Evaluation of Barriers to Administering Evidence-Based Fall Risk Education and Screening to

Older Adult Populations by Healthcare Providers

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Abstract

Background: Falls in the older adult, age 65 and older, are a major factor in regards to the populations' mortality, decreased mobility, and significant strain on financial resources (CDC, 2011; 2012). There is a need to identify those at risk for falls and make effective referrals in order to decrease the above mentioned factors. Limited research exists as to provider's perspective on the barriers to completing fall risk assessments in both the primary and acute settings. *Methods:* Providers in the Midwestern health system were surveyed MD's, DO's, nurse practitioners, and physician's assistants. *Results:* Providers agreed that fall risk assessment is an important aspect of both primary care visits and admissions/discharge planning of acute patients. Of those surveyed, the providers identified gait dysfunction, polypharmacy, and previous falls as the most important areas to evaluate for fall risk. Time to discuss and complete fall risk assessments were found to be one of the determining factors to the completion of a fall risk assessment in both inpatient and outpatient settings. *Conclusions:* This research aimed to identify what the barriers are to completing a fall risk assessment in inpatient and outpatient settings and identified where in the patient care spectrum providers deem it appropriate to provide screening and intervention. This research helped to standardize fall risk assessments by identifying barriers to completing and addressing fall risk. It also identified what fall risk assessment tools are being used in the outpatient and inpatient settings.

Keywords: falls, barriers, assessment, older adult (>65)

Background

      Falls are a phenomenon that all human beings will experience in their lifetime beginning at a very young age, and continuing across the lifespan. In 2007, accidental falls were reported as the number one cause of non-fatal injury of all age-groups, with the exception of ages 15-24 (automotive accidents), (Centers for Disease Control and Prevention (CDC), 2007). Unintentional injury was the 5th leading cause of death in the United States with 18% being related to falls in all populations, specifically, 48% in the older adult population, >65 years of age (CDC, 2007). Medicare costs associated with falls in this age group have been assessed at $9,000-$13,500 per non-fatal fall and topped 19 billion dollars in direct medical costs to the Medicare system (Shumway-Cook et al., 2009). These numbers are projected to increase as the population of citizens over 65 continues to rise.

      Of mortal falls in 2008, a staggering 82% of the individuals were over the age of 65. Consequently, this population has been linked to death and increased mortality from falls (CDC, 2008). The number of deaths solely related to outpatient falls has been on the rise since 1993 (Stevens, 2006). Specifically, in 1997 deaths related to falls in this population were 29 per 100,000 people and in 2007 it was 45 per 100,000 people (Baker and Hu, 2012; DHHS, 2012). Direct medical costs related to outpatient fatal falls is estimated at 200 million dollars (Shumway-Cook et al., 2009). This implies that this age group is vulnerable and warrants closer attention by providers for cost control, quality of life preservation, and reduction of mortality.

      Inpatient falls occurring on Intensive Care Units (ICU) and non-ICU units are also significant. A range of 1.4 and 17.9 patient falls occurs per 1,000 inpatient days depending upon the type of inpatient unit and staffing (Lovallo, Rolandi, Rossetti, Lusignani, 2010).

      The most commonly identified reasons for falling within the inpatient setting were

associated with activities of toileting and getting into, or out of, bed. Adults on an acute care

floor that were transferring from the bed to chair or moving to the and from the bathroom,

regardless of nursing assistance comprised 45% of falls (Huey-Ming & Chang-Yi, 2012). These

previously mentioned events led to falls in inpatient settings, which is perceived as a more

controlled environment compared to outpatient setting. It is estimated that 78% of falls in

hospitalized patients can be categorized as predictable physiological falls, i.e. occurring in

individuals exposed to identifiable risk factors based on fall risk assessments conducted by

nursing and/or providers (Lovallo et al., 2010).

Several fall risk assessment tools that are available to identify these physiological fall

factors includes the Morse Fall Risk Scale, the Conley Scale, STRATIFY tool, Tinetti Scale,

Downton Index, and Hendrich Risk Model (Lovallo et al., 2010). These fall risk assessment

scales are utilized by nursing and providers during an inpatient stay to evaluate patients with

high or low probability of falls based on a multitude of factors including co-morbidities, history

of falls, current medications with emphasis on benzodiazepines, antiepileptics, and patient

judgment (Lovallo et al., 2010). When these fall assessment tools yield a positive result, a more

in-depth clinical evaluation is warranted by either nursing or providers to determine whether

preventative measures such as physical deterrents, education, medication changes, or increased

staff awareness is warranted (Lovallo et al., 2010).

The CDC has endorsed a toolkit for the outpatient clinical setting called Stopping Elderly

Accidents, Deaths, and Injuries (STEADI) (CDC, 2013). This toolkit includes resources for

providers related to fall risk prevention and fall risk assessment in the older adult population. It is

based on an algorithm from the American and British Geriatric Societies Clinical guides that

compiles standardized assessment tools, educational handouts, and tips for conversation starters

(CDC, 2013).

Solutions for both inpatient and outpatient falls begins with a comprehensive assessment to determine those at risk for falls. Once identified, appropriate interventions can be put into place, such as discontinuing any medications with a negative effect on a patient's judgment and/or coordination, ordering high-low beds to discourage independent ambulation, bed alarms for chairs and beds, and home-based interventions for patients upon discharge. These home-based interventions we've considered include appropriate supervision, utilizing home health services such as visiting nurses, removing obstacles such as rugs and wires, installing equipment such as grab bars in the bathroom, or having the proper railings for stairs, and continued evaluation of functional ability by family and providers.

Significance

Organizations that determine professional standards for healthcare providers have concluded that nurses and providers should be competent on basic fall assessments and appropriate interventions/education. Nursing competencies state that professional nurses beginning at the bachelor level should be able to deduct and apply current evidence based practice which specifically pertain to fall risk assessments and appropriate preventative measures (Stevens, 2009). The impact of these assessments for nursing include being responsible for supervising patients and implementing safety techniques for those at high risk of falling and disciplined if they have had a pattern of non-compliance with fall prevention interventions. Nurses also have a duty to round regularly on patients, toilet patients frequently, and practice safe transfer and ambulation techniques.

Nurse practitioners (NP) core competencies define the role of the NP related to falls as: one who recognizes fall risk and the need for screening, prescription of devices to maintain

balance and prevent injury, and implementation of patient specific interventions that promote

safety and quality of life (AACN, 2010). Medical doctors (MD) have six core competency

requirements that focus on: "systems based practice, interpersonal skill and communication,

medical knowledge, patient care, practice-based improvement, and professionalism" (Stewart,

2001). These competencies do not make specific mention to falls, but declare that each physician

must be competent to address topics such as falls and implement evidence-based practice that

they deem necessary. Physician Assistant's (PA) have competencies very similar to those of the

MD's with focus on professionalism, evidence-based practice, and communication and include

intervention as well as use of screening (National Commission of Certification of Physician

Assistants (NCCPA), 2012)

The Joint Commission highlights the topic of home-based falls as a key component of the

National Patient Safety Goals (NPSG) for ambulatory and home care. The goals specifically

address the identification of those at risk of falling, and to make coordinated efforts to limit

people from falling (DHHS, 2012). Healthy People 2020 identified avoiding an increase in fall

related deaths as a main goal for all individuals (DHHS, 2012).

Falls in older adults are a significant financial burden to society and a central contributor

to mortality. Fall incidence, risk, financial impact, and mortal consequences have been studied

previously, and described above. We've determined that every patient's risk for falls warrants

attention from not only providers, but also from physical and occupational therapists,

pharmacists, durable medical equipment manufacturers, emergency medical responders, policy

makers (local, state, and federal), advocates for the aging population, agents implementing the

Affordable Care Act (ACA), and many others.

Cost effective measures, accurate screening, and appropriate evidence based

interventions have increased with the recent shifts in our healthcare delivery system. Nursing staff has been the primary health care worker administering fall risk assessments and interventions are typically based on protocol, no specific provider orders. Intervention protocols can be varied depending on the unit (i.e. sit/stand alarms, gripping socks, identifiable arm bands, and signs on patient doors).

Additional research with a focus on outcomes and overall decrease in the rate and severity of falls is necessary to advance the subject from this point onward. This information is especially pertinent to nurse practitioners, hospitalists, physician assistants, and other primary care providers that have close access to individuals in the outpatient and inpatient settings.

Fall risk assessments have an impact on patient reimbursement by Medicare which affects the handling of falls within the inpatient setting. Effective October 2008, Medicare implemented payment changes to hospitals designed to encourage the prevention of conditions such as falls. Medicare no longer provides reimbursement to hospitals for a higher-paying diagnosis-related group (DRG) such as injuries related to inpatient falls, i.e. hip fractures (National Council on Aging, 2011). The National Council on Aging estimates an extra $10,800 in direct medical care costs for inpatient fall injuries due to an increased length of stay, rehabilitation, medications, and caregiver burden (National Council on Aging, 2011).

Due to lack of reimbursement for hospital-occurring falls the responsibility is placed upon the organization to ensure all fall-risk assessment measures and interventions are in place, and the appropriate chain of command is followed. There are pivotal roles and responsibilities related to fall management assigned to everyone within the health care system ranging from hospital management, specific unit management to the floor staff. This is critical for not only the safety of patients, but for the economical functioning of healthcare systems in the future.

Problem statement

Falls in older adult populations proved to have a negative effect on quality of life and functioning (CDC, 2011; 2012). Primary and acute care providers were in a pivotal position to evaluate and educate patients, but do not always provide the most up to date interventions and screening. The goal of this project was to determine these barriers and highlight any shortcomings within the outpatient and inpatient evaluation of fall risk that may lead to increased injury, mortality, and/or cost for the individual and possibly hospital/healthcare system. Information derived from this study provides insight into the attitudes and behaviors of providers in relation to completing fall assessments, and acts as a focus for research in future study.

Purpose

The purpose of this research project was to explore perceived barriers of all providers to fall risk assessment for older adults, >65, within an outpatient and inpatient setting. The type of scholarly project identified is a *program evaluation* project. Evaluation of the barriers that exist with fall risk assessment among nurse practitioners, physicians, and physicians assistants benefits patients in the older adult population.

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Review of Literature

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Falls: Empirical Evidence of Outpatient Falls

Unintentional falls in older adults, age >65, are an unfortunate, yet common, occurrence. The approach of study in outpatient falls focused on preventative measures, gained attention to fall awareness, patient's physical inadequacies, and proprioception. These events in older adults (age >65) were preceded by several variables. One of these variables included the prescription of medications to compliment aspects of aging that had been shown to increase risk of falling either from improper dosing or combinations of specific pharmaceuticals (Wilson et al., 2011).

A complex combination of multiple therapeutic agents used to combat various ailments is referred to as polypharmacy, and has be linked to falling and increased risk of falling in the older adult population in both outpatient and inpatient settings (Kojima et al*.,* 2012).

Hypertension is a commonly treated condition in older adults. Medications used to correct the incidence of hypertension had been linked to increased risk rate of falling primarily due to the incidence of orthostatic pressures resulting from medicine-induced hypotension (Gangavita et al., 2011). Another variable that affects the elderly population is the condition of osteoporosis. Osteoporosis itself is not associated as a risk factor for falling but is significant in the relation to the increased risk of morbidity and mortality in the event of a fall. This is due to increased fractures, i.e. hip fractures, though it may also cause a fall if the fracture is pathologic in nature (Smulders et al*.,* 2011). Evidence shows that the older adult population has a knowledge deficit, based on their presumption of fall risk, actual fall risk factors and appropriate fall risk interventions (Hill et. al., 2011).

Kinesthetic factors had also been found to attribute to falls in older adults. These kinesthetic factors have a broad inclusion from sensory perception to physical strength to fear of falls. Types of kinesthetic factors included the patient's ability to sense objects and their physical environment which are linked to many known causes of falls. Another factor, mild to moderate vision impairment, was not considered to be directly related to falls in aging adults, but may have been a contributing factor when combined with other co-morbidities. Lastly, severe visual impairment in either one or both eyes has been shown to be a significant contributing factor in falls of some aging populations (Lamoreux et al., 2008).

In addition to kinesthetic factors, older adults require more time to adjust to an erect, walking posture in order to compensate for objects that may disrupt their path during walking. If

uncompensated, this common result of impeded erect walking may lead to increased risk of falling (Uemura, Yamada, Nagai, and Ichihashi, 2011). In conjunction with impeded erect walking, there are also unintentional simultaneous muscle contractions of lower extremity muscle groups which increase throughout the aging process and had been directly linked to falls (Nelson-Wong et al*.*, 2012). Anticipation of falling has creates unnecessary fear which in turn has led to the actual act of falling (Scheffer et al., 2008). Interventions based on empirically-identified risk factors, such as the aforementioned kinesthetic factors, had been studied by conducting them on inpatient units where there is a higher level of professional supervision.

Falls: Empirical Evidence of Inpatient Falls

Incidence rates link factors such as delirium, mobility, and medication effects to an increased risk of falls in a hospital setting. Falls by older adult patients being cared for in the hospital is unfortunately a common event. There are many preventable strategies to implement in the acute setting, however; human nature will always prevail. Even though falls are classified as "never events" by the Centers for Medicare and Medicaid (CMM); falls are not 100% avoidable (Lohse et al., 2012). A systems-based fall-prevention program that is provided by physicians and implemented by nursing, nursing aides, occupational therapy and physical therapy is a strategy to help in the lessening incidence of falls while in an inpatient setting (Lohse et al., 2012).

It is believed that despite all the interventions available in the acute setting: toileting assistance, timed-toileting, bed alarms, non-slip socks, high-low beds, sitters, and gait belts for example, that it is unrealistic to consider all falls to be preventable (Lohse et al., 2012). The most effective management by providers in the acute setting is to provide education to the healthcare team, in order to create a partnership and promote a culture of safety. Fall risk education is most

effective when it was data-driven and derived from evidence-based practice (Lohse et al., 2012).

This partnership requires open-communication between providers and nursing staff about patient

risk factors to falls (i.e. age, co-morbidities, surgeries, medications, etc.) and possible

implementation of prevention strategies.

Falls Prevention: Community-Based Fall Interventions

Many different types of interventions to reduce falls had been examined due to the large

incidence, financial burden, and potential loss of independence/life that falling imposes on the

older adult population. Community-based plans of care may be effective and are best developed

individually by professional staff with an established rapport on an individualized level to best

utilize preventative resources with realistic compliance and acceptance (McMahon, Talley, and

Wyman, 2011).

Community-based interventions were derived from empirical sources mentioned

previously. Screening and education for at-risk adults did not affect the overall incidence of

falls, despite increased referrals and use of physical and occupational therapies (Ciaschini et al.,

2009).   In such cases of at-risk patients, Gillespie et al. concluded that the event of falling may

not be entirely avoidable, but the frequency of falls may be reduced (Gillespie et al., 2011).

Monitoring bone health and incorporating physical therapy to deliver individualized treatment,

mostly based osteoporotic risk factors, is part of a multidisciplinary approach that is shown to

increase awareness and decrease fracture rates associated with falls in communities (Perry and

Downey, 2012). Exercises focusing on strength and balance improved kinesthetic risk factors

mentioned above in older adults, but did not significantly affect the rate of falls in the

community-based study populations (Freiberger et al.2012; Shumway-Cook et al. 2007).

Other reports exist advocating for strength and balance to decrease the rate and risk of

falling by using community-based multitask training and music (Trombett et al., 2011; Åberg, Frykberg, and Halvorsen, K. 2010). However, they make no mention of fall rate post-intervention. Incidentally, Aberg *et al* reported falls without injury occurred after intervention initiation, but decreased overall fear by patient of falling. This in turn suggested that physical interventions in a controlled environment may be a risk factor itself and may merit future study.

Falls Prevention: Inpatient barriers to fall prevention

Clinical practice guidelines (CPG) for fall prevention are effective in the inpatient setting; however, the problem is in their implementation within the units. Barriers to implementation of fall prevention include individual attitudes and perceptions of providers towards research of these clinical practice guidelines (Stenberg & Wann-Hansson, 2011). Since falls are the number one type of inpatient accident it is important to understand barriers to fall prevention and utilize strategies to overcome those barriers.

Factors to overcome barriers to implementation and compliance seem to be a supportive leadership, systematic evaluations of the CPG outcome, and the facilitator's role. Findings show healthcare professionals' attitudes to, and compliance with, CPGs for fall prevention seem to be mainly dependent upon actual experience of a course of events including falls and fall injuries followed by negative consequences. This experience led to increased motivation in using a clinical practice guideline. The benefits of fall risk assessment and prevention were obvious when fall incidence had decreased on the inpatient unit mainly based on a CPG. (Stenberg & Wann-Hansson, 2011)

Furthermore, successful implementation and guideline compliance are influenced by social factors including: community obligations i.e. laws and regulations, organizational resources concerning leadership within the organization, and individual resources such as ethics,

motivation, and knowledge.

Perceived barriers to fall prevention and management by nurses

   Nurses are often the initial point-of-contact in the acute setting for evaluating fall risk for each patient. It was shown that several barriers to implementing clinical practice guidelines in relation to fall prevention included: "knowledge and motivation of staff, availability of support staff, access to facilities, health status of patients and education of staff and patients" (Koh et al., 2008, pg.6-7). Differing attitudes about the importance of fall prevention was highlighted by Tzeng and proposed greater focus during primary education (Moreno-Casbus et al., 2011).

  Jones, Ghosh, Horn, Smith, Vogt found that physician's in the Colorado area lack awareness of both fall assessment tools, and educational materials. A limitation to this is they only surveyed physician's it is possible that other providers may have a differing awareness about such resources and that these barriers may not hold true for all types of providers (2011).

  International nursing research confirmed other barriers to implementation of current best practice research including availability of current literature, time limitations in the work environment, lack of ability to effectively influence change, and inadequate evaluation skills (Johnson and Hutchinson, 2004).

  Trombetti, Hars, Hermann, Kressig, Ferrari, and Rizzoli expanded on Johnson and Hutchinson to reinforce the key barriers to implementation of evidence based practice change is a lack of time to analyze current research and implement the findings (2006). It was also determined that organizational barriers, research quality, attitudes of direct care staff, and communication between registered nurses and providers adversely affected fall screening and subsequent management (Moreno-Casbus et al., 2011). Registered nurses play a different role

than providers, but do have initial access to patients and the availability to address the subject of falls, or indicate need for screening in the acute setting.

Perceived barriers to fall prevention by providers in the inpatient and outpatient setting

Primary care providers have had the most direct access to knowledge, referral, and patient specific attributes that may contribute to falls. Nurse practitioners acting in the primary care provider role have had similar knowledge, and were more likely to respond to surveys then the other providers solicited on the topic of falling (Kramer, Ganz, Vivrette, Harker, Josephson, Saliba, 2010).

Chou et al (2006), surveyed providers and have identified several variables that they conclude influence the delivery of current evidence based practice in regards to patients falling. The first variable identified pertains to the complexity of the patient's condition with regards to competing for provider's time, proper referrals, and attentiveness to all factors that may contribute to falls. They also believed that the patient may inaccurately respond, have pre-conceived notions of medications, and provide false-positive feedback to the provider when asked about fall risk (Chou et al., 2006). They also identified logistical factors in the healthcare setting including: transportation, time constraints with appointments, and family involvement as barriers to fully implement desired interventions related to falls (Chou et al, 2006*).*

Surveyed providers identified time constraints during appointments, immediate issues affecting patients, and the lack of access to information as barriers to providing fall risk screening and education to older adult patients (Jones, Ghosh, Horn, Smith, Vogt*,* 2011). Of those providers screened only 8% based their fall prevention practices on clinically acceptable guidelines with regard to the American Geriatrics Society, and The British Geriatric Society, (Jones et al.*,* 2011).

Providers also identified patient compliance with fall intervention strategies as a key barrier in avoidance of falls, and listed inadequate Medicare reimbursement and availability of other providers as another barrier to successful referral (Fortinsky et al., 2004). Primary care providers (PCPs) did correlate lower rates of fall screening with higher self-reported need for continuing education for providers regarding falls (Kramer et al., 2010).

Assisted living facilities are housing areas where older adults lived together, but are able to participate in the community with minimal supervision and oversight from professional staff. These aforementioned perceived barriers for both inpatient and outpatient falls also apply to assisted living patients and residents and have been identified to be driven mainly by compensation, instance, and knowledge of falls (Nyrop, Zimmerman, Sloan and Bangdiwala, 2012). Researchers determined that communication between primary care providers and staff at these facilities regarding fall risk of its residents is an obstacle to implementing effective fall risk management strategies (Nyrop, Zimmerman and Sloan, 2011).

Empirical research shows that falls are a major threat to the livelihood and financial security of older adults in the United States (U.S.). It was identified above that many fall risk assessment tools exist to identify those at risk of falling. What has not been shown is a positive correlation between corrections of identified fall risk factors and a decreased overall fall rate in this population. Provider studies have been completed examining what they perceive as barriers by discussing overall attitudes and perceptions of fall management.

More research is needed to accurately discriminate between those at high and low-risk of falling and what this means for further assessment and individualized interventional planning. There is conflicting evidence into whether or not the fear of falling limits activities. Evidence-based educational programs seemed to be most effective to achieve awareness and induce the

elderly to understand the health benefits of not falling in order to identify risk and apply appropriate interventions. This principle has be applied to provider education in terms of increased assessment completion, and interventions, in the form of education or further referral. There was no literature to evaluate what is done once a patient is 'deemed' a fall risk in terms of education completed, or referral to a fall-targeted program, or when a provider believes the best time to address fall risk is.

In the inpatient setting it was imperative that falls take an interdisciplinary approach, but there was yet to be good evidence as to how falls and interventions were communicated between the interdisciplinary team and what the barriers to that communication are. However, it was known that in the inpatient setting, nurses are the front line staff for fall risk screening (Moreno-Casbus et al., 2011).

Future research that identified attitudes and potential gaps in education of providers will provide foundations for future research in development of interventions that decrease rate of falls. Advance practice nurses in the roles of nurse practitioners, clinical nurse leaders, and hospital administration will benefit from having further insight into what providers perceive about falls, and evidence shows that strong leadership is another strong component of fall intervention.

<p style="text-align:center">Theoretical Framework</p>

The Theory of Reasoned Action (TRA) was used to guide this study of perceived barriers. This model was acceptable in examining providers because it was based heavily in intent and attitude (Montano and Kaspryzk, 2008). The principles are influenced by external barriers. The first principle of the theory is attitude, and it is derived by personal beliefs and examination of outcomes. The second component is individual standards, and is driven by

motivation to comply and perceived normative behavior. Attitude and subjective norm eventually lead to examination of current behavior then the decision to either alter or retain current behavior (Montano and Kaspryzk 2008).

The Theory of Reasoned Action applies to this study, as it was developed to examine actions. Behavioral motives can be altered by external variables, which are the focus of this study. Identification of these variables (potential barriers) added to the body of knowledge and improved patient care. It was used to examine provider behavior, perception, and attitude of falls, fall risk, and fall risk intervention when included with other elements of patient care. This study attempted to illicit external variables that influence attitude, perceived standard and provided insight to how they affect the overall behavior of primary and acute care providers not providing fall risk education or interventions based on current evidence based practice.

Methods

Design

This study was of non-experimental design with focus to identify perceived barriers of providers to fall risk intervention and management. The setting for the study was primary care clinics staffed by physicians, nurse practitioners, physician assistants, as well as, inpatient units staffed by physicians and hospitalists in private suburban healthcare.

The providers were emailed through their organization's email address along with a letter of recruitment and a link to the survey that has been developed on and internet based system. The providers received an initial email invitation with a one week time frame for desired completion. Implied consent was obtained when the provider entered the survey through the link provided within the email after reading through the letter of recruitment and understanding their role in the survey. All survey responses were kept anonymous and no IP addresses were gathered or saved

through the internet survey system. After one week, a follow-up email was sent out to all

providers to remind those that have not completed the survey that their participation is requested

and encouraged.

The survey was inspired by Kramer et al and was composed of seventeen questions

related to the ability of primary and acute care providers to assess fall risk in the older adult

patients, age >65 (Figure 1). It had demographic-type, Likert scale, and "yes-or-no" questions,

and took approximately 10 minutes or less for the providers to complete.

The aforementioned potential fall risk assessment barriers were evaluated by the

providers entering answers on an electronic survey on BlueQ. The survey was developed by

Creighton University School of Nursing students completing their MSN capstone. The survey

was comprised of items identified in literature review that were considered the best way to

examine providers' insight into fall risk screening and management.

Sample/Setting

The provider research population was comprised of MD's, NP's, PA's, physical therapist,

occupational therapists, and speech therapists that service the clinics and inpatient units

mentioned above. The study was conducted in the outpatient and inpatient settings of the

healthcare system, a suburban private healthcare system in the Midwest through providers' email

account.

Ethics

Prior to the commencement of the study, approval from the Institutional Review Board of

the University and healthcare systems were obtained. Additional endorsement was obtained from

the Chair of the hospital IRB and Vice President of Medical Affairs and the President and CEO

of the Physicians clinics that staff the hospital and clinics. Information gathered posed no threat

to ethical standards of either institution. The survey was anonymous and the participants were reminded to not include any identifying information to the survey. There were no perceived risks to participants because of the nature of the survey method and confidentiality of results.

Procedures

Study participants were providers recruited from the primary care clinics and inpatient settings of the healthcare system mentioned above. The participants were alerted by receiving a letter of recruitment from the President and CEO of the hospital system accompanying a link to the BlueQ survey. The letter and survey were sent Friday January 31st, 2014 with a reminder sent Thursday February 6th 2014. They then followed the link, and completed the short survey. The survey closed after two weeks of being open on Friday February 14th, 2014. The data was collected by the third party web site BlueQ, and compiled the data without exposing the researchers to identifiable data.

Data Analysis

Data was collected by the BlueQ software, and compiled results were accessed by the graduate student researchers. The number of responses resulted in nominal data removing the need for advanced statistical software.

Measures

Data was collected by use of the BlueQ survey. This document examined perceived barriers defined by the various literature reviews from multiple dimensions of the patient care spectrum ranging from vision to polypharmacy. Previously identified measures from literature were combined with other identified barriers to be included in the provider survey, to observe attitudes, knowledge, and patterns of evaluation of the providers in the studied healthcare system.

Limitations

The broad spectrum of the word physician or provider is a hazard of generalizability (Theoretical) of this study. For the purpose of this study the word provider includes: MD, DO, NP, or PA. Providers were asked about the management of patients greater than age 65. This was a threat to the generalizability of the results even though this age is at greatest risk of falling (USCB, 2012).

Limits of credibility (Methodological) of this study include the limited geographical location and narrow population. The assessment tool utilized was developed specifically for this study and had not yet been proven or tested which presents a limit as well. Survey links were sent to all providers in the hospital system; therefore providers that do not provide care for the elderly over 65 could also have completed the survey.

Results

A total of 29 practitioner respondents out of 231 providers solicited, completed the survey. Out of 166 physicians and 65 other healthcare providers there was a 13% response rate for the completion of the survey. The majority of respondents were physicians with equal percentages of NPs and DOs (4%) and 2% PAs responded (Table 1). Of these responding providers 58% worked in both the office and acute care settings, 17% were exclusively acute providers and 24% worked in outpatient clinics. The majority of the respondents (41%) were experienced providers with between 11-20 years of practice (Table 1).

The majority of providers (96.5%) reported it is 'almost always' or 'always' essential to evaluate risk of falls in the over 65-years old population in the inpatient setting as well as for discharge planning from acute inpatient visits. Sixty-two percent of surveyed providers reported they had access to appropriate resources to assist with the management of inpatient and outpatient falls. Overall, 72% reported having access to current evidence-based fall screening

and management information for prevention of falls. Formal education in the management of

falls was lacking, demonstrated by a 65% response of providers reporting they had not received

organized instructions on the management of falls in the outpatient setting. Lastly, 62% of

surveyed providers stated they had performed an outpatient fall screening exam, while a meager

7% reported conducting the same in the inpatient setting. (Figures 2 and 3)

Incidental findings within the survey responses were analyzed. When asked to select the

three most important factors in fall-risk screening, the majority of providers chose: previous falls

(74%), gait dysfunction (69%), and polypharmacy (62%). No provider identified hypertension,

osteoporosis, or muscle spasms as important factors for fall-risk screening. Only two providers

selected "fear of falling" and nine providers (31%) chose "vision" when asked the same question

about important factors for fall-risk screening.

Using a Likert scale respondents rated >90% that fall-risk screening was "sometimes

necessary" or "always necessary" in inpatient admissions and discharge assessments. However,

38% said that it was "sometimes necessary" to provide fall-risk screening on older adults >65 at

all primary care outpatient visits. When providers were surveyed about time for fall-risk

management, 71% of respondents answered there was "almost never" or "sometimes" enough

time during outpatient visits to discuss falls However, only 65% of inpatient providers reported

having enough time during rounds for fall-risk management.

Discussion

The survey identified a slight majority of respondents (53%) who believed they do have

access to current and relevant evidence-based resources which would have allowed for

opportunities to increase education of fall-risk management. This additional education could

potentially raise the number of providers that include fall-risk management into their practice

with the older adult population. Up to date information is readily available for most healthcare systems, and encouragement to utilize these evidenced-based resources could directly, and positively, affect patient care in relation to fall-risk.

The lack of inpatient fall-risk screening (7%) may contribute to the heavy influence and responsibility of staff nurses' role in the inpatient management of falls. In comparison 62% of providers in the outpatient setting responded that conducting fall-risk screening is less than ideal. The role of fall-risk screening should be defined in hospital protocol in order to define which staff is responsible for conducting screening in the inpatient setting.

This survey found both similar and conflicting results as compared to portions of the most recent literature related to provider perceived barriers and beliefs about inpatient and outpatient falls. Jones, Ghosh, Smith, and Vogt (2011) revealed physicians believe polypharmacy and physical activity are risk factors that are the most important areas of identification of risk factors in those over age 65. In comparison to the aforementioned study, our survey identified that providers cited polypharmacy, gait dysfunction, and previous falls as important risk factors in agreement with Jones *e al*.

Additional data was collected from the survey that adds to the field of knowledge, but does not address the purpose of the study. Surveyed providers did not select extrinsic factors such as hypertension or osteoporosis with much significance except for polypharmacy. Hypertension, osteoporosis, muscle spasms, vision (31%) are all extrinsic conditions that surveyed providers felt linked to falls in older adults. These extrinsic factors can be directly assessed and treated by providers at inpatient and outpatient settings through assessment of the patient. This may draw the conclusion that providers regard falls as a product of the patient's failure to interact with the environment as a failure of intrinsic factors, rather than a trigger by

extrinsic factors such as home environment.

Providers answering "sometimes necessary" on the Likert scale for the necessity of screening for falls in all older adults provides some insight into the lack of importance placed on fall-risk management. The Department of Health and Human Services (DHHS) requires through Medicare that all patients are screened for falls at age 65, but does not mention continuous, yearly follow-up screening. Therefore, providers' views of the necessity for fall-risk screening would incidentally coincide with DHHS recommendations, however not necessarily best practice, that yearly fall-risk screening would suffice for management.

Based on literature review findings and Medicare requirements fall-risk screening must be conducted on all patients over >65 at least once while either inpatient or during outpatient visits. The actual number of fall-risk screening may be different from our study results due to inpatient and intake nurses conducting some, if not most, of the fall-risk screening.

Limitations

Limitations to the study were also discovered during the investigation. Gathering information from a survey poses multiple limitations. The survey was only available to providers for two weeks for completion. Completion of the survey required providers to leave other professional and spend ten minutes to complete. Although the survey was provided via email with one completion reminder, some providers may not frequently check email, leading to a decrease in exposure.

The survey was sent to all providers in the healthcare system provider mailing list with the assumption that it would only reach physicians, nurse practitioners, or physician assistants. However, after analyzing the results it was discovered that five respondents (17%) were physical therapists, occupational therapists, and speech therapists not providers. Some respondents only

reported seeing either inpatients or outpatients but not both.

Conclusion

The goal of this project was to determine the barriers, and to highlight any shortcomings within the outpatient and inpatient evaluation of fall risk that may lead to increased injury, mortality, and/or cost for the individual and possibly hospital/healthcare system. The studies mentioned in the Review of Literature suggested that additional research was warranted and further examination of barriers to fall risk education is necessary. There was little research that identified both attitudes and behaviors of providers with regards to fall assessment and risk. Survey results showed that Providers feel that there are time constraints, limitations in provider education, limitations in available resources, and need for consistent screening in the older adult population. Future research geared towards any one of the identified barriers would add substance and depth to the topic. Future research on intrinsic factors such as hypertension, osteoporosis, and muscle spasms and their links to falling will allow for better provider education in management of falls. Filling the gaps in this body of research will lead to better management of falls, and a decrease of cost to the healthcare system for events stemming from falls.

Appendix

Table 1 (Provider Demographics)

Demographics	Frequency (%)	Count
Gender		
Male	41.4	12
Female	58.6	17
Area of Practice		
Hospital	17.2	5
Office	24.1	7
Both	58.6	17
Provider Type		
MD	48.3	14
DO	13.8	4
NP	13.8	4
PA	6.9	2
Other	17.2	5
Years in Practice		
Resident	0	0
0-5	20.7	6
6-10	20.7	6
11-20	41.4	12
>20	17.2	5

Figure 1 (Provider Survey)

1) What is your gender?

☐ Male

☐ Female

2) What is your area of specialty?

☐ Hospital

☐ Office

☐ Both

3) Type of provider

☐ MD

☐ DO

☐ NP

☐ PA

☐ Other

4) Years in practice

☐ Resident

☐ 0-5 years

☐ 6-10 years

☐ 11-20 years

☐ > than 20 years

5) Identify 3 areas of Evaluation that you think are <u>MOST</u> important in assessment of outpatient falls for older adult patients

☐ polypharmacy

☐ gait dysfunction

☐ vision

☐ hypertension

☐ osteoporosis

☐ muscle spasm

☐ fear of falling

☐ patient knowledge of fall risk

☐ previous falls

☐ home environment

6)

	N/A	Never	Almost Never	Sometimes	Almost Always	Always
Fall risk evaluation is essential for all inpatient admissions of older adult patients						
Fall risk evaluation is essential for all discharge planning of the older adult patient						
Fall risk evaluation is essential for all primary care visits of older adults						
Fall risk evaluations are essential for all non-primary care visits *includes acute, and all follow-up exams of older adult patients						
There is enough time in your scheduled visit to discuss falls in the outpatient setting with older adult patients						
There is enough time in your scheduled rounding to discuss fall risk prevention						

7)

|	YES	NO	N/A
I have access to appropriate resources available to manage older adult patients with a fall risk in inpatient rounding			
There are appropriate resources available to manage older adult patients with a fall risk in outpatient office visit			
I have access to current evidence based practice content for fall risk screening and management of the older adult patient			
Have you ever performed an outpatient fall screen on an older adult patients, such as the timed "up and go" or the HOMEFAST screen?			
I have received formal instruction in management of outpatient falls in the older adult patient			
I have performed an inpatient fall screen on an older adult, such as the Morse Fall Scale?			

Figure 2 (Survey question 7)
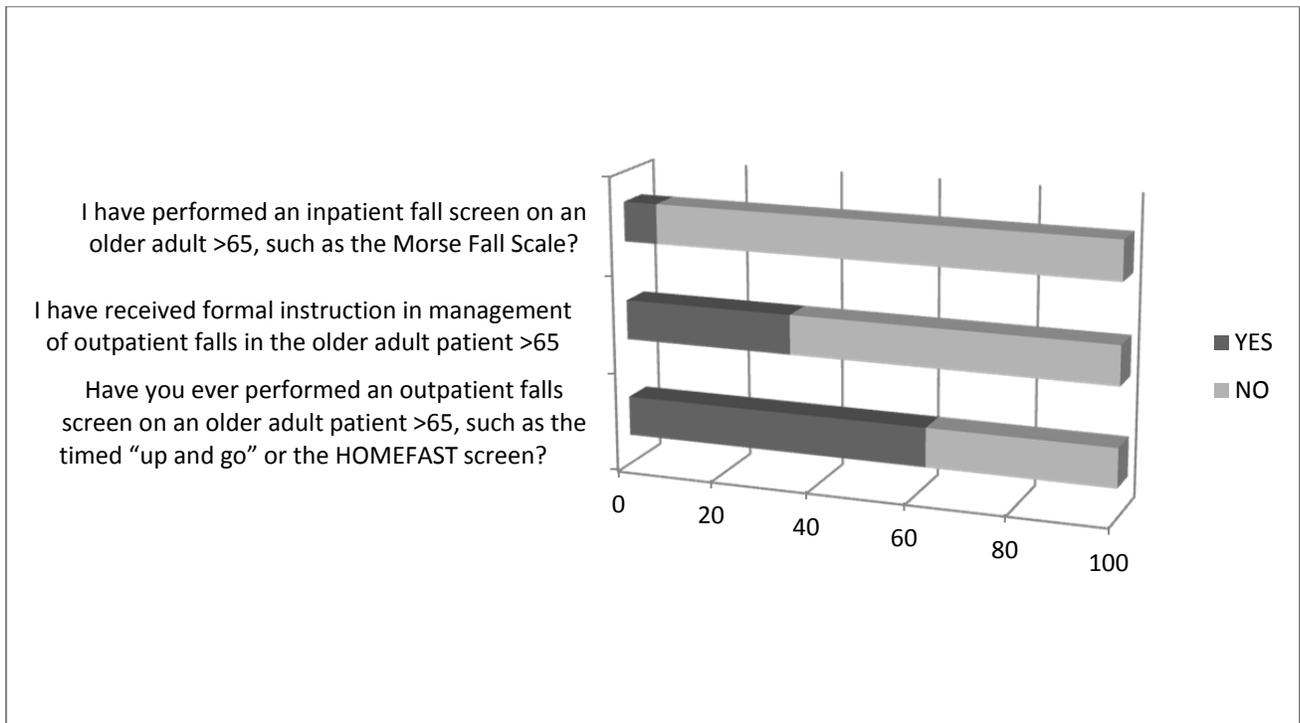
Figure 3 (Survey question 7 continued)
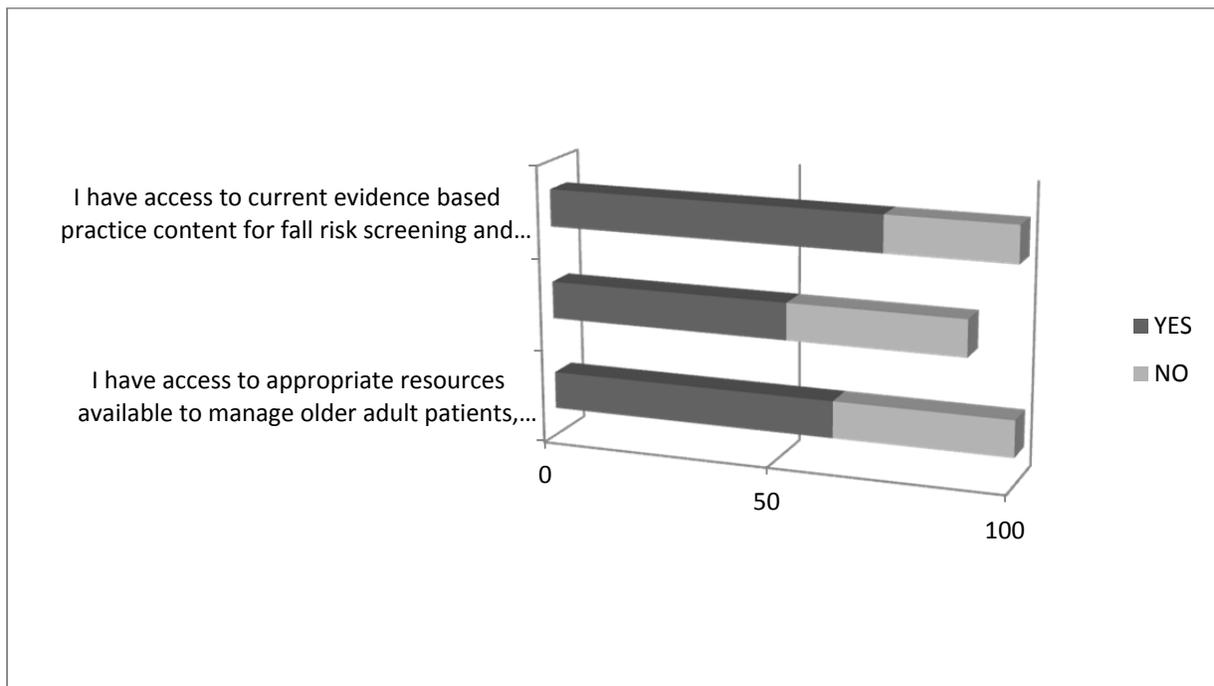
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