



**Nurses' Fall-knowledge and Fall Prevention Practices for
Hospitalized Elderly in Medan, Indonesia**

Elida Sinuraya

**A Thesis Submitted in Partial Fulfillment of the Requirements for the
Degree of Master of Nursing Science (International Program)**

Prince of Songkla University

2016

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ABSTRACT

The study was conducted at the medical and surgical wards of a general hospital, in Medan, Indonesia. A descriptive correlational study was applied to achieve the aims of this study. This thesis offers a study of the level of nurses' fall-knowledge, the level of nurses' fall prevention practices, and the relationship between nurses' fall-knowledge and fall prevention practices for hospitalized elderly. The subjects were 153 nurses from medical and surgical wards in a general hospital in Medan. Data were collected from October to November, 2015 using the nurses' fall-knowledge questionnaire and the nursing staff survey of fall prevention knowledge which explored nurses' knowledge about falls and fall prevention. The Scripps Mercy Hospital Rounding Tool questionnaire was also used to examine nurses' fall prevention practices. Then the data were analyzed using descriptive statistics and inferential statistics, Pearson's product-moment correlation coefficient.

The nurses' fall-knowledge was at a moderate level ($M=20.18$, $SD=3.22$). Nurses' fall prevention practices were at a high level ($M=12.63$, $SD= 2.37$). There was no statistical relationship between nurses' fall-knowledge and their fall

prevention practices for the hospitalized elderly in Medan, Indonesia ($r = -.07$, $p=.41$). In conclusion, continuing nursing education regarding fall-knowledge and fall prevention practice should be allocated to Medan nurses to ensure accurate knowledge and high quality practices on falls.

Keywords: Nurses Fall-knowledge, Fall Prevention Practices, Hospitalized Elderly

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CHAPTER 1

INTRODUCTION

This chapter presents the background and significance of the problem, the objectives of the study, research questions, theoretical framework of the study, research hypothesis, definition of terms, and the significance of the study.

Background and Significance of the Problem

Falls are the leading cause of injury-related visits to emergency departments in the United States and the primary etiology of accidental deaths for persons over the age of 65 years (George & Fuller, 2000). The mortality rate for falls has been increasing with age in both sexes and in all racial and ethnic groups. According to George and Fuller (2000), 70 percent of accidental deaths for persons 75 years of age and older resulted from falls. The hospitalized elderly, especially in geriatric rehabilitation, have a greater risk and are more vulnerable to fall (Tinetti & Kumar as cited in Mauk, 2014). In the US, falls are the leading cause of accidental death and the 7th leading cause of death for people > 65 or older with 75 percent of deaths caused by falls occurring in the 13 percent segment of the population who are > 65 or older. A study review from previous evidence showed that more than 50 percent of hospitalized elderly people in the US are at risk of falling (Centers for Disease Control and Prevention, 2014). Annually, 34.7 percent of elderly people in community-dwellings fall (Orces, 2013).

In Indonesia, the incidence of falls among hospitalized patients from January to

September 2012 was 14 percent (Congress XII of the Association of Indonesian Hospitals as cited in Prabowo & Khoiriyati, 2014). In addition, the incidence of injury from falls was 34.5 percent (Anugrahini, Arrum, & Ernawati, 2008). Also, the prevalence of falls reported from 11 hospitals in Jakarta, Indonesia was 6 to 16 percent (Lumenta as cited in Yuswardi, 2013).

Fall of the hospitalized elderly impacts on patients and institutions. The impact on patients were fractures or injuries (Nilson, Moniruzzaman, & Andersson, 2013), increased hospital care cost (Gelbard et al., 2013), and a longer stay in the hospital (Potter, Perry, Stockert, & Hall, 2013). More than 90 percent of hip fractures occur as a result of falls, with most of these fractures occurring to persons over 70 years of age (George & Fuller, 2000). The consequences of recurrent falls for patients include psychological problems such as fear of falling, depression, loss of self-confidence, social withdrawal, confusion and loneliness (Europe WHO, 2004). For institutions or hospital staff, the consequences or impact of falls for patients increased their workloads, hospital expenses and, decreased the quality of care or good reputation of hospitals (William, Young, Williams & Schindel, 2011). Moreover, the incidence of falls has been used as one of the key performance indicators to represent the quality of nursing care (Montalvo, 2007). Also, falls are one of the considerations for the nursing sensitive quality indicators (American Nursing Association, 2009).

Fall prevention is a critical component to prevent the hospitalized elderly from falls. Theoretically, falls for hospitalized patients are frequently caused by a combination of risk factors that are specific to the patients and their conditions (Pearson & Coburn, 2011). From this, falls can be prevented once risk factors are identified and managed. The risk factors related to falls among the elderly are divided into intrinsic and extrinsic factors, in general (Church, Robinson, Angles, Tran, & Wallace, 2011). Intrinsic factors include physiological origins whereas extrinsic

factors include precipitating factors from the environment or other hazards (Mitty & Flores, 2007). Fall prevention for the hospitalized elderly is critically important to nurses as they assess hospitalized elderly who are at risk of falling, developing interventions to promote safety, implementation of fall prevention, and evaluation of fall prevention (Potter, Perry, Stockert, & Hall, 2013; The Singaporean MOH, 2005). Here, nurses should have adequate knowledge and practices regarding fall-knowledge and fall prevention practices.

There are several studies that identified factors contributing to fall prevention and intervention used to prevent falls for the hospitalized elderly. A nurses' knowledge regarding fall has been reported as one of the major barriers in successfully applying fall prevention programs and guidelines. This knowledge is a nurses' knowing that elderly patients may be at risk of falling and being concerned about the consequences of a fall, what will happen if they fall. Subsequently, showing concern about what can be done to prevent falls (Potter et al., 2013). A study conducted by Koh, Manias, Hutchinson, Donath, and Johnston (2008) revealed that most problems in applying clinical fall prevention practice guidelines are knowledge and motivation. Also, the effectiveness of fall reduction in the acute care setting was based on fall awareness and educational program (Williams et al., 2011).

In Indonesia, similarly to other countries, nurses play a vital role in fall prevention for patients. Previous studies regarding falls have been conducted in Indonesia to test the instruments and to examine the relationship between factors related to falls. A study conducted by Prabowo and Khoiriyati (2014) revealed no relationship between the level of nurses' knowledge and the implementation of the Morse fall assessment. With regard to nurses' training, a study conducted by Anugrahini and colleagues (2008) found that the nurses in the stroke unit of a hospital

in Indonesia had not been particularly well trained in patient safety and fall prevention.

In regard to Indonesia nurses' fall prevention practices in Medan, nurses used restraints for prevention of falls with hospitalized patients (A. Ginting, personal communication, December 27, 2013). However, according to Mauk (2014) restraints cause a greater risk of falls for hospitalized elderly because they attempt to free themselves from these constraints. Also, the beds allocated are quite high. The height of the bed should allow the hospitalized elder's feet to be flat on the floor, with their hips, knees and ankles at 90-degree angles when sitting on the bed (The Australian Commission on Safety and Quality in Health Care, 2009). From this, the current practice to prevent hospitalized elderly falls might not be effective.

In order to increase patient safety by increasing the quality of nursing care, it was therefore necessary to conduct a study on nurses to examine their level of knowledge regarding fall and fall prevention practice. Further the relationship between their knowledge regarding of fall and fall prevention practices for hospitalized elderly were examined to facilitate improvement.

Objectives of the Study

The goal of this study was to examine the relationships between nurses' fall-knowledge and their fall prevention practices for the hospitalized elderly.

The objectives of the study were:

1. To explore the level of nurses' fall-knowledge for hospitalized elderly.
2. To explore the level of nurses' fall prevention practices for hospitalized elderly.
3. To examine the relationships between nurses' fall-knowledge and their fall prevention practices for hospitalized elderly.

Research Questions

The research questions of this study were:

1. What is the level of nurses' fall-knowledge for the hospitalized elderly?
2. What is the level of nurses' involvement in fall prevention practices for the hospitalized elderly?
3. Is there any relationship between nurses' fall-knowledge and fall prevention practices for the hospitalized elderly?

Theoretical Framework of the Study

The objectives of this study were to explore nurses' fall-knowledge and fall prevention practices for the hospitalized elderly and ascertain if there were any relationships between the two. In order to achieve these aims, the conceptual framework of this study was based on two vital concepts, 1) fall-knowledge and, 2) fall prevention practices.

1) Nurses' fall-knowledge consists of conceptual knowledge regarding falls and knowledge for fall prevention. According to Krathwohl (2010), conceptual knowledge is the connection among the basic components within a greater structure that enables them to function together. It consists of the ability to classify and to make groups, the knowledge of principles and generalities as well as the knowledge of theories, models and construction. Whereas procedural knowledge describes how to do something, including methods of assessment and examination, allocate practices by using skills and techniques according to standards, algorithms, and practice guidelines. Procedural knowledge also requires the ability to perform particular skills and techniques, and the ability to use specific knowledge to make decisions to select a suitable procedure for a particular condition (Krathwohl, 2010). Nurses' knowledge of fall, according to the Singaporean MOH (2005) and Kim, Jeon, and Chon (2015),

involves knowledge of falls, a fall risk assessment, intervention to prevent falls, and post-fall analysis and management. They argued that such knowledge was needed for fall prevention practices to prevent falls in hospitals. Knowledge about falls consists of the impacts of fall and fall risk. The impacts of fall regarding the institution or hospitals were financial reconciliation, an increased workload, litigation, a negative reputation. The impacts of falls on the patients were fractures and increased mortality for the hospitalized. A fall risk includes intrinsic risk factors (medicine, diseases, depression, visual/hearing impairment, numbness, and dysuria) and extrinsic risk factors (sliding and environment). A fall risk assessment consists of the time frequency of falls in the hospital, the history of fall, medication associated with an increase in fall risk, impaired mobility, poor visual acuity, and the environment. Interventions to prevent falls consists of environmental safety, restraints, exercise programs, shoe soles for patient stability, medication reviews, use of floor mats and call bells. In post-fall analysis and management, hospitalized elderly who have had a fall should be re-assessed, as a fall is often a presentation of a change in health status. Post-fall assessment includes attention to the patients' injuries, medical reviews to exclude acute causes of the fall, and investigation into the circumstances of fall to determine any underlying root cause. Management of fall consists of treatment of acute underlying conditions or chronic musculoskeletal issues such as use hip protectors or neurologic disease, restriction of restraints, physical therapy for gait and balance training, and education (Ministry of Health Singapore [The Singaporean MOH], 2005).

2) Nurses' fall prevention practices, according to Thirumalai (2010), are the levels of compliance or the actual practices of nurses in implementing fall prevention interventions. Fall prevention practices consist of fall risk assessment, intervention to prevent falls, and post-fall analysis and management involving the following activity;

(1) a sign on the door/a Kilroy sign, (2) signs in rooms, (3) armbands, (4) toileting schedule posted if applicable, (5) call lights, urinals, and bedpans within reach, (6) patient unable to communicate (confused or medication induced), (7) patient demented or confused unable to comply, (8) was patient and or family educated? look for charting, (9) fall on this admission, (10) charted appropriate risk level, (11) low bed/bed alarm for impulsive and forgetful patient, (12) environment free from clutter, (13) physiotherapy (PT) / orthopedic therapy (OT) order, (14) PT/OT gait assessment documented if applicable, (15) fall risk and patient specific interventions identified on care plan, (16) Kilroy sticker on chart indicating fall risk to transport personnel.

The conceptual rationales of fall-knowledge and fall prevention practices as mentioned above together provide the general conceptual foundations of this study as delineated in Figure 1.

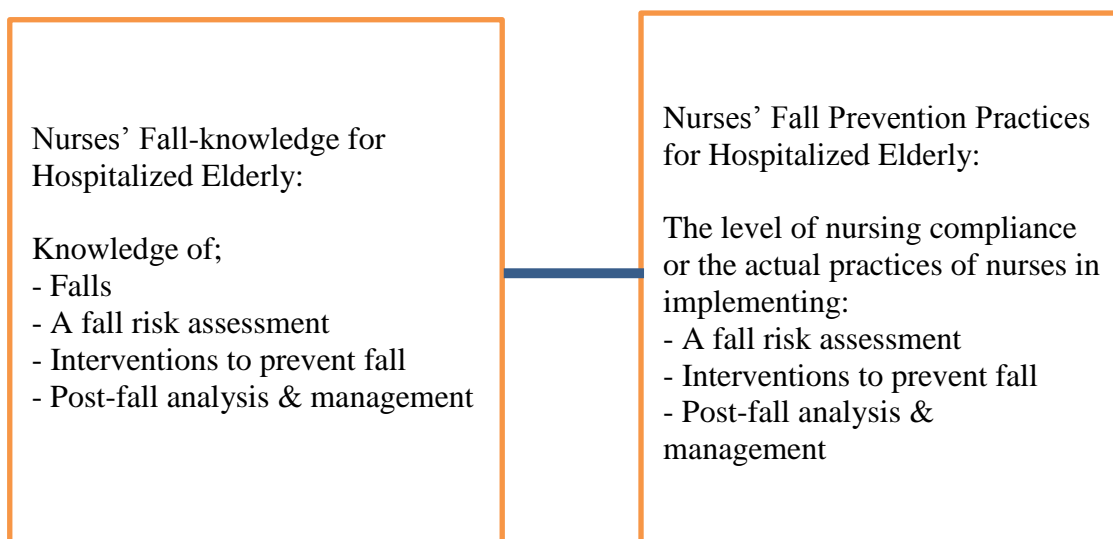


Figure 1

Theoretical framework of nurses' fall-knowledge and fall prevention practices

Research Hypothesis

The hypothesis of this study was that:

There is a positive relationship between nurses' fall-knowledge and fall prevention practices for the hospitalized elderly.

Definition of Terms

Fall-knowledge was defined as the level of nurses' understanding about fall which consists of falls, fall risk assessment, interventions to prevent fall, and post-fall analysis and management, and practices to prevent fall consists of a fall risk assessment, intervention to prevent fall, and post-fall analysis and management. It was measured by two questionnaires 1) The Nurses' Fall-knowledge Questionnaire, which was modified from the nurses' fall-knowledge questionnaire developed by Kim (2011) and modified by Kim and colleagues (2015), and 2) The Nursing Staff Survey of Fall Prevention Knowledge developed by Dibenedetto (2004) and modified by the researcher.

Fall prevention practices were defined as the level of nursing compliance or the actual practices of nurses in implementing fall prevention interventions, which consist of a fall risk assessment, interventions to prevent fall, and post-fall analysis and management. The fall prevention practices questionnaire was modified from the Scripps Mercy Hospital Rounding Tool questionnaire (Rounding Tool) developed by Gutierrez and Smith (2008) and modified by Thirumalai (2010).

Elderly refers to patients who are admitted to the hospital and are 60 years of age or older.

Scope of the Study

This study was conducted to explore the level of nurses' fall-knowledge and

the level of nurses' fall prevention practices for hospitalized elderly. Moreover, the researcher examined the relationships between nurses' fall-knowledge and fall prevention practices. This study was conducted at a public hospital, in Medan, Northern Sumatera province, Indonesia. The data was collected from October to November 2015.

Significance of the Study

The results of this study will be used to bridge the knowledge gap and increase understanding regarding Medan nurses' knowledge about fall and fall prevention practices for the hospitalized elderly. The findings of this study will also be of concern to Medan nurses regarding the importance of the nurses' role and their responsibility regarding fall prevention. The results of this study also can be used as baseline data for further research related to nurses' fall-knowledge and fall prevention practices for hospitalized elderly.

CHAPTER 2

LITERATURE REVIEW

This chapter presents a review of literature related to nurses' fall-knowledge and fall prevention practices. A critical analysis of the evidence of nurses' fall-knowledge and fall prevention practices for hospitalized elderly is sequential presented as follows:

1. Overview of Fall among Hospitalized Elderly
 - 1.1. Introduction to fall among hospitalized elderly
 - 1.2. Impacts of fall on hospitalized elderly
 - 1.3. The risk factors of fall of hospitalized elderly
2. Nurses' Fall-knowledge
 - 2.1 Introduction to nurses' fall-knowledge
 - 2.2 Empirical studies regarding nurses' fall-knowledge
 - 2.3 Measurement of nurses' fall-knowledge
 - 2.4 Indonesian nurses' fall-knowledge
3. Nurses' Fall Prevention Practices
 - 3.1 Introduction to nurses' fall prevention practices
 - 3.2 Empirical studies regarding nurses' fall prevention practices
 - 3.3 Measurement of nurses' fall prevention practices
 - 3.4 Indonesian nurses' fall prevention practices
4. Relationship between Nurses Fall-knowledge and Fall Prevention Practices
5. Factors Conducted to Nurses' Fall-knowledge and Fall Prevention Practices
6. Summary of the Literature Review

Overview of Fall Among the Hospitalized Elderly

This section provides a review of literature related to fall among hospitalized elderly focusing on the overview of fall among hospitalized elderly, impacts of falls in hospitalized elderly, and the risk factors of fall in hospitalized elderly.

Introduction of fall among hospitalized elderly

A fall is defined as “an unplanned descent to the ground or other lower surface with or without injury to patient” (Bouldin et al., 2013) or body damage (Tzeng, Titler, Ronis, & Yin, 2011). Additionally, a fall has been defined as an unintentional coming to the ground or some lower level and other than a consequence of sustaining a violent blow, loss of consciousness, sudden onset of paralysis as in stroke or epileptic seizure (Stromborg & Olsen, 2004; Gibson, Andres, Isaacs, Radebaugh, & Worm-Petersen as cited in Karnes, 2011). A patient’s fall rate is defined as the rate at which patients fall during hospitalization per 1,000 patient days (Dykes, Carroll, Hurley, Benoit, & Middleton, 2009). In the United States, the fall rate is 3.56 fall events/1,000 patients-days with 0.93/1,000 patients resulting in injury. Together, total falls and injurious fall rates were highest in medical wards, followed by medical-surgical wards, and lowest in surgical wards (Bouldin et al., 2013). Falls, according to Dykes and colleagues (2009), are “the leading cause of injury-related deaths and the most common cause of nonfatal injuries and admissions”.

The incidence of falls has become a nursing-sensitive quality of care indicator of in-patient services. According to the American Nurses Association as cited in Dykes and colleagues (2009), patient fall rates could be most improved through nurse-led safety strategies or interventions. From this, there are a number of strategies and

interventions that have been developed and used to prevent in-patient falls. Symbols, signs, equipment, and colors, for instances, have been launched to be used for patients that high risk of falling to remind nurses and other healthcare staff as well as patients and family members. Identifiers and visual reminders can be used to indicate fall risks in the hospital such as signs, stickers, slippers, bracelets, or tags about falling can be placed above the patient's bed, on the patient's door, at the nurses' station, or on the patient's chart. This also increased patients' awareness of fall risk, for example, reminding patients to call for help before getting out of bed (NICHE, 2015).

The hospitalized elderly have a greater risk to fall in hospitals (Tinetti & Kumar as cited in Mauk, 2014) especially in geriatric rehabilitation because they are more vulnerable in terms of their physical conditions and have a slower reaction time in maintaining balance (Anderson, 2003). A geriatric syndrome, given elderly group is higher incidence of fall. According to Abreu, Mendes, Monteiro, and Santos (2012) accident of fall in hospitalized elderly have partially dependent, mostly in the patient room, and the events were morning shift. Hospitalized elderly with partially dependent will manage themselves to get up. Consequently, It will increase risk to fall. Approximately 1.9 percent and 2.8 percent of patients have accidents that include falls after hospital admissions (Vassallo et al., 2004). Nearly 1.8 million older adults experienced problems with nonfatal fall-related injuries in the emergency department and more than 433,000 of these were hospitalized due to falls (Potter et al., 2011).

The Centers for Disease Control and Prevention as cited in Healthcare Risk Control (2009) reported that one in three adults aged 65 or older in the United State will experience falls each year and 10 percent of falls occur in a hospital. In the geriatric

rehabilitation ward the incidence of falls is 3.4 per person per year (Nyberg et al as cited in Cameron et al., 2010).

Since the aging process of the elderly changes the system of the body and thus the decline of function in the body's systems and physical conditions, falls occurring among the elderly population are especially dangerous (Huda & Wise as cited in Huang, Gau, Lin, & Kernohan, 2003).

Impacts of fall on hospitalized elderly

As mentioned earlier, falls of hospitalized elderly can lead to the devastating consequences such as injuries, death and the profound effects of its consequences. Generally, the impacts of fall in hospitalized elderly can be divided into the impact to the institution or hospitals and into the patients.

For the institution, patient falls in hospitals might affect hospitals in the following ways: the need for financial reconciliation, an increased workload, litigation, a negative institution reputation (Williams et al., 2011), and increased hospital care costs due to delayed hospital stay and its consequences (Gelbard et al., 2013; Frick, Kung, Parrish, & Narrett, 2010; Stevens et al. as cited in Healthcare Risk Control, 2009; Williams et al., 2011). A study conducted by Frick, Kung, Parrish, and Narrett (2010) revealed that the health care costs based on treatments and management needed as a result from falls and its consequences were on \$272 spent for a hip fracture among elderly people, \$371 for muscle balance training, \$326 for home modifications, \$160 for psychotropic withdrawal, \$104 for Tai chi, and \$99 for Vitamin D supplementation. Additionally, as the incidence of falls has become a nursing-sensitive quality of care indicator of in-patient services, the quality of nursing care might be evaluated as below standard (Potter et al., 2013).

Falling has profound impacts for patients. Falls commonly lead to negative outcomes such as injuries, prolonged hospitalization and legal liability. The effects of falls on patients include; fractures, extended hospitalization, and consequences on their quality of life and their families (Owings et al as cited in Huang et al., 2003). Generally, falls resulted in injuries or fractures of body parts, consequences of injured organs, with a variety of severity (from mild to severe) and complexity of treatment, management, and care needed. A study conducted by Sadigh, Reimers, Andersson, and Laflamme (2004) revealed that the most injured part of the body resulting from a fall was the head (40.6%), whereas pain and swelling were found after injury from falls (Hitcho et al., 2004). In terms of fall-related fractures, upper extremity fractures were mostly found among hospitalized elderly (80 years and above) (Nilson, Moniruzzaman, & Andersson, 2013). A previous study revealed that the major result of fall-related injury was minor injury (82%) or injuries that required a simple intervention (Mion et al., 2012). However, falls and subsequent consequences caused patients to have to further stay in hospital. The extended hospital length of stay after falls provides risks for patients to develop other complications (Potter et al., 2013).

As mentioned above, fall and subsequent consequences provide a variety of physical impacts. Additionally, the psychological impact of fall has been reported among older people as well as older patients, which was also inextricably linked to recurrent fall (Europe WHO, 2004). Change in mental health (Owings et al as cited in Huang et al., 2003), fear of falling, depression, and new psychological problems were found, as well as loss of self-confidence such as social withdrawal, confusion and loneliness after falls (Europe WHO, 2004). Loss of confidence in staff was also found among patients after fall and became a major barrier for patients to reconcile (Williams et al., 2011). Moreover, the

fear of falls in the future made patients develop self-imposed depression and resulted in decreasing patients' mobility and socialization (Deshpande et al as cited in Swartzel, Fulton, & Friesth, 2013).

In summary, fall and subsequent consequences affect both patients and the institution. The impacts on the institution included costs of extended hospitalization, litigation, increased workload, and the hospital's reputation. The impacts for the patient were injury, longer stays in hospital, fear of fall recurrence in the future, loss of confidence in self/staff, and mental health alterations.

The risk factors of fall for the hospitalized elderly

To effectively prevent falls for hospitalized elderly, it is important to identify the risk factors for falls in particular for high-risk patients from the first day of admission. According to the Joint Council on Accreditation of Healthcare Organization, as cited in Chelly et al. (2008), the reduction of the incidence of falls in hospital depends on the application of anticipation of falls along with assessing patients who are at risk of falling.

In general, the risk factors related to fall of the elderly are divided into intrinsic and extrinsic risk factors (Church et al., 2011). The intrinsic risk factors include a physiologic origin whereas extrinsic risk factors include precipitating factors from the environment or other hazards.

Intrinsic risk factors

Intrinsic risk factors are those factors related to the physiologic origin of the patient, including (1) age, (2) history of falls, (3) incontinence or urinary frequency or urgency, (4) lower-extremity weakness, gait and balance deficits, (5) medication, (6)

sensory impairment, (7) degenerative disorders, (8) changes in mental status, and (9) foot disorders. According to Abreu and colleagues (2012) accidental falls in hospital related more to intrinsic risk factors.

Age is a significant factor that increases the chance of fall. As mentioned earlier, age-related issues will change older people's capability to perform normal activities for daily living. Older people also have a problem with balance and have a risk of falling while moving without supervision (Campbell and Matthews, 2010). Results from previous studies have shown higher rates of falls in hospitalized elderly, exhibiting relationships between higher age and the higher potential for falls. A study conducted by Chelly and colleagues (2008) found that older patients were at a significantly increased risk of falling and patients who are 80 years old have three more times the potential to fall causing injury than 50 years old patients in the same unit of the hospital. In three different studies, the age of patients who fell in hospital setting were 17 to 96 years old (Hitcho et al., 2004), 80 to 89 years old (Costa-Dias et al., 2013), and over 65 years old (Healey & Darowski, 2012).

One of the intrinsic risk factors for a fall is having a history of falls. When an elderly person falls, they often developed a fear of falling again. From this, elderly patients limit their activities, become less mobile, withdrawn, depend on others, and are more at risk for recurrent falls in the future (Anderson, 2003). Results from a previous study revealed a relationship between the history of falls and the current incidence of falls. Costa-Dias and colleagues (2013) reported 22 percent of all patients had a history of recurrent falls. Campbell and Matthews (2010) found that a history of falls related with falls throughout post-stroke rehabilitation. Similarly, Deandrea and colleagues (2013)

found that the elderly patients' history of falls related with falls in the geriatric or rehabilitation ward.

Incontinence or urinary frequency or urgency becomes another factor that enhances falls as found among 36.1 percent of patients who fall (Hitcho et al., 2004). Due to physical change the urinary system, the elderly lose some tones and elasticity, thus urinary incontinence is a result in developing an increasing frequency of urination (Touhy & Jett, 2012). Consequently, the elderly rush to the toilet and providing a higher chance for them to fall.

Lower-extremity weakness, gait and balance deficits are also risk factors for falls (Moreland, Richardson, Goldsmith, and Clase, 2004; Williams et al., 2011). The body's capabilities to maintain its organization in a standing position and to react to prevent a fall depend upon coordination in the musculoskeletal system, the neurological system, and visual ability. Age-related functional change in the nervous and musculoskeletal systems causes motor neurons to work less efficiently, have a slower reaction time, and the ability to respond quickly to stimuli and intervene decreases. Loss of bone mass results in weak bones and may affect the functional ability of the elderly to maintain a standing position. In the elderly, falls are inextricably linked with gait and neurological diseases and its consequence of weakness (Axer, Axer, Sauer, Witte, & Hagemann, 2010; Williams et al., 2011). Results from a previous study have shown that patient falls in hospital were due to problems in the lower-extremity (38.3%) and loss of balance (12.0%) (Hitcho et al., 2004). Similarly, balance impairment, hemi neglect syndromes, self-care deficit, mobility impairment, postural hypotension and gait impairment, were found as factors which-related to falls in post-stroke rehabilitation setting (Campbell & Matthews, 2010).

Medication used is also found to increase risk of falls (Chelly et al., 2008). Adverse drug effects have long been known as a major risk factor for falls, particularly to frail older adults (Miller, 2002). Medications such as opioid analgesics, anti-hypertensive drugs, antiarrhythmic drugs, laxatives, and diuretics were found related to falls post-stroke (Campbell & Matthews, 2010). Among these medications, sedative drugs were a significant predictor for falls (Andersson, Kamwendo, Seiger, & Appelros, 2006), including antidepressants, opioids, and a diuretic non-antihypertensive agent (Costa-Dias et al., 2013; Czernuszenko & Czlonkowska, 2009; Mion et al., 2012). Results from previous study found a relationship between using sedatives and anti-depressants drugs and falls rates in geriatric and rehabilitation wards (Deandrea et al., 2013). Moreover, poly-pharmacy or in combination with alcohol may increase the risk of falls (Lin, Lai, Liao, Muo, & Hsieh, 2013). From this, any elderly who consume four or more medications should be considered at high risk for falls, and nurses can suggest to practitioners that they review the medical necessity (Miller, 2002).

Sensory impairment includes vision, hearing, or double impairments are being additional factors contributing to falls in hospitalized elders. Falls related to reduced visual acuity, slowing darkness adaptation, perceptual changes (e.g., inability to perceive depth and reduced contrast sensitivity), loss of hearing, neuropathy, delirium, and proprioceptive dysfunction. Generally, as part of the normal aging process, elderly experience visual impairment and hearing loss. Visual impairment is a decline in visual acuity, peripheral vision, depth perception, night vision, and tolerance for glare (Anderson, 2003), all being was significant predictor for falls (Andersson et al., 2006). Also, visual impairment or hearing acuity have been reported as factors related to falls

post-strokes (Campbell & Matthews, 2010) whereas double sensory impaired elderly had a greater incidence of falls (58.5%) (Davis, 2012).

A degenerative disorder is an illness leading a patient to lose the function of their organs. In the elderly, the most common degenerative diseases are Alzheimers, Parkinsons, Huntingtons, pick or dementia, and amyotrophic lateral sclerosis. Consequently, a progressive loss of cognitive functions, damage to the brain, muscle, gait, movements, and peripheral nervous system develop which provide a higher risk for elderly to fall. Cognitive impairment and hemiparesis-motor impairment are factors related to falls throughout post-stroke rehabilitation (Campbell & Matthews, 2010). According to Hitcho and colleagues (2004), on average 6.12 patients out of 1,000 patients' fall every day which 31.7 percent are caused by neurology deficiency and result in impaired memory. Cognitive impairment is also related with falls of the geriatric or rehabilitation wards (Deandrea et al., 2013; Williams et al., 2011). Patients who are confused about their surroundings are more probable to fall (Potter et al., 2013).

Changes in mental status in particularly depression and dementia relate to falls (Cotter & Strumpf, 2002). Altered mental status contributes to 43 percent of the risk factors related to falls in hospitalized elderly (Chelly et al., 2008). According to Wang and colleagues (2012), the risk of falling is greater when the effects between medical conditions and depression combine. 44.3 percent of patients who fell were disoriented or confused (Hitcho et al., 2004). The elderly who fell twice or more had significantly higher levels of depressive symptoms compared to those with one fall or no falls (Padubidri et al., 2014).

Foot pain and foot disorders are commonly found in the elderly, resulting increasing higher risk for falls. One in three elderly over 65 has foot pain, stiffness, or

aching feet. Most foot pain comes from corns, calluses and toe deformities, of which 75 percent are bunions making it difficult to walk and causing problems with balance and contributing to falls (Health in Aging, 2014). In addition, foot ulcers, deformed nails and general pain from walking initiate balance difficulties and an increased risk of falls (Europe WHO, 2004).

Extrinsic risk factors

Extrinsic risk factors include the environment or other hazards related to falls as follows (1) the bathroom, (2) furniture, (3) flooring, (4) assistive device, (5) prolonged length of hospital stay, (6) bed in a high position, (7) restraints, (8) full-length bedrails, (9) noises, (10) communication, and (11) training and education.

According to Hitcho and colleagues (2004) one of the characteristics in falls for hospitalized elderly is that it occur during the evening or at night, and the location of patient's room has a 50 percent relationship with eliminating the possibility of falling. Incidence of falling increased when patients are unassisted in the hospital. Falls in the bathroom occurred while the patient was transferring on or off the toilet seats or while hurrying to the bathroom to urinate or defecate (Miller, 2012).

Furniture such as tables, beds, and chairs has a contribution to falls. The fall mechanism included slipping or tripping (9.8%) in the hospital (Hitcho et al., 2004). Hospital furniture such as bed tables and cabinets, which are used to support patients, while they are standing including moving the furniture such as the visitor's chair contribute to falls (The Princess Alexandra Hospital, n. d).

Flooring also contributes to falls (76.5%) (Hitcho et al., 2004). A floor that is highly polished, wet, or covered with loose carpeting or throw rugs can cause a fall.

Also, liquid dripping from dresses and umbrellas on rainy days can also be a source slips and falls on some floor surfaces. By providing plastic bag umbrella covers for visitors, a hospital can keep the floors dry (SAIF corporation, 2008) which can reduce the risk for falls.

Inappropriate assistive devices for physical deficit, including the maintenance of assistive devices (e.g., wheelchairs, support poles, trapezes), and instruction on use of assistive devices, increase the risk of falls. Assistive devices for a physical deficit such as cane/walker/crutches have a 17 percent contribution to the risk factor of falls of the hospitalized elderly (Chelly et al., 2008). Deandrea and colleagues (2013) found that walking aids related to falls in the geriatric or rehabilitation wards. The disadvantage of older people using canes is that they have problems using their devices and therefore this relates with an increased risk of falling (Bateni & Maki, 2005). The wheelchair, which is well-known to be accessed up-on hospital admission, has a statistically significant inverse related effect on fall injury (OR: 0.20; 95% CI: 0.05, 0.84) (Mion et al., 2012).

Patients with a prolonged length of hospital stay often were accompanied with prolonged immobility. Consequently, the disuse of endurance muscles, caused muscles to atrophy and be damaged. In addition, declined muscle mass and strength, and joint instability put patients at greater risk for falls (Potter et al., 2013). For instance, the surgery and oncology services had the highest lengths of stay prior to falls with medians of 8 and 7 days per fall (Hitcho et al., 2004).

A high setting of the bed which is deemed to be more than 120 meters of the lower leg length may have unsafe consequences because of foot placement instability (Capezuti & associates as cited in Tzeng et al., 2012). From this, it is suggested to keep

patient beds in the lowest position and monitor patient safety to prevent fall and injuries, especially for the elderly and confused patients (Capezuti and associates as cited in Tzeng et al., 2012). A high bed setting also relates to patient's fears of falling when getting in and out of bed.

Restraints may cause lower extremity weakness thus increasing a risk for falls (Saufi, 2004). There is no evidence that restraints can prevent falls but they can create serious drawbacks and contribute to serious injuries (American Geriatrics Society, 2001). In addition, using restraints causes a greater risk of falls because the hospitalized elderly attempt to free themselves from these constraints (Mauk, 2014).

The use of a bed rail also creates a greater risk of falls because elders attempt to free themselves from these constraints (Mauk, 2014). In the hospital setting however, nearly 4 percent of the patients had one or no side-rails up, 67 percent had two or three side-rails up, and 10 percent had all four side-rails raised at the time when patients fell (Hitcho et al., 2004). This provides another environmental risk for falls.

Hospital noise sources including voices from nurse station and visitors, nurse call bells, instrument/ monitor alarms, ringing phones, rolling hospital carts, printers file drawers, and mechanical systems impacts on the patients' quality of sleep (Brooks, 2003). This results in sleeping deficiency and poor obedience to nurses' instruction. From this, it can be inferred that a hospital would have a lower rate of injurious falls when inpatient satisfaction measures regarding the quietness of the hospital environment were higher (Tzeng et al., 2011).

Good communication between nurses and patients or among nurses and other healthcare providers is needed to succeed in the practices of fall prevention. According to the Joint Commission as cited in Davies (2014), vital reasons for fatal falls

include incomplete staff communication, unfinished orientation and training, inadequate patient assessment and reassessment, environmental issues, and inadequate care planning and provision.

Staff training and education are important in increasing nurses' fall-knowledge and their practices of fall prevention. An application of a fall awareness and educational program in an acute care setting was effective in fall reduction (Williams et al., 2011). The study results from the previous study also revealed a significant decrease in the incidence of falls across inpatient units in the third month after the completion of a falls prevention program (Lange et al., 2009).

In conclusion, factors related to falls consist of intrinsic and extrinsic risk factors. Intrinsic risk factors include age, the history of falls, incontinence or urinary frequency or urgency, lower-extremity weakness, gait and balance deficits, medication, sensory impairment, degenerative disorders, changes in mental status, and foot disorders. Extrinsic risk factors are bathroom, furniture, flooring, assistive devices, prolonged length of hospital stay, beds in a high position, restraints, full-length bedrails, noises, communications, lack of training and education. To ascertain whether patients are at risk of falling or not, the hospital must conduct a falls risk assessment on each hospitalized elderly, evaluating both intrinsic and extrinsic factors (Healthcare Risk Control, 2009).

Nurses' Fall-knowledge

This section presents nurses' fall-knowledge regarding the introduction to nurses' fall-knowledge, empirical studies regarding nurses' fall-knowledge, measurement of nurses' fall-knowledge and Indonesian nurses' fall-knowledge.

Introduction to nurses' fall-knowledge

Knowledge is an important domain for the formation of nursing practices to prevent falls in the hospital and provide a basis in applying clinical fall prevention practice guidelines (Koh et al., 2008). Knowledge is information, understanding, or skill that someone acquires by experience or education (Webster dictionaries online, 2015). With regard to fall, fall-knowledge is an overall knowledge of recommended fall prevention practice (Laing, Silver, York, & Phelan, 2011). A nurses' knowledge regarding fall prevention in a hospital has several contributing factors, such as education level, nursing staff training regarding patient fall prevention, and nursing staff education (El Enein, El Ghany, & Zaghoul, 2012).

Nurses have different levels of knowledge regarding fall as evidenced by several studies. In accordance with Laing and colleagues (2014) and Soones, Ahalt, Garrigues, Faigman, and Williams (2014), knowledge among employee about fall prevention was generally in low level. In contrast, previous studies conduct by Prabowo and Khoiriyati, 2014; Johnson, Hime, Zheng, Tran, Kelly, and Siric, K (2014) revealed that falls knowledge among nurses was in high level.

Falls

A nurses' fall-knowledge is a significant part of nursing care. With regard to fall, nurses need adequate knowledge to provide additional comprehensive care to meet the complex needs of the hospitalized elderly such as caring for those who are risk of falls (Wagner, Dickson, Shuluk, Richards, Fox, & Capezuty, 2013). Also, nurses are responsible for identifying patients who are at risk of fall and for developing a plan of care to minimize the risk of fall (Joint Commission as cited in Thirumalai, 2010). Fall-

knowledge consists of understanding about the types and causes of falls (Struksnes, Lindström, Hall-Lord, Slaasletten, & Johansson, 2011). Fall-knowledge consists of understanding about places where falls frequently, impact of falls, and fall risk (Kim, Jeon, & Chon, 2015), including the risk factors related to falls, both intrinsic and extrinsic the risk factors particularly for hospitalized elderly (Wiens et al., 2006). According to McNamara (2011) the nurses need to update their knowledge of fall risk for the surgical patients include preoperative, intraoperative, and post-operative risk for fall. Additionally, fall-knowledge is nurses' knowing and being concerned that the hospitalized elderly may be at risk of falling, the impact of fall, and subsequently things they can do to prevent falls (Potter et al., 2013).

A fall risks assessment

Hospitalized elderly should undergo a falls risk assessment within 24 hours of admission to identify those at higher risk of falling (The Singaporean MOH, 2005). Risk assessment should be multidimensional and consist of medical, functional and behavioral assessments of patients. The falls risk assessment tool should be applied, which is easy to manage, requires minimal or no equipment, and then linked to an action plan suitable for the local clinical setting.

A falls risk assessment consists of history of falls, medications associated with increased fall risk, secondary or specific diagnoses known to affect falls risk such as stroke, Parkinson's disease, postural hypotension, and seizure, dizziness, vertigo, and any weak condition. Functional of body includes altered mental status such as confusion and disorientation, altered elimination status such as urinary/bowel incontinence or frequency, impaired/deterioration of activities of daily living (ADL), impaired mobility or gait and

poor visual acuity. Behavioral of patient includes poor safety awareness, lack of insight into own health condition, and risk taking behavior (The Singaporean MOH, 2005).

According to Morse (1989) a falls risk assessment consists of history of falling, secondary diagnosis, ambulatory aid, intravenous therapy, gait, and mental status. According to Deer Lodge Center (2012), a falls risk assessment consists of history of falls, medications, psychological, cognitive status, vision (difficulty seeing), mobility (mobility status unknown or appears unsafe/impulsive/forgets/gait aid), behavior (agitation, confusion, disorientation, difficulty following instructions or unaware of limitations), activities of daily living (risk-taking behavior, unsafe use of equipment, unsafe footwear/inappropriate clothing, environment (difficulties with orientation to environment), nutrition (underweight, low appetite, taking vitamin D supplement), hydration (shown signs and symptoms of dehydration), continence (urgency, nocturia, and incontinent episodes). In general, a falls risk assessment consists of personal factors (intrinsic risk factors), environmental factors (extrinsic risk factors), interactive risk factors (person's interactions within the long-term care environment) such as hospitalized elderly with dementia (Hill & Fauerbach, 2014).

Interventions to prevent fall

Intervention to prevent fall should comprise of multifactorial interventions incorporating both general and individual-specific/tailored strategies. A number of programs or practice guidelines have been developed and launched to prevent fall. Accordance with Toronto Best Practice (2006) intervention to prevent fall consist of general intervention, individual-specific interventions, education, interventions for

patients with altered mental status, mobility and exercise for hospitalized elderly at risk of fall.

General interventions include environment safety and equipment checks such as the clearing of obstacles and clutter at the bedside and along passage ways, providing night lights at bedsides, hallways and toilets, providing grab bars in toilets/bathrooms and on slopes, using non-slip flooring and keeping the floor dry, highlighting the edge of steps and slopes, locking wheels of furniture, placing frequently used items and mobility devices within reach of the patient, keeping regular maintenance of equipment and ensuring that they are correctly used, keeping bed at lowest practical height when the patient is in bed, using half-length bed rails to assist the patient in getting out of bed, using safety belts on wheelchairs when transporting patients, using sturdy chairs that have arm rests and are of appropriate height for rising and sitting (geriatric chairs), using non-slip mats on chairs.

Specific individual interventions include increased observation for “at risk” patients; providing assistance for patients at fall risk; interventions for patients with altered mental status and elimination and a tailored exercise program.

Education includes staff education such as the importance of fall prevention, risk factors for falls and assessment, multidisciplinary strategies to reduce falls, safe transfer and safe mobility techniques, and education for the patient and family such as risk factors for falls, safe mobilization and limitations to activities, safety precautions in the ward and ward orientation, importance of staying & being mobile unless contra indicated.

Interventions for patients with altered mental status include orientating patients to the hospital environment, re-orientating patients closely, nursing patients on

a low bed, and reinforcing activity limits and other safety needs to patients and their family.

Interventions for patients with altered elimination status include enquiring about their elimination needs routinely and offering appropriate toileting aids, placing patients with urgency nearer to toilets, instructing male patients with dizziness to sit and voiding using the urinal, and checking on patients receiving laxatives and diuretics for their elimination needs.

Mobility and exercise for hospitalized elderly at risk of falls should include assistance with transfers and mobilization. The hospitalized elderly should use well-fitted, non-slip footwear when ambulating (rubber soles provide better stability and shock absorption than leather soles).

According to the Ministry of Health in Singapore (2005) intervention to prevent falls hospitalized elderly with impaired mobility should be referred to physiotherapy for gait, balance and strength training as well as receiving prescription of walking aids if necessary. Complete bed rest should not be imposed on patients unless ambulation is contraindicated, and an exercise program, and medication review for the hospitalized elderly by physicians should be considered as part of routine inpatient care, because those on poly pharmacy are especially at risk to fall.

Hill and Fauerbach (2014), reported that intervention to prevent fall consist of frequent hospitalized elderly checks at least every two hours or more frequently depending on patient need, environmental considerations include floor, rooms for the hospitalized elderly, bathrooms, monitoring devices, beds and floor mats.

Floors should be free of clutter, well-maintained, wax free, free of uneven surfaces and spills, and there should be proper lighting including a night light. The

walking path should be free of multiple obstacles, patterned floor surfaces should be avoided.

Furniture should be stable, with arms that patients can easily reach and hold, and bathrooms should be large enough to allow safe transfers from wheelchairs to toilets, activity areas should have a safe place for patients with activity intolerance to rest during ambulation.

Monitoring devices; refers to call bells and alarms. Regarding restraints, they will be used only after other measures have been considered or used because restraints are associated with falls, injuries, and death.

Regarding beds and floor mats, all bedrails, restraint, and cushioned mats of two to three inches thick with beveled edges lined with reflective tape are also helpful for patients who are at high fall risk and have histories of fall-related fractures, Helmets and hip protectors are also useful.

Post-fall analysis and management

The hospitalized elderly who experience an inpatient fall should undergo a post-fall assessment. A fall may be a marker of serious underlying illness. Those who have had a fall should be re-assessed as a fall is often a presentation of a change in health status. It has been shown in long term care settings that assessment within seven days of a fall was effective in preventing subsequent hospitalization and reducing length of hospital stays (Rubenstein et al as cited in The Singaporean MOH, 2005).

Post-fall assessment includes attention to patients' injuries, a medical review to exclude acute causes of the fall, and investigation into the circumstances of the fall to determine any underlying root cause. Falls management consists of treatment of

acute underlying condition or chronic musculoskeletal problem involving the need to use hip protectors or having neurologic disease, or the need for restriction of restraints, physical therapy for gait and balance training, and education about management of fall (The Singaporean MOH, 2005).

According to Toronto Best Practice (2006), fall management for the hospitalized elderly means, the interdisciplinary team will: (1) initiate a head injury routine and evaluate the patient's level of consciousness and any possible injury related with the fall, (2) then inform the attending physician and makes sure the patient receive immediate treatment after the fall, (3) then complete an incident report and note detailed progress, (4) then explore the contributing factors related with the fall including location, time and related activity, (5) analyze fall prevention interventions and modify the plan of care as indicated, (6) communicate to all shifts that the patient has fallen and is at risk of fall, and (7) observe of the patient for 48 hours after the fall as per routine if they are on anticoagulants such as heparin, coumadin, and aspirin.

Fall management involves patients with or without head trauma. For those without head trauma, it is necessary to check for vital signs, check for blood glucose (diabetic patients), determine circumstances leading to the fall and making corrections. The fall should be reported to the attending physician or nurse practitioner on the day of the fall. During the first 48 hours (vital signs should be taken every 8 hours, and mobility restriction may be required if it appears warranted due to the fall. Further, detection for possible injuries not evident at the time of the fall should be assessed such as limb reflex, and joint range of motion. For managing a post fall with minor head trauma the same protocol as outlined above is used. In addition nurses, perform neuro-checks every two hours for the first 12 hours, every three hours for the next 24 hours, and every four hours

for the following 24 hours. A physician should be alerted for any changes that are noticeable in the patient including an alert when head trauma has occurred to patients who received anticoagulants (Pillow Paws Medical Footwear, n.d).

According to Moncada (2011), management of a fall involves treating acute underlying conditions or chronic musculoskeletal or neurologic disease, medication reduction (especially psychotropic medications), vitamin D supplementation if vitamin D levels are low, treatment of orthostatic hypotension, advice about appropriate footwear (shoes with low heel height and high surface contact area), treating underlying precipitants of delirium such as infection. Providing non pharmacologic management of confusion by nursing staff, physical therapy for gait and balance training/assistive device recommendations, providing supervised strengthening with or without gait and a balance exercise program, offering hip protectors, checking visual acuity, use of eyewear, providing patient and family education, and staff education.

Empirical studies regarding nurses' fall-knowledge

There have been a number of studies conducted to examine fall-knowledge among nursing staff but they are still inconclusive. Knowledge and motivation about falls in hospitals were found to help nurses to build up fall awareness and prevent falls (Williams et al., 2011). A descriptive study was conducted by Kim and colleagues (2015) to explore nursing students' knowledge of falls, attitudes on falls, and awareness of in-patient. The study results revealed that knowledge among nursing students was at high level (12.86 out of 15 points) (Kim et al., 2015). However, a study conducted by Prabowo and Khoiriyati (2014) revealed no relationship between nurses' knowledge and implementation of the Morse fall scale and suggested further study to prove this finding.

To date, while there have been a number of studies explaining nurses' fall-knowledge, there is a limited published of information about this in Indonesia.

Measurement of nurses' fall-knowledge

A number of tools have been developed to measure nurses' fall-knowledge as outlined below.

The nurses' fall-knowledge, attitude, and awareness questionnaire, for example, was developed by Kim (2011) and modified by Kim and colleagues (2015) to assess respondent's knowledge, attitude and awareness regarding falls. The validity of instrument was not determined but the internal consistency reliability of instrument was .75. The instrument consists of 71 multiple-choice items with 13 items of demographic data, 30 items of awareness on risk factors of falls, 13 items of attitude on falls, and 15 items of fall-knowledge. The questions relating to knowledge of falls involved whether (1) the recurrence rate is high among anyone who has already experienced a fall, (2) falls occur most frequently among safety incidents in hospitals, (3) falls increase an elderly persons' death rate, (4) elderly hip fractures occur from falls, (5) sliding is not falling, (6) the more medicine you take, the higher your fall risk, (7) the more diseases you have, the higher your fall risk, (8) depression is not related to falls, (9) someone who has a visual impairment has a higher risk for falls, (10) being numb in the limbs is not related to falls, (11) dysuria is a risk factor for falls, (12) hearing impaired is not related to falls, (13) taking medicine for diabetes is not related to falls, (14) taking medicine for blood pressure is not related to falls, and (15) falls occur more when getting up from and down on beds in hospitals.

The nurses' fall-knowledge, attitude, and awareness questionnaire contains three

subscales; knowledge of fall, attitude regarding fall, and awareness. This instrument is appropriate to use to measure falls independently in this study because, this tool contains (1) intrinsic fall risk, (2) extrinsic fall risk, and (3) impacts of fall. It is beneficial to explore the level of nurses' fall-knowledge for hospitalized elderly in, Medan, Indonesia.

The Falls Staff Survey developed by Williams and colleagues (2011) was based on Fleck and Forrester's survey (2001) to assess nurses' awareness of fall risk factors, and nurses' actions to decrease falls in hospital. This tool is an open-ended questionnaire that consists of five open-ended questions to explore (1) the impact of falls on hospital, (2) the impact of falls on patients, (3) internal factors related to fall, (4) external factors related to fall, and (5) interventions to prevent falls without mentioning the reliability and validity of the tool.

The falls risk awareness questionnaire (FRAQ) proposed by Wiens and colleagues (2006) was developed to assess awareness and perception of a wide range of risk factors for falling among two convenience samples of older adults as well as to investigate associations between personal attributes and experiences, and awareness and perceptions of risks for falling. This instrument was tested on older adults and health professional groups (physicians, pharmacists, registered nurses, licensed practical nurses, physiotherapists, occupational therapists, social workers, dieticians, resident or medical students). This tool has been used by Lopez and Trelha (2013) to assess this measurement for the elderly in Brazil. The result of this study showed that the internal consistency of the tool was α .95, plus an intrarater correlation coefficient (ICC-3.1) of .91 was obtained with an intra-class correlation to the Kappa coefficient of .89 and a Bland and Altman mean difference (bias) of -.52 regarding the inter-examiner reliability, the ICC .78, Kappa .76 with a bias of .12. The form is multiple-choice, written, and self-complete.

This instrument is useful for assessing risk factors for falling among the hospitalized elderly rather than for health professionals.

The Nurses' Fall-knowledge Test (NFKT) was developed by Johnson and colleagues (2014) to assess the risk of falls, fall prevention strategies and management after fall. The instrument consists of 21 true/false items or multiple choice questions. The instrument was tested on registered nurses in one local health service. The validity of instrument was not reported and reliability of instrument was .616.

The Morse Fall Scale was developed by Morse (1997) to assess patients at risk for predicted falls. The instrument consists of a 25 item questionnaire and observation. In Indonesia, Prabowo and Khoiriyati (2014) used this instrument to determine the level of nurses' knowledge regarding risk assessment in PKU Muhammadiyah hospital, Yogyakarta Indonesia. The instrument was then tested with nursing staff in PKU Muhammadiyah hospital. The internal consistency reliability of instrument was .69. with Cronbach's alpha coefficient.

Indonesian nurses' fall-knowledge

Several studies regarding Indonesia nurses' fall-knowledge have been conducted in Indonesia (Prabowo and Khoiriyati, 2014; Susanti, 2015; Oktaviani, Sulisetyawati, and Fitriana, 2015). A descriptive correlation study conducted by Prabowo and Khoiriyati (2014) revealed that nurses fall-knowledge at high level, and similar with a study conducted by Susanti (2015). The moderate level of nurse fall-knowledge among nurses in Surakarta was found in the study conducted by Oktaviani and colleagues (2015).

Almost all previous studies have shown common characteristics of nurse participants. According to, Prabowo and Khoiriyati (2014), who studied the level of

education of nurse participants had diploma (66.7%), and worked in the current work place from one to five years (88.9%). Similarly, the characteristics of nurse participants in Susanti (2015) was their level education holding diploma (56.6%), and at the current work place from one to ten years (63.5%), their aged from 30-39 years old (53.8%), and the majority was female (75.2%). Also, Oktaviani and collageus (2015) showed the characteristics of nurse participants were their level education with a diploma (90.8%), at the current work place from one to ten years (43.1%), the average age was 34 years old and the majority of nurse participants were female (87.7%).

Nurses' Fall Prevention Practices

This section presents nurses' fall prevention practices regarding introduction to nurses' fall prevention practices, empirical studies regarding nurses' contribution to fall prevention practices, measurement of nurses' fall prevention practices, and Indonesian nurses' fall prevention practices.

Introduction to nurses' fall prevention practices

For older patients, nurses have an important role in preventing falls and its consequences. Nurses play a vital role to recognize patients' risks for falls, allocate and implement plan to prevent and/or manage falls as well as communicate this to nursing staff and other healthcare providers (The Australian commission on safety and quality in health care, 2009). Nurses' fall prevention practices, similarly with other nursing practices, are the performance of acts requiring substantial specialized knowledge, judgment, and skill based on the principles of the biological, physiological, behavioral, and sociological sciences regarding falls. In order to provide high-quality practice to

prevent falls, a set of fall prevention practices guideline, or best practices for fall are highly needed to underpin when nurse make decision to implement a plan to prevent falls for the hospitalized elderly. For instance, The Australian Commission on Safety and Quality in Health Care (2009) has launched national guidelines to inform clinical practice and assist hospitals to develop and implement practices to prevent falls.

Empirical studies regarding nurses' fall prevention practices

Previous studies conducted to examine nurses' fall prevention practices for the hospitalized elderly are presented as follows.

Thirumalai (2010) conducted a study to determine the level of acute care nurses' compliance in implementing fall prevention programs and barriers in implementing the program in an acute care setting. The participants were registered nurse and licensed practical nurses. A licensed practical nurses (LPN) or licensed vocational nurse is a nurse who has finished a practical nursing program and passed a licensure examination. A registered nurse (RNs) is a nurse who has a significant total education (associate degree, diploma, or bachelor) (Potter, Perry, Stockert, & Hall, 2011)

The study results revealed both high and moderate levels of nurses' compliance in using fall signage such as Kilroy signs on the door (51.7%), "call/do not fall" signs in the room (65.5%), placing fall risk arm bands on patients (24.1%), and placing Kilroy stickers on the chart indicating fall risk to transport personnel (10.3%). The barriers to fall prevention were recognized as rate of patient regulation (25%), lack of closeness of allocated patients (23%), and emergency episode like codes (13%) (Thirumalai, 2010).

Education on fall prevention has an effect upon the nurses' attitudes/perceptions and knowledge regarding fall prevention (Dibenedetto, 2004). A study conducted by

Lange et al. (2009) found a significant decrease in the incidence of falls after implementing geriatric nursing education program and enhanced satisfaction with autonomy, task requirements, and interaction between nurses. Patient satisfaction and characteristics of nurse staffing were also suggested to be examined in order to decrease the rate of injurious falls (Tzeng et al., 2011).

According to the Singaporean MOH (2005), assessment, intervention, prevention of falls including post-fall analysis and management were needed as fall prevention practices to prevent falls in hospital. The assessment consists of assessment of fall, risk factors related to fall and reassessment of fall. Fall interventions involves multifactorial fall prevention approach, environmental safety, interventions for patients with altered mental status, interventions for patients with altered elimination status, mobility and exercise, medication review, and education. Post-fall analysis and management, for post-fall analysis involves attention to patient injury, medical review to exclude acute causes of fall, and investigation into the circumstances of fall to determine any underlying root cause. Similarly, Potter and colleagues (2013) suggested that risk of fall assessment, intervention, implementation, and evaluation or fall prevention are important to prevent falls in the hospital.

Measurement of nurses' fall prevention practices

A number of tools have been developed to measure nurses' fall prevention practices. As follows,

The Scripps Mercy Hospital Rounding Tool (Rounding Tool). This was developed by Gutierrez and Smith (2008) and modified by Thirumalai (2010) to measure the grade of compliance among nursing staff in recognizing patient who will at high-risk for falls. It

is a 16-item close-ended 'yes' and 'no' questionnaire which includes (1) sign on door/Kilroy sign; (2) sign in room/call do not fall; (3) armband on; (4) toileting schedule posted if applicable; (5) call light, urinal, bedpan within reach; (6) patient unable to communicate (confused or medication induced); (7) patient demented or confused, unable to comply; (8) was patient and or family educated? look for charting; (9) fall on this admission; (10) charted appropriate risk level; (11) low bed/bed alarm for impulsive and forgetful patient; (12) environment free from clutter; (13) PT/ OT order; (14) gait assessment documented if applicable; (15) fall risk and patient specific interventions identified on care plan; (16) Kilroy sticker on chart indicating fall risk to transport personnel.

The scores will therefore be interpreted into a grade of compliance with fall prevention protocol as high, moderate, or low compliance. The lower scores showed more compliance and higher scores showed less compliance (noncompliance). The content validity index of the instrument was .92 and the reliability coefficient was .77.

Process-of-care documentation was also developed by Rask and colleagues (2007) to measure nurses' fall prevention. It is a detailed 21-item audit tool to evaluate the feasibility and effectiveness of a falls management program. Inter-rater reliability was established with agreement on at least 80 percent of the items whereas the content validity index was not determined. The items of the tool includes: (1) patient screened for fall risk on admission, readmission, or last full minimum data set, (2) history of falls documented in the medical record, (3) comprehensive falls assessment completed for those identified at high risk, (4) falls assessment reflects a multidisciplinary approach addressing risk factors, (5) assessment of all risk factors complete and documented, (6) orders from primary care provider, therapist, and other professionals added to care plan, (7) treatment

of underlying medical conditions in care plan, (8) for patients with changes in high-risk medication, does care plan include sleep measures and behavior management interventions?, (9) for patients with unsafe behaviors, does care plan include management strategies to reduce risk of injury, (10) does care plan include interventions to minimize falls risk, (11) for patients in wheelchairs, does care plan provide interventions to improve positioning and comfort, (12) for patients with poor vision, does care plan include low-vision precautions, (13) have environmental and equipment hazards been corrected, (14) interim plan of care implemented while falls assessment and care plan are completed, (15) new intervention added within 24 hours of each fall, (16) monitoring of success or failure of interventions documented in the notes, (17) review of interventions and revision of care plan by falls team, (18) data collected after each fall, (19) does primary care physician refer to patient's fall or risk factors in first progress note after fall, (20) care plan revision with new interventions added based on data collection at time of fall, and (21) nurse's notes reference fall and show increased monitoring for 24–72 hours after fall.

The Falls Management Program (FMP) is an interdisciplinary quality development initiative designed to assist nursing facilities in providing patient-centered care and developing their fall care processes and outcomes through educational and quality enhancement tools. The fall management program consists of (1) patients' living space and patients safety include eliminate clutter, keep the bed wheels locked at all times, eliminate lightweight furniture, report loose handrails and toilet seats, report torn linoleum and loose carpet edges, report burned out light bulbs, keep the call light, water pitcher, glass, and any personal items within arm's length of the patients, use footwear which has tread on the bottom, a firm shape, and a low, even heel, and give proper foot care, (2) patients' transfer and mobility include know which patient need assistance

during transfer and walking, watch all patient closely through the first 2 to 3 week after admission and after a health decline or acute illness, for most patient keep bed in the lowest position at all times, dress the patient in easy-to-manage clothing, provide toileting, food, drink and activity based on the patients schedule, check the patients often, (3) equipment use include check the wheelchair brakes often, report all broken or lost parts of wheelchair, walkers and canes, use all of the seating items which are ordered for patients, report any patients who leans over, slides down, or leans to one side while seated in a wheelchair, do not share wheelchairs among residents, and make sure all equipment is labeled with the patients' name, (4) psychotropic drugs includes know which patients take a benzodiazepine or an antipsychotic, watch patients who are on these drug for side effect such as confusion, drowsiness, dizziness, change in gait, loss of balance, and change in mental status, and use behavior management skills to lessen the need for these drugs (Taylor, Parmelee, Brown, and Ouslander, 2005).

The Morse prevention program was developed to prevent falls for hospitalized patients and provide basis in developing the other fall prevention programs. This program includes (1) orientate patient to environments and hospital consisting of routines point out location of the bathroom, if patient is confused, orientation is continuing process, call light in easy touch –make sure patient is able to use it, & teach patient to call for assistance before getting out of bed, (2) patient/family education means verbally inform patient and family of fall prevention interventions, (3) shift report consists of inform the patient's "at risk" status, (4) plan of care consists of cooperate with multidisciplinary team members in planning care, and healthcare team should tailor patient specific prevention plans, (5) post a "falls program" sign at the entrance to the patient's room, (6) make "comfort" rounds every two hours and include change in

position, toileting, offer fluids and ensure that patient is warm and dry, (7) consider obtaining physician order for physical therapy consultation, (8) implement bowel and bladder program, (9) deliberate needs regarding toileting with patient, (10) provide a commode at bedside if appropriate, (11) urinal/bedpan should be within easy reach if appropriate, (12) evaluate medications for potential side effects, (13) consider peak effect that affects level of consciousness, gait and elimination when planning patient's care, (14) consider having a pharmacist review medications and supplements to evaluate medication regimen to promote the reduction of fall risk, (15) bed in low position with brakes locked, document number of side rails, (16) individual belongings inside reach, (17) eliminate unnecessary equipment and furniture consist of ensure pathway to the bathroom is free of obstacles and is lighted, and consider placing patient in the bed that is close to the bathroom, (18) use a night light as appropriate, (19) nonskid /non-slip footwear, (20) do not leave patients unattended in diagnostic or treatment areas, (21) consider placing the patient in a room near the nursing station, for close observation, particularly for the first 24–48 hours of admission, and consider patient safety alarm, if appropriate, and (22) consider using protection devices: hip protectors, a bedside mat, a “low bed” or a helmet (Morse as cited in St. Joseph's Hospital, 2006).

The nursing staff survey of fall prevention knowledge and perception developed by Dibenedetto (2004) consists of two parts.

The first part is related to the attitudes/perceptions and behavior of the nursing staff regarding fall prevention used to examine perception regarding problem of fall and techniques in prevention fall among hospitalized elders. This part consists of 24 items rated on 5-point Likert scale (strongly disagree=1, strongly agree=5). The reliability coefficient (KR 20) was from .789 to .845 and the face validity was approved by the

expert panels. The questions in this part item consist of (1) fear of falling, (2) consequence of fall, (3) goal in reducing fall, (4) nurses' responsibility to reduce fall rates, (5) nurses' confidence to prevent fall, (6) training in fall prevention, (7) fall prevention, (8) observation, (9) management of fall, and (10) risk of fall.

The second part of the instrument is related to knowledge regarding fall prevention used to examine knowledge of the nursing staff regarding fall prevention among hospitalized elders. This part consists of 23 items multiple choice questions. The reliability coefficient was from .795 to .855 and the face validity was approved by the panel experts. Ten of the items in the instrument were common knowledge and therefore, it was deleting prior to administrating the test. The questions are (1) What times do falls seem to occur the most in health care settings? a. 2 am to 4 am, b. 6 am to 10 am, c. 1 pm to 5 pm, d. 10 pm to 12 am, (2) In what way can environmental adaptations to prevent falls be made more acceptable to the individual? a. ask the individual their preferences, b. encourage the individual to make changes, c. make changes in location of belongings. d. provide some new items of furniture, (3) a resident you are working with reports having fallen two weeks ago. How can you enhance safety to prevent the resident from falling again? a. administer a muscle relaxant, b. do a balance assessment, c. provide privacy while transferring, d. request that he/she remain seated, (4) assuming that you determine the resident's risk of falling is substantial, What strategy will you employ to help reduce the risk? a. insure adequate lighting, b. medicate to decrease anxiety, c. restrain with a break-away lap chair, d. reduce the residents socializing, (5) restraining a resident that is at risk of falling may result in Which of the following? a. be more detrimental than helpful, b. make the resident feel safer, c. place the resident at less risk of injury, d. require less supervision of resident, (6) What type of medical history would place a

resident at an increased risk for falling? a. edema, b. falls, c. gender, d. heart disease, (7)

What type of medication might put a resident at a greater risk of falling? a. antibiotic, b.

blood pressure, c. inhaler, d. vitamin, (8) How can the implementation of strategies to

reduce falls benefit long-term care facilities? a. enhance working relations, b. increase

need for more staff, c. produce added work, d. reduce overall costs, (9) How can the nurse

best assist the resident with activities of daily living (ADL), for fall prevention? a. lay out

clothing, b. provide clean shoes, c. provide a sanitary environment, d. store assistive

devices, (10) What is a good way that the nurse can prevent an elderly person from

falling? a. ask them to stay seated most of the day, b. have their vision examined yearly,

c. provide them with fresh water every morning, d. secure them in a recliner chair while

eating, (11) elderly people can help improve their balance by wearing which kind of

specific footwear? a. Shoes with insoles, b. shoes with leather soles, c. shoes with low

rubber soles, d. shoes with soft socks, (12) Which of the following would best benefit

elderly residents if they had a fall? a. hip protectors, b. knee protectors, c. shin protectors,

d. tibia protectors, (13) How can the nurse best provide a program that will benefit an

elderly person's balance? a. planned daily exercises, b. planned daily socialization, c.

planned daily relaxation, d. planned daily snacks, (14) When a resident is admitted to

your unit, what is one way you can ensure his/her safety? a. ask them to stand near their

bed, b. have them sit while interviewing, c. keep their feet clean and dry, d. review their

medication list, (15) one of the best ways a nurse can plan to assist a resident who is at an

increased risk of falling is to provide Which of the following? a. a telephone, b. grab bars

in bathroom, c. trapeze bar, d. walker, (16) in an initial interview, the answers to which of

the following questions would best alert the nurse o future falls? a. do you often walk

with a cane?, b. do you dress yourself?, c. Have you fallen in the past two years?, d. have

you had any bone surgeries?, (17) Which of the following statements by a resident would alert you to the possibility of a future fall? a. “i would like to take a walk”, b. “i am going to do an exercise”, c. “i am weak this morning”, d. “I would like my sleeping pill”, (18) as part of the nursing process how can the nurse plan to ensure overall resident safety? a. have residents use their walker, b. have residents use their wooden cane, c. write a short-term goal for your shift, d. write a report for nursing staff on your shift, (19) Which of the following would be a way of ensuring that the resident does not fall out of bed and get injured? a. avoid raising head of bed, b. closely supervise at night, c. lock the wheels on the bed, d. place the mattress on the floor, (20) What is one way the nurse can evaluate a nursing goal for a resident who is subject to falling? a. assess changes that were made in the environment, b. assume that the resident has followed instructions, c. place a call light near the resident’s bed, d. place a reminder on the resident’s door, (21) Which of the following is the most likely reason that someone might under report falls? a. forgetfulness, b. lack of nursing staff, c. no injury occurred, d. too busy, (22) How can the nurse evaluate the treatment of an elderly person experiencing fallaphobia? a. observe ability to clutch the wall during ambulation, b. observe ability to regain independence of mobility, c. provide adequate stimuli, d. provide vision and hearing exams, (23) Who is usually held accountable for the prevention of falls? a. facility, b. family, c. staff, & d. resident.

Indonesian nurses’ fall prevention practices

In Indonesia, similar to other nations, the incidence of fall in hospital has been used as one of the indicators that reflects a patient’s safety (Ministry of Health Indonesia [The Indonesia MoH], 2011).

The patient safety standards include (1) patient's rights, (2) educate patients and families, (3) patient safety and continuity of care, (4) evaluate method to improve performance and patient safety program, (5) the role of leadership to improve patient safety, (6) educate staff about patient safety, and (7) communication is key for staff to achieve patient safety. In Indonesia, nursing practice is based on established nursing standards and standardized operating, ethical principles, including good communication with the patient and family members, proper documentation of all nursing care allocated to patients (Silfa, 2010), in general.

Indonesian nurses as well as other hospital staff have a key role to develop patient safety standards to reduce fall risks and prevent falls in hospital (The Indonesia MoH, 2011). From this, the standard VI SKP or a description of patient safety standards was developed to decrease fall rates. The standard involves of evaluation of falls and management after falls to reduce its consequences and it is suggested to apply in all hospitals. According to the standard VI SKP, the initial assessment for patient who is at risk of fall is suggested and re-assesses the patient if instability is indicated. Evaluation risks of falls include a history of falls, medication, alcohol consumption, gait and balance (The Indonesia, MOH 2011). After assessment and interpretation, the measure to reduce risk of falls will therefore be conducted for patients that are considered at risk. Further suggestions, regarding the outcome of measures, should include monitoring all cases, mitigation of injuries from falls, and the impact of unexpected events (The Indonesia MOH, 2011). Even though the rule of falls in Indonesia hospitals reached the minimum standard the incidence of disabled patients' falling is not expected to occur in the hospital (Ministry of Health, No. 129 / Menkes / SK / II / 2008) (The Indonesia MOH, 2015), and fall rates are still reported from hospital in Indonesia.

Also, according to Ministry of Health, No. 129 /Menkes/SK/II/ 2008 regarding minimum standards of the hospital service, the incidence of patients fall with disability / death of 100 % is not expected to occur in the hospital (The Indonesia MOH, 2015).

Indonesian nurses are categorized into five grades based on their level of nursing education and their experience in medical or surgical wards in the hospital. Grade 1 are described as a) nurses needing strict supervision, b) implementing basic nursing skills and routine patient care, c) developing nursing assessment skills.

Grades 2 are described as a) demonstrating adequate and acceptable performance, b) having capabilities to distinguish important situation and determine the priorities, and c) they are not tight in the supervision.

Grade 3 are described as a) competent thus unnecessary to be supervised during the nursing proses, b) able to plan and organize the goals of nursing process, c) able to show the purpose and activity of nursing intervention, d) responsible, e) able to communicate well, f) sharing their ideas and knowledge with others.

Grade 4 are described as a) demonstrating specialization in knowledge and skill, b) having continuous professional education, c) responsible in leadership and supervision, d) able to recognize and adjust to vary normative, and e) appropriately delegate of responsibility, and using problem solving.

Grades 5 are described as a) demonstrating experience in clinical practice, and b) being responsible in management of personnel (Sukiman, 2013).

Indonesian nurses' play a vital role to prevent patient from falls based on hospital safety standards. This includes giving information regarding fall prevention in hospital to the patient and their families to work with the interdisciplinary team such as collaborating with medication, and reporting accidental falls in hospital.

Several studies regarding Indonesian nurses' fall prevention practices have been conducted (Prabowo & Khoiriyati , 2014; Susanti, 2015; Oktaviani et al., 2015; and Anugrahini et al., 2008).

A study conduct by Oktaviani and colleagues (2015) found a moderate level of nurse obedience to the implementation of the standard operating procedure of patient fall risk prevention. Similarly, a study conducted by Susanti (2015), revealed that nurse obedience to the implementation of standard operating procedure of patient fall risk prevention was at moderate level. Also, the nurses in the stroke unit have not been trained in care regarding patient safety as well as fall prevention (Anugrahini et al., 2008). This provides room to examine Indonesian nurses' fall-knowledge and their fall prevention practices for the hospitalized elderly.

Relationship Between Nurses' Fall-knowledge and Fall Prevention Practices

Previous studies have been conducted to examine the relationship between nurses' knowledge and their practices. For example, a study conducted by Oktaviani and colleagues (2015), found a correlation between the nurses' knowledge and nurses' compliance to the implementation of the standard operating procedure of patient fall risk prevention. Also, a study conducted by Susanti (2015), found a correlation between nurses' knowledge and compliance to implementation of the standard operating procedure the risk of fall injury.

Prabowo and Khoiriyati (2014) examined the relationship between the level of nurses' knowledge and implementation of risk assessment using the Morse Fall Scale in PKU Muhammadiyah Yogyakarta Unit 2 Hospital, Indonesia. Twenty seven nurses participated in this study. The researchers developed a 25 item questionnaire to measure

knowledge about the Morse Fall Scale. In contrast, the study result revealed no relationship between the level of knowledge of nurses and implementation of the scale.

Laing, Silver, York, and Phelan (2011) conducted a study to explore fall prevention knowledge, attitude, and practices of community stakeholders and older adults. The subjects were 83 workers and 101 older adult respondents. The study results revealed that increased knowledge and availability of fall prevention services might help engage older adults in fall prevention practices and reduce the adverse effects of falls.

Factors Relating to the Nurses' Fall-knowledge and Fall Prevention Practices

A number of research studies have been conducted on the factors involving nurses' fall-knowledge and fall prevention practices. El Enein and colleagues (2012), conducted a quasi-experimental study, to assess the effects of an educational training program on nurses' knowledge and performance regarding prevention of fall at one of the health insurance organization hospitals in Alexandria. The researchers found that nurses' knowledge was related to several factors. For instance: individual factors (history of fall, urine incontinence, osteoporosis, bed ridden patient), health factors (medications on neurological system, awareness troubles, seizure, heart attack, post-operative), environmental factors (bed barriers, furniture, safe ends, carpenters, location of patient room, logo for patient identification, bed alarm), and other factors (availability of equipment, routine round, helmet hat, incomprehensive communication, insufficient training, incomplete patient evaluation, unsafe environment, insufficient care, absence of laws and regulations, no guidance plates). Since the majority of the subjects had a diploma (45%), the researcher discussed and argued that diploma holders might possess low skills and low training (El Enein et al., 2012).

There are a number of factors that can contribute to nurses' fall prevention practices including age, nurses' knowledge, attitudes, and awareness, staffing, hospital system and environment. According to Argote and Spektor (2011) the component to create knowledge is experience, including Mubarak (2007) study; education, working, age, interesting, culture, and information. Implication of educational program and training regarding falls have been generally suggested for nurses to enable nurses' competency in applying knowledge and skills to prevent falls (Gould, Berridge, & Kelly, 2007). A study conducted by Koh and colleagues (2008) revealed that the biggest barriers to apply clinical fall prevention practice guidelines are nurses' knowledge and motivation (82.4%), followed by availability of support staff (77.8%), access to facilities (73.3%), health status of patients (55.7%), education of staff and patients (49.4%) . Nurses' fall prevention practices in the long-term care setting also related to nurses' attitudes, knowledge, levels of education, training in fall prevention, ethnicity and years of clinical experience (Dibenedetto, 2004).

Staff training and education are important in increasing nurses' fall-knowledge and their practices of fall prevention. Application of fall awareness and an educational program in an acute care setting was effective in fall reduction (Williams et al., 2011). A study conducted by Lange and colleagues (2009) found a significant decrease in the incidence of falls across inpatient units in the third month after the completion of a falls prevention program.

Summary of the Literature Review

The elderly have a greater risk of fall in hospital because they are more vulnerable in terms of their physical condition which results from the aging process which can affect

a decrease in the body's function. Falls however, can be prevented once fall risk assessment and fall prevention practices are allocated.

Nurses play a vital role to recognize patients' risks for falls, allocate and implement plan to prevent and/or manage falls as well as communicate this to nursing staff and other healthcare providers (The Australian Commission on Safety and Quality in Health Care, 2009). Nurses' fall-knowledge involves falls, fall risks assessment, interventions to prevent fall and post-fall analysis and management which can be measured by using the Nurses' Fall-knowledge Questionnaire developed by Kim (2011) and modified by Kim and colleagues (2015) and the Nursing Staff Survey of Fall Prevention Knowledge developed by Dibenedetto (2004).

Nurses' fall prevention practices are the performance of acts requiring substantial specialized knowledge, judgment, and skill in implementing of a fall risk assessment, intervention to prevent fall, and post-fall analysis and management which can be measured by using the Scripps Mercy Hospital Rounding Tool Questionnaire developed by Thirumalai (2010).

To date, there is still a report of fall rates in Indonesian hospital as well as an inconclusive and unclear summary from the previous literature related to nurses' fall-knowledge and fall prevention practices within the context of Indonesia. The gap in the literature demonstrates a need for further study of nurses' fall-knowledge and fall prevention practices in an Indonesian setting to facilitate improvement and enhance quality of care regarding falls among hospitalized elderly thereafter.

CHAPTER 3

RESEARCH METHODOLOGY

This chapter describes the research methodology. The details of the research design and its methodology include the population and setting, sample and sample size, sampling technique, instrumentation, validity and reliability of the instruments, ethical considerations, the data collection procedures and data analysis procedures are presented.

Research Design

A descriptive correlational study was used to explore nurses' fall-knowledge, nurses' fall prevention practices and, relationship between nurses' fall-knowledge and fall prevention practices for the hospitalized elderly in Medan, Indonesia.

Setting

This study was conducted in a general hospital, in Medan, a northern Sumatera province in Indonesia. This hospital has 721 in-patient beds and it serves as a referral center for the northern Sumatera province, Aceh province, West Sumatera province, and Riau province. This study was conducted at medical wards, and surgical wards that had hospitalized elderly.

Population and Sample

Population

The population of this study was the nurses who were working at general hospital

in Medan, Indonesia. Currently, there are 827 nurses working in this hospital. The target population of this study was nurses who were taking care of elderly in the medical and surgical wards in a general hospital.

Sample and sampling procedure

The sample was drawn from the target population. The target population was equal to 300 nurses. Purposive sampling was used to select the nurse samples from twelve wards based on the inclusion criteria. The sample was selected based on the following inclusion criteria: (1) aged 21 years or older, (2) employed as a regular staff member or full-time nurses, and (3) who had completed a minimum of a diploma in nursing, and (4) who have had minimum one year experience allocating nursing care for elderly patients.

Sample size

The sample size of this study was estimated and calculated using Yamane's formula (Yamane as cited in IFAS University of Florida, 2013). The formula is:

$$n = \frac{N}{1 + (N)(e)^2}$$

N= Population

n= estimate sample size

e= error estimation (0.05)

$$n = \frac{300}{1 + (300)(0.05)^2} = 171 \text{ nurses}$$

In this study however, there were only 153 nurses who met the inclusion criteria and were recruited for data collection. From this, 153 nurse participants were included in this study.

Instrumentation

The instruments comprised of three parts. Part one was a Demographic Data Questionnaire. Part two was used to examine nurses' fall-knowledge, which consists of 1) the Nurses Fall-knowledge Questionnaire and, 2) the Nursing Staff Survey of Fall Prevention Knowledge. Part three was the Scripps Mercy Hospital Rounding Tool questionnaire to examine the nurses' fall prevention practices as follows:

Part I: Demographic Data Questionnaire (DDQ)

A demographic data questionnaire was developed by the researcher which consists of seven items: age, gender, marital status, religion, level of nursing education, the current workplace, period of working in the current workplace, and experience in attending fall prevention training (see Appendix A, P.95).

Part II: Nurses' Fall-knowledge Instruments

Nurses' Fall-knowledge Instruments consist of 1) the Nurses Fall-knowledge Questionnaire and, 2) the Nursing Staff Survey of Fall Prevention Knowledge.

The Nurses' Fall-knowledge Questionnaire

In this study, the Nurses' Fall-knowledge Questionnaire was modified from the nurses' fall-knowledge, attitude, and awareness questionnaire developed by Kim

(2011) and modified by Kim and colleagues (2015). The empirical instrument contains 3 domains regarding falls: knowledge, attitudes, and awareness. The internal consistency reliability of the instrument was .75. In this study, only the domain of fall-knowledge was used to examine nurses' fall-knowledge.

The questionnaire consists of two categories: (1) impacts of fall, (2) fall risk. It comprised 15 items that were true/false questions. In this study, only 14 items were used to measure the level of the nurses' fall-knowledge. Items 2 and 3 were used to measure knowledge impacts of falls. Fall risk was divided into intrinsic risk factors (items no 1, 5, 6, 7, 8, 9, 10, 11, 12, & 13) and extrinsic risk factors (items 4 & 14) (see Appendix A, P.97).

In this study, the terms someone, anyone, or elderly person that were used in the primary questionnaire were changed to the hospitalized elderly population in order to fit with the sample of this study. Also, co-morbidities were added to reinforce the state of diseases of hospitalized elderly.

The answers of items number 1, 2, 3, 5, 6, 8, 10, and 14 were "true". A score of 1 was given if the subjects selected the 'true' answer whereas a score of 0 was given if the subjects selected the 'false' answer. In contrast, a score of 0 was given for "true" answer for items number 4, 7, 9, 11, 12, and 13. Here "false" answer scored 1. The total score for fall domain for items 1 to 14 ranged from 0 to 14. The total score were categorized into three levels (low, moderate, and high).

The Nursing Staff Survey of Fall Prevention Knowledge Questionnaire

The nurses' fall prevention knowledge regarding a fall risk assessment,

interventions to prevent fall, and post-fall analysis and management were measured by using the modified nursing staff survey of fall prevention knowledge and perception developed by Dibenedetto (2004). The empirical instrument contains two domains: fall prevention knowledge and attitude/perception. The reliability coefficient was from .795 to .855 and the face validity was approved by a panel of expert. In this study, only the domain of the fall prevention knowledge subscale was used to examine the level of nurse's fall prevention knowledge.

The questionnaire consists of three categories: 1) a fall risk assessment, 2) intervention to prevent falls and, 3) post-fall analysis and management. This tool has 23 items of multiple choice questions. Only 22 items were used to examine the level of nurse's fall prevention knowledge. One questionnaire was not used because it measured attitude or perception which is not relevant to the objectives of this study.

Items numbered 1, 2, 3, 4, 5, 6, 7, 8, and 9 were used to measure a fall risks assessment. Intervention to prevent fall was measured by using items numbered 10, 11, 12, 13, 14, 15, 16, 17, 18, and 19. Items numbered 20, 21, and 22 were used to measure post-fall analysis and management (see Appendix A, P.99).

A score of 1 was given if the subjects gave the correct answer whereas a score 0 was given if the subjects gave the wrong answer. The score of the domain for a fall risks assessment for items numbered 1 to 9 ranged from 0 to 9. The score of the domain intervention to prevent fall for items numbered 10 to 19 ranged from 0 to 10. The score of the domain for post-fall analysis and management for items number 20 to 22 ranged from 0 to 3.

The total score of the Nurses' Fall-knowledge instrument was taken from the Nurses' Fall-knowledge Questionnaire and Nursing Staff Survey of Fall Prevention

the Nurses' Fall-knowledge Questionnaire and Nursing Staff Survey of Fall Prevention Knowledge Questionnaire. There were a total of 36 points desired from the scores.

Part III: The Scripps Mercy Hospital Rounding Tool Questionnaire

A nurse's fall prevention practice was measured by the Scripps Mercy Hospital Rounding Tool (Rounding Tool) questionnaire developed by Gutierrez and Smith (2008) and modified by Thirumalai (2010). The content validity index score of the instrument was .92 and the internal consistency reliability was .77.

The questionnaire consists of three categories; 1) fall risks assessment, 2) interventions to prevent falls and, 3) post-fall analysis and management. This tool has 16 items of multiple choice questions. Items numbered 1, 2, 3, 4, 5, 6 were used to measure the nurses fall risks assessment. Intervention to prevent fall were measured by items numbered 7, 8, 9, 10, 11, 12, 13, and 14. Items numbered 15 and 16 were used to measure post-fall analysis and management.

In this study, questions numbered 1, 2, 3, 5, 6, 8, 9, 10, 13, 14, 15, and 16 had additional statement added to the sentence to make the questionnaire clearly. The Kilroy terms were not used because they were unfamiliar to the subjects in this study.

The Rounding Tool has 16 items used for a fall risk assessment, interventions to prevent falls, and post-fall analysis and management. The empirical items contained: 'yes' 'no' and 'not applicable' checklists. However, the aim of this study was to explore nurses' fall prevention practices in terms of the actual interventions practice to prevent falls. The statement of the items of the rounding tool was therefore revised to be able to measure the current practices of fall prevention activity (see Appendix A, P.104).

The answers for items numbered 1 to 16 were either yes, no or N/A. Yes indicated

the practice of that item (so scored 1), whereas “no” indicated that it was not practiced and “N/A” indicated that it was not practiced because it was not applicable in the hospital (score 0).

The domain score for a fall risks assessment for items numbered 1 to 6 ranged from 0 to 6. The domain score for interventions to prevent falls for items numbered 7 to 14 ranged from 0 to 8. The domain score for post-fall analysis and management for items numbered 15 to 16 ranged from 0 to 2. The total scores for nurse’s fall prevention practices ranged from 0 – 16. A higher score indicated that nurses took more actions apply fall prevention.

Translation of the Instruments

In this study, the instruments were translated using the back-translation technique (Brislin as cited in Lee, Li, Arai & Puntillo, 2009). The first translator translated the original English version into an Indonesian version. Then, the second translator translated the Indonesian version back to an English version. Finally, the two English versions were examined for comparability of language and similarity of interpretation by an English expert who checked for suitable meaning and made sure that the two versions were equivalent. In this study, the translators were (1) a lecturer from the faculty of nursing, (2) a lecturer from the English department, and (3) a lecturer from the faculty of liberal arts (see Appendix B, P.107). This procedure was repeated multiple times until the meaning of the translated questionnaire was equivalent and had no discrepancies with the English version. Then the Indonesian version of the instruments was used for data collection.

Validity and Reliability of Research Instruments

Validity of the instruments

The content validity concerns the degree to which the tool measures what it claims to measure. In this study, the instruments consisted of a Demographic Data Questionnaire, a Nurses Fall-knowledge Questionnaire, the Nursing Staff Survey of Fall Prevention Knowledge and Perception Questionnaire, and the Scripps Mercy Hospital Rounding Tool.

Content validity for nurses' fall-knowledge questionnaire, the nursing staff survey of fall prevention knowledge questionnaire, and the Scripps Mercy Hospital Rounding Tool was obtained in regard to the accuracy and appropriateness for an Indonesian health care context. The experts for the content validity consisted of a Geriatric Nursing lecturer from the Faculty of Nursing, Sumatera Utara University, Medan, Indonesia and two lectures from the medical nursing department of the Faculty of Nursing, Prince of Songkla University, Thailand (see Appendix C, P.108). The questionnaires were revised according to the experts' opinions and recommendations as follows: 1) delete the term hospitalized elderly in items numbered 12 and 14 for the nurses' fall-knowledge questionnaire; 2) made clear the words about the provide layout clothing; 3) changed elderly patient to hospitalized elderly; 4) removed the item how can the implementation of strategies or programs to reduce falls benefit long-term care facilities because this item provides the sense of measuring attitude or perception; 5) removed the word "call do not fall"; and 6) changed the word clutter to noise because hospital noise impacts the patients' quality of sleep result in developing sleep deficiency and poor obedience to nurses' instructions, which is associated with fall prevention.

Reliability of the instruments

The reliability of the nurses' fall-knowledge questionnaire and the Scripps Mercy Hospital Rounding Tool in this study were tested by using Kuder Richardson (KR 20), whereas the reliability of the Nursing Staff Survey of Fall Prevention Knowledge Questionnaire was tested by using the split-half coefficient. The results showed that the internal reliability of the nurses' fall-knowledge questionnaire was .73 and the Scripps Mercy Hospital Rounding Tool was .80. The high value indicates reliability and while .90 indicates a homogeneous test (Zaiontz, 2016).

The Nursing Staff Survey of Fall Prevention Knowledge Questionnaire, was .542 ($p > .444$) for Guttman's Split-Half Coefficient. Thus, the questionnaires were reliable. The final questionnaires in English version are shown in Appendix A (see Appendix A, P.95) and an Indonesian version in Appendix D (see Appendix D, P.109).

Data Collection Procedures

Data collection was conducted among nurses working in the medical and surgical wards in a general hospital in Medan, Indonesia by using the questionnaires. The data collection procedures involved two phases; a preparation phase and a data collection phase as outlined below.

Preparation phase

The details of the process of the preparation phase are described below.

1. The researcher submitted the final draft of the proposal and the questionnaires to the Research Ethics Committee, Faculty of Nursing, Prince of Songkla University, Thailand for ethical consideration and human rights aspects approval.

2. The researcher obtained an authorization letter for data collection from the Dean of the Faculty of Nursing, Prince of Songkla University, Thailand.

3. The researcher asked for permission from the hospital Director and the nursing superintendent of a general hospital, in Medan, Northern Sumatera province, Indonesia.

4. The researcher met the head nurses to explain the objectives, data collection procedure of the study, and requested the name list of nurses currently working in those wards.

5. The head nurses selected the nurse subjects based on the inclusion criteria and recruited them thereafter.

Data collection phase

The details of the data collection phase are described below.

1. The researcher contacted the subjects, and gave a brief explanation about the objectives of the study and also informed them that they were free to withdraw anytime without getting any penalty.

2. Written consent was obtained from each subject after they agreed to participate in this study.

3. The researcher explained the questionnaires and allocated about one week for the subjects to complete the questionnaires. At the same time, the researcher allowed the subjects to clarify the question/s that were unclear, such as the word armband.

4. The researcher checked the completeness of the questionnaires after getting them back from the subjects.

5. Finally, the researcher coded and scored the questionnaires.

Ethical Consideration

This study required a committee review and approval since it involved humans. Data collection on this study was conducted after the proposal was approved by the Institutional Review Board, of the Faculty of Nursing, Prince of Songkla University (PSU), Thailand, and by the Director of the hospital setting. Additionally, approval was obtained from the charge nurse of the target wards. The purposes and data collection procedure of the study were explained to the eligible nurses. They were informed that their participations were purely voluntary and that confidentiality would be strictly maintained. Willingness to fill in the questionnaires was taken as consent to participate.

Data Analysis

In this study, all data was analyzed with computer analytical software. The data were analyzed by using the following statistical techniques:

Descriptive statistics was used to analyze demographic data which included frequency, percentage, mean, median, interquartile range for age and period of work in their current unit. The frequency and percentage were used to analyze gender, marital status, religions, level of nursing education, the current work place, and experience in attending fall prevention training/conferences/workshops/ seminars.

The level of nurses' fall-knowledge and prevention practices was analyzed by using frequency, percentage, mean and standard deviation. The relationship between nurses' fall-knowledge and nurses fall prevention practice was used Pearson's product-moment correlation coefficient. Based on the data of 153 subjects, the knowledge and practices scores were normally distributed. In this instance, linearity was used based on the assumption that there was a straight line between two variables. It was checked

between two variables which were evaluated by the inspection of scatter plots. The linearity assumption was tested and the finding supported this assumption.

The Pearson's product-moment coefficient correlation and Spearman rank coefficient correlation were used to examine the correlation between five demographic characteristics and nurses' fall-knowledge, including nurses' fall prevention practices. The significance level was set at .05.

According to Prabowo and Khoiriyati (2014), nurses' level knowledge and implementation risk assessment Morse fall scale were categorized into three levels (low, moderate, and high). Similarly, in this study, nurses' fall-knowledge and nurses' fall prevention practices were categorized into three levels. Nurses' fall-knowledge instruments consist of 1) the nurses' fall-knowledge questionnaire and, 2) the nursing staff survey of fall prevention knowledge.

The scores for nurses' fall-knowledge regarding a fall were categorized into three levels (low, moderate, and high). A low level was a score < 7.33 , a moderate level was a score from 7.33 to 9.33, and a high level was a score > 9.33 .

The scores of the domain for a fall risks assessment were categorized into three levels (low, moderate, and high). A low level was a score < 4.33 , a moderate level was from a score of 4.33 to 5.33, and a high level was a score > 5.33 .

The scores of the domain for interventions to prevent fall were categorized into three levels (low, moderate, and high). A low level was a score < 3.33 , a moderate level was a score from 3.33 to 4.33, and a high level was a score > 4.33 .

The scores of the domain for post-fall analysis and management were categorized into two levels (low and high). A low level was a score < 1.00 , and a high level was a score > 1.00 .

The scores of the nurses' Fall-knowledge were categorized into three levels (low, moderate, and high). A low level was a score < 17.00 , a moderate level was a score from 17.00 to 21.00, and a high level was a score > 21.00 .

Nurses' fall prevention practices instruments were measured by Scripps Mercy Hospital Rounding Tool questionnaire. The scores for nurses' fall prevention practices regarding a fall risks assessment was categorized into three levels (low, moderate, and high). A low level was a score < 4.33 , a moderate level was a score from 4.33 to 5.33, and a high level was a score > 5.33 .

The domain scores for interventions to prevent falls were categorized into three levels (low, moderate, and high). A low level was a score < 4.00 , a moderate level was a score from 4.00 to 6.00, and a high level was a score > 6.00 .

The domain scores for post-fall analysis and management were categorized into two levels (low and high). A low level was a score < 1.00 and a high level was a score > 1.00 .

The scores for nurse's fall prevention practices were categorized into three levels (low, moderate, and high). A score < 10.00 was categorized as the low level, the moderate level was a score from 10.00 to 13.00 and the high level was a score > 13.00 . The findings of this study are presented in tables and narration in Chapter 4.

CHAPTER 4

RESULTS AND DISCUSSION

The results and discussion sections present the research findings, the result of research hypothesis testing, and the discussion of those findings, including demographic characteristics of the study population. This results and discussion are presented according to the objectives of this study as follow: demographic characteristics of the study population, the level of nurses' fall-knowledge for hospitalized elderly, the level of nurses' fall prevention practices for hospitalized elderly and, the relationships between nurses' fall-knowledge and fall prevention practices for hospitalized elderly.

Results

Demographic characteristics of the study population

In this study, data were obtained from 153 nurse participants who met the inclusion criteria. Nine specific characteristics were analyzed: age, gender, marital status, religion, level of nursing education, period of working in the ward, the current work place, experience in attending fall prevention training/conferences/ workshops/or seminars and, experience of caring hospitalized elderly with fall. The number and percentages of the samples in each demographic characteristic are presented in Table 1 (see Table 1).

Table 1

Frequency and Percentage of Nurses' Characteristic (N = 153)

Demographic Characteristic	<i>n</i>	%
Age (years)		
<i>M= 35.65, SD=8.530, Min= 23, Max=53</i>		
21 – 29 years old	43	28.1
30 – 39 years old	61	39.9
40 – 49 years old	41	26.8
50+ years old	8	5.2
Gender		
Male	9	5.8
Female	144	94.2
Marital status		
Single	27	17.6
Married	120	78.5
Widow/widower	6	3.9
Religion		
Christian	93	60.8
Catholic	10	6.5
Islam	49	32.0
Hindu	1	.7
Level of nursing education		
Diploma	100	65.4
Bachelor	53	34.6
Period of working in the ward		
<i>M= 7.06, SD= 6.397, Min= 1 year, Max=26 years</i>		
<9 years	112	73.2
10 – 20 years	38	24.8
>21 years	3	2.0
The current work place		
Medical ward	78	51.0
Surgical ward	75	49.0
Experience in attending fall prevention training/conferences/workshops/ or seminars		
Yes	29	19.0
Time		
1 - 3	19	12.4
5 - 8	10	6.6

Table 1 (*Continued*)

Demographic Characteristic	<i>n</i>	%
Years		
2012 – 2013	17	11.3
2014 - 2015	12	7.7
No	124	81.0
Experience in caring for hospitalized elderly who had fallen		
Yes	37	24.2
Time		
1 – 5	24	15.7
6 – 10	13	8.5
Management after fall		
The post-fall assessment	4	2.6
Treatment of acute underlying condition	5	3.3
The post-fall assessment and treatment of acute underlying condition	28	18.3
No	116	75.8

As shown in Table 1, most of the participants in this study were female (94.2%), Christian (60.8%), married (78.5%) and had completed a diploma in nursing (65.4%) with a minimum of one year extend to twenty-six years of nursing experience. The age range of the samples is varied from 23 to 53 years with the average of 35 years old ($SD = 8.526$). As seen in Table 1, more than half of the subjects work in medical ward (51.0%). Almost all the subjects (81.0 %) had no experience in attending fall prevention training/conferences/ workshops/ or seminars and had no experience in caring for hospitalized elderly who had fallen (75.8%).

In this study, as mentioned in Chapter 3, the statistical analysis and testing using the Pearson's product-moment coefficient correlation and spearman rank coefficient correlation were also employed to determines whether or not each demographic

characteristics variables are correlated with nurses fall-knowledge, including with nurses fall prevention practices.

The statistical analysis revealed no statistical significance correlation between nurses fall-knowledge and age ($r = -.051, p = .534$), level of nursing education ($r = -.084, p = .300$), the duration of working at the ward ($r = -.103, p = .204$), experience in attending fall prevention training/conferences/ workshops/ or seminars ($r = -.018, p = .825$) and experience in caring for hospitalized elderly who had fallen ($r = .007, p = .929$) (see Appendix E, P.124).

Similarly, there was no statistical significance correlation between nurses fall prevention practices and age ($r = -.083, p = .310$), level of nursing education ($r = -.073, p = .367$), the duration of working at the ward ($r = -.106, p = .193$), experience in attending fall prevention training/conferences/workshops/seminars ($r = -.076, p = .351$) and experience in caring for hospitalized elderly who had fallen ($r = -.113, p = .164$) (see Appendix E, P.124).

The level of nurses' fall-knowledge for hospitalized elderly

In this study, as mentioned in Chapter 1 (page 6), nurses' fall-knowledge for hospitalized elderly consists of knowledge regarding falls, fall risk assessment, interventions to prevent falls, and post-fall analysis and management. As mentioned in Chapter 3 (page 61), the scores of each domain are categorized into three levels; high, moderate, and low.

The study findings revealed that the average score of nurses' fall-knowledge for hospitalized elderly was moderate level ($M=20.18, SD=3.22$) with minimum and maximum score of 12 and 27 (see Table 2).

As seen in Table 2 the level of nurses' fall-knowledge of the hospitalized elderly regarding falls and post-fall analysis and management is high whereas the level of knowledge regarding fall risk assessment and interventions to prevent falls is moderate and low, respectively.

Table 2

Minimum, Maximum, Mean, Standard Deviation of the Level of Nurses' Fall-knowledge for Hospitalized Elderly in Medan, Indonesia (N=153)

Items	Min	Max	M (SD)	Interpretation
Nurses' Fall-knowledge	12	27	20.18 (3.22)	Moderate level
Falls	4	14	10.33 (2.33)	High level
A fall risk assessment	1	8	4.73 (1.19)	Moderate level
Interventions to prevent fall	0	7	3.27 (1.31)	Low level
Post-fall analysis & management	0	3	1.85 (.75)	High level

Item analysis was additionally made to determine the actual number of nurse participants who gave the correct and incorrect answers of each item. Data analysis using descriptive statistics was conducted to determine the top five items with the highest and the lowest percentage of the scores (see Appendix F, P.125).

The level of nurses' fall prevention practices for hospitalized elderly

In this study, as mentioned in Chapter 1 (page 7), nurses' fall prevention practices for the hospitalized elderly consists of a fall risk assessment, interventions to prevent fall, and post-fall analysis and management. As mentioned in Chapter 3 (page 62), the scores of each domain are categorized into three levels; high, moderate, and low.

The study findings revealed that the average score of nurses fall prevention practices was high level ($M=12.63$, $SD= 2.37$) (see Table 3), including a fall risk assessment and interventions to prevent falls. However, the level of nurses' fall prevention practices for hospitalized elderly regarding the post-fall analysis and management was at a low level.

Table 3

Minimal, Maximal, Mean, Standard Deviation of the Level of Nurses' Fall Prevention Practices for Hospitalized Elderly in Medan, Indonesia (N=153)

Items	Min	Max	M (SD)	Interpretation
Nurses' Fall Prevention Practices	7	16	12.63 (2.37)	High level
A fall risk- assessment	2	6	5.36 (1.01)	High level
Intervention to prevent falls	2	8	6.01 (1.44)	High level
Post-fall analysis & management	0	2	1.27 (.79)	Low level

In addition, item analysis was conducted to determine the actual number of nurse participants who gave the correct and incorrect answers. Data analysis using descriptive statistics was conducted to determine the top five items with the highest and the lowest percentage of the scores (see Appendix F, P.125).

The relationship between nurses' fall-knowledge and fall prevention practices for hospitalized elderly

The data analysis revealed no statistical relationship between Medan nurses' fall-knowledge and fall prevention practices for the hospitalized elderly ($r = -.07, p=.41$) (see Table 4). In this study, since the research hypothesis stated that there is a positive relationship between nurses' fall-knowledge and fall prevention practices for hospitalized elderly, the research hypothesis is therefore not accepted.

Table 4

Correlation Coefficient Between Nurses' Fall-knowledge and Fall Prevention Practices for Hospitalized Elderly (N=153)

Nurses Practices	Nurses' Knowledge	
	<i>r</i>	<i>p-value</i>
<i>Total score practices</i>	<i>-.07</i>	<i>.41</i>

Discussion

This section presents the discussion of the findings according to the objectives of the study and aligned with the research questions and the research hypothesis. Here, the study results of the level of nurses' fall-knowledge, the level of nurses' fall prevention practices and, the relationships between nurses' fall-knowledge and fall prevention practices for hospitalized elderly are sequentially discussed as follows.

The level of nurses' fall-knowledge for hospitalized elderly

In this study, the overall level of nurses' fall-knowledge for the hospitalized

elderly is at a moderate level. This is similar to a previous study conducted by Oktaviani and colleagues (2015) to examine the nurses' risk fall-knowledge among nurses in Surakarta, Indonesia which also revealed moderate level of knowledge. The researchers argued that the nurse participants had moderate level of knowledge because of the level of diploma degree nursing education and clinical experiences less than ten years (Oktaviani et al., 2015). Similarly, the majority of nurse participants in this study hold diploma (65.4%) with clinical experience of working in the ward less than nine years (73.2%).

In addition, the level of nurses' fall-knowledge regarding fall in this study is high which shows congruence with a study conducted by Kim and colleagues (2015). In accordance with Kim and colleagues (2015), the high level of nurses' fall-knowledge regarding falls was found to be related to the level of nursing education.

As mentioned previously, the majority of Medan nurse participants had no experience in attending in prevention training/conferences/ workshops/ seminars (81%) and had no experience of caring for the hospitalized elderly (75.8%), their knowledge regarding falls and post-fall analysis management are still in high level. According to Gould and colleagues (2007), regarding falls in the nursing education program could enable nurses' competency in applying knowledge and skill to prevent fall. In this study, the participants did their diploma and bachelor under the Indonesian nursing curriculum. From this, the subjects as well as other Indonesian nursing students had to attend lectures on falls and had to conduct clinical nursing practices for elderly care in a hospital, nursing homes, and community.

Currently, under the Indonesian nursing curriculum, for both diploma and bachelor, the concepts and theories of patient safety, including falls, are integrated in

fundamentals of the nursing course and geriatric nursing course with the focus on nursing homes and the community. This can be also evidenced from some participants who expressed their feelings when they saw the questionnaires that made them recall memories of the assignment given in the geriatric nursing course. According to Dibeneetto (2004), education of fall prevention has an effect upon the nurses' attitudes/perceptions and nurses fall prevention knowledge. This would be a key contributor to the findings of this study in as much as nurses fall-knowledge regarding falls and post-fall analysis and its management were still at a high level.

Interestingly, although Medan nurse participants in this study had a high level of fall-knowledge regarding fall and post-fall analysis and management, the level of fall-knowledge regarding fall risk assessment and interventions to prevent falls was in the moderate and low levels, respectively. As discussed previously, the subjects' background knowledge regarding falls on nursing homes and the community rather than the hospitalized elderly. Also, the participants in this study lacked fall prevention education and training. Moreover, when examining the details allocated in their courses, the overview of the concept of falls is given in general or just an overview but does not include the details of fall risk assessment and interventions to prevent fall specifically in the hospital and for the elderly patients. From this, the level of fall-knowledge regarding fall risk assessment and interventions to prevent falls caused lack of guidance to assess risk of fall for the hospitalized elderly.

According to Krathwohl (2010), the high level of knowledge and practice in particular nursing practice requires nurses to use both conceptual knowledge and procedural knowledge. Conceptual knowledge is the connection among the basic components within a greater structure that enables them to functions together (Krathwohl,

2010). Procedural knowledge, according to Krathwohl (2010), refers to how to do something, including methods of assessment and examination, allocate practices by using skills and techniques according to standards, algorithms, and practice guidelines.

In order to achieve a high level of nurses' fall-knowledge and practices regarding fall, the integration of conceptual knowledge of fall risk assessment and interventions to prevent falls with procedural knowledge is highly needed.

With regard to fall prevention practice, nurses use their previous background knowledge factors each individual hospitalized elderly. They may have ability to make the connection of the aging process and urinary frequency/ balance impairment and fall. Nurses' will know the principles of fall regarding the elderly and then try to preempt a fall. For example, implementing a toileting schedule/providing a call light, urinal, and bedpan within reach.

As mentioned earlier, the Medan nurses in this study had no experience of caring hospitalized elderly, who had experienced a fall (75.8%) and had no experience in attending fall prevention training/conferences/ workshops/ seminars (81%). According to Argote and Spektor (2011), experience is one of the important factors to increase knowledge.

Additionally, nurses' knowledge is negatively related to insufficient training (El Enein et al., 2012). Training regarding falls has been generally suggested to enhance nurses' competency in applying knowledge and skill to prevent falls (Gould et al., 2007). Since the nurse participants in this study lack procedural knowledge resulting from a lack of experience in nursing patients in this group, as well as lack training and attending a continuing education program regarding falls, the level of knowledge regarding

fall risk assessment and interventions to prevent falls is still not high.

The level of nurses' fall prevention practices for hospitalized elderly

In this study, Medan nurse participants had a high level of fall prevention practices for hospitalized elderly regarding fall risk assessment and interventions to prevent falls. As mentioned in Chapter 2, fall prevention practice is the actual practices of nurses in implementing fall prevention interventions. Fall prevention practices consist of a fall risk assessment, intervention to prevent falls, and post-fall analysis and management. The findings in this study were similar to a study conducted by Thirumalai (2010). The researcher argued that the high level of nurses' fall prevention practices of fall risk assessment and interventions to prevent falls was because the nurse participants were registered nurse (RNs) and licensed practical nurses (LPN) (Thirumalai, 2010).

Similarly, almost all the nurses in this study are RNs and LPN. According to Potter and colleagues (2011), an LPN is a nurse who has finished a practical nursing program and passed a licensure examination and an RNs is a nurse who possesses a significant total education. After completing the professional education program, the RN candidates must pass the examination for RNs. In conclusion, the respondents are licensed and have passed the Examination for Registered Nurses. The questions regarding falls are included in the patient safety section of the examination for RNs (Silvestri, 2014) and LPNs (Silvestri, 2010).

In addition, education was one of the important factors to increase a nurse ability to perform fall prevention practices. In accordance with Williams and colleagues (2011), education program and fall awareness were found effective in fall reduction in an acute care setting. As discussed previously, the background knowledge regarding falls derived

from their undergrad nursing study, from both theory and practice courses, provided basis for them to construct or integrate and apply the background knowledge of fall risk assessment and interventions to prevent falls and allocate care for hospitalized elderly.

In accordance with the grading of Indonesian nurses, they are categorized into 5 grades based on the level of nursing education and their experiences in medical or surgical wards in the hospital. In this study, most of nurse participants were in grade 3. According to Indonesia clinical nurse grades, grade 3 is nurse who has achieved a certificate as a clinical nurse grade 3 with the clinical experience. A clinical nurse grade 3 is required to either hold a diploma with clinical experience of nine years or hold a bachelor's with six years of clinical experience. Involving competency of clinical nurses grade 3, they must be able to use and apply the nursing process independently, and plan and organize goals, and establish nursing intervention, including have responsibility, have good communication skills and be able to share their ideas and knowledge with others (Sukiman, 2013). The participants from Medan who grade 3 were competent enough to have high level of fall prevention practices regarding fall risk assessment, and interventions to prevent falls for the hospitalized elderly.

The relationship between nurses' fall-knowledge and fall prevention practices for hospitalized elderly

As mentioned previously, the data analysis revealed no statistical relationship between nurses' fall-knowledge and fall prevention practices.

The study results in this study show congruence with a study conducted by Prabowo and Khoiriyati (2014) in PKU Muhammadiyah Yogyakarta, Indonesia to

examine the relationship between the level of nurses' knowledge and the implementation of the risk assessment Morse Fall Scale. The study result also revealed no relationship between the level of nurses' knowledge and implementation of the Morse Fall Scale for risk assessment, the researchers argued that the reason was because the majority of participants had minimum training in fall prevention and had not been evaluated and audited in using the Morse scale (Prabowo & Khoiriyati, 2014).

In comparison, the nurse respondents in this study had no experience of caring the hospitalized elderly regarding falls and had no experience in attending fall prevention training/conferences/workshops or seminars. As discussed previously, even though the Medan participants in this study had background knowledge of falls derived from their nursing curriculum, the focus of their clinical practice regarding fall involved the nursing home and community, and not the hospital setting in particular. From this, lack of firsthand experience as well as lack of continuing education after graduation might play a vital role in the study results as there is no statistical relationship between nurses' fall-knowledge and fall prevention practices for hospitalized elderly in this study.

Clinical nursing experience has been acknowledged as one of the most important factors in enhancing the quality of nursing practice. In accordance with Benner (1982), the level of nurses' proficiency which is based on the level of nurse performance and the stages of skill acquisition is significantly based on experience with the situations. Since the Medan participants in this study had no experience in allocating care for hospitalized elderly regarding falls and even though they had a high level of knowledge, the relationship between nurses' fall-knowledge and fall prevention practice for hospitalized elderly might not be found.

Continuing education is a vital component to provide the best possible care to prevent fall for hospitalized elderly. Continuing nursing education has been used worldwide as a requirement to continue or maintain nursing license. Importantly, continuing nursing education helps nurses to further develop their knowledge of a specific nursing field. In terms of fall and fall prevention, nurses may take courses on fall and fall prevention practices for the hospitalized elderly in order to increase their competency of fall care. Updating and improving practice regarding falls can be done in different ways such as by attending conferences or workshops in fall areas. Lack of continuing education regarding fall after graduated of Medan's nurse participants in this study might therefore affect the relationship between nurses' fall-knowledge and fall prevention practices for hospitalized elderly.

It is important to note that some caution is required when interpreting and utilizing the findings of this study due to the following facts and participant observations during collecting the data. Since the research questionnaires were given to the participants during work and under a busy workload, some nurse participants might have quickly responded or were unable to pay attention or had difficulty in allocating time to complete the questionnaire comprehensively.

Currently, Medan Hospital has the capacity to accommodate up to 721 beds and 827 nurses. One surgical ward has 36 beds and 22 nurses allocated thus: morning shift 10-11 nurses (include head nurse and nurse administrative), afternoon shift 3 nurses, night shift 3 nurses, night off 3 nurses, and holiday leave 2 nurses. According to Nursalam (2012) the standardized nurse-to-patient ratio base on Gilles method is 31 nurses for 36 patients (31:36).

Here, the nurse-to-patients ratio might be inadequate. Most of their time is devoted or allocated to the routine activities of the ward. Base on observation in the wards, Medan nurses' day-to-day routine activities consist of pre-operative care, post-operative care, activity of daily living, pain management, patient discharge, patient education, updating nursing care plans and nursing intervention record. In addition, fall and fall prevention practice guidelines are not launched in this hospital setting. Consequently, the nurses might not include fall prevention practice in their day-to-day practice.

The results and discussion made in this chapter bring us to the conclusion and recommendations in the following chapter.

CHAPTER 5

CONCLUSION AND RECOMMENDATIONS

This chapter presents the conclusion of the study by highlighting the research conducted on the topic. The conclusions given were drawn from the outcomes of the research on nurses' fall-knowledge and fall prevention practices for the hospitalized elderly in Medan, Indonesia. Moreover, recommendations were made from the findings and conclusion of the study. The strengths and limitations of the study were also addressed.

Conclusion

This descriptive correlational study was designed to explore nurses' fall-knowledge, nurses' fall prevention practices and relationship between nurses' fall-knowledge and nurses fall prevention practices for the hospitalized elderly in Medan, Indonesia. The study was conducted in the medical and surgical wards at general hospital in Medan from October to November, 2015. The purposive sampling technique was used to select sample nurses' who met the inclusion criteria. Finally, 153 nurses out of 180 nurses aged 21 years or older, employed as a regular staff member or a full-time nurse, with a minimum of a diploma in nursing, and experience in allocating nursing care for elderly patients were included in this study.

Two vital concepts of fall-knowledge according to the Singaporean MOH (2005) and Kim and colleagues (2015) and, fall prevention practices proposed by Thirumalai (2010) were employed as the conceptual framework of this study.

Data were collected by using the self-reported questionnaires. The Nurses Fall-knowledge Questionnaire with reliability testing .729 and, the Nursing staff Survey of Fall Prevention Knowledge with Guttman Split-Half Coefficient .542 were used to examine nurses' fall-knowledge. While the Scripps Mercy Hospital Rounding Tool questionnaire with reliability testing .80 was used to examine the nurses' fall prevention practices.

Both descriptive statistics and inferential statistics (Pearson's Product-Moment Correlation Coefficient) were used to analyze the data. With regard to the dominant characteristics of the nurse samples, the majority of the samples holds a diploma and had no experience in attending fall prevention training/conferences/ workshops/seminars, including no experience of caring for hospitalized elderly regarding falls.

The overall level of nurses' fall-knowledge for hospitalized elderly was at moderate level. The level of fall-knowledge regarding falls and post-fall analysis and management were at high level, while the level of nurses' fall-knowledge regarding fall risk assessment and interventions to prevent falls was at moderate and low level.

The main empirical findings are as follows. The overall high level of nurses' fall prevention practices, including fall risk assessment and interventions to prevent falls is contrary to the level of post-fall analysis and management which was at a low level. There was no statistically significant correlation between nurses' fall-knowledge and age, level of nursing education, the duration of working at the ward, experience in attending fall prevention training/conferences/workshops/or seminars and experience in caring for hospitalized elderly who had fallen. In addition, there was no statistical correlation between nurses fall prevention practices and age, level of nursing education, the duration of working at the ward, experience in attending fall prevention training/

conferences/workshops/seminars, and experience in caring for hospitalized elderly who had fallen.

Moreover, there was no relationship between nurses' fall-knowledge and fall prevention practices for the hospitalized elderly.

Strengths and Limitations of the Study

Strengths of the study

The methodological strength can be claimed in conducting this study. As seen, the research questions and the inclusion criteria were clearly defined. Purposive sampling was employed to select the sample who met the inclusion criteria. The research instrument was developed and modified based on the general approval and agreement from the experts. The reliability testing was done with all research instruments which yielded an acceptable level. Appropriate statistical methods were used to analyze the data. In addition, the study was conducted at the general hospital in Medan, Indonesia and the researcher is an insider in this research setting, with deep understanding of the hospital context as well as Indonesian nursing education thus able to provide insight in making an argument and discussion of the findings. With this in mind, the thesis discussions have been drawn from within the context of the Indonesian nursing curriculum and hospital. Here, the strength of discussion given can also be claimed. From this, the generalization of this study can be also yielded for other medical and surgical wards in Indonesia where the medical and surgical nurses may have similar knowledge and practice regarding fall and fall prevention practices.

Limitations of the study

While this study generates evidence about fall and fall prevention practices for hospitalized elderly, its limitation can be drawn as follows:

1. This study used a single method of self-report questionnaires to collect data regarding nurses' fall prevention practices. This method has limitation in itself, particularly when it is used for the evaluation of human actions. It cannot represent the complete picture or every aspect of particular nursing practices.

2. For the strategy of collecting data, the researcher distributed the questionnaire and allowed one week to return. Here, the accuracy of the data might be questioned since the samples could search the answer from other resources or they could discuss with each other.

3. This study was conducted at medical ward and a surgical ward which both have elderly patients. The participants were not specific to the geriatric field. It may not be an accurate reflection of the field of geriatric wards.

Implications and Recommendations

The following implications and recommendations are made based on the results of this research and are offered for nursing education, nursing practices and, future nursing research in the field of hospitalized elderly focused on fall and fall prevention practices.

1. Nursing education

The following recommendations are offered for nursing education:

The Indonesian nursing curriculum as well as nursing curricula in other regions should add both theory and practices regarding falls and fall prevention practices for the hospitalized elderly. Raising awareness and appropriate attitudes regarding this issue

is also required to be cultivated and embedded during the time nurses are students.

2. Nursing practice

The following recommendation is offered for nursing practice;

In this study, although the overall of nurses' fall-knowledge and fall prevention practices are moderate and high, respectively, the study results still revealed a low level of knowledge regarding intervention to prevent fall and practices regarding post fall analysis and management. In addition, the five items with the lowest score of nurses' fall-knowledge and fall prevention practices were found (see table 7 & 8, P.139). This provides room for improvement to enhance nurses' competency.

The subject had no experience in attending workshop and training regarding fall awareness or training regarding fall-knowledge and fall prevention practice. In addition, clinical practice guidelines to prevent falls should be launched in the hospital. To create a culture of patient safety that includes fall is highly needed.

3. Nursing research

The following recommendations are offered for related research;

Since the overriding objectives of this study were to examine only fall-knowledge and fall prevention practices, and relationship between nurses' fall-knowledge and fall prevention practices future studies of overall competency are suggested to justify the complete picture of nurse competency. Also, since the study results revealed no relationship between fall prevention knowledge and practice, future studies to examine the contributing or determinant factors regarding this issue are suggested. In addition, the participant observation study is suggested to explore a complete picture of nurse fall prevention practices to make way for improvement.

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APPENDICES

APPENDIX A**English Version of the Instruments for Data Collection****Part I: The Demography Data Form**

Code.....

Date.....Time.....

Instruction

Do Not write your name on this questionnaire. The answer you give will be kept confidential. Please answer the questions truthfully. Please put checklist (√) in the correct answer on close-ended questions or write your answer on open ended questions.

Thank you.

The questions are

1. Agein years

1. From 21 to 25 years old

2. From 26 to 35 years old

3. From 36 to 45 years old

4. From 46 to 55 years old

5. From 56 to 65 years old

2. Gender

1 Male 2 Female

3. Marital status

1. Single

2. Widowed/widow

- 3. Married
- 4. Divorced

4. Religion

- 1. Christian
- 2. Islam
- 3. Hindu
- 4. Catholic
- 5. Buddhist

5. Level of nursing education

- 1. Diploma
- 2. Bachelor
- 3. Master

6. The current ward.....

- 1. Medical
- 2. Surgical

7. The duration of working at this wardyears.

- 1. < 5 years
- 2. 5 – 10 years
- 3. > 10 years

8. Experience in attending fall Prevention training/conference/
Workshop/seminar.

- 1. Yes

If yes, please specify;

-How many times?

- 1. <5 x
- 2. > 5x

- When did you receive the training/conferment/workshop /seminar

1. < 2013

2. > 2015

2. No

9. Experience of caring hospitalized elderly with fall

1. Yes

If yes, please specify;

-How many times?

1. <5x

2. > 5x

-Management after falls

1. The post-fall assessment

2. Treatment of acute underlying condition (management of fall)

3. The post-fall assessment and treatment of acute underlying condition (management of fall)

3. No

Part II. Nurses' Fall-knowledge

A. Nurses' Fall-knowledge Questionnaire

Instruction: Please read each statement below carefully regarding fall in hospitalized elders. Place a tick (✓) in the parentheses in front of 'True' if you think a statement it true.

Place a tick (✓) in the parentheses in front of 'False' if you think a statement it false.

Domain 1: Falls

1. Recurrence rate is high among hospitalized elderly who has already experienced a fall

a. True

b. False

2. Falls increase mortality rate among hospitalized elderly.
 - a. True
 - b. False
3. Elderly hip fractures can occur by falls
 - a. True
 - b. False
4. Sliding is not falling
 - a. True
 - b. False
5. The more medicine a hospitalized elderly take, the higher of his/her fall risk.
 - a. True
 - b. False
6. The more diseases and co-morbidities a hospitalized elder have, the higher of his/her fall risk
 - a. True
 - b. False
7. Depression is not related to falls
 - a. True
 - b. False
8. A hospitalized elderly who has a visual impairment has a higher risk for falls.
 - a. True
 - b. False
9. Getting numbness in the limbs is not related to falls.
 - a. True
 - b. False
10. Dysuria is a risk factor for falls.
 - a. True
 - b. False
11. Hearing impairment is not related to falls.
 - a. True
 - b. False

12. Taking medicine for diabetes is not related to falls.
 - a. True
 - b. False
13. Taking medicine for blood pressure is not related to falls.
 - a. True
 - b. False
14. Falls occur more when getting up from and down on beds in hospitals
 - a. True
 - b. False

B. The Nursing Staff Survey of Fall Prevention Knowledge

Domain II:

Fall risks assessment

1. What times do falls seem to most occur in hospital?
 - a. From 2 a.m. to 4 a.m
 - b. From 6 a.m. to 10 a.m
 - c. From 1 p.m. to 5 p.m
 - d. From 10 p.m. to 12 a.m

2. Which of the following statements from a patient would alert nurses to consider about the possibility of getting a future fall?
 - a. "I would like to take a walk."
 - b. "I am going to do an exercise."
 - c. "I am feeling weak this morning."
 - d. "I would like to take my sleeping pills."

3. What is the criterion that nurse can use to evaluate the goal achievement in nursing the patient who is at risk for fall?
 - a. Assess changes that were made in the environment
 - b. Assume that the patient has followed fall prevention instructions

- c. Place a call light near the patient's bed
 - d. Place a reminder on the resident's door
4. How can nurses assess that hospitalized elderly experiencing fear to fall?
- a. Observe his/her ability to clutch the wall during ambulation
 - b. Observe ability to regain independence of mobility
 - c. Provide adequate stimuli by hand touch for exams
 - d. Provide vision and hearing exams
5. On an initial interview, the answers to which of the following questions would best alert nurse to predict future falls of patient?
- a. Do you often walk with a cane?
 - b. Do you dress for yourself?
 - c. Have you fallen in the past two years?
 - d. Have you had any bone surgeries?
6. What history would place a patient at an increased risk for falling?
- a. Edema
 - b. Falls
 - c. Gender
 - d. Heart disease
7. What type of medication might put a patient at a greater risk of falling?
- a. Antibiotics
 - b. Antihypertensive drug
 - c. Inhaler
 - d. Vitamin
8. Which kind of specific footwear can help in improving balance for elderly patients?
- a. Shoes with insoles
 - b. Shoes with leather soles

- c. Shoes with low rubber soles
 - d. Shoes with soft socks
9. Which of the following daily plan will best benefit an elderly patient's balance?
- a. Exercises
 - b. Socialization
 - c. Relaxation
 - d. Foods

Domain III:

Interventions to prevent fall

10. In what way that the environmental adaptation to prevent falls will be able to make more acceptable to individual?
- a. Ask the individual's preferences
 - b. Encourage the individual to make changes
 - c. Make changes in location of belongings
 - d. Provide some new items of furniture
11. A patient experienced fall two weeks ago. How can you prevent the patient from falling again?
- a. Administer a muscle relaxant
 - b. Do a balance assessment
 - c. Provide privacy while transferring
 - d. Request that he/she remain restricts to stay in bed.
12. Assuming that you determine the patient's risk of falling is substantial, what strategy will you employ to help reduce the risk?
- a. Insure adequate lighting.
 - b. Medicate to decrease anxiety.
 - c. Restrain with a break-away lap chair.
 - d. Reduce the patient's socializing.

13. As a part of the nursing process, how can nurse set plan to ensure overall patient safety?

- a. Have patients use their walker
- b. Have residents use their wooden cane
- c. Write a short-term goal for patient safety in your shift
- d. Write a nursing report regarding patient safety in your shift

14. Which of the following can prevent elderly patient from fall out of bed and get injured?

- a. Avoid raising the head of bed
- b. Closely supervise elderly patient at night time
- c. Lock the wheels on the bed
- d. Place the mattress on the floor

15. How can the nurse best assist the activities of daily living (ADL), for patient to prevent fall?

- a. Provide plan clothing
- b. Provide clean shoes
- c. Provide a sanitary environment
- d. Store assistive devices

16. What is a good strategy to prevent hospitalized elderly from falling?

- a. Ask them to stay seated or stay in bed most of the day
- b. Have their vision examined on admission and yearly
- c. Provide them with fresh water every morning
- d. Secure them in a recliner chair while eating

17. Which of the following should be provided for patient who is at an increased risk of falling?

- a. A telephone
- b. Grab bars in bathroom

- c. Trapeze bar
- d. Walker

18. When elderly patients newly admitted to your unit, what is the activity to ensure their safety?

- a. Ask them to stand near their beds
- b. Ask them to have a seat while interviewing
- c. Keep their feet clean and dry
- d. Review their medication list

19. Restraining a patient who is at risk for falling may result in which of the following?

- a. Place the patient more detrimental than helpful
- b. Make the patient feel safer
- c. Place the patient at less risk of injury
- d. Require less supervision of the patient

Domain IV:

Post-fall analysis & management

20. Which of the following would best benefit hospitalized elderly if they have fall?

- a. Hip protectors
- b. Knee protectors
- c. Shin protectors
- d. Tibia protectors

21. Which of the following is most likely to be the reason underpinning nurses' decision to report fall rates lower than real?

- a. Forgetfulness
- b. Lack of nursing staff
- c. No injury or consequence of fall occurred
- d. Too busy

22. Who is usually held a major role and accountability for the prevention of falls in hospitalized elderly?

- a. Hospital staff
- b. Family members
- c. Staff nurses
- d. Elderly patients

Part III: The Scripps Mercy Hospital Rounding Tool questionnaire

Instructions for scoring this tool:

Select (✓) “Yes” only if you or the hospital staffs implement the element or statement below.

Select “No” (✓) only if you or the hospital staffs do not implement the element or statement below.

Select “N/A” (✓) only if the element or statement below is not applicable or not appropriate in your hospital

Domain I: Fall risks assessment

1. Use fall sign on the door or above the patient’s bed.

- () 1= Yes
- () 2= No
- () 3=N/A

2. Put sign in patient’s room or call do not fall in the ward or above the patient’s bed.

- () 1= Yes
- () 2= No
- () 3=N/A

3. Use armband on for patients that risk for falls.

- () 1= Yes
- () 2= No
- () 3=N/A

4. Toileting schedule posted if applicable.

1= Yes

2= No

3= N/A

5. Provide a call light, urinal, and bed pan within reach for elder patients.

1= Yes

2= No

3=N/A

6. Patient unable to communicate (confused or medication induced)

1= Yes

2= No

3=N/A

7. Patient demented or confused, unable to comply.

1= Yes

2= No

3=N/A

8. Teach patient and family about falls and fall prevention

1= Yes

2= No

3=N/A

9. Assess and record patient's history of fall on this admission.

1= Yes

2= No

3=N/A

10. Assess risk for falls for each and record in patient's document.

1= Yes

2= No

3=N/A

11. Provide low bed/bed alarm for impulsive and forgetful patient.

1= Yes

2= No

3=N/A

12. Manipulation of the environment free from clutter.

1= Yes

2= No

3=N/A

13. Rehabilitation team gives physiotherapy (PT) / occupational therapy (PT) order.

1= Yes

2= No

3=N/A

14. Gait and transferring difficulty assessment documented if applicable.

1= Yes

2= No

3= N/A

15. Identified fall risk and patient specific interventions on care plan.

1= Yes

2= No

3=N/A

16. Put fall sticker on chart to indicate fall risk to transport personnel.

1= Yes

2= No

3=N/A

APPENDIX B

List of the Translator of the Instrument

Three bilingual translators were used in the translation process of the Nurses Fall Knowledge Questionnaire, the Nursing Staff Survey of Fall Prevention Knowledge Questionnaire, and the Scripps Mercy Hospital Rounding Tool questionnaire. Two translators were involved in the process of translation and back translation and third translator checked the consistency and discrepancy of the meaning and appropriate of the word used.

The translators are:

1. Ns. Dara Febriana, Msc in Nursing, the lecturer of nursing, Faculty of Nursing, Syiah Kuala University, Indonesia.
2. Widya Andayani, S. S, M. Hum, the lecturer of English Department, state University of Medan, Indonesia.
3. Mr. Greg Oliver, a lecturer from the Faculty of Liberal Arts, Prince of Songkla University, Thailand.

APPENDIX C

List of the Experts for Content Validity Testing

Three experts validated the contents of the instruments. The name of the expert is:

1. Mr. Iwan Rusdi, S.Kp, MNS, the lecturer of Geriatric Nursing, Faculty of Nursing, Sumatera Utara University, Medan, Indonesia.
2. Dr. Charuwan Kritpracha, the lecturer of Medical Nursing Department, Prince of Songklha University, Thailand.
3. Assist. Prof. Dr. Ploenpit Thaniwattananon, the lecturer of Medical Nursing Department, Prince of Songklha University, Thailand.

APPENDIX D**Indonesian Version of the Instruments for Data Collection****Bagian I: Kuesioner Data Demografi**

Kode.....

Tanggal.....Waktu.....

Petunjuk Pengisian

Tidak perlu mencantumkan nama anda di kuesioner ini. Jawaban anda akan dirahasiakan. Berikan jawaban yang sebenarnya. Berikan tanda checklist (√) pada jawaban yang anda pilih untuk pertanyaan tertutup atau tuliskan jawaban Anda pada pertanyaan terbuka. Terima kasih.

Pertanyaannya sebagai berikut

1. Usia tahun

3. Jenis kelamin

 1 Pria 2 Wanita

3. Status

 1. Lajang 2. Duda/Janda 3. Menikah 4. Bercerai

4. Agama

 1. Kristen 2. Islam

- 3. Hindu
- 4. Katolik
- 5. Budha

5. Tingkat pendidikan keperawatan

- 1. Diploma
- 2. S1
- 3. S2

6. Ruang kerja sekarang.....

- 1. Medical
- 2. Surgical

7. Lama bekerja di ruangan tersebuttahun.

8. Pengalaman menghadiri pelatihan/konferensi/workshop/seminar mengenai pencegahan jatuh.

- 1. Ya

Jika ya, jelaskan;

- Berapa kali?

- 1. <5 x
- 2. > 5x

- Kapan anda mengikuti pelatihan/konferensi/workshop/seminar tersebut

- 1. <2013
- 2. > 2013

- 2. Tidak

9. Pengalaman merawat lansia yang jatuh

- 1. Ya

Jika ya, jelaskan;

- Berapa kali?

- 1. <5x
- 2. > 5x

- Pengelolaan pasien setelah jatuh

- 1. Pengkajian setelah jatuh
 - 2. Pengelolaan Jatuh (Perawatan kondisi akut yang mendasari)
 - 3. Pengkajian setelah jatuh dan Pengelolaan Jatuh (perawatan kondisi akut yang mendasari).
-
- 2. Tidak

Bagian II: Pengetahuan Perawat tentang Jatuh

A. Kuesioner Pengetahuan Perawat tentang Jatuh

Petunjuk pengisian:

Bacalah setiap pertanyaan mengenai pencegahan jatuh dengan seksama dan tentukan jawaban atau pilihan yang terbaik menurut Anda. Berikan lingkaran sesuai dengan jawaban yang telah Anda pilih sebagai yang terbaik di antara pilihan yang tersedia.

Domain 1: Jatuh

1. Pasien lanjut usia yang dirawat dan pernah jatuh memiliki kemungkinan yang tinggi untuk jatuh kembali di rumah sakit.
 - a. Benar
 - b. Salah

2. Kejadian jatuh meningkatkan angka kematian pada lanjut usia yang dirawat di rumah sakit.
 - a. Benar
 - b. Salah

3. Patah tulang panggul pada lansia dapat disebabkan oleh jatuh.
 - a. Benar
 - b. Salah
4. Tergelincir tidak termasuk jatuh.
 - a. Benar
 - b. Salah
5. Semakin banyak obat yang dikonsumsi maka semakin tinggi risiko jatuh pasien lanjut usia yang dirawat di rumah sakit.
 - a. Benar
 - b. Salah
6. Semakin banyak penyakit dan komorbiditas lansia yang dirawat di rumah sakit, akan lebih tinggi risikonya.
 - a. Benar
 - b. Salah
7. Keadaan Depresi tidak berhubungan dengan kejadian jatuh.
 - a. Benar
 - b. Salah
8. Lansia yang dirawat di rumah sakit dan memiliki gangguan penglihatan memiliki risiko tinggi untuk jatuh.
 - a. Benar
 - b. Salah
9. Kebas pada kaki atau tungkai bawah tidak ada hubungannya dengan kejadian jatuh.
 - a. Benar
 - b. Salah

10. Disuria adalah faktor risiko jatuh.
- a. Benar
 - b. Salah
11. Terganggunya pendengaran tidak ada hubungannya dengan kejadian jatuh.
- a. Benar
 - b. Salah
12. Mengonsumsi obat diabetes tidak ada hubungannya dengan kejadian jatuh.
- a. Benar
 - b. Salah
13. Mengonsumsi obat yang berhubungan dengan tekanan darah tidak ada hubungannya dengan kejadian jatuh.
- a. Benar
 - b. Salah
14. Jatuh sering terjadi ketika pasien sedang bangun dan turun dari tempat tidur di rumah sakit
- a. Benar
 - b. Salah

B. Survey Pengetahuan Staff Perawat tentang Pencegahan Jatuh

Domain II: Pengkajian Risiko Jatuh

1. Kapan waktu paling sering terjadi jatuh di rumah sakit?
- a. Jam 02.00 - 04.00 dini hari
 - b. Jam 06.00 – 10.00 pagi hari
 - c. Jam 13.00 – 17.00 sore hari

d. Jam 22.00 – 24.00 malam hari

2. Manakah dari pernyataan pasien berikut yang manakah yang harus diwaspadai oleh perawat sebagai kemungkinan akan terjadinya jatuh di masa depan?

- a. “Saya mau berjalan”
- b. “Saya akan berolahraga”
- c. “Saya merasa lemah pagi ini”
- d. “Saya mau minum obat tidur”

3. Kriteria apa yang digunakan perawat untuk mengevaluasi keberhasilan dalam merawat pasien yang berisiko jatuh?

- a. Mengkaji perubahan yang dibuat di lingkungan
- b. Menganggap pasien telah mengikuti petunjuk mengenai pencegahan jatuh
- c. Menempatkan tombol pemanggil di dekat tempat tidur pasien
- d. Menempatkan peringatan di pintu pasien

4. Bagaimana cara perawat mengkaji rasa takut jatuh lansia yang dirawat di rumah sakit?

- a. Mengamati kemampuan lansia untuk berpegangan pada dinding pada saat bergerak atau berjalan
- b. Mengamati kemampuan lansia untuk mendapatkan kembali kemandirian untuk bergerak
- c. Memberikan rangsangan yang cukup melalui sentuhan tangan untuk pemeriksaan
- d. Menyediakan pemeriksaan untuk penglihatan dan pendengaran

5. Pada wawancara awal, manakah jawaban pasien terhadap pertanyaan berikut yang harus diwaspadai oleh perawat sebagai kemungkinan akan terjadinya jatuh di masa yang akan datang.

- a. Apakah anda sering berjalan dengan tongkat?
- b. Apakah anda mengenakan pakaian sendiri?
- c. Apakah anda memiliki riwayat jatuh dalam dua tahun terakhir?
- d. Apakah anda pernah menjalani operasi tulang?

6. Riwayat kesehatan manakah yang menempatkan pasien pada peningkatan risiko untuk jatuh?

- a. Edema
- b. Jatuh
- c. Jenis kelamin
- d. Penyakit jantung

7. Jenis obat apa yang menempatkan pasien pada risiko yang lebih besar untuk jatuh?

- a. Antibiotik
- b. Antihipertensi
- c. Inhaler
- d. Vitamin

8. Jenis sepatu manakah yang dapat membantu memperbaiki keseimbangan pasien lansia?

- a. Sepatu dengan sol
- b. Sepatu dengan sol kulit

- c. Sepatu dengan sol karet rendah
- d. Sepatu dengan kaus kaki lembut

9. Manakah dari rencana harian berikut yang paling baik manfaatnya untuk mempertahankan keseimbangan pada pasien lansia

- a. Olahraga/latihan
- b. Sosialisasi
- c. Relaksasi
- d. Makanan

Domain III: Intervensi untuk mencegah jatuh

10. Dengan cara apa adaptasi lingkungan untuk mencegah jatuh lebih diterima oleh individu

- a. Menanyakan pilihan individu
- b. Mendorong individu untuk membuat perubahan
- c. Membuat perubahan di lokasi tempat barang-barang diletakkan
- d. Menyediakan perabotan baru

11. Seorang pasien terjatuh 2 minggu yang lalu. Bagaimana caranya anda mencegah pasien tersebut untuk tidak jatuh lagi?

- a. Memberikan obat relaksasi otot
- b. Melakukan pengkajian keseimbangan
- c. Memberikan privasi ketika pasien dipindahkan
- d. Meminta pasien untuk tetap di tempat tidur

12. Anda beranggapan bahwa menentukan risiko jatuh adalah hal yang penting. Apa strategi yang akan Anda terapkan untuk membantu mengurangi risiko jatuh pada pasien lanjut usia?

- a. Memastikan pencahayaan yang cukup
- b. Obat untuk menurunkan kecemasan
- c. Restrain menggunakan kursi break-away lap
- d. Mengurangi waktu pasien bersosialisasi

13. Sebagai bagian dari proses keperawatan, bagaimana caranya perawat membuat rencana untuk memastikan keselamatan pasien secara keseluruhan?

- a. Meminta pasien untuk menggunakan walker
- b. Meminta pasien untuk menggunakan tongkat kayu
- c. Menuliskan tujuan jangka pendek untuk keselamatan pasien pada saat shift anda
- d. Menuliskan laporan keperawatan yang berkaitan dengan keselamatan pasien pada saat shift anda

14. Kegiatan manakah yang dapat mencegah pasien lansia keluar dari tempat tidur dan mengalami cedera?

- a. Hindari meninggikan kepala tempat tidur
- b. Awasi pasien dengan ketat pada malam hari
- c. Kunci roda tempat tidur
- d. Menempatkan kasur di lantai

15. Bantuan terbaik oleh perawat untuk menolong aktivitas sehari-hari (ADL) pasien guna mencegah jatuh adalah:

- a. Membantu pasien untuk mengenakan pakaian
- b. Menyediakan sepatu pasien yang bersih
- c. Menyediakan lingkungan pasien yang bersih
- d. Menyimpan alat-alat bantu pasien

16. Strategi terbaik untuk mencegah jatuh pada lansia yang dirawat di rumah sakit adalah

- a. Minta mereka untuk tetap di tempat tidur sepanjang hari
- b. Memeriksa penglihatan mereka pada saat masuk di rumah sakit dan setiap tahunnya
- c. Sediakan air segar setiap pagi
- d. Amankan mereka di kursi recliner (kursi sofa yang dapat dilipat) pada saat makan

17. Manakah dari berikut ini yang harus disediakan untuk pasien yang berisiko jatuh?

- a. Telepon
- b. Pegangan tangan di kamar mandi
- c. Trapeze bar (alat pegangan tangan di atas tempat tidur)
- d. Walker (alat bantu jalan)

18. Ketika pasien lansia baru masuk ke ruangan anda, aktivitas apa yang harus dilakukan untuk memastikan keselamatan mereka?

- a. Meminta mereka untuk berdiri di dekat tempat tidur
- b. Meminta mereka untuk duduk saat wawancara
- c. Menjaga kaki mereka bersih dan kering

d. Memeriksa daftar obat mereka

19. Mengekang pasien yang berisiko jatuh dapat mengakibatkan mana dari hal berikut?

- a. Lebih merugikan pasien daripada menolongnya
- b. Membuat pasien lebih aman
- c. Membuat risiko pasien untuk cedera lebih kecil
- d. Pasien tidak membutuhkan pengawasan yang lebih

Domain IV: Analisa dan pengelolaan setelah jatuh

20. Manakah dari hal berikut yang paling bermanfaat bagi pasien lansia yang dirawat di rumah sakit jika mereka jatuh?

- a. Pelindung panggul
- b. Pelindung lutut
- c. Pelindung tulang kering (shin)
- d. Pelindung tulang tibia

21 . Manakah dari hal berikut yang menjadi alasan utama bagi perawat untuk melaporkan angka jatuh lebih rendah dari angka yang sebenarnya?

- a. Lupa
- b. Kurangnya tenaga keperawatan
- c. Tidak ada cedera atau akibat dari jatuh terjadi
- d. Terlalu sibuk

22 . Siapa yang memiliki peran dan tanggung jawab untuk mencegah jatuh pada pasien

lansia yang dirawat di rumah sakit?

- a. Staf rumah sakit
- b. Anggota keluarga
- c. Perawat
- d. Pasien lansia

Bagian III: Kuesioner Scripps Mercy Ronde Rumah Sakit

Petunjuk penilaian alat ukur:

Pilih (√) “Ya” jika anda dan staff rumah sakit melakukan hal atau pernyataan berikut.

Pilih “Tidak” (√) jika anda dan staff rumah sakit tidak melakukan hal atau pernyataan berikut.

Pilih “Tidak tersedia/tidak ada” (√) jika hal dan pernyataan berikut tidak dapat diterapkan atau tidak sesuai dengan rumah sakit anda

Domain I: Pengkajian risiko jatuh

1. Mengkaji ketidakmampuan pasien untuk berkomunikasi (kebingungan atau akibat obat).
 - () 1= Ya
 - () 2= Tidak
 - () 3= Tidak tersedia/tidak ada

2. Mengkaji pasien dimensia atau bingung, tidak mau patuh
 - () 1= Ya
 - () 2= Tidak
 - () 3= Tidak tersedia/tidak ada

3. Mengkaji dan mencatat riwayat jatuh pasien pada saat masuk.
- () 1= Ya
 - () 2= Tidak
 - () 3= Tidak tersedia/tidak ada
4. Mengkaji risiko jatuh untuk setiap pasien dan mencatatnya pada status pasien.
- () 1= Ya
 - () 2= Tidak
 - () 3= Tidak tersedia/tidak ada
5. Pengkajian gaya berjalan dan berpindah, dicatat bila memungkinkan.
- () 1= Ya
 - () 2= Tidak
 - () 3= Tidak tersedia/tidak ada
6. Mengidentifikasi risiko jatuh dan merencanakan intervensi yang sesuai dengan kondisi pasien pada perencanaan keperawatan
- () 1= Ya
 - () 2= Tidak
 - () 3= Tidak tersedia/tidak ada

Domain II: Intervensi untuk mencegah jatuh

7. Menggunakan tanda “jatuh” di depan pintu atau di atas kepala tempat tidur pasien.
- () 1= Ya
 - () 2= Tidak
 - () 3= Tidak tersedia/tidak ada
8. Meletakkan tanda “jatuh” di kamar pasien dalam ruangan atau di atas kepala tempat tidur pasien.
- () 1= Ya
 - () 2= Tidak

- () 3= Tidak tersedia/tidak ada
9. Menggunakan ban lengan untuk pasien yang berisiko jatuh.
- () 1= Ya
- () 2= Tidak
- () 3= Tidak tersedia/tidak ada
10. Jadwal ke toilet ditempelkan jika memungkinkan.
- () 1= Ya
- () 2= Tidak
- () 3= Tidak tersedia/tidak ada
11. Menyediakan tombol pemanggil, urinal dan pispot dalam jangkauan pasien.
- () 1= Ya
- () 2= Tidak
- () 3= Tidak tersedia/tidak ada
12. Mengajarkan pasien dan keluarga mengenai jatuh dan pencegahan jatuh
- () 1= Ya
- () 2= Tidak
- () 3= Tidak tersedia/tidak ada
13. Manipulasi lingkungan bebas dari kebisingan
- () 1= Ya
- () 2= Tidak
- () 3= Tidak tersedia/tidak ada
14. Meletakkan sticker jatuh pada status pasien untuk mengindikasikan risiko jatuh pada saat pasien dipindahkan.
- () 1= Ya
- () 2= Tidak
- () 3= Tidak tersedia/tidak ada

Domain IV: Analisa dan pengelolaan setelah jatuh

15. Menyediakan tempat tidur yang rendah atau alarm tempat tidur untuk pasien yang impulsive dan pelupa.

() 1= Ya

() 2= Tidak

() 3= Tidak tersedia/ tidak ada

16. Tim rehabilitasi memberikan fisioterapi dan terapi okupasional.

() 1= Ya

() 2= Tidak

() 3= Tidak tersedia/tidak ada

APPENDIX E

Correlation Between Variables and Five Demographic Variables

Table 5

Correlation Between Nurses Fall-knowledge and Five Demographic Variables (N=153)

Variables	<i>r</i>	<i>p-value</i>
Age (year) ^(a)	-.051	.534
Level of nursing education ^(b)	-.084	.300
The duration work at the ward ^(a)	-.103	.204
Experience in attending fall prevention training/conferences/workshops/ or seminars ^(b)	-.018	.825
Experience in caring for hospitalized elderly who had fallen ^(b)	.007	.929

Variable ^a = Pearson coefficient correlation

Variable ^b = Spearman rank coefficient correlation

Correlation is significant at level .05 (2-tailed)

Table 6

Correlation of Nurses Fall Prevention Practices and Five Demographic Variables

(N=153)

Variables	<i>r</i>	<i>p-value</i>
Age (year) ^(a)	-.083	.310
Level of nursing education ^(b)	-.073	.367
The duration work at the ward ^(b)	-.106	.193
Experience in attending fall prevention training/conferences/workshops/ or seminars ^(b)	-.076	.351
Experience in caring for hospitalized elderly who had fallen ^(b)	-.113	.164

Variable ^a = Pearson coefficient correlation

Variable ^b = Spearman rank coefficient correlation

Correlation is significant at level .05 (2-tailed)

APPENDIX F

The Top Five Items with Highest and Lowest Score in Each Subscale of the Variables

Table 7

The Top Five Items with Highest and Lowest Score in Each Subscale of the Nurses' Fall-knowledge Questionnaire that Nurses Answered Correctly (N=153)

No	Fall-knowledge	<i>n</i>	%
The top five items with the highest score			
1.	Elderly hip fractures can occur by falls	144	94.1
2.	A hospitalized elder who has a visual impairment has a higher risk for falls.	141	92.1
3.	Falls occur more when getting up from and down on beds in hospitals	140	91.5
4.	The more diseases and co-morbidities a hospitalized elder have, the higher of his/her fall risk	135	88.2
5.	Falls increase mortality rate among hospitalized elder	128	83.6
The top five items with the lowest score			
1.	Which of the following can prevent elderly patient from fall out of bed and get injured?	4	2.6
2.	What times do falls seem to most occur in hospital?	13	8.4
3.	When elderly patients newly admitted to your unit, what is the activity to ensure their safety?	27	17.6
4.	As a part of the nursing process, how can nurse set plan to ensure overall patient safety?	27	17.6
5.	Restraining a patient who is at risk for falling may result in which of the following?	36	23.5

Table 8

The Top Five Items with Highest and Lowest Score in Each Subscale of the Nurses Fall Prevention Practices Questionnaire that Nurses Answered Correctly (N=153)

Fall Prevention Practices	<i>n</i>	%
<hr/>		
The top five items with the highest score		
1. Assess and record patient's history of fall on this admission	152	98
2. Assess risk for falls for each and record in patient's document	152	98
3. Identified fall risk and patient specific interventions on care plan.	151	97.4
4. Use fall sign on the door or above the patient's bed.	148	95.5
5. Teach patient and family about falls and fall prevention	147	94.1
The top five items with the lowest score		
1. Toileting schedule posted if applicable	42	27.4
2. Provide low bed/bed alarm for impulsive and forgetful Patient	79	51.6
3. Manipulation of the environment free from noise	102	66.0
4. Provide a call light, urinal, and bed pan within reach for elder patients	105	68.6
5. Use armband on for patients that risk for falls	114	74.5

APPENDIX G**Permission Letter for Using the Instrument**

Elida Sinuraya <sinurayaelida@yahoo.co.id>

Ke

전혜원

07/24/15 jam 12:55 PM

Dear Dr. Hye-Won Jeon

Thank you for your respond.

Sincerely yours

Elida Sinuraya

Master Nursing Student

Prince of Songkla University

Thailand.

07/24/15 jam 8:26 AM

Dear Elida Sinuraya

I am sorry for the late response.

It is very interesting for you to research on falls.

I majored in adult nursing and now i am teaching it at kkottonrae university.

It is honorable to use my research instrument and I am looking forward to having a good study.

Sincerely yours

Hyewon jeon

Hyewon Jeon, RN, PhD

Department of Nursing, Kkottongnae Univ.

133 Sangsam-gil, Hyundo-myeon,

Seowon-gu, Cheongju-si, Chungbuk, Korea, 363-707

Tel) 82-43-270-0134(office)

-----Original Message-----

Subject : information

Date : 2015-07-22 19:43:14

From : Elida Sinuraya <sinurayaelida@yahoo.co.id>

To : "hwjeon@kkot.ac.kr" <hwjeon@kkot.ac.kr>

Cc :

Dear Hye-Won Jeon

With due respect to you, I am Elida Sinuraya from Indonesia. I am a master student at department of Adult Nursing, Faculty of Nursing, Prince of Songkla University, Thailand. I am propose to conduct a thesis, entitled “Nurses’ Fall Knowledge an Fall prevention Practices for Hospitalized Elderly in Medan, Indonesia”.

I have reviewed your article entitled “ Study on the knowledge and attitudes of falls and awareness of fall risk factors among nursing students” and consider it to be appropriate for use in my study. Therefore, I would like to asking permission to use the Nurses’ fall knowledge, attitude, and awareness questionnaire.

I am looking forward to hear your respond. Thank you.

Sincerely yours

Elida Sinuraya

Master nursing student

Prince of Songkla University

Thailand

sinurayaelida@yahoo.co.id

APPENDIX H

Nurses Answered Correctly on Each Item of the Nurses' Fall-knowledge

Table 9

Frequency and Percentage of Nurses Answered Correctly on Each Item of the Nurses' Fall-knowledge Questionnaire (N=153).

No	Nurses Fall-knowledge	<i>n</i>	%
The Nurses' Fall-knowledge Questionnaire			
1.	Recurrence rate is high among hospitalized elder who has already experienced a fall. T	127	83
2.	Falls increase mortality rate among hospitalized elderly. T	128	83.6
3.	Elderly hip fractures can occur by falls. T	144	94.1
4.	Sliding is not falling. F	117	76.4
5.	The more medicine a hospitalized elder take, the higher of his/her fall risk. T	86	56.2
6.	The more diseases and co-morbidities a hospitalized elder have, the higher of his/her fall risk. T	135	88.2
7.	Depression is not related to falls. F	103	66.5
8.	A hospitalized elder who has a visual impairment has a higher risk for falls. T	141	92.1
9.	Getting numbness in the limbs is not related to falls. F	105	68.6
10.	Dysuria is a risk factor for falls. T	64	41.8
11.	Hearing impairment is not related to falls. F	90	58.8
12.	Taking medicine for diabetes is not related to falls. F	82	53.5
13.	Taking medicine for blood pressure is not related to falls. F	125	81.6
14.	Falls occur more when getting up from and down on beds in hospitals. F	140	91.5

Table 9 (continued)

No	Nurses Fall-knowledge	<i>n</i>	%
The Nursing Staff Survey of Fall Prevention Knowledge Questionnaire			
Fall risks assessment			
1.	What times do falls seem to most occur in hospital? B	13	8.4
2.	Which of the following statements from a patient would alert nurses to consider about the possibility of getting a future fall?. C	111	72.5
3.	What is the criterion that nurse can use to evaluate the goal achievement in nursing the patient who is at risk for fall?. A	46	30.0
4.	How can nurses assess that hospitalize elder experiencing fear to fall?. B	40	26.1
5.	On an initial interview, the answers to which of the following questions would best alert nurse to predict future falls of patient?. C	114	74.0
6.	What history would place a patient at an increased risk for falling?. B	70	45.7
7.	What type of medication might put a patient at a greater risk of falling?. B	135	88.2
8.	Which kind of specific footwear can help in improving balance for elderly patients?. B	114	74.5
9.	Which of the following daily plan will best benefit an elderly patient's balance?. A	80	52.2
10.	In what way that the environmental adaptation to prevent falls will be able to make more acceptable to individual?. A	37	24.1
11.	A patient experienced fall two weeks ago. How can you prevent the patient from falling again? B	102	66.6
12.	Assuming that you determine the patient's risk of falling is substantial, what strategy will you employ to help reduce the risk? A	79	51.6
13.	As a part of the nursing process, how can nurse set plan to ensure overall patient safety? C	27	17.6
14.	Which of the following can prevent elderly patient from fall out of bed and get injured? D	4	2.6
15.	How can the nurse best assist the activities of daily living (ADL), for patient to prevent fall? A	90	58.8
16.	What is a good strategy to prevent hospitalized elders from falling? B	51	33.3

Table 9 (continued)

No	Nurses Fall-knowledge	<i>n</i>	%
17.	How can the nurse best assist the activities of daily living (ADL), for patient to prevent fall? A	90	58.8
18.	What is a good strategy to prevent hospitalized elders from falling? B	51	33.3
19.	Which of the following should be provided for patient who is at an increased risk of falling? B	48	31.3
20.	When elderly patients newly admitted to your unit, what is the activity to ensure their safety? D	27	17.6
21.	Restraining a patient who is at risk for falling may result in which of the following? A	36	23.5
22.	Which of the following would best benefit hospitalized elders if they have fall? A	130	84.9
23.	Which of the following is most likely to be the reason underpinning nurses' decision to report fall rates lower than real? C	62	40.5
24.	Who is usually held a major role and accountability for the prevention of falls in hospitalized elderly? C	91	59.4

APPENDIX I

Nurses Answered Correctly on Each Item of Nurses' Fall Prevention Practices

Table 10

Frequency and Percentage of Nurses Answered Correctly on Each Item of Nurses' Fall Prevention Practices for Hospitalized Elderly (N=153)

No	Nurses' Fall Prevention Practices	<i>n</i>	%
The Scripps Mercy Hospital Rounding Tool questionnaire			
1.	Assess patient for unable to communicate (confused or medication induced). Y	130	84.9
2.	Assess patient demented or confused, unable to comply. Y	119	77.7
3.	Assess and record patient's history of fall on this admission. Y	151	98.6
4.	Assess risk for falls for each and record in patient's document. Y	151	98.6
5.	Gait and transferring difficulty assessment documented if applicable. Y	119	77.7
6.	Identified fall risk and patient specific interventions on care plan. Y	150	98.0
7.	Use fall sign on the door or above the patient's bed. Y	147	96.0
8.	Put fall sign in patient's room in the ward or above the patient's bed. Y	145	94.7
9.	Use armband on for patients that risk for falls. Y	114	74.5
10.	Toileting schedule posted if applicable. Y	42	27.4
11.	Provide a call light, urinal, and bed pan within reach for elder patients. Y	105	68.6
12.	Teach patient and family about falls and fall prevention. Y	146	95.4
13.	Manipulation of the environment free from noise. Y	101	66.0
14.	Put fall sticker on chart to indicate fall risk to transport personnel. Y	119	77.7
15.	Provide low bed/bed alarm for impulsive and forgetful patient. Y	79	51.6
16.	Rehabilitation team gives physiotherapy (PT) / occupational therapy (PT) order. Y	115	76.1

APPENDIX J

Informed Consent Form

Dear Participant,

My name is Elida Sinuraya. I am a master student at Faculty of Nursing, Prince of Songkhla University, Thailand. I am also a lecturer in nursing program, Faculty of Nursing, Mutiara Indonesia University, Medan. I ask you to participate in a research project designed to examine the relationship between nurses' fall-knowledge and fall prevention practices for hospitalized elderly in Medan, Indonesia. This study has been approved by the Research Ethics Committee of this hospital. You are asked to participate in this research project because you are the one who can share your experience that will be useful for nursing practice, nursing education, and nursing research. Participation is voluntary, you have the right to withdraw. If you decide to participate in this study, you are asked to respond to a set of questionnaires for 30 - 40 minutes.

Risk and Comforts:

There is no known risk to participate in the study.

Withdrawal from participation:

You have the right to withdraw from participation anytime without any problems prior to completion of data collection.

Benefits: The results of this study will contribute to nurse knowledge regarding fall, nursing practice to prevent fall and the future research related with prevention fall in hospitalized elderly.

Confidentially:

All information and your response in this study will remain confidential. Only researcher, the advisor, and the research committee of this study are eligible to access the data.

Neither your name nor will any identifying information be used in the report.

Lastly, you can contact me by phone +6281376216444 or by email at sinurayaelida@yahoo.co.id if you have questions or suggestions or cannot participate. If you agree to participate in this study, please sign your name. If you feel uncomfortable to sign but you are willing to participate, please let me know. Thank you for expressing interest in this study.

.....
(Name of Participant)	(Signature of Participant)	Date
Elida Sinuraya
(Name of Researcher)	(Signature of Researcher)	Date

VITAE

Name **Elida Sinuraya**

Student ID **5610420023**

Educational Attainment

Degree	Name of Institution	Year of Graduation
Diploma of Nursing	Sint Carolus	1993
Bachelor of Nursing	Mutiara Indonesia Nursing College	2003

Scholarship Awards during Enrolment

Directorate General of Higher Education (Ministry of Research, Technology, and Higher Education) of the Republic of Indonesia.

Work – Position and Address

Lecturer at faculty of nursing, University of Sari Mutiara Indonesia

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