 % for those older than 75 years and to 50% for those older than 80 years. Injury rates for people older than 85 years are the highest, in part because of the number of falls. Approximately 5% of elderly people older than 65 years who fall require hospitalization.

According to Greenhouse (cited in Bezon et al., 1999: 112), 75% of the deaths caused by falls occur in the elderly, who represent only 12% of the population. Fifty percent of older people who fall do so repeatedly, sustaining injuries such as hip fracture, other fractures, soft tissue injuries, dehydration, and pneumonia. Most falls occur at home and while walking or turning around. In an analysis of seven studies and 2312 falls in community-dwelling of older people, Rubenstein et al. (cited in King & Tinetti, 1995:1148) reported that 41% of falls had environment-related causes, and 13% were caused by weakness or a disorder of gait or balance. Other causes included drop attack, dizziness, confusion, visual impairment, postural hypotension, or the cause was unknown. This was in contrast to causes of falls in the nursing home, where

the most frequent causes were weakness, gait, or balance disorder (26%) and dizziness or vertigo (25%) ; only 16% of falls were environment-related. All this is due to the environment in the nursing home as arranged by health care providers. Unlike the elderly in the community, most of them live alone and have activities of daily living by themselves. The study of Craven & Bruno (1986:30-31) insisted that a risk factor finding was the relationship of falling and living alone. Sixty of the study population (99 subjects) lived alone, 71% of this group were fallers, whereas the number of fallers among the subjects not living alone was 18%. Thus living alone was identified as a risk factor. All of these factors in fall prevention research of the elderly in the community must focus on education programs (cause, fall assessment and fall prevention), training muscle strength and balance of gait program.

In regard to patient falls in the hospital, they represent the largest category of hospital incident reports. It has been reported that 70% - 80% of incident reports are related to patient falls (Huda & Wise, 1998: 55). Thus, hospitals today are strongly motivated to reduce patient falls because quality of care is of the utmost importance to both the patient and the institution. Patient falls have been studied by health care professionals in a variety of agencies, with a variety of populations. These studies indicate that implementation of a falls prevention program can reduce the frequency of falls (Ruckstuhl et al., 1991: 26). There were many fall risk assessment tools which were constructed and developed for identification of fall risk. Moreover, the fall risk factors were statistically analyzed. The significant risk factors were performed to a predictive fall model (Hendrich et al., 1995: 129-139) and many falls prevention programs have been developed based on these certain factors. However, multiple descriptive articles have been written regarding intervention for preventing falls, few

research terms have validated the effectiveness of specific interventions. Whedon & Shedd, (1989 cite in MacAvoy et al., 1996: 213) complied a critique of the extent literature on fall risk assessment tools and concluded most have not been scientifically tested. They also noted that the tools are of limited value without documentation of their sensitivity and specificity in advancing nursing theory and practice. Thus, Kilpack et al., (1991:50) tried to utilize research-based interventions to prevent falls. They reviewed the literature by focusing on research reports that described patient fall prevention programs. They encouraged researchers to move beyond their descriptive work about fallers and dedicate their efforts toward effective prescriptive fall prevention measures.

1.2 Situation in Thailand.

In Thailand, falls are the most common kind of accident and cause of injury that lead to hospitalization among the elderly (Hanjangsit, K., 1994 ;Threeyavuthevad, S., 1991 ; Thosingha et al., 1992 ; Tunmookhayakul, A., 1983). Many studies focused on the elderly population and reported that females had more falls than males (Loasawatchaikul & Putwattana, 2000 : 18 ; Ponputhasa & Pothiban, 2000:45 ; Jitapunkul et al., 1998:234 ; Thosingha et al., 1990 :206). Loasawatchaikul & Putwattana (2000) studied related factors and outcome of falls in elderly patients who were examined at the out patient department at Ramathibody Hospital. They found that 79.6% of falls occurred in and around patients'home while 20.4% occurred outdoors. This study agreed with the study of Thosingha et al., (1992:207) and many studies of foreign countries (as mentioned above), but disagreed with the national survey study about falls in the Thai elderly (Jitapunkul et al., 1998). It found that 65% of falls occurred outdoors. This may be because the mean age between the 2 studies

differed (73.6 of the first, 69.1 of the second study). Loasawatchaikul & Putwattana discussed that the elderly with older are often at home and have less activities outside. Thus, they would have more probability of falls in the home. In addition, they reported that the most common causes of falls (51.5 %) were extrinsic factors such as slippery floor, tripping, different located floors, and others, while intrinsic factors (unanticipated falls, imbalance postural control, dizziness, postural hypotension, and others) induced falls at 38.8%.

Jitapunkul et al., (1998) reported that the occurrence of falls in 6 months before their study was 19%, and 8% of them fell twice or more at the same period. Eighty five percent of falls occurred in the day-time and most of them occurred outdoors. They discussed that the elderly in Thai culture often sit on the floor and move by creeping more than walking. In addition, the public environment in Thailand (such as a path, ditch, street) were built inappropriately which can lend the elderly to fall easily. Consequently, fall rate in the outdoors was higher. The outcome of the national survey study concluded that fall risk factors in Thai elderly included pathophysiology, physical deterioration, poor mental health, nutrition deficit, more activity and environmental factors. It was interesting to note that, the increased age of the elderly was not related with the fall rate. This is because Thai elderly who are older often decrease their movement and walk. Other reason is that in the outside, younger elderly have more activity than older. Therefore the younger elderly frequently have more probability to fall.

There were 4 research studies which studied the descriptive and analytic epidemiology of accidents of the elderly. Treyawuthiwat (1991) and Thosingha et al., (1992) reported that the kinds of accident found were mostly falls (42.70%, 37.9%).

Whereas Hanjangsit (1994) and Yompuk (1997) reported that most kinds of accident were cutting (25.9%, 21.25%), and falls (17.03%, 18.12%). Moreover, all these researches insisted that the significant factors of accidents were poor physical health, poor mental health (Treyawuthiwat, 1991 ; Hanjangsit, 1994; Hanjangsit, 1994), female(Treyawuthiwat, 1991 ; Hanjangsit, 1994), deafness, poor vision (refractive error, glaucoma, cataract), diabetes mellitus, usage of sedatives, activity of daily living (Hanjangsit, 1994; Yompuk, 1997), muscle weakness(Hanjangsit, 1994), poor and moderate family relationship, single elderly, age over 75 years (Treyawuthiwat, 1991), and tripping (Thosingha et al., (1992:207).

Ponputhasa & Pothiban, (2000:42-53) studied knowledge attitudes and behaviors regarding fall prevention of the elderly and found that the mean score of fall prevention knowledge, and the attitudes toward fall prevention behaviors were at high level. There was a moderate positive correlation between falls prevention knowledge and attitudes towards fall prevention ($r = .519$, $p < .01$). A very weak positive correlation between fall prevention knowledge and fall prevention behaviors ($r = .201$, $p < .01$), and a weak positive correlation between attitudes towards fall prevention and fall prevention behaviors ($r = .327$, $p < .01$) were demonstrated.

From the above literature, it can be concluded that the study of falls among hospitalized patients in Thailand is still very limited. It can be explained that patient falls are a sensitive issue that are not disclosed, although the occurrence of falls really exists and does harm to the patients. In fact, health care providers should accept this fact and take this problem into serious consideration. Cooperating to prevent falls and providing patient safety are needed. Therefore the first step is to explore this problem and to study and assess fall risk factors by developing a fall risk assessment tool.

2. Fall risk of patients with eye diseases.

2.1 The characteristics of patients with eye diseases.

The patients with eye diseases are the people who have eye problems that may be caused by diseases, injury, surgery, and the aging process. Most of them are elderly and have visual impairment such as blurred or decreased vision, and blindness. The treatments of eye disease are surgery, laser, drug injection, and medicine eye drops. The results of these treatments may cause of pain or blurred vision and these patients often cover their pathologic eyes with eye pads. Using only one eye, these patients decrease their visual field and it affects their postural control. Furthermore, these patients may have other health problems due to the aging process, chronic diseases (diabetes mellitus, heart disease, hypertension, orthopedic problems, cancer, etc) and medication use. Medications that these patients often take are sedative drugs for pre-operation and therapeutic drugs for chronic diseases. These drugs may affect their mental status, muscle weakness and elimination. All of these factors were found to contribute to fall risk. Consequently, patients with eye diseases may have a high probability for accidental falls.

2.2 Fall risk factors in patients with eye diseases.

A review of the fall literature confirms that various researchers have identified risk factors (measurable patient characteristics, medical or nursing diagnoses) that have a potential to predict falls in the elderly population. Falls are not an inevitable part of the normal aging process (Ignatavicius, 2000 : 28 ; Ryan et al., 1993:24), but are the result of the interaction of physiologic and environmental factors (Ryan et al., 1993:24). Many of these risk factors often are associated with an underlying pathophysiological cause or are a direct result of a disease process that

helps account for the presence of a risk factor (Hendrich et al., 1995:129). In addition, environmental conditions can also contribute to patient falls. Thus, the fall risk factors among patients with eye diseases are categorized into two main groups: intrinsic and extrinsic factor as follows :

1. Intrinsic Factors

1.1 Impaired vision. Visual impairment are caused by opthalmic diseases such as cataract, glaucoma, retinal degeneration, and etc. This factor contributes to falls because of the changes in depth perception, visual acuity and visual field that cause a limited vision and color discrimination (Pasunun, N.,1999:66 ; Craven & Bruno, 1986 : 32). Moreover, visual system is associated with postural balance. If there is a visual disorder, like patients with eye diseases, there may be postural imbalance. All of these results may contribute to patients with eye diseases to have a fall risk.

1.2 History of falls. Many studies reported that a history of falls is a strong risk factor for falls. If these patients already have had one or more falls, the risk increases. Therefore, nurses should ask the patient or family about previous falls (Ignatavicius, 2000 : 29 ; Lane, 1999:41 ; Mosley et al., 1998:42 ; Huda & Wise, 1998:56 ; MacAvoy et al., 1996 ; Craven & Bruno, 1986:29 ; Hendrich et al., 1995:133).

1.3 Medication Use. Medication use is potentially the most modifiable risk factor for falls. Specific medications, recent change in dose, and total number of prescriptions have been associated with an increased fall risk. The impairment of mental alertness due to long-acting benzodiazepines, barbiturates, antidepressants, and neuroleptics increase the fall risk. Antihypertensives may increase

the fall risk by causing postural hypotension or fatigue, leading to dizziness and confusion and diuretics may produce volume depletion or electrolyte imbalance. Some of these patients need to take medicine to treat their chronic diseases such as anti-hypertensive and anti-diabetic drugs that increase their fall risk. In general, patients with eye diseases often take sedation for pre-operative drugs that cause them to be drowsy. Post-operation under general anesthesia may cause these patients to have drowsiness, dizziness, nausea/vomit, and postural hypotension. This action and side effects of the drugs may induce a patient to fall. Patients who take more than three medications are at the highest risk. (Ignatavicius, 2000 : 29 ; MacVoy and et al, 1996 : 213 ; Nyberg et al., 1996: 157 ; Friedman et al., 1995: 1241 ; King & Tinetti, 1995: 1149 ; Lund & Sheafor, 1985: 39).

1.4 Chronic diseases. These diseases may increase the fall risk because the result of the disease process such as hypoglycemia from DM, fatigue from heart disease and cancer, stroke from hypertension, and etc. Patients with eye diseases who are elderly may have some of these chronic diseases that contribute to the fall risk.

1.5 Decrease mental status or cognitive impairment. In the hospital, elderly patients can become acutely confused, a condition known as delirium that lasts for hour or days. Although delirium differs from a dementia such as Alzheimer's disease (chronic, progressive confusion), both involve loss of memory and judgment. With either problem, hallucination, delusion, depression, and disorganized thinking are common and contribute to falls (Ignatavicius, 2000 : 29). These factors may be observed in patients with eye diseases because most of them are elderly.

1.6 Decreased mobility. The patients with eye diseases who have impaired gait, musculoskeletal weakness or paralysis, and lower extremity dysfunction often have a fall risk. The greater the extent of the deficit, the higher the fall risk (Ignatavicius, 2000 : 29).

1.7 Poor balance or postural control. Postural control is determined by the integration of visual, proprioceptive, and vestibular input within the central nervous system to effect a motor response. Impaired sensory, integrative, or motor functioning will affect balance and potentially increase the fall risk (King & Tinetti, 1995:1148). The elderly patents with eye diseases may have proprioception in the lower limbs, poor visual contrast sensitivity, less ankle dorsiflexion strength, decreased reaction time, and body sway that affects their postural control and may contribute to their fall risk. A greater understanding of postural control will be of value in planning future interventions to decrease the incidence of falls (King & Tinetti, 1995:1148).

1.8 Bladder dysfunction. Urgency, nocturia, especially incontinence were found in about 22 % of elderly (Jitapunkul, S.,1998: 144). It induces falls due to urgency of traveling to the bathroom that is the most frequently reported activity related to fall risk factor. Nocturia increases fall risk for several reasons, including sudden change in position, need to locate the bathroom quickly, and low or absent lighting (Stewart et al., 1992 cited in Capezuti et al., 1999: 31). Incontinent patients may slip by their urine. The etiology of the incontinence should be evaluated by the patients' primary care providers or a continence specialist (Capezuti et al., 1999: 31).

1.9 Physiologic changes of aging. Aging is a changing process of life that mutually occurs with deterioration of one body. Aging may cause fall risk, because of the result of aging such as sensory impairment, incoordination between muscles and nervous system, poor balance and posture control, deteriorated joints, deficient blood supply to brain, dementia, and confusion. (Tuntiplachiva, K. & Tuntiplachiva, K., 1985 :21). About 50% of ophthalmic patients who were admitted in the hospital were elderly (Yenjit, V., 1999). Thus most of patients with eye diseases may have a fall risk.

2. Extrinsic Factors.

Extrinsic factors create challenges to balance that must be overcome to avoid falling. The degree to which they pose a threat depends on the vulnerability of the elderly person and the frequency of exposure to the potentially destabilizing situation (King &Tinetti, 1995:1150). Extrinsic factors often focus on environmental factors that include :

2.1 Hazardous environmental conditions and obstacles.

2.1.1 Bed siderails interfering with bed safety : Until recently, use of full bilateral siderails was considered a routine and necessary intervention to prevent bed-related falls. However, current research demonstrates siderails may lead to serious injury and death (Capezuti et al., 1999 :31). Bed-related falls occur because of a myriad problems and, thus, compel nurses to employ a variety of individualized interventions. Reduction of siderails requires administrative support, both through policies that reflect a restrain-free, or at least minimal restraint use goal, and financial resources to purchase new equipment (e.g., low bed).

2.1.2 Bed height : Bed height is crucial to safe standing. Bed height is the distance between the floor and the top of the mattress. No reports of optimal bed height could be located. However, the lowest standard bed height in most American nursing home is approximately 53 cm, which is the best height for patients with a lower leg length of 43 cm to 53 cm. Low beds, approximately 35 cm to 51 cm above the floor, including 15 cm for the mattress are becoming readily available. Beds can be manually, hydraulically, or electrically adjusted to a range of heights of between 35 cm to 65 cm, and should be individualized to promote transfer. A very low bed, 18 to 33 cm above the floor, including 15 cm for the mattress may place patients too close to the floor for safe standing (Capezuti et al., 1999 :29).

2.1.3 Low-seated chair, low-seated toilets : Alexander et al. (1996) suggested that a seat height that is approximately 100% to 120% of the lower leg length facilitates rising. Increased seat height requires less knee extension, forward leaning, and strength of lower extremity muscles.

2.1.4 Bathroom : Hand-held showers, grab bar support, grab rails for the tub and toilet, and risers for the toilet should be installed depending on the need. Not only did the interventions prevent falls but the equipment changed patients' quality of life (Bezon et al., 1999 : 115).

In addition, the environmental hazards that increase the likelihood of a fall include loose rugs, inadequate lighting, slippery floor surfaces (wet or polished floors), and hallway clutter.

2.2 Improper use of ambulatory and transfer devices. This includes unlocking wheelchair brakes and inappropriate size of devices.

2.3 Faulty equipment. This includes worn tips on walkers and canes, and non working wheelchair brakes.

2.4 Improper footwear. This includes high-heeled shoes, slippers with poor traction and improper fit. Patients should be reminded to use footwear, especially low-heeled shoes with good traction, when ambulating to the bathroom. In one study of a nursing home dementia unit, 38% of falls were attributed to slippage on urine. Use of treaded slipper socks in bed reduced falls at night by 9% (Meddaugh et al., 1996 cited in Capezuti et al., 1999 :29).

3. Fall risk assessment.

The inconsistency in the findings and multitude of risk factors found in the literature make it difficult to incorporate them into a clinical nursing assessment and practice (Hendrich et al., 1995: 129-130) but there are efforts to muster all these risk factors by focusing on intrinsic factors to construct a Fall Risk Assessment Tool: FRAT or High-Risk Fall Model: HRFM. Although most falls focus on intrinsic factors attributed to them, studies have shown that certain extrinsic factors also play a role in the occurrence of falls (Mosley et al., 1998:39). Therefore, extrinsic factors should be not neglected. Falls may be reduced through a preventive plan that includes assessment of intrinsic and extrinsic factors that cause a falling base on scientific method. In Thailand, the research of fall risk assessment has not been studied yet. Thus, the foreign studies of falls must be modified and integrated within situations and characteristics of Thai people.

In the United States, fall risk assessment tools were constructed to assess patient's risk factors or fall risk in a variety of hospitals. It is interesting to note that although most fall risk assessment tools have not been scientifically tested. Most agencies instituted a fall prevention program to show substantial improvement in their fall rate (Whedon & Shedd 1989 cited in MacAvoy et al., 1996:213-214). However there were some studies that utilized research-base interventions to prevent falls (Kilpack et al., 1991: 50-56 ; Hendrich et al., 1995: 129-139).

Prevention of patient falls usually begins with the nurses admission assessment. Nurses should assess each patient who is admited in hospital for his / her fall risk. This creates a system for nurses to conduct an ongoing assessment during the stay as the patient's condition changes. A number of tools help nurses numerically score the patient's risk, and many health care agencies design their own assessment tools (Ignatavicius, 2000:29). In general, there are two types of scales to identify the fall-prone patient. The purpose of the first type of scale is to identify the patient's probability of falling or fall risk. The second type of scale is used to assess factors that contribute to the patient's fall risk. Although the first type of scale supplies information on the patient's likelihood of falling, which is usually presented as a fall score, it supplies the little information about interventions to reduce the patient's fall risk, or prevent falls. Consequently, a more thorough assessment of the patient must be conducted for the purpose of reducing the patient's fall risk. Conversely, instruments that identify factors contributing to the patient's fall risk may give direction on how to reduce the patient's risk but supply little information on the patient's fall risk. The first type of scale is quick and easy to use, sensitive to change in the patient's condition, and should be used routinely and frequently. The second type of scale involves

cumbersome assessment forms and is probably used only once or twice during the hospital stay, perhaps after admission or after the fall occurs (Morse, 1993: 307).

Most of these forms are checklists to guide future nursing care. The most comprehensive of these forms was developed to include variables and a rating scale, indicating the attempts that were made to combine the assessment form with a predictive fall risk score. Further, forms may link the assessments with nursing diagnoses or with intervention strategies for the nursing care plan.(Morse, 1993: 309).

The fall risk assessment tools that were developed and statistically tested are as follows :

3.1 Fall Risk Assessment Tool (FRAT). This was developed by members of the Quality Assurance Committee (MacAvoy et al., 1996). This tool has 7 categories : age, mental status (confusion and agitation), elimination, history of fall, sensory impairment, activity, and medications. The FART was tested by identifying all patients on six medical / surgical units. Reliability of the FART was tested by the test-retest method was .9. Each patient is assessed on admission and assigned a numerical value in each of these categories. The assigned values are then added to obtain the total score. A patient with a score of 10 or higher would be considered at high risk for fall and the high risk protocol should be instituted. The significant risk factors included history of a fall, age, confusion, and elimination.

3.2 Hendrich Fall Risk Model (HFRM). Hendrich et al., (1995: 134-6) revised HFRM, an instrument that was constructed by Hendrich (1988). This instrument was used to assess 22 risk factors found to be statistically significant in the fall literature and/or those that are known to be prevalent in clinical practice. The instruments were completed by coding "yes" or "no" for each of the 22 risk factors.

Interrater reliability was measured in the fall and control samples and found to be 97.5%. Logistic regression was used to develop the risk factor model. The final risk model had 7 significant risk factors: confusion/disorientation, depression, altered elimination, recent history of falls, nonadaptive mobility, generalized weakness, dizziness/ vertigo, primary cancer diagnosis. The High-Risk Fall Model was constructed by using the significant risk factors from the model. Each patient is assessed using the risk factors and their respective risk point tallied during each shift. The risk factor assessment classifies the patient's degree of risk during each shift. Patients with a total risk score of less than 3 are considered to have a near normal fall risk, a score of 3 to 6 is above normal risk, and a score of more than 6 is extremely high risk.

3.3 The Morse Fall Scale. Morse (1986 cited in MacAvoy et al., 1996) conducted a study of the Morse Fall Scale, which was used daily to assess fall risk in patients at three levels of acuity. The three categories of the falls were identified as : a) Anticipated physiological-falls that occurred because of physiological and predictable situation such as confusion, and mobility problems ; b) Unanticipated physiological-falls that occurred because of physiological but unpredictable origin, such as fainting or seizure ; and c) Accidental-falls that occurred because of slipping, tripping, or rolling out of bed. Increased scores correlated with increased fall rate and severity of injury. The Morse Fall Scale is a valid indicator of fall risk in those with falls classified as anticipated physiological. Factors identified as valid predictors include history of fall, secondary diagnosis, intravenous therapy, ambulatory aids, gait, and mental status.

Risk factors of each study may be applicable to some units but it may not be of value to the highly specialized patients care units. The fall risk factors of each specialty unit would be different (Hendrich et al., 1995: 137). such as :

Pediatrics unit : Suspected risk factors include age (developmental vs. fall), 24 hours after surgery and head injured patients.

Critical care unit : Suspected risk factors include awakening from coma state, overdose, hypoxia and environmental psychosis.

Obstetrics unit : Suspected risk factors include prolonged labor, excessive blood loss, first and second rise delivery and 24 hours after epidural.

Psychiatry unit : Suspected risk factors include unpredictable affect (behavior vs. fall), tricyclic antidepressants, orthostatic vital sign changes, multiple medication and wandering.

Rehabilitation unit : Suspected risk factors include incontinence, multiple medication, anemia and patients who require assistance with all transfers.

HIV unit : Suspected risk factors include generalized weakness, secondary dementia and confusion.

Thus specialty units should consider the difference of specialized risk factors for developing the effective fall risk assessment tool.

It appears that risk factors from the fall literature are interrelated and may result in excessive risk factor identification. The identification of individual patient risk factors should help guide specific interventions for each patient, especially among ones who are at risk such as patients with eye diseases and who have visual impairments. Fall prevention programs may need to include a unit-based approach to risk factors identification because certain diagnosis-related groups, each with their

unique risk factors, are admitted to specific nursing units. Thus, units that provide care for patients at risk for falls such as eye diseases or other patients with visual disorders should incorporate the risk factors into a nursing assessment flow sheet to facilitate the use of the research findings, which can be used proactively to guide clinical decision making. In addition, the assessment tool may be developed to provide a framework for therapeutic interventions based on risk factor assessment.

CHAPTER III

METHODOLOGY

Study Design.

This study was a descriptive study aimed at studying fall risk factors and level of fall risk in patients with eye diseases.

Population and Sampling.

Population

The population in this study were adult patients with eye diseases who were admitted at the Ophthalmic Department of Siriraj Hospital.

Sampling

The sample of this study was twenty patients with eye diseases whom were purposely selected. The inclusion criteria to enroll patients into the study consisted of the following :

1. Admitted on the first day.
2. Consented to collaborate in this study.

Instrumentation.

The instrument of this study was the fall risk assessment tool which consisted of 4 parts.

Part 1. General characteristics form included 13 items of demographic data. It included age, sex, marital status, educational level, occupation, income, admission date, discharge date, length of hospital stay, diagnosis, operation, operative date, and other chronic diseases.

Part 2. Environmental observation form that was used to observe extrinsic factors which contributed to patient falls. It consisted of 3 parts that included environmental conditions in the ward (floor surface and pathway, bathroom, and light), environmental conditions around the patients' bed (bed and space between beds), and additional extrinsic factors that include ambulatory and transfer devices, faulty equipment, and patient gown and slippers. This environmental observation form was constructed from the literature that related to falls.

Part 3. Fall risk assessment form which was used to measure patient conditions that related to intrinsic factors. This assessment form was developed from the Fall Risk Assessment Tool of MacAvoy et al.(1996) which included age over 60, mental status (confusion/ dizziness/ agitation/ depression), elimination (continent/ incontinent), history of fall, sensory impairment (blur vision), ambulatory & gait (stability/instability), medication use (tranquilizer/sleeper /diuretic/chemo/ antiseizure/ diabetic/ anti HT), and added weakness, and chronic diseases factors which were mentioned from the literature that related to fall risks. If the characteristics of patients were agreed with any items of the fall risk assessment, scores of the items were labeled 1. In contrast, if the characteristics of patients disagreed, scores of the items were labeled 0. The total score was cumulative across the items, thereby assessing severity of the fall risk.

The total score of 0 means the patient has no fall risk.

The total score of 1-3 means the patient has a low fall risk.

The total score of 4-6 means the patient has a moderate fall risk.

The total score of 7- 9 means the patient has a high fall risk.

Part 4. The outcome of fall occurrence each day was recorded while patients were admitted in Ophthalmic Ward. Label 0 if the patients did not fall, label 1 if they were slippery, and label 2 if they fell.

Validity and Reliability Test.

Content validity

The content validity of the fall risk assessment tool was tested for clarity and appropriateness of language by four experts, a nurse instructor who is an expert in caring of activity limited patients and three nurses who are experts in caring of patients with eye diseases.

The investigator took the opinion and recommendations of these experts to improve the instruments before trying out the instruments.

Reliability

The fall risk assessment form was tested by interrater method. The investigator and one ophthalmic nurse assessed and observed 10 ophthalmic patients who have the same characteristics as a selected population at Siriraj Hospital at the same period and recorded independently. The interrater reliability was calculated as follows (Polit & Hungler, 1999: 416).

$$r = \frac{\text{Number of agreements}}{\text{Number of agreements + disagreements}}$$

The interrater reliability of fall risk assessment form was 0.8.

Data Collection.

The investigator requested a permission form to collect data from the Faculty of Graduate Studies, Mahidol University and sent to The Dean of the Faculty of Medicine Siriraj Hospital.

The investigator collected data at the Ophthalmic Wards where patients with eye diseases were admitted from 8.00 – 12.00 a.m. and 2.00 – 8.00 p.m. every day until they were discharged from the hospital. The process of data collection was as follows :

1. The investigator introduced herself and was permitted to conduct the study by the headnurses of the wards.

2. The patients who were admitted on the first day were purposely selected according to the selected criteria.

3. The investigator approached and established a relationship with the sample.

4. The sample gave informed consent before being asked to participate in the study.

5. When the sample agreed to participate in this study, data collection was conducted by the following procedure.

5.1 The investigator interviewed the sample regarding the demographic data.

5.2 The investigator assessed the sample and observed fall risk factors both intrinsic and extrinsic factors as following to the fall risk assessment tool.

5.3 Intrinsic factors were assessed following part 3 of the fall risk assessment tool (to be mentioned in the instrument).

5.4 Extrinsic factors were observed and recorded following part 2 of the fall risk assessment tool.

5.5 Each sample was asked and observed about his / her falls and slips.

Protection of Human Subjects.

1. A request for permission to conduct the study was also submitted to the Human Subject Committee of Siriraj Hospital.

2. When the investigator obtained permission to conduct this study from Siriraj Hospital, the investigator began to collect data at the ward.

3. The investigator introduced herself and told the samples objectives of the study before interviewing.

4. The samples were informed of their rights and that they could request information from the investigator at anytime if they did not understand anything about the study.

5. The samples could cancel their participation at anytime if they wanted, and they would not be affected in anyway.

Data Analysis.

The data was analyzed by these statistical methods.

1. Demographic data and fall risk level were analyzed by using the method of frequency distribution.
2. Fall risk factors were analyzed by using percentage.
3. Environmental observation data and outcome of fall data were described.

CHAPTER IV

RESULTS

This descriptive study was aimed to study fall risk factors and fall risk level in patients with eye diseases. Twenty samples were purposively selected. The results are presented in 5 parts as follows :

Part I Demographic data of patients with eye diseases.

Part II Information related to environmental factors.

Part III Intrinsic factors that induced fall risk.

Part IV Fall risk level among patients with eye diseases.

Part V Outcome of falls.

Part I Demographic data of patients with eye diseases.

1.1 It was found that the sample of this study included 10 males and 10 females with an age range from 23 to 81 years. ($\bar{X}$ = 56.05, SD =19.28). Most patients in this study were married and educated to elementary level. Eight of them were not-employed, the other 8 were labor-workers while 2 were farmers, and the other 2 were government officers. The majority of the patients had a monthly income of below 5,000 bath (Table1).

Table 1 Frequency of the patients with eye diseases categorized by sex, age, marital status, educational level, occupation, and income (n = 20).

Characteristic		Frequency
Sex :	Male	10
	Female	10
Marital status :	Married	12
	Singled / Widowed / Divorced	8
Educational level :	Had no formal education	1
	Elementary level	15
	High school level	4
Occupation :	Not-employed	8
	Farmer	2
	Labor-worker	8
	Government officer	2
Income / month (bath) :		
	Below 5,000 bath	17
	5,001 - 10,000 bath	2
	10,001 - 15,000 bath	1

1.2 It was found that the range of hospital stay was 3 to 15 days. The majority of hospital stays ranged from 4 - 6 days and 7 - 9 days. Mean length of hospital stay was 7.45 days. There were 9 patients with no other chronic diseases, 5 patients with diabetic mellitus, 2 patients with hypertension, and 2 patients with SLE (Table 2).

Table 2 Frequency of the patients with eye diseases categorized by length of hospital stay and other chronic diseases (n = 20).

Characteristic		Frequency
Length of hospital stay :	1 - 3 days	1
	4 - 6	8
	7 - 9	6
	10 - 12	3
	13 - 15	2
Other chronic diseases :		
	None	9
	Diabetes Mellitus	5
	Hypertension	2
	SLE	2
	HIV	1
	Cancer	1
	Multiple Sclerosis	1
	Hyperthyroidism	1

* The patient may have more than 1 chronic disease.

Part II Information related to environmental factors.

The extrinsic or environmental factors that may contribute to patient fall was observed and the results of the observations are as follows :

1. Overall environmental conditions in the ward.

The environment in the ward that may contribute to patient fall was similar each day. The details of the environmental conditions are as follows :

1.1 Floor surfaces and pathway : Floor surfaces and pathways were smooth, nonslippery, not wet or polished. The hallway was clear.

1.2 Bathroom : The main entrance to the bathroom was rather narrow. The door's transom was rather high (about 10 cm) which may be an obstacle for patients to trip over. In the bathroom, there was a little wet and slippery floor after patients have taken a bath every morning. The worker would scrub the floor in time and then the floor was wet or slippery. There had no grab bar support in the bathroom and clotheslines were too high. In the toilets, there also was no grab bar support.

1.3 Lighting : In the patients' room, the light from the outside of the building (sunshine) was enough to take general activities, but fine work must need more light. In day-time, the electric lights were switched off and switched on at 6.00 p.m. to 10.00 p.m. or when more light was needed. The pathway, outside the room had enough light due to the electric lights were switched on all the time and there was sunshine that entered the pathway. Sometimes it resulted in a glare from the floor that contributed to the patients to have blurred vision.

2. Environmental conditions around patient bed.

2.1 The patient bed : Patient beds had the height about 60 cm above the floor, including 15 cm for the mattress. This was rather high for Thai patients.

Siderails were 30 cm in height and the height of the raised siderails from the top of the mattress to top of siderails was 20 cm. This was too low to protect the patients. The patients could climb this height and then they may have serious injury from falling. The pillows and the blankets were arranged thus they did not obstruct the patients to get out or get in bed.

2.2 Space around patient bed : The space around patient bed was rather narrow. The distance between the patients' bed was about 100 cm. In this space, there were bed side tables, chairs for visitor, and waste baskets. Some patients' bed had a table fan and over bed that made space around bed too narrow. All these matters be obstacles that may lead to falls.

3. Additional extrinsic factors that may contribute to patient fall.

3.1 Improper use of ambulatory and transfer devices.

Ambulatory and transfer devices were rather old but fairly good, not faulty. There were 3 walkers in the ward that were seldom used, 3 wheelchairs for use to transfer patients to another building, and 1 pad slide to move patients who could not ambulate from stretcher to beg or bed to stretcher. Patient transference in short distances such as going to the bathroom or the treatment room often helped to support. Unless the patient could not ambulate or had difficulty to walk, the wheelchair would be used.

3.2 Improper patient gown and slipper.

Patients' gown were too big. Slippers for use in the bathroom were not slippery but too big and had an improper fit for the patients' feet.

Part III Intrinsic factors that induce fall risk.

It was found that the major factors of fall risk were sensory impairments that included blurred vision (31.90%), age over 60 (17.18%), and medication use (12.89%). Whereas the minor factors of fall risk were mental status (1.17%), elimination (3.25%), and weakness (5.20%) (Table 3).

Table 3 Percentage of fall risk factors categorized by intrinsic factors (n = 20).

Fall risk factors	percent
- Sensory impairment (blurred vision)	31.90
- Age over 60	17.18
- Medication use (tranquilizer /sleeper /diuretic /chemo / antiseizure/ diabetic/ anti HT/ etc)	12.89
- Ambulatory & gait (stability / instability	11.19
- Chronic illness (HD / DM / HT/ CA / orthopedic)	10.02
- History of falling	7.16
- Weakness	5.20
- Elimination (continent/ incontinent)	3.25
- Mental status (confusion/dizziness/agitation /depression	1.17

Part IV Fall risk among patients with eye diseases.

1.1 It was found that most patients with eye diseases had a low fall risk level both on admission day and on hospital discharge day. However, on the hospital discharge day, there were 4 patients who demonstrated a high fall risk level, while there were only 2 patients who demonstrated a high fall risk level on the admission day (Table 4).

Table 4 Frequency of fall risk level among patients with eye diseases (N = 20).

Fall risk level	Admitted day	Discharge day
Low fall risk	13	13
Moderate fall risk	5	3
High fall risk	2	4

1.2 It was found that most patients who underwent eye operation had a low fall risk. Scores of fall risk often increased on preoperative and postoperative days but the fall risk level had a little change. Thus, the number of moderate fall risk levels only increased on preoperative and postoperative day and decreased on hospital discharge day, as the same as admission day (Table 5).

Table 5 Frequency of fall risk level among patients underwent eye operation (N = 17).

Fall risk level	Admitted day	pre-op day	post-op day	D/C day
Low fall risk	12	10	8	12
Moderate fall risk	3	5	7	3
High fall risk	2	2	2	2

Part V Outcome of falls.

For the outcome of falls of this study, there were no falls but there were 3 patients who slipped.

Case 1 : The patient was female and 69 years old. She was diagnosed with cataracts and was operated by phacoemulsification method. Her length of hospital stay was 3 days. She had diabetes mellitus and orthopedic problems : pain at the knees and legs and weakness which caused an imbalanced gait. She had a moderate fall risk by assessing her from the fall risk assessment tool. She slipped once on the second day of her stay while she was going to the bathroom but no injury occurred. The weakness of her leg muscles and pain at the knees were the causes of her slip.

Case 2 : The patient was female and 81 years old. She had cataracts and was operated by phacoemulsification method. Her length of hospital stay was 5 days. She had hypertension and orthopedic problems. It was difficult for her to ambulate by herself. She needed help to support herself or by use of a walker. She had a high fall risk by assessing her from the fall risk assessment tool. She slipped once a day on the third, forth, and fifth day of her stay but no injury occurred. Most of slips occurred while she was walking to the bathroom. The causes of her slips were weakness of leg muscles and pain at knees and hips.

Case 3 : The patient was male and 62 years old. He had orbital cellulitis, optic nerve compression, hyperuricemia, hepatomegaly, deep vein thrombosis (feet edema), HIV, and Burkits lymphoma. His length of hospital stay was 4 days. He looked very weak, slipped once a day on the first, second, and third day of his stay. He died due to failure of blood circulation on the forth day. His fall risk was moderate on

the first day and high on the second and third day due to exacerbation of his disease process and medication use or chemotherapy. He slipped twice on walking to the bathroom and once on getting out bed. The first and second slips occurred due to muscle weakness and foot drop, and the third slip occurred because of muscle weakness and dizziness from postural hypotension.

CHAPTER V

DISCUSSION

The purpose of the study was to study fall risk factors in patients with eye diseases. The questions of this study were : 1) What were the risk factors that contribute to falls in patients with eye diseases?, and 2) What was level of fall risk in patients with eye diseases? Descriptive results according to the purpose and the questions of the study are described in detail as follows :

1. Essential factors that contribute to the fall risk among patients with eye diseases.

1.1 Sensory impairment. In this study, sensory impairment, especially visual impairment was the first factor of fall risk among patients in this group. This agreed with the study of Craven & Bruno (1986:30-31) that found seventy-three percent of subjects who reported vision problems were fallers. Moreover, the previous studies identified that sensory impairment was a fall risk factor (Lane, 1999: 39 ; Hendrich et al., 1995: 131 ; King & Tinetti, 1995: 1148 ; Mahoney et al., 1994:269 ; Ryan et al., 1993: 24 ; Grant & Hamilton, 1987:74 ; Craven & Bruno, 1986: 30). Patients with eye diseases often have visual problems from blurred and low vision until they were blind in which they could not see anything clearly. The pathologic eyes often were covered with eye pads. Patients must use one eye which caused the patients' visual field to be narrow. It was a cause of poor postural control. Decreased visual acuity, narrow visual field, and use of one eye in these patients may have contributed to their fall risk.

1.2 Age over 60. A second risk factor finding was age over 60 years. Although, there were no falls in this study, three patients who slipped (near fall) were elderly (all over the age of 60 years). The risk factor of age has been consistently documented. Advancing age is a risk factor for falling (Bezon et al., 1999: 114 ; Lane, 1999: 41 ; Huda & Wise, 1998: 56 ; MacAvoy et al.,1996: 216 ; King & Tinetti, 1995:1148 ; Gross et al., 1990:21 ; Craven & Bruno, 1986: 30 ; Pasunun, N., 1999:66). In addition, the literature has shown a strong correlation between elderly patients and number of falls (Ruckstuhl et al., 1991: 26 ; Morse et al., 1985 : 15-18). In contrast, the study of Hendrich et al.(1995:136) did not replicate age in their fall risk model, although a previous risk model from a 1987 data set (N = 232) found that age older than 70 years was a significant risk factor. This finding from a larger data set can be explained by the significance of risk factors often associated with age (mobility and generalized weakness, confusion, altered elimination and dizziness/vertigo), which leads one to believe that age alone does not predispose to a fall risk. This is why using age as a primary risk factor for falls can result in an over-targeting of high-risk patients in many areas of the hospital.

1.3 Medication use. In this study, medication use that might contribute to the fall risk is often sedative drugs for pre-operation and treatment medications for other chronic diseases, for example, anti-hypertension and anti-diabetic drugs. Based on the results of many studies, the researchers believe that the most common side effects of drug therapy (sedation, hypotension, impaired balance, altered elimination, and impaired reaction time) increase the risk of an elderly person falling. This may be a better predictor of fall risk than the medication itself because the drug may not always be a risk factor unless side effects are exhibited in the patients (Campbell, 1991

cited in Hendrich et al., 1995: 132). The administration of medications may also be a precipitating factor in elderly patients. Aging can bring about body changes that affect the response to drugs. The half-life of medications in elderly patients is increased, and there is also a cumulative effect caused by decreased hepatic and renal function in the elderly. Therefore, the administration of medications may contribute to an adverse patient effect that, in turn, may contribute to fall (Ruckstuhl et al., 1991: 26). In addition, multiple medications which cause drug risks from medication reactions and interactions may also contribute to patient falls (Morse et al., 1985 : 15-17).

1.4 Ambulatory and gait. In this study, all patients can ambulate by themselves but their ability of ambulation differed. There were 3 patients who slipped due to impaired gait and muscle weakness. Two patients had lower extremity impairment because of aging and orthopedic problems. The other looked weak from exacerbated disease process (lymphoma and HIV), and severity of drug action (chemotheray). Impaired ambulation and gait or impaired postural control were significant fall risk factors among elderly patients (Friedman et al., 1995: 1241 ; King & Tinetti, 1995: 1148) which must be considered and able to prevent. It is noted that ambulatory patients had more fall risk than nonambulatory patients. As the study of Friedman et al., (1995:1237-1242) found that the elderly in nursing homes who were ambulatory or able to use a wheelchair were more likely to have an increase in falls following a move than elderly who were bed-bound. This was agreed by the study of Thapa et al.,(1996:273-278) that found nonambulatory elderly who stayed in nursing homes had an injurious fall rate less than one-half that for ambulatory elderly, and in the nonambulatory group, fall rates decreased with decreasing mobility. The explanation for this results was the elderly who were mobile had an increase in activity

thus increase in fall risk. A major concern was the general weakness and mobility difficulties evident among the patients. This led to a strengthening program that includes special classes for exercise (Bezon et al.,1999:115).

Other intrinsic factors that may contribute to falls were chronic diseases, history of falls, weakness, impaired elimination, and poor mental status. Although these factors were not found in this particular study as essential risk factors, these problems still existed in some patients. One of these factors, weakness, was a strong risk factor that induced patients to slip but it was found in only 5 patients. Many studies supported that weakness caused patient falls especially among the elderly. Muscle strength training is a method for fall prevention among the elderly and patients who had weakness (Schoenfelder & Why, 1997:383-90;Lipsitz et al., 1994: 953-9). According to this finding, weakness should be an essential risk factor to falls that nurses should be aware of.

2. Level of fall risk among patients with eye diseases.

The level of fall risk was divided to low, moderate, and high level. All patients with eye diseases in this study had scores of fall risk and most of them had a low fall risk level. The characteristics of patients in each fall risk level were as follows:

2.1 Low fall risk patients. Patients in this group often were young and had only visual problems that was the main fall risk factor and medication use on their pre-operative day. The old patients in this group were strong and had no chronic diseases, elimination problem, and previous fall. Fall risk of patients in this group often was caused by visual impairment that affected them to limited vision (Pasunun, N.,1999:66) and poor postural balance (Nualnat, N., 2000:46 ; King & Tinetti,

1995:1148). Pre-medication use induced patients to be drowsy. All of these results may contribute to patients with eye diseases to have a fall risk. As this finding, all patients with eye diseases had a fall risk although their fall risk was at low risk level. Therefore, nurses should consider this and must not neglect the patients for fall prevention.

2.2 Moderate fall risk patients. Patients in this group often were elderly person (age over 60 years) and had visual problems and other problems such as chronic diseases, imbalance gait, and medication use. Fall risk of these patients resulted from the aging process that caused deterioration or dysfunction of organ systems. Aging was a risk factor for falling (Bezon et al., 1999: 114 ; Lane, 1999: 41 ; Huda & Wise, 1998: 56 ; MacAvoy et al.,1996: 216 ; King & Tinetti, 1995:1148 ; Gross et al., 1990:21 ; Craven & Bruno, 1986: 30) and an increase in age would increase the fall risk (Bezon et al., 1999: 114 ; Pasunun, N., 1999: 66). Chronic diseases and symptoms of these patients may induce their fall risk. These included DM, back pain and knee pain. The patients may have hypoglycemic drowsiness from DM and diabetic drugs. Back pain and knee pain may cause an imbalance gait. Visual impairment, like low risk patients, results from chronic diseases process, imbalance gait that made the body sway, and side effects and actions of some medication use added to the increasing fall risk among patients in this group. In the outcome of this study, one patient in this group slipped due to his imbalance gait. Nurses must increase their awareness of these patients and prevent adverse events from the fall risk factors.

2.3 High fall risk patients. High fall risk patients had the same fall risk factors as the moderate group, and added history of falls and weakness factors. History of falls was a risk factor that has been studied in The United States of America

(Ignatavicius, 2000 : 29 ; Lane, 1999:41 ; Mosley et al., 1998:42 ; Huda & Wise, 1998:56 ; MacAvoy et al., 1996 ; Craven & Bruno, 1986:29 ; Hendrich et al., 1995:133). Although it has not been studied in Thailand yet, it may be helpful base-factor that should be considered. Weakness factor that may result from aging or diseases could contribute to poor postural control and induce a fall risk although its scores by patient assessing were not high. One of two patients in this group that slipped had weakness due to his pathogenic disease and chemotherapy. The scores of the fall risk did not decrease through length of hospital stay. It showed that patients in this group tend to fall all the time. Nurse must plan to prevent falls and care for these patients closely.

Two patients who slipped had a high fall risk and another one had a moderate risk. Therefore, fall risk level was associated with slips which lead to patient falls. It was noted that a high fall risk level increased on the hospital discharge day. This is because these patients with increasing fall risk were examined and found that they had other diseases (hypertension and diabetes mellitus). They were treated with medications that may have contributed to their fall risk.

3. Extrinsic factors.

Extrinsic factors often focused on environmental conditions included equipment and assistant device for ambulation and transfer. Environmental conditions in this study were relatively appropriate and did not induce falls, the parts that had foibles were rather high bed and did not adjust the height, narrow space between each bed, narrow entrance to the bathroom, high transom, no grab rail, and too big patient gown and slippers. In general, this foibles parts will be corrected by the administrators of the institution, however, nurses or health care providers must care and help patients

closely to avoid these factors. Therefore, extrinsic factors were risk factors of falling that should be considered and evaluated. However, there was not any definite criteria to assess extrinsic factors. Thus, there is a need for an assessment form to evaluate the environment that contributes to fall risk.

CHAPTER VI

CONCLUSION

Summary of the study.

This was a descriptive research that studied fall risk factors and fall risk level in patients with eye diseases.

The sample of this study was 20 patients of the Ophthalmic Department in Siriraj hospital.

The instrument used in this study included general characteristics form, environmental observation form, fall risk assessment form and outcome of falls. The data was analyzed as follows:

1. The demographic data and fall risk level were analyzed by using the method of frequency distribution.
2. Fall risk factors were analyzed by using the method of percentage.
3. Environmental observation data and outcome of fall data were described.

The results were as follows:

1. General demographic data : It was found that 10 samples were males and 10 were females. Most patients in this study were married and educated to elementary level. Occupation of patients were 8 patients who were employed and 8 with no occupation. A monthly income was below 5000 bath (Table 1). The majority of hospital stays ranged from 4 - 6 days and 7 - 9 days. Mean of length of hospital stay was 7.45 days. There were 9 patients with no other chronic diseases, 5 patients with diabetic mellitus, 2 patients with hypertension and 2 patients with SLE (Table 2).

2. Environmental conditions data : Most environmental conditions did not contribute to patients at fall risk except for patients' gown and slippers that were too big, height of patients' bed that rather high and there was a narrow space around the bed. The entrance to the bathroom was relatively narrow with a high transom, and there was no grab rail in the bathroom.

3. Fall risk factor : Most of the fall risk factors in this sample were visual impairment, age over 60 years, medication use, ambulatory and gait impairment, and chronic diseases. All patients in this study showed risk for falls but the level of risk among the majority of them was low.

4. Outcome of falls : In study period, there were no falls. There were 7 slips in 3 patients.

Implications and Recommendations.

Implications and application of study findings.

1. Fall risk assessment was essential and necessary for patients with eye diseases. All of them had a fall risk although it was at a low risk level. Sensory deficit, age and aging process, medication use, and other diseases were a part of the risk factors that may lead to falls among these patients. The investigator would like to recommend the fall risk assessment for patients with eye diseases :

1.1 Fall risk usually can be assessed initially on admission and evaluated in relation to impending treatments that may interfere with increase fall risk. Nurse should list fall risk factors for planning preventive interventions. Thus, it is necessary to develop a specific fall risk assessment tool for each unit.

1.2 Reassess patient fall risk at pre-operation, post-operation, and whenever the patients' condition change.

2. The ward should be arranged to provide environmental safety. Extrinsic factors were alleviated with the help of safety equipment. If the patients had poor ambulation, they should use a walking aid. Specific bathroom safety equipment was installed. Hand-held showers, grab rails and risers for the toilet were installed depending on the need. Low beds should be designed to follow standard leg length among Thai people (approximately 36 to 48 cm above the floor, including 15 cm for the mattress : this is the standard of low bed in the United States of America (Capezuti, 1999:29)) and should be becoming readily available. Beds can be adjusted the heights (in USA, this may be between 36 and 65 cm) and should be individualized to promote transfers

3. The solution for patient falls should be published to practitioners. Publication of the means for identifying the patient falls results in the immediate adoption of the scale into practice. In essence, this results in the identification of fall patients before measures to prevent the recognized and inevitable falls have been developed. Publication of solutions of patient falls can be done by developing fall prevention protocols for practitioners, presenting lists of prevention strategies to the ward, and publishing in seminar conferences. In essence, changing attitudes of nurses is necessary. The most successful strategy to date appears to be changing attitudes of nurses (Morse, 1993:310). Increased awareness of patient falls increases supervision. Therefore, it is important that health care providers be constantly aware of the patients' risk, be knowledgeable about the falls prevention protocol, and implement its use.

4. From the finding of this study, the investigator develop an operating procedure to be a guideline for assessing fall factors and fall risk in patients with eye diseases (Appendix D).

Implication for Further Studies.

1. The fall risks assessment tool may be used to be evident base data for the study about patient falls in the future.

2. In the future, the four risk factors that were found in this study need to be tested to assess if these factors are effective in predicting patient falls. The continued use of a control group is an important component of future studies.

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APPENDIX

APPENDIX A : LIST OF EXPERTS

APPENDIX B : THE CONSENT FORM

APPENDIX C : INSTRUMENT

APPENDIX D : GUIDELINE FOR OPERATING PROCEDURE

APPENDIX A

LIST OF EXPERTS

There are four experts who validated content of the fall risk assessment tool.

1. Assist. Prof. Mayuree Kaewchantr

   Department of Surgical Nursing

   Faculty of Nursing

   Mahidol University.

2. Ms. Tasneeya Krachangros

   Supervisor Nurse, Eye Ear Nose and Throat Nursing Division.

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3. Ms. Sukanya Chatsuwan

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4. Ms. Chaloemsri Sapkong

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APPENDIX B

THE CONSENT FORM

คำชี้แจงและพิทักษ์ของผู้เข้าร่วมการศึกษา

ดิฉัน ชื่อ นางสาว กาญจนี นิติเรืองจรัส เป็นนักศึกษาหลักสูตรพยาบาลศาสตรมหาบัณฑิต สาขาการพยาบาลผู้ใหญ่ คณะพยาบาลศาสตร์ มหาวิทยาลัยมหิดล กำลังทำสารนิพนธ์เรื่อง "การประเมินปัจจัยเสี่ยงต่อการพลัดตกหกล้มในผู้ป่วยโรคตา" ท่านเป็นบุคคลหนึ่งที่มีความสำคัญยิ่งในการให้ข้อมูลครั้งนี้ จึงใคร่ขอความร่วมมือในการตอบแบบประเมินความเสี่ยงต่อการพลัดตกหกล้ม ซึ่งจะใช้เวลาประมาณ 5 นาที

ข้อมูลที่ได้จากการตอบแบบสอบถามของท่านนี้ จะนำไปใช้ในการวางแผนให้การพยาบาลเพื่อป้องกันการพลัดตกหกล้มของผู้ป่วยโรคตาต่อไป การเข้าร่วมการศึกษาครั้งนี้จะเป็นไปโดยความสมัครใจของท่าน ไม่ว่าท่านจะเข้าร่วมการศึกษาหรือไม่ก็ตาม จะไม่มีผลกระทบใดๆต่อท่าน หากท่านยินดีเข้าร่วมการศึกษาครั้งนี้ แล้วเกิดเปลี่ยนใจภายหลัง ท่านมีสิทธิ์ที่จะถอนตัวได้ตลอดเวลา โดยไม่มีข้อแม้ใดๆ ในระหว่างการเข้าร่วมการศึกษาถ้าท่านมีข้อสงสัยใดๆ ดิฉันยินดีตอบข้อสงสัยของท่านตลอดเวลา ข้อมูลที่ได้จากท่านทั้งหมดจะเป็นความลับ และจะนำเสนอผลการศึกษาของปัจจัยเสี่ยงและความเสี่ยงของผู้ป่วยโรคตาโดยรวม

การศึกษาครั้งนี้จะประสบความสำเร็จลงได้ ถ้าหากได้รับความอนุเคราะห์และความร่วมมือจากท่าน จึงขอขอบคุณในความร่วมมือของท่านมา ณ โอกาสนี้ด้วย

กาญจนี นิติเรืองจรัส
นักศึกษาหลักสูตรพยาบาลศาสตรมหาบัณฑิต
มหาวิทยาลัยมหิดล

สำหรับผู้เข้าร่วมการศึกษา

ข้าพเจ้าได้ทราบรายละเอียดของการศึกษาดังที่ได้อธิบายไว้ข้างต้น มีความเข้าใจและสมัครใจเข้าร่วมในการศึกษาครั้งนี้

.....

(ลายมือชื่อผู้เข้าร่วมการศึกษา)

APPENDIX C

INSTRUMENT

เครื่องมือประเมินความเสี่ยงต่อการพลัดตกหกล้ม

Fall Risk Assessment Tool : FRAT

ส่วนที่ 1 ข้อมูลส่วนบุคคล

ชื่อสกุลผู้ป่วย.....

1. อายุ.....ปี 2. เพศ ☐ชาย ☐หญิง

3. สถานภาพสมรส ☐คู่ ☐โสด ☐หม้าย ☐หย่า ☐แยก

4. ระดับการศึกษา ☐ ไม่ได้รับการศึกษา ☐ ประถมศึกษา
☐ มัธยมศึกษาตอนต้น ☐ มัธยมศึกษาตอนปลาย
☐ อนุปริญญาหรือเทียบเท่า ☐ ปริญญาตรีหรือเทียบเท่า
☐ สูงกว่าปริญญาตรี

5. อาชีพ ☐ ไม่ได้ประกอบอาชีพ
☐ ทำนา ทำสวน
☐ รับจ้าง
☐ ค้าขาย
☐ รับราชการ / รัฐวิสาหกิจ

6. รายได้.....บาท/เดือน

7. รับไว้ในโรงพยาบาลเมื่อ.....

8. จำหน่ายจากโรงพยาบาลเมื่อ.....

9. รวมระยะเวลาที่รักษาตัวในโรงพยาบาล.....วัน

10. การวินิจฉัยโรค.....

11. การผ่าตัดที่ได้รับ.....

12. ผ่าตัดเมื่อวันที่.....

13. มีโรคประจำตัว ☐ ไม่มี
☐ มี ระบุ.....

ส่วนที่ 2 แบบสังเกตปัจจัยสิ่งแวดล้อมที่มีผลต่อการเกิดการพลัดตกหกล้ม

ปัจจัยสิ่งแวดล้อม (ปัจจัยเสี่ยงภายนอก)	วันที่		วันที่	
	เวลา	เวลา	เวลา	เวลา
1. สภาพแวดล้อมในหอผู้ป่วย				
- พื้นห้อง ทางเดิน (เรียบ ลื่น มีสิ่งของวางเกะกะ)				
- ห้องน้ำ (เปียก ลื่น มีราวจับ)				
- เตียงนอน				
- แสงสว่าง				
- การจัดวางอุปกรณ์ สิ่งของ เครื่องใช้				
2. สภาพแวดล้อมรอบเตียงผู้ป่วย				
- ลักษณะและที่ตั้งของเตียงนอน				
- บริเวณรอบเตียง				
แสงสว่าง				
การจัดวางอุปกรณ์ สิ่งของ เครื่องใช้				
3. ปัจจัยภายนอกที่เสริมต่อการพลัดตกหกล้ม				
- อุปกรณ์ช่วยในการเคลื่อนย้าย เช่น				
รถเข็น				
เปล				
- ความพอเหมาะพอดีของเครื่องนุ่งห่ม เช่น				
เสื้อผ้า				
รองเท้า				
ถุงเท้า				

ส่วนที่ 3 แบบประเมินปัจจัยเสี่ยงภายในต่อการเกิดการพลัดตกหกล้มในผู้ป่วยโรคตา

ในแบบประเมินจะมีปัจจัยเสี่ยง 9 ข้อ ให้ประเมินว่าผู้ป่วยมีปัจจัยเสี่ยงในแต่ละข้อหรือไม่ ถ้ามีประเมินเป็น 1 ถ้าไม่มีประเมินเป็น 0

การประเมินปัจจัยเสี่ยง		วันที่และเวลาที่ประเมิน			
ปัจจัยเสี่ยง	ความเสี่ยง				
1. อายุ น้อยกว่า 60 ปี	0				
60 ปี ขึ้นไป	1				
2. ระดับการรู้สึกตัว					
รู้สึกตัวดีตลอดเวลา	0				
สับสน / มึนงง /วุ่นวาย / ซึมเศร้า	1				
3. การขับถ่ายปัสสาวะ					
ปกติ	0				
กระปริดกระปรอย / กลั้นปัสสาวะไม่ได้	1				
4. ประวัติการพลัดตกหกล้ม					
ไม่มีประวัติพลัดตกหกล้ม	0				
เคยมีประวัติพลัดตกหกล้ม	1				
5. ประสาทสัมผัสผิดปกติ					
ไม่ผิดปกติ	0				
การมองเห็นผิดปกติ / ถูกปิดตา	1				
6. ท่าทางการเดินและการทรงตัว					
มั่นคงและสมดุล	0				
เดินเซ ขาลาก การทรงตัวไม่ดี	1				
7. การได้รับยา					
☐ ยากล่อมประสาท ☐ยานอนหลับ ☐ยาขับปัสสาวะ					
☐ ยาขยายหลอดเลือด ☐ยากันชัก ☐ยาเคมีบำบัด					
☐ ยาลดความดัน ☐ยาลดน้ำมูก					
ไม่ได้รับยาเหล่านี้เลย	0				
ได้รับยาเหล่านี้ชนิดใดชนิดหนึ่ง /หลายชนิด	1				

8. กล้ามเนื้ออ่อนแรง/มีอาการอ่อนเพลีย ไม่มีอาการ 0 มีอาการ 1 9. โรคประจำตัว (โรคหัวใจ เบาหวาน ความดันโลหิตสูง โรคข้อและกระดูก มะเร็ง) ไม่มีโรคประจำตัว 0 มีโรคประจำตัว (โปรดระบุ) 1				
รวมปัจจัยความเสี่ยงทั้งหมด				

ส่วนที่ 4 สรุปเหตุการณ์การพลัดตกหกล้มของผู้ป่วย

ในแต่ละวันที่ประเมินและสังเกตผู้ป่วย ถ้าไม่เกิดเหตุการณ์พลัดตกหกล้มให้ประเมินเป็น 0 มีการลื่นไถล ประเมินเป็น 1 และ มีการพลัดตกหกล้ม ประเมินเป็น 2

ผลการพลัดตกหกล้มของผู้ป่วย	วันที่			
ไม่เกิดเหตุการณ์พลัดตกหกล้ม 0 มีการลื่นไถล 1 มีการพลัดตกหกล้ม 2				

APPENDIX D

GUIDELINE FOR OPERATING PROCEDURE

แนวทางสำหรับการปฏิบัติ (Guideline for operating Procedure)
เรื่อง การประเมินปัจจัยเสี่ยงต่อการพลัดตกหกล้มในผู้ป่วยโรคตา

วัตถุประสงค์ - เพื่อค้นหาปัจจัยเสี่ยงและระดับความเสี่ยงต่อการพลัดตกหกล้มของผู้ป่วยโรคตา
- เป็นข้อมูลพื้นฐานในการวางแผนให้การพยาบาลเพื่อป้องกันการพลัดตกหกล้ม

ขอบเขต เป็นแนวทางในการประเมินปัจจัยเสี่ยงและระดับความเสี่ยงต่อการพลัดตกหกล้มของผู้ป่วยโรคตา สำหรับพยาบาล

นิยามศัพท์

ปัจจัยเสี่ยงต่อการพลัดตกหกล้ม หมายถึง ภาวะของผู้ป่วย และ สภาพของสิ่งแวดล้อมที่ส่งเสริมให้ผู้ป่วยมีโอกาสพลัดตกหกล้ม ลื่น หรือ สะดุด

ความเสี่ยงต่อการพลัดตกหกล้ม หมายถึง โอกาส หรือความน่าจะเป็นที่ผู้ป่วยจะเกิดการพลัดตกหกล้ม ลื่น หรือ สะดุด โดยอาจแบ่งเป็นระดับตามความเสี่ยง มาก ปานกลาง หรือ น้อย

หน้าที่รับผิดชอบ พยาบาลวิชาชีพ

ขั้นตอนการปฏิบัติ

1. ประเมินปัจจัยเสี่ยงต่อการพลัดตกหกล้มในผู้ป่วยที่รับใหม่ทุกราย โดยประเมินตามแบบประเมินในเครื่องมือประเมินปัจจัยเสี่ยงต่อการพลัดตกหกล้ม ซึ่งมีวิธีการประเมิน ดังนี้
   1.1 ประเมินอายุของผู้ป่วย หากมีอายุตั้งแต่ 60 ปี ขึ้นไป ถือว่ามีความเสี่ยงให้คะแนนเป็น 1 หากอายุต่ำกว่า 60 ปี ถือว่าไม่มีความเสี่ยง ให้คะแนนเป็น 0
   1.2 ประเมินและสังเกตระดับความรู้สึกตัวของผู้ป่วย หากผู้ป่วยรู้สึกตัวดีตลอดเวลาให้คะแนนความเสี่ยงเป็น 0 แต่ถ้ามีอาการสับสน มึนงง วุ่นวาย หรือซึมเศร้า ถือว่ามีความเสี่ยง ให้คะแนนเป็น 1
   1.3 ประเมินและสังเกตการขับถ่ายปัสสาวะ หากมีการขับถ่ายปกติให้คะแนนเป็น 0 แต่ถ้ามีการขับถ่ายกระปริดกระปรอย ขับถ่ายบ่อย หรือกลั้นไม่ได้ ให้คะแนนความเสี่ยงเป็น 1
   1.4 ซักประวัติการพลัดตกหกล้มในอดีต ถ้าเคยมีการพลัดตกหกล้มมาแล้วถือว่ามีความเสี่ยงให้คะแนนเป็น 1
   1.5 ประเมินและสังเกตประสาทสัมผัสได้แก่การได้ยินและการมองเห็น ถ้ามีอาการหูตึงหรือ มีการมองเห็นที่ผิดปกติ หรือถูกปิดตา ถือว่ามีความเสี่ยงให้คะแนนเป็น 1

1.6 ประเมินและสังเกตการทรงตัวและท่าทางการเดิน ถ้ามีการทรงตัวไม่ดี มีอาการเดินเซ เดินขาลาก มีท่าทางโอนเอน ถือว่ามีความเสี่ยงให้คะแนนเป็น 1

1.7 ประเมินการได้รับยาของผู้ป่วยที่จะมีผลทำให้เกิดความเสี่ยง เช่น ยากล่อมประสาท ยาขับปัสสาวะ ยาขยายหลอดเลือด ยากันชัก ยาเคมีบำบัด ยาลดความดันโลหิต แม้ผู้ป่วยจะได้รับยาเหล่านี้เพียงชนิดเดียว ก็ถือว่ามีความเสี่ยงให้คะแนนเป็น 1

1.8 ประเมินและสังเกตความแข็งแรงกล้ามเนื้อของผู้ป่วย รวมทั้งอาการอ่อนเพลีย หากมีอาการกล้ามเนื้ออ่อนแรง หรือมีอาการอ่อนเพลีย ถือว่ามีความเสี่ยงให้คะแนนเป็น 1

1.9 ซักประวัติการมีโรคประจำตัวเช่น ถ้ามีโรคหัวใจ เบาหวาน ความดันโลหิตสูง โรคข้อและกระดูก โรคมะเร็ง ถือว่ามีความเสี่ยงให้คะแนนเป็น 1

2. รวมคะแนนที่ประเมินได้ในข้อ 1.1-1.9 ถ้า ได้คะแนนเป็น 0 ผู้ป่วยรายนั้นไม่มีความเสี่ยง ถ้าได้คะแนน 1-3 ถือว่าผู้ป่วยรายนั้นมีความเสี่ยงระดับต่ำ ได้คะแนน 4-6 ถือว่าผู้ป่วยรายนั้นมีความเสี่ยงระดับปานกลาง ได้คะแนน 7-10 ถือว่าผู้ป่วยรายนั้นมีความเสี่ยงระดับสูง
3. ควรประเมินผู้ป่วยซ้ำในวันก่อนผ่าตัด, วันหลังผ่าตัด หรือทุกครั้งที่ผู้ป่วยมีอาการเปลี่ยนแปลงที่อาจจะนำไปสู่การพลัดตกหกล้มได้ เช่นมีอาการซึม สับสน มึนงง อ่อนเพลีย เป็นต้น และประเมินซ้ำก่อนผู้ป่วยกลับบ้าน เพื่อให้คำแนะนำในการป้องกันการพลัดตกหกล้มที่บ้าน หากผู้ป่วยยังมีความเสี่ยงเหลืออยู่ แต่ถ้าเป็นไปได้ควรประเมินผู้ป่วยทุกเวรหรือทุกวัน
4. ประเมินและสังเกตสิ่งแวดล้อมในหอผู้ป่วยและรอบๆเตียงผู้ป่วย ในเรื่องของการกีดขวางจากการจัดวางอุปกรณ์ สิ่งของ เครื่องใช้ ลักษณะของพื้นห้อง ทางเดิน ห้องน้ำ เปียก ลื่นหรือมีสิ่งของวางเกะกะหรือไม่ อุปกรณ์ช่วยในการเคลื่อนย้าย เช่น รถเข็น เปล อยู่ในสภาพพร้อมใช้หรือไม่ ความพอเหมาะพอดีของเครื่องนุ่งห่ม เสื้อผ้า รองเท้า และ แสงสว่างภายในหอผู้ป่วย
5. บันทึกรายละเอียดจากการประเมินสภาพของผู้ป่วยเก็บไว้ในรายงานประวัติผู้ป่วย เพื่อเป็นข้อมูลพื้นฐาน ในการหาวิธีการป้องการพลัดตกหกล้มต่อไป

BIOGRAPHY

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