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The Intrinsic Factors That Influence Risk of Falling Of Patients: A Literature Review

Pelni Pujiawati[1], Lisa Musharyanti[2*]

[1,2*)] School of Nursing, Faculty of Medicine and Health Sciences, Universitas Muhammadiyah Yogyakarta

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A B S T R A C T

Patient safety, including the prevention of patient falls, is one of the health quality determinants. However, there are still reports of 12% fall incident in a hospital. Intrinsic factors are something that needs to be known to prevent falls in patients because patients have different intrinsic factors. Therefore, it requires treatment that is specific to each patient's intrinsic factor. One of the initially conducted a fall risk assessment using the Morse Fall Scale which is most commonly used. The study purpose was to describe the intrinsic factors that influence the risk of falling of patients. This research design is a literature review using some data based: on Pubmed, Science Direct and Proquest. The research articles that have been screened by title and abstract, full-text, inclusion and exclusion criteria and the articles quality. Ten studies were included in this review. The results obtained were 4 intrinsic factors that influence falls inpatients, in high-risk intrisic factor there are history of falls and gait, in low-risk intrinsic factor there are secondary diseases and mental status. The conclusion is that inpatients have various intrinsic factors that influence the risk of falling, therefore, appropriate treatment is needed according to risk factors.

Kata kunci:

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**) corresponding author*

Lisa Musharyanti

School of Nursing, Faculty of Medicine and Health Sciences, Universitas Muhammadiyah Yogyakarta
Jl. Brawijaya, Geblagan, Tamantirto, Kec. Kasihan, Kabupaten Bantul, Daerah Istimewa Yogyakarta 55183

Email: lisa.musharyanti@umy.ac.id

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A B S T R A K

Keselamatan pasien termasuk pencegahan pasien jatuh merupakan salah satu penentu mutu kesehatan. Namun, masih ada laporan kejadian jatuh 12% di rumah sakit. Faktor intrinsik merupakan hal yang perlu diketahui untuk mencegah pasien jatuh karena pasien memiliki faktor intrinsik yang berbeda. Oleh karena itu, diperlukan perawatan yang spesifik terhadap faktor intrinsik setiap pasien. Salah satu awalnya dilakukan pengkajian risiko jatuh menggunakan Morse Fall Scale yang paling umum digunakan. Tujuan penelitian ini adalah untuk mendeskripsikan faktor intrinsik yang memengaruhi risiko pasien jatuh. Desain penelitian ini adalah tinjauan literatur menggunakan beberapa data berdasarkan: Pubmed, Science Direct dan Proquest. Artikel penelitian yang telah disaring berdasarkan judul dan abstrak, teks lengkap, kriteria inklusi dan eksklusi serta kualitas artikel. Sepuluh studi dimasukkan dalam ulasan ini. Hasil yang diperoleh adalah 4 faktor intrinsik yang mempengaruhi jatuh pada pasien rawat inap, pada faktor intrinsik risiko tinggi terdapat riwayat jatuh dan gaya berjalan, pada faktor intrinsik risiko rendah terdapat penyakit sekunder dan status mental. Kesimpulannya pasien rawat inap memiliki berbagai faktor intrinsik yang mempengaruhi risiko jatuh, oleh karena itu diperlukan penanganan yang tepat sesuai dengan faktor risiko tersebut.

INTRODUCTION

Patient safety is an important element to be observed to assess the quality of nursing services because it affects health services (Nursalam, 2015). Patient safety is very important to evaluate because many medical errors that occur have an impact on the lack of patient safety. In Indonesia, there is the Regulation of the Ministry of Health of the Republic of Indonesia No. 11 of 2017 about patient safety (Kementrian Kesehatan, 2017). In addition to regulations in Indonesia that regulate *patient safety,* there are also international regulations issued by the International Joint Commission (JCI). According to the Joint Commission International (JCI) (2017) there are 6 International Patient Safety Goals (IPSG) (Joint Internasional Commission (JCI), 2017). One of them is reducing the risk of injury to patients due to falls.

The patient safety goal is to reduce the injury risk to patients falling, this is important to achieve. Another Indonesian regulation concerning *Standar Minimum Pelayanan* (SPM) (Minimum Service Standart) for hospitals is that incidence of falling patients ending in death or disability is expected to be 100% non-existent (Kementrian Kesehatan, 2008). This indicates that the incidence of patient falls and injuries that occur in the hospital should not occur at all (Kementrian Kesehatan, 2008). Based on the results of research one of the most common incidents in hospitals is the incidence of falls (12.5%) (Budi et al., 2019). This indicates that the incidence of falls is still far from the accreditation standard reference, where the accreditation standard explains that the incidence of falls in the hospital should be 0% (Joint Internasional Commission (JCI), 2017).

The results of research related to the obedience of nurses in complying with and implementing Standard Operating Procedures (SOP to prevent patient falls in 47 nurses, the results showed that 26 nurses (55.3%) indicated that they had not complied in efforts to prevention patients from falling in accordance with the Standards Operational Procedures (SOP) at Hospital X Surabaya (Jati, 2018). Nurses should be able to take precautions to prevent patients from falling, which is one of the benchmarks or signs of patient safety that can be done by assessing the risk of falling.

According to Nursalam (2015) fall risk assessment is a form of patient fall risk assessment and is carried out by health workers and applies to all patients undergoing hospitalization (Nursalam, 2015). One of the instruments or tools used to assess the risk of falling inpatients, especially adult patients are the Morse Fall Scale (MFS) (Nursalam, 2015). Therefore, it is important to use a tool to assess or measure the risk of falling inpatients. This is important because of the relevance of the patient's condition which can threaten the patient's life to death if a fall risk assessment is not carried out, one of which uses the Morse Fall Scale (MFS).

According to Anggraini (2018) regarding "Nurses' Knowledge of Morse Fall Scale Assessment with Compliance in Performing a Fall Risk Assessment" it is known that nurses who do not comply are 17.5% (Anggraini, 2018)). There is also a lack of knowledge related to reducing patient fall risk among professional students of the Universitas Muhammadiyah Yogyakarta Nursing Study Program. The results of the study show that 37% of students did not know the action to reduce patient falls, 37% of students did not know the definition of patient fall risk and 83% of students did not know about the evaluation inpatients at risk of falling (Musharyanti et al., 2016). Nurses' understanding is important so that the incidence of patient falls can be avoided. Even students of the nursing profession also have a role when undergoing clinical practice in hospitals to assess the risk of falling inpatients.

Patient safety is an important element to be observed to assess the quality of nursing services because it affects health services (Nursalam, 2015). Patient safety is very important to evaluate because many medical errors that occur have an impact on the lack of patient safety. According to Nursalam (2015) fall risk assessment is a form of patient fall risk assessment and is carried out by health workers and applies to all patients undergoing hospitalization (Nursalam, 2015). One of the instruments or tools used to assess the risk of falling inpatients, especially adult patients are the Morse Fall Scale (MFS) (Nursalam, 2015). Therefore, it is important to use a tool to assess or measure the risk of falling inpatients. This is important because of the relevance of the patient's condition which can threaten the patient's life to death if a fall risk assessment is not carried out, one of which uses the Morse Fall Scale (MFS).

Assessment using the Morse Fall Scale (MFS) is more sensitive than assessment using Hendrich Fall Scale in detecting early risk of falling patients with various disease (Dessy et al., 2017). This is obtained by the results of the assessment associated with the Morse Fall Scale (MFS) instrument being able to detect early the risk of falling inpatients and in all diagnostic conditions and every day increasing in the fall risk category (Dessy et al., 2017). This indicates that the use the Morse Fall Scale (MFS) is highly recommended due to its advantages in early detection of the patient's risk of falling in various disease. Morse Fall Scale (MFS) is an assessment instrument that can be used quickly and simply to assess the risk of a patient falling and prevent falls (Nursalam, 2015). Many nurses, around 82.9% who have used the Morse Fall Scale (MFS) instrument, stated that the use of the Morse Fall Scale (MFS) instrument assessed its use as faster only takes less than 3 minutes and less complicated and about 54% of the nurses had used the Morse Fall Scale (MFS) instrument. Based on this statement, it strengthens and prioritizes the use of the Morse Fall Scale (MFS) in assessing the risk of falling inpatients.

According to Guillaume, Crawford, & Quigley (2016) adapted from the World Health Organization (WHO) (2007) there are several risk factors that influence the risk of falling inpatients, one of which is biological or intrinsic factors originating from these patients (Guillaume et al., 2016). The biological factors include age, sex, chronic disease, dizziness, comorbidities, cognitive, mobility, balance, need for elimination and treatment, and surgery (Guillaume et al., 2016). Based on Nursalam (2015) there is a grouping of risk factors based on their source in the instrument (Nursalam, 2015). One group of fall risk factors based on the source is the intrinsic factor. These intrinsic factors such as characteristics possessed by the patient, general physical function, diagnosis or physical changes in the patient, and medication and drug interactions given to the patient. If we see, most of these factors are included in the components of the Morse Fall Scale (MFS) fall risk assessment instrument. Morse Fall Scale (MFS) components include, having a fall history, secondary diagnosis > 1, walking assistance, IV installation, gait/moving and mental status (Nursalam, 2015). Therefore, the Morse Fall Scale (MFS) assessment is very necessary when assessing the risk of falling inpatients.

So many studies on the level of knowledge of nurses on the assessment of falls in patients using the Morse Fall Scale (MFS). While research on risk factors for falls in patients is still minimal in hospitals, especially the intrinsic factor contained in the study data produced by the Morse Fall Scale (MFS), which cannot be predicted by the hospital itself from

each patient. Morse Fall Scale (MFS) is commonly instruments in assessing the risk of fall in patients (Gu et al., 2016). This encourages researchers to conduct research by conducting a literature review. This review intends to examine the description of the intrinsic factors that influence the risk of falling inpatients.

The literature review purpose is to describe the intrinsic factors that influence the risk of falling inpatients.

METHOD

The PEO research question was developed to define the research question, how does the description of intrinsic factors (Exposure) that influence the risk of falling (Outcome) of patients (Population)? A comprehensive article search was performed using Pubmed, Proquest, and Science Direct. Provisions for searching titles and abstracts include: "Intrinsic Factor", "Fall Risk", "Fall Risk", "Risk of Falling", "Patient Fall", "Inpatient", "Hospitalized Patient", "Hospitalization", "Morse Fall Scale", "Fall Risk Assessment", "Score Result" and combine each keyword with "AND" and "OR". The inclusion criteria in the article are the original article, all quantitative articles, samples of hospitalized patients, measurement risk factors for falls using the Morse Fall Scale, articles in English, full-text available articles, and 2016-2021 publication years. Then, the exclusion criteria applied were articles that did not explain the design or path of the study, pediatric patients because pediatric patients are generally risk assessment using the humpty dumpty fall scale, and post-operative patients or under anesthesia due to the Morse Fall component. *Scales* are not included. Research articles that have been screened based on the title and abstract, full text, inclusion and exclusion (Snyder, 2019)criteria that have been determined and the quality of the article assessed using the Joanna Brigs Institute (JBI) (Joanna Briggs Institute (JBI), 2020). The data will be analyzed with descriptive analysis method (Sillner et al., 2019). The data were analyzed by descriptive analysis method (Sillner et al., 2019). This method is one of the methods to describe research results without analyzing and making conclusion that can be applied to the public (Zed, 2008).

Article Flow
The flow of article selection based on pretermined critria is shown in the following figure:

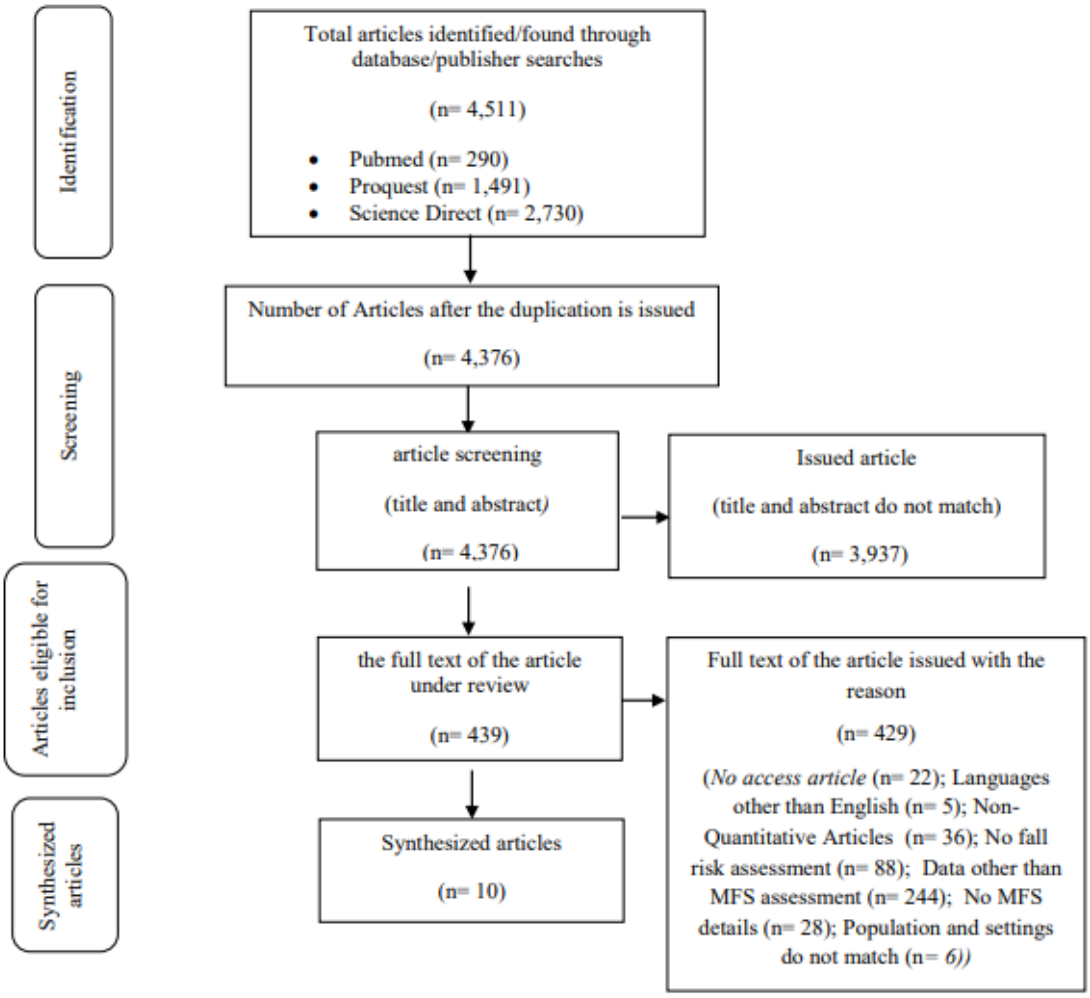

Figure 1. Schema PRISMA Diagram

RESULTS AND DISCUSSION

Result

There are 10 research articles found based on the inclusion and exclusion criteria and then reviewed (Figure 1). The ten research articles consisted of 4 articles from Brazil, 2 articles from Korea, 2 articles from the United States (Florida and Massachuset), 1 article from Indonesia and 1 article from Slovakia. Review data entered into the table (Table 1) after going through the review of the quality of the article.

There are many factors that influence the risk of falling inpatients. The patient's fall risk can be assessed using the most commonly used fall risk assessment tool, namely the Morse Fall Scale (MFS). Several intrinsic factors based on the results of studies using the Morse Fall Scale (MFS) have been reported in this review. Starting from a history of falls, gait, disease diagnosis and mental status. The related description of the results of the literature review will be explained as follows.

Table 1
List of research articles in the literature review on factors that influence the risk of falls in hospitalized patients

Researcher Name and Year	Title	Research *Design*	*Settings*	Characteristics of Respondents	Researched Factors	*Outcome* / Results
(Aguiar et al., 2019)	Factors Associated to Falls of Hospitalized Patients in Medical-Surgical Clinics	An analytical and descriptive study quantitative approach	A large-scale general hospital in the northern region of the state of Ceará, Brazil in June to September 2017	155 Patients with details 41.2% (64) had a clinical diagnosis (women: 30 (46.9%) and men: 34 (53.1%)) and 58.8% (91) were traumatological patients (women: 9 (9.9%) and men: 82 (90.1%))	Fall backround, comorbidities, intravenous therapy, assistance to move/walk, walking space, mental state	There were statistically significant differences between the fall risk assessments between clinical and traumatological patients were comorbidities ((p=0.000) (Clinical: 50% vs. Trauma: 82.4%).
(Choi et al., 2018)	A Dynamic Risk Model for Inpatient Falls	A retrospectiv e cohort study	2nd largest University of Florida (UF) affiliate hospital: UF Health Shands and UF Health Jacksonville. Data were taken from records of patients treated during the period January 2012–October 2013 (UF Health Shands) or March 2013–October 2013 (UF Health Jacksonvill).	75,036 Patients had at least 1 FRID during the first 5 days in hospital. We excluded patient days in which ventilation or continuous infusion of a disabling sedative agent (ie, propofol, dexmedetomidine, midazolam, vecuronium, rocuronium, atracurium, cisatracurium, or succinylcholine chloride) was documented. Patients who have fallen can still be included in the research group.	History of falling, ambulatory aids, gait/transferrin g, mental status	there was a strong predictor, namely a history of falls (odds ratio [OR], 1.99; 95% confidence interval (CI), 1.42-2.80).
(Falcão et al., 2019)	Risk of Falls in Hospitalized Elderly People	Cross-sectional study and a quantitative approach	Hospitals in Brazil January to December 2016	284 patients i.e. elderly patients of both sexes, treated in the Surgical Unit 119 patients, Medical Clinic A 66 patients, B 76 patients and Infectious-Parasitic Disease (IPD) 23	History of falls, secondary diagnosis, aid in walking, endovenous therapy/saliniz ed or heparinized endovenous device, march,	Items with a high fall risk associated with falls were secondary diagnoses in 228 patients (80.3%)

				patients, aged 60 years and over, were included. Excluded those with functional fallability, ie, patients who were paralyzed, comatose, sedated or without motor activity.	mental state	
(Guillaume et al., 2016)	Characteristics of The Middle- Age Adult Inpatient Fall	A secondary analysis	A large academic teaching hospital in Central Massachusetts from January 1, 2012 to July 31, 2014.	The 439 patients (male: 251 (57%) and female: 188 (43%)) included in the study sample were middle-aged inpatients (45-64) who fell either once or fell repeatedly during the study period. A repeated fall may have occurred during the same admission or during another admission in the study period. Exclusion criteria include adult patients fall in the psychiatric unit; adult patient fall during outpatient appointments in the outpatient department; and the fall of visitors, students, and staff.	Fall history 3 months, alert & oriented MFS, abnormal gait MFS, assistive devices MFS	There are identified items, namely abnormal gait with a percentage of 51% (n = 224) falling
(Lee et al., 2020)	Factors Influencing Falls in High- and Low-Risk Patients in a Tertiary Hospital in Korea	A retrospective case-control study	A tertiary hospital in S city, Korea from June 1, 2014, to May 31, 2015.	2,227 Patients included in the high risk and fall group n= 305 patients defined as patients aged 19 years or older who experienced a fall in any of the 15 departments (oncology, gastroenterology, liver transplant surgery, general surgery, hepatobiliary surgery, colorectal surgery, general surgery). gastrointestinal, hematology, cardiology,	History of falling, secondary diagnosis, IV or heparin lock, ambulatory aid, gait, mental status	In the high-risk and fall group, the intrinsic risk factor for MFS in gait disturbance with OR = 1.77 significantly causes falls.

				neurology, obstetrics and gynecology, pulmonology, rehabilitation, orthopedics, and urology) and high ric and non-fall group n = 1918 i.e. inpatients who stayed in one of the 15 departments of the hospital for an average 22 days in the same period, seta in both groups of patients who had an MFS score of 45 or more.		
(Miertová et al., 2018)	Risk Factors of Falling in Patients with Neurological Diseases	A quantitative prospective cross-sectional study	Department of Neurology at the Comenius University Jessenius School of Medicine (JMF CU) and University Hospital at Martin (UHM).	103 Patients with inclusion criteria were: age 18 years, hospitalization for neurological problems, and an assessment of fall risk up to 24-48 hours after admission. If the patient failed to meet at least one of the above-mentioned criteria, he or she was excluded from the study.	*The fall in PH within the last 3 months, secondary diagnosis (number 4, mental health disorder, gait and balance disorder, ambulatory aid*	There were patients with a high risk of falling, a significant predictor of falls, namely gait and balance disorders (p = 0.000).
(Noh et al., 2021)	Fall Predictors Beyond Fall Risk Assessment Tool Items for Acute Hospitalized Older Adults: A Matched Case-Control Study	A retrospective case–control design.	An academic tertiary hospital in a city in Korea from the database From January 2016 to December 2018	620 patients from 13 acute care ward units consisting of 210 *fallers* (57-95 years) and 410 controls (55-97 years) were included in this study.	History of falling within 3 months, secondary diagnosis, IV therapy/heparin lock, ambulatory aid, gait, mental status (forgets limitation)	Among the six MFS items, more fell than controls who had intrinsic factors, namely gait disturbance (p=0.001), history of falls (p=0.002), and mental status (p=0.009).
(Pasa et al., 2017)	Risk Assessment And Incidence of Falls in Adult Hospitalized Patients	Cohort study	Clinical Surgical and Medical Clinic Services I and II from a teaching hospital that located in the interior of the State of Rio Grande do Sul, Brazil.	831 Patients including all patients admitted to the service proposed; over 18 years of age and who accepted to participate in the study. The ideal time to start collection was set	History of falling, secondary diagnosis, use of intravenous device, help with walking, walking, mental status	The results of the study stated that patients who had an MFS score at risk of falling had a higher percentage of patients with a secondary diagnosis with a total of 506 (60.9%) patients.

				to 24 hours of hospitalization. However, to minimize losses, this time was extended to 48 hours. No exclusion criteria were set.		
(Purnamasari et al., 2020)	Risk Factors of Falls a mong Hospitalized Stroke Patients	A quantitative descriptive design	Dadi Regional Special Hospital, South Sulawesi province in 2019	48 Patients stroke with an average age of 54.85 years. With the number of male 30 (62.5%) patients and female 18 (37.5%) patients.	Fall history, secondary diagnosis, physical mobility, how to walk and cognitive functions	There are several intrinsic factors of MFS that quite a lot of patients have, namely secondary diagnosis in 24 (50%) patients and impaired cognitive function in 23 (47.9%) patients.
(Urbanetto et al., 2017)	Analysis of risk prediction capability and validity of Morse Fall Scale Brazilian version	Longitudinal study	Two hospitals of the University of Rio Grande do Sul, Brazil were conducted from November 2013 to March 2014.	1487 Patients with inclusion criteria: 18 years, admitted to a clinical or surgical unit, and evaluated in relation to factors associated with falls within 48 hours of initial admission.	Fall history, secondary diagnosis, ambulatory aid, IV or heparin or saline IV access, gait, mental status	These factors showed a statistically significant relationship between the incidence of falls and risk classification, and the group that experienced falls showed an association with high risk. This was also observed in the comparison of groups (falling and not falling) with scores on factor intrinsically using MFS the first mean history of falls in the falling group was 20.7+7.2 (25%) and the non-falling group 5.9+ 10.6 (0.0%) with p= <0.0001. Second, gait in the group fell 8.6+6.7 (10%) and the group did not fall 4.1+6.0 (0.0%) with p=<0.001. Third, the mental status in the group fell 4.8+6.2 (1.2%) and the group did not fall 1.4+3.9 (0.0%) with p=<0.001.

High-Risk Intrinsic Factor

Fall History is one of the intrinsic factors that influence risk of falls in patients, as evidenced by studies whose results are strong predictors of hospitalized patients is a history of there are in a retrospective cohort study with a sample of 75,036 patients (Choi et al., 2018). This is supported by a longitudinal study related to the risk of falling in hospitalized patients involving 1,487 patients, it was found that the results of the assessment using the Morse Fall Scale (MFS) were also observed in group comparisons (falling and not falling) with scores on intrinsic factors using the average MFS. The mean history of falling in the falling group was 25% and the non-falling group 0.0% with p= <0.0001 (Urbanetto et al., 2017). However, there is another study in a retrospective case-control study with a study sample of 620 patients whose results contained a significant intrinsic factor, namely a history of falls but not the first to be associated with a significant outcome. The first was gait disturbance (p=0.001) and followed by a history of falls (p=0.002) (Noh et al., 2021).

Gait is also one of the intrinsic factors that influence risk of falling in patients, as evidenced in a retrospective case-control study involving 2,227 patients whose assessment results according to the Morse Fall Scale (MFS) were found in the high-risk and fall group had intrinsic factors, namely impaired gait significantly causes falls (Lee et al., 2020). This is supported by a retrospective case-control study with a

research sample of 620 patients, the result of which is that among the 6 items Morse Fall Scale (MFS) which includes intrinsic factor that has significance, namely walking disorders (p = 0.001) (Noh et al., 2021). This is also in line with the results of a secondary study analysis in which an abnormal gait is identified using Morse Fall Scale (MFS) the result is 51% (n = 224) of falls (Guillaume et al., 2016). There is also a study involving 103 patients, patients with a high risk of falling, there are predictors signification of the incidence of falls: gait and balance disorders (Miertová et al., 2018). However, another study related to risk of falls inpatients involving 1,487 patients found that the results of the study using the Morse Fall Scale (MFS) showed that patients who had previous walking disorders experienced falls as much as 10% of patients who fell with p < 0.0001, which is of significant significance. second in the study (Urbanetto et al., 2017).

Low-Risk Intrinsic Factor

The disease diagnosis or can be called a comorbidity is one of the intrinsic factors that affect the risk of falling in patients, as evidenced in a study conducted with a *cohort study* with a sample of 831 patients. Morse Fall Scale (MFS) secondary diagnosis 506 (60.9%) (Pasa et al., 2017). Other studies also support the intrinsic factors in the diagnosis of disease, namely a study conducted with a cross-sectional study and quantitative approach involving 284 patients whose results obtained a high percentage of elderly patients with a high risk of falling associated with a secondary diagnosis 228 (80.3 %) of patients (Falcão et al., 2019). Another study involving patients with clinical diagnosis and traumatological patients as many as 155 patients who had the highest number of comorbidities in all patients (p = 0.000) they had comorbidities (clinical: 50% vs. trauma: 82.4%) (Aguiar et al., 2019). This result is also supported by the Morse Fall Scale (MFS) study conducted at an Indonesian hospital, namely a secondary diagnosis of 50% (Purnamasari et al., 2020)

Mental status is one of the intrinsic factors that influence risk of falling inpatients, it has been proven in several studies although it is not the main outcome in these studies. The study was a retrospective case-control study with a study sample of 620 patients whose results were among the six Morse Fall Scale (MFS) items, more falls than controls who have intrinsic factors, namely, first, gait disturbance (p=0.001), second, history of falls (p=0.002), and thirdly, mental status (p=0.009) (Noh et al., 2021). Similarly, another study involving 1,487 supportive patients, this was observed in the comparison of groups (falling and not falling) with scores on intrinsic factor using Morse Fall Scale (MFS) the average first history of falls in the falling group was 25% and the group did not fall 0.0% with p= <0.0001. Second, gait in the group fell 10%and the group did not (Urbanetto et al., 2017).

DISCUSSION

It is important to assess the risk of falling inpatients to determine the factors that cause falls. One of the risk factors for falling is using the Morse Fall Scale (MFS). This is because the Morse Fall Scale (MFS) is commonly used instruments in assessing the risk of falling in patients (Guillaume et al., 2016). Morse Fall Scale (MFS) can assess intrinsic factors including a history of falls, gait disorders, disease diagnosis and mental status. Identifying people who are at high risk for falls and increasing awareness about existing risk factors, as well as access to information through educational interventions, can reduce the adverse impact of falls (Arandia et al., 2017). This is because each patient may have different intrinsic factors that affect the risk of falling.

The results of this literature review indicate that a history of falls is one of the intrinsic factors that are included in the high-risk intrinsic factor. Fall history factors are widely owned and closely related to the incidence of falls in patients (Choi et al., 2018; Noh et al., 2021; Urbanetto et al., 2017). Where the patient's history of falls cannot be known without an assessment. The most common assessment to determine the history of falls is in the Morse Fall Scale (MFS) item. A history of falls is one of the intrinsic factors that are included in high-risk intrinsic factors. That way nurses can give more attention to patients who already have a history of previous falls. However, there is another study that has been carried out, namely a cohort study involving 831 patients in several surgical and medical clinics in Brazil, the results of which were found in the Morse Fall Scale (MFS) study that the number of patients who did not have a history of falls was 151 (53, 2%) patients (Pasa et al., 2017.

The results of this literature review also show that the patient's gait is one of the intrinsic factors that enter into a high-risk intrinsic factor. Triggers of gait factors in the incidence of falls in patients such as muscle weakness, lower extremity weakness, balance disorders and walking problems besides utu are certain drugs that can cause walking disorders and increase the risk of falling (Guillaume et al., 2016; Lee et al., 2020; Miertová et al., 2018; Noh et al., 2021; Urbanetto et al., 2017). Therefore, assistance is needed when the patient walks or even the patient can use a walking aid that is adapted to the patient's condition. When choosing a walking aid, the anatomy of the body must be considered because the selection of an improper walking aid can result in worsening gait and the risk of falling (Trijayanti & Kurnia, 2017). However, the use of walking aids is also one of the extrinsic factors that can increase the risk of falls in patients as well. This is evidenced by the existence of several studies which state that the use of walking aids is significant for the incidence of falls (Noh et al., 2021; Urbanetto et al., 2017)(17,18). In addition to this research, there are other studies which state that there is a relationship between walking aids and the risk of falling in the elderly at the elderly posyandu RW 04 Ward Village, Kediri City (Trijayanti & Kurnia, 2017). So, when a patient has a walking disorder and is given a walker, it does not mean that the patient is free from the risk of falling.

The results of other studies from this literature review, disease diagnosis is one of the intrinsic factors which is included in the low-risk intrinsic factor. The diagnosis of secondary disease can affect the patient's risk of falling. When the patient has secondary or more than one disease it is possible for the patient to experience higher limitations related to body weakness, musculoskeletal, neurological, etc. This is also certainly related to the use of intravenous devices, almost 100% of hospitalized patients have secondary disease (Aguiar et al., 2019; Pasa et al., 2017; Purnamasari et al., 2020). Intravenous injection is also one of the items contained in the Morse Fall Scale (MFS) which is a risk factor for patients falling.However, in another study in the form of a longitudinal study involving 2 groups, namely falling and not falling, the result is that secondary disease p = 0.543 which means no significant to the incidence of falls (Urbanetto et al., 2017).

The results of the latest research from this literature review are mental status is an intrinsic factor which is included in the low-risk intrinsic factor. Intrinsic factors of mental status that influence risk of falls in patients. This mental status affects the incidence of falls inpatients. This is evidenced by the existence of several studies such as the significance of the incidence of falls for faller and non-faller groups, the number of data on patients who have mental status disorders in hospitals (Noh et al., 2021; Purnamasari et al., 2020; Urbanetto et al., 2017). When a patient has a mental status disorder, the nurse may have to ensure that the patient is accompanied by a companion while in the hospital if possible. If not, the possibility of the patient falling is quite large. However, there are other studies which state that mental status in patients has no significance to the risk of falling in patients, namely a study in the form of a quantitative prospective cross-sectional study involving 103 patients whose results showed that mental status factors had no significance to the risk of falling with p = 0.061 (Miertová et al., 2018).

LIMITATION OF THE STUDY

This literature review has the limitation of only covering articles that use the Morse Fall Scale (MFS) and of course the factors studied are also limited to only items contained in the Morse Fall Scale (MFS), so many factors are not yet known. it would be better if this literature review was supplemented using articles using various fall risk assessment tools such as STRATIFY, and the Hendrich Fall Scale (HFS).

CONCLUSIONS AND SUGGESTIONS

Based on the results of the 10 articles that were synthesized and the results of the discussion above from several articles, it was found that there were 4 intrinsic factors that influenced the risk of falling in patients. 4 factors that influence the risk of falling in patients, namely a history of falls and gait are classified as high-risk intrinsic factors and secondary disease and mental status are classified as low-risk intrinsic factors.

Nurses should assess patients using available fall risk assessment instruments, for example the Morse Fall Scale. When conducting an assessment the nurse should aware regarding patients who have risk factors for a history of falls and gait. As follows: increased attention for patients who have a history of falls, should be studied deeper related to the causes of their fall history.

ETHICAL CONSIDERATIONS

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Conflict of Interest Statement

There is no conflict of interest for this study.

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