



Evaluation of the effectiveness of an intervention in a health team to prevent falls in hospitalized elderly people

Avaliação da eficácia de uma intervenção na equipe para prevenir quedas ao idoso hospitalizado

Evaluación de eficacia de una intervención en el equipo para prevenir caídas del anciano hospitalizado

How to cite this article:

Cunha LFC, Baixinho CL, Henriques MA, Sousa LMM, Dixe MA. Evaluation of the effectiveness of an intervention in a health team to prevent falls in hospitalized elderly people. Rev Esc Enferm USP. 2021;55:e03695. doi: <https://doi.org/10.1590/S1980-220X2019031403695>

 Luís Filipe Correia da Cunha¹

 Cristina Lavareda Baixinho^{2,3}

 Maria Adriana Henriques^{2,3}

 Luís Manuel Mota Sousa⁴

 Maria dos Anjos Dixe^{3,5}

¹ Centro Hospitalar Universitário Lisboa Central, Lisbon, Portugal.

² Escola Superior de Enfermagem de Lisboa, Centro de Investigação, Inovação e Desenvolvimento em Enfermagem de Lisboa (CIDNUR), Lisboa, Portugal.

³ Centro de Inovação em Tecnologias e Cuidados de Saúde (ciTechCare), Leiria, Portugal.

⁴ Escola Superior de Enfermagem, Universidade de Évora, Évora, Portugal.

⁵ Escola Superior de Saúde, Instituto Politécnico de Leiria, Leiria, Portugal.

ABSTRACT

Objective: To evaluate the effectiveness of an intervention program in practices and behaviors of a health team to prevent falls in hospitalized elderly people. **Method:** This was an action, mixed-methods, and longitudinal study that applied an intervention based on TeamSTEPPS®, and organized into five domains: team training, communication, leadership, monitoring, and mutual support. The population was nurses and nursing aides who worked at the medical service of a Portuguese hospital center. Data were obtained by consulting process records and interviews, and by applying the Scale of Practices and Behaviors of Teams for Fall Prevention. **Results:** There was improvement in all indicators of the scale, with evident progress in discussion of risk factors and preventive measures to be implemented. **Conclusion:** This intervention promoted decision-making regarding the preventive measures to be applied to each elderly person and improved communication and the interest in identifying the causes of falls to prevent their recurrence.

DESCRIPTORS

Aged; Hospitalization; Accidental Falls; Patient Care Team; Geriatric Nursing.

Corresponding author:

Cristina Lavareda Baixinho
Rua dos Matos, nº 3, Santiago dos Velhos
Arruda dos Vinhos, Portugal
crbaixinho@esel.pt

Received: 10/02/2019
Approved: 09/23/2020

INTRODUCTION

Over the past years, there has been a marked increase in the number of falls among elderly people, especially those who are hospitalized. The literature justifies this growth with several reasons that, not surprisingly, are interconnected, such as the improvement in accident reporting systems; the increase in mean age or health deterioration of hospitalized people; the reduced time nurses spend with inpatients; the increase in use of sedation therapy⁽¹⁾; low levels of knowledge of elderly people regarding adequate strategies to prevent falls⁽²⁾; the fact that individual and team practices not always guarantee safety when it comes to communication, recording, and monitoring of elderly people⁽³⁾; and the hospital setting itself, which differs from the home environment, a fact that can contribute to 30% to 50% of the total number of falls in inpatients⁽⁴⁾.

Regarding environmental risk, there are not only the aspects related to the structure of services, but also the presence of equipment and materials at places where people pass through, which are obstacles to gait, as well as of other patients, who commonly have complex diagnoses that demands various types of care and show mobility and balance alterations that increase the risk of falls⁽⁵⁾.

Falls are the main type of accident in hospitals. They lead to loss of functioning and longer recovery or rehabilitation⁽⁶⁾, increase morbidity and treatment costs⁽⁷⁾, cause limitations, and worsen the clinical picture and emotional alterations, resulting in longer hospital stay^(6,8-9).

Elderly people who experienced a fall are more likely to fall again. It is known that a fall episode increases the chances of the problem happening again around 33% compared to the probability of a first episode to occur⁽⁸⁾. Additionally, there is an increased risk of development of post-fall syndrome, which accompanies elderly people and their relatives when they get back home⁽²⁾. After a fall episode in a hospital environment, elderly people show high risk of falling at home, more specifically in the bedroom, and get especially vulnerable to problems such as cognitive and functional decline, infections, poor therapeutic management, therapeutic complications, and occurrence of new accidents, with possible hospital readmissions^(2,10).

Fractures that follow falls are one of the most disabling possible consequences, because they trigger a downward spiral in elderly people's health condition, leading to greater dependence or disability and having the potential to result in several complications in the long run⁽¹⁾. The probability of death caused by a fracture in the upper end of the femur is 2.25 higher when the problem happens in the hospital in comparison with the number recorded for episodes in the community⁽¹¹⁾. To emphasize the difficulty that these numbers entail, it must be stressed that every 13 seconds an elderly person is admitted to an emergency service with injuries resulting from a fall, and that every 20 minutes an elderly person dies in the aftermath of a fall⁽¹²⁾.

Underreporting of accidents makes this scenario worse. Usually, all the cases that result in injuries are reported, but episodes that seem to be injury-free at first and may lead

to late detection of problems by professionals are often not associated with the fall that originated them⁽⁵⁾, which hinders the adoption of timely measures to prevent fall recurrence and ptophobia.

Although there has been substantial progress in the knowledge in this area, some authors advocated that the biomedical model has been prevailing in the study of this phenomenon⁽³⁾ and that new interventions should be considered, since fall prevention programs are, at best, partially effective⁽¹³⁾ and health professionals who deal with human behavior not always apply adequate approaches and end up resorting to inflexible parameters to tackle unpredictability, while elderly people's perceptions and intentions are kept out of the evaluation and prevention process⁽¹³⁾.

In face of this scenario, some researchers have recommended that one of the interventions outside the biomedical model be the team intervention that uses TeamSTEPPS[®]⁽¹⁴⁻¹⁵⁾. A previous study that applied this teamwork system aiming to engage professionals in safety and fall prevention recorded a decrease in fall occurrence rate from 1.90 to 0.69 per 1,000 bed-days⁽¹⁵⁾, which illustrates the potential of this method to prevent this type of accident.

The objective of the present study was to evaluate the effectiveness of an intervention program in the improvement of practices and behaviors of a health team to prevent falls in hospitalized elderly people.

METHOD

STUDY TYPE

With the research question "What is the effectiveness of an intervention program in the improvement of practices and behaviors of a health team at a medicine service regarding management of fall risk in hospitalized elderly people?" as a starting point, the authors opted to develop an action, mixed-methods, and longitudinal study due to the flexibility of the method, which allows to implement a set of interventions that identify and solve clinical practice problems⁽¹⁶⁾.

The selected method offers the possibility of interaction between researchers and participants with the objectives of introducing changes oriented toward improving the practices of a specific context, creating synergies between theory and practice, and making different actors commit to solving problems⁽¹⁶⁾ and transferring knowledge into clinical practice.

There are different methodological currents for this type of research. Given the study object, the authors chose the model by Kuhne and Quingley⁽¹⁶⁾, organized into three phases and six steps: planning (defining the problem, defining the project, measuring), action (implementing and observing), and reflection (evaluating and verifying whether the problem was sorted out).

The planning phase occurred between September 2016 and September 2017, a period that allowed the researchers to know the health team and the context, understand the problem, define the project, and determine data collection techniques⁽¹⁶⁾. All the participants were submitted to training on the intervention, the domains, and the activities to be implemented.

In this phase, the team chose a nurse to be the leader in the implementation of the intervention. The primordial activities of this professional were planning and carrying out the training of the team in occasions that were key to the implementation of the project, gathering the professionals once a month and providing feedback on prevalence, assessing the applied interventions, identifying difficulties and change opportunities, and encouraging communication about the subject, especially during shift handover^(3,17).

The action phase, which included implementing the intervention, happened between October 26, 2017 and February 2, 2018. The intervention was previously validated by a board of experts in the fall field and was made up of 35 activities based on TeamSTEPPS® dimensions: team training, communication, leadership, monitoring, and mutual support⁽¹⁷⁾. In the validation study, all the indicators showed a consensus higher than 80%, and the Content Validity Index of the intervention was 0.92⁽¹⁷⁾.

To improve communication and dissemination of the project among the members of the team, a group with all the participants was created in the social media Viber®. This intervention turned out to be an important means of discussion, promotion, and scheduling of activities to prevent falls in elderly patients.

The reflection phase to evaluate the intervention was carried out from February 2 to April 30, 2018 and included analysis of semi-structured interviews, of results of the examination of medical records, of participatory observation of shift handovers, and of the Scale of Practices and Behaviors of Teams for Fall Prevention (EPCEPQ, as per its abbreviation in Portuguese)⁽³⁾, which was applied two times: one week before the beginning of the intervention (the third week of October 2017) and two months after it was completed (the first fortnight of April 2018).

POPULATION

The present study was carried out at an inpatient care and internal medicine center, at a Portuguese hospital center that had 20 nurses (including the head nurse) and 11 nursing aides. The inclusion criteria were: working providing direct delivery of care, accepting to participate in the study, and not being on vacation or at a situation of absenteeism during training periods or meetings of the team oriented toward implementing the intervention. The sample was 27 professionals (83%), who met the eligibility criteria. One aide was excluded because she was sick, and three professionals (two nurses and one aide) were excluded because they were on vacation during the evaluation step.

DATA COLLECTION

The participants were contacted before the beginning of the study execution as a measure to guarantee that they would meet the inclusion criteria, ask for their collaboration, and promote adherence in filling out the used instrument.

Data collection was carried out by resorting to several techniques, namely semi-structured interviews, examination of medical records, participatory observation of shift

handovers, and application of the EPCEPQ⁽³⁾ to quantitatively assess whether the practices and behaviors of the health team regarding fall risk management had changed or not after the intervention. This unidimensional Likert-type scale, with six items that provide a score ranging from 6 to 30 points, showed adequate psychometric properties in its validation process and had a Cronbach's alpha of 0.918⁽³⁾.

Examination of medical records was carried out during the planning phase, to help identify the problem; the action phase, to monitor the implemented intervention and the intended change; and the reflection phase, to evaluate the project.

A notebook was used to record field notes. These were codified with the abbreviation FN, followed by the record number of the observation and its type. These notes included data related to the observation of the practices, excerpts of the interviews with the participants, and elements of the organization of the physical space of the nursing ward. Over the study execution, there was an evaluation of the physical conditions of the facility with the assistance of two members who worked at the service (head nurse and a nurse who was involved in the hospital's fall prevention program).

The researcher present at the study setting over this period wrote reflective notes about the process and results. The team meetings and shift handovers were crucial for sharing information, implementing the intervention aiming to impact everyday practices, and promoting communication between the researcher and the participants⁽¹³⁾.

DATA ANALYSIS AND TREATMENT

The data were submitted to content analysis according to Bardin's technique. The information obtained by applying the EPCEPQ received statistical treatment by using SPSS version 23. Medians were compared by applying the nonparametric Wilcoxon (Z) test to evaluate the changes recorded in the EPCEPQ before and after the intervention was implemented. Ceiling and floor effects were calculated to assess the impact of the changes after the intervention. These effects are defined, respectively, as the percentage of people at the maximum and minimum of the possible score in each scale domain⁽¹⁸⁾. The effect size was calculated by using the formula $r = Z / \sqrt{N}$ (Wilcoxon). The results were interpreted according to the following classification: $0.2 \leq r < 0.5$ indicated small effect size; $0.5 \leq r < 0.8$ pointed to moderate effect size; and $r \geq 0.8$ denoted high effect size⁽¹⁹⁾. The adopted significance level was $p < 0.05$.

ETHICAL ASPECTS

The proposal was approved by the ethics commission (process no. 492/2017). Anonymity and data confidentiality were guaranteed to all participants, and these signed free and informed consent forms. A ballot box was placed at the facility in the two periods of application of the EPCEPQ so the participants could insert the filled out scale inside it. This was an attempt to increase adherence to the study and reduce the risk of obtaining professionally and socially

acceptable. The social media Viber® was used exclusively to share information about the project, the interventions in progress, the announcement of the meetings, and the training of the team. This resource was not used to share clinical information nor inpatients' personal data.

RESULTS

The participants were 27 professionals who worked at the medicine service where the intervention was implemented, of whom 92.6% (25) were women, 70.4% (19) were nurses, and 29.6% (8) were nursing aides. On average, they had been working in this activity for 138.8 ± 102 months (11.3 years), with a minimum time of 14 months and a maximum time of 372 months of professional activity.

When asked about training frequency, 74.1% of the professionals (20) answered affirmatively for risk factors and fall prevention measures in the hospitalized elderly population, and 70.4% (19) answered affirmatively for how to proceed after a fall episode.

The meetings for training and discussion allowed to diagnose the situation, identify the difficulties, and expose the model to be used to manage falls in elderly people hospitalized in the service. Debating the intervention to be applied disclosed organizational restraints, difficulties of communication and information circulation between nurses and aides, and the realization that risk evaluation with the Morse scale was not followed with the introduction of adequate preventive measures, as mentioned by one of the nurses:

(...) *We evaluate risk exposure for every patient, but it is nearly a mechanical act, as there is the mandatory recording because of the risk management office, but in fact the interventions are the same for everyone (...) maybe they are different when an elderly person falls* (FN22).

During the first examination of medical records, it was found that the Morse scale had been filled out in accordance with recommendations, but systematic recording of fall prevention interventions did not exist. In the records of moderate and high risk elderly people, there was a care plan with prevention measures that were too general and little specific to that age group. In more than one case, the information present in the data collection sheet, filled out at patient admission, was either inexistent or incomplete, lacking data such as date, hour, location, or fall mechanism, in cases in which the elderly person had experienced a previous fall (pre-hospitalization or emergency). Although all fall occurrences were reported in the risk management office form, some records contained no documentation about it or showed incomplete information.

In the initial analysis of the participants' accounts, the elements that stood out were organizational restraints, the high number of patients assigned to each professional, lack of time, and inexistence of time and proper spaces for the team to discuss the problems and find solutions, as emphasized by two participants:

(...) *the place is always packed, sometimes there are stretchers in the corridor, and it is the same people doing everything, it is not always possible to talk about work* (FN57, nursing aide).

(...) *we begin the working day worried about the workload, even when we give the team some information on fall risk or what to do to prevent falls we do that during the execution of other procedures... we cannot even confirm if the message was clear* (FN18, nurse).

Regarding the application of the EPCEPQ, the Cronbach's alpha was 0.804, which indicated satisfactory internal consistency. The results of using this scale at two moments, before and after the intervention, pointed to an improvement in all indicators, as shown in Table 1.

Table 1 – Sample characterization regarding practices and behaviors of the team regarding fall prevention before and after the intervention – Lisbon, Lx, Portugal, 2018.

Practices and behaviors	Preintervention (N*=27)			Postintervention (N*=24)			Wilcoxon test Z (p value)*
	Mean	Median	SD†	Mean	Median	SD†	
1. The team discusses fall risk factors of different elderly people	3.37	3	.629	3.96	4	.550	-3.086 (0.002)
2. The team discusses fall prevention measures to be applied to each elderly person	3.15	3	.662	4	4	.417	-4.065 (<0.0001)
3. We decided the fall prevention measures to be applied to each elderly person as a team	3.30	3	.775	4.08	4	.584	-3.500 (<0.0001)
4. Communication is essential for preventing falls	4.30	5	.869	4.79	5	.509	-2.379 (0.017)
5. By means of communication, I know, evaluate, interpret, and transmit elements that are relevant to fall prevention	3.59	4	.797	4.17	4	.482	-3.234 (0.001)
6. I usually show interest in identifying causes of falls	3.74	4	.764	4.08	4	.584	-2.236 (0.025)
Total (6-30)	21.44			22.30			

*N – number of elements; †SD – standard deviation; *p – significance level

Comparison of the means obtained in each evaluation showed that there was improvement in all indicators, as well as in the final scale score, in both evaluation moments. The results of the Wilcoxon test indicated that there was substantial improvement in all scale items after the intervention.

There was a decrease of 11.3% over the study execution period in comparison with the same period in the previous

year. However, it is not possible to associate this reduction with the intervention, given the multiplicity of risk factors involved in fall genesis.

Analysis of Table 2 indicated that the ceiling effect increased in all items of the EPCEPQ after the intervention.

It must be stressed that *r* values ranged from 0.30428 to 0.55318, which according to the reference values pointed to a small effect size.

Table 2 – Ceiling and floor effects of the EPCEPQ scale before and after the intervention – Lisbon, Lx, Portugal, 2018.

Items	Preintervention		Postintervention		Effect size
	Ceiling effect	Floor effect	Ceiling effect	Floor effect	
1. The team discusses fall risk factors of different elderly people	0	0	11.1	0	0.41995
2. The team discusses fall prevention measures to be applied to each elderly person	0	0	7.4	0	0.55318
3. We decided the fall prevention measures to be applied to each elderly person as a team	7.4	0	18.5	0	0.47629
4. Communication is essential for preventing falls	51.9	0	74.1	0	0.32374
5. By means of communication, I know, evaluate, interpret, and transmit elements that are relevant to fall prevention	11.1	0	18.5	0	0.44009
6. I usually show interest in identifying causes of falls	14.8	0	18.5	0	0.30428

In the last examination, most records had documented the implemented intervention(s) and the corresponding evaluation(s).

Oral information on fall occurrences in shift handovers was also analyzed. There was greater concern in the team, since the beginning of the implementation of the project, with the subject at hand. Contrarily to what happened in the period previous to the study execution, the team began informing the fall of patients admitted to the service, that is, whether they had a recent fall history.

During shift handovers, the professionals discussed individualized interventions to be implemented and/or continued. In cases involving fall episodes, the fall mechanism and the measures adopted to prevent recurrences were described in detail. Meetings and moments of information sharing were used to examine the circumstances of the accident (mechanism, whether it was witnessed or not, what the intervention after the fall was) to identify opportunities to improve and increase safety service's physical space.

DISCUSSION

The first step to implement the intervention was training the team, a crucial action in prevention programs, since it increases adherence to fall episodes reporting and more complete recording of them⁽²⁰⁾.

Regarding application of the EPCEPQ, there was an improvement in the discussion of fall risk factors (from $3.37 \pm .629$ to $3.96 \pm .550$). This gain was also perceptible in the analysis of documentation and oral information transmitted during shift handovers, and it can be considered an added value, because communication of fall risk factors in health teams is usually reduced. This means that these factors, most times, are not discussed, which may indicate depreciation of fall risk⁽³⁾.

Determining which elderly people show fall risk is the first step to prevent accidents⁽²¹⁾ as this measure allows to use resources more efficiently and orient the care delivered by the team toward the patients who are exposed to a higher level of risk.

Improving communication in the team, which can be achieved by holding meetings and making shift handovers more dynamic, combined with using new technologies (the social media Viber®) and training the team, increased the quality of practices and behaviors regarding fall risk management. Previous studies have considered that this type of strategy associating team training and improved communication about fall risk between the team members can be effective to decrease fall prevalence⁽¹⁴⁻¹⁵⁾.

The participants have always valued communication as an essential factor to prevent falls. This was the only indicator with a median of 5 in the preintervention evaluation. However, analysis of the accounts showed that services do not always create conditions that favor communication in multidisciplinary and interdisciplinary teams. One of the added values of the used intervention and method was the possibility given to the researcher to remain in the context and bridge the gap between informal and formal knowledge⁽¹³⁾ and between different professionals.

The approach must be interdisciplinary⁽¹²⁾, and some authors advocated that prevention programs that include nurses only are not effective and that a varied team is necessary to make a difference⁽²⁰⁾. Training different types of professionals, encouraging communication between them, and making them commit to the established goals is an effective method to reduce the number of falls and associated injuries^(3,14). By adopting this strategy, the entire multidisciplinary team in the hospital becomes responsible for

decreasing fall risks and guaranteeing a safe and risk-free environment, with sharing of experiences and knowledge⁽¹⁴⁾.

Communication and creation of moments and spaces to gather the team were the main cornerstones for the success of the intervention. As mentioned in the oral accounts of the participants, time is always scarce and teams end up pushing these breaks into the background to solve more urgent problems. This issue is well described in the bibliography, with authors standing up for the idea that the main focus of fall prevention involves remedying the lack of knowledge and communication related to fall prevention interventions within the team and between the team and healthcare users⁽²²⁾. Improving communication by sharing accurate information about elderly people's behaviors, health condition, used medications, and other risk factors can contribute to decreasing the number of fall episodes by 12%⁽²³⁾.

In these communication processes, leaders, the catalysts of prevention programs, favor each team member's expression with clear objectives and purposes. In this context, each professional takes on well-defined functions⁽²²⁾. The members need periodic feedback and must be able to fix behaviors that do not promote safety. In institutions where a safety culture is implemented, teams usually have clear and frequent communication processes involving all members^(22,24-25).

The essential components of a safety culture begin with leadership⁽²⁴⁾. One of the domains of the intervention was related to leadership. The nurse who took over leader functions had the responsibilities of promoting discussion and safety in the physical space, encouraging the implementation of individualized measures, guaranteeing coordination with the hospital's quality and safety office, and developing trust in the team regarding communication of fall episodes in a proactive way⁽²³⁾.

Indicator 5 of EPCEPQ ("By means of communication, I know, evaluate, interpret, and transmit elements that are relevant to fall prevention") showed scores of $3.59 \pm .797$ and $4.17 \pm .482$ before and after the intervention, respectively, which pointed to an improvement in the fall risk management process.

The choice of a professional to hold the position of leader was based on the literature recommendations pointing out that nurses with this function play a fundamental role in implementing and coordinating a safety culture in teams aiming to reduce risks and damages to which healthcare clients are exposed. One example that illustrates this situation is programs designed to prevent falls and their associated injuries⁽²⁴⁾.

Need for leadership is perceived as the first step to take in nearly all care improvement projects so it is possible to gather resources and support the implementation across the entire organization⁽²⁴⁾. Leaders take on monitoring and mutual support because of their ability to anticipate and help with the needs of the team members by applying accurate knowledge on these workers' responsibilities and workload⁽¹⁵⁾. Additionally, frequent and open communication originates trust in the members, and there is a continuous learning process in which all learn with mistakes and try to constantly improve the processes and their own performance⁽¹⁵⁾.

The authors of the present study share the opinion of other researchers who advocate that evidence-based fall prevention is innovative and, therefore, represent new work forms, which demand new knowledge, skills, and abilities that have to be taught, grasped, and applied in the profession, so nurses can lead the processes in teamwork⁽²⁵⁾. Future studies should explore acceptance of leaders and their impact on team dynamization and, consequently, on the change of practices and behaviors regarding risk evaluation, communication, documentation, and safety.

The professionals' self-perception regarding their interest in identifying the cause of falls increased (from $3.74 \pm .764$ to $4.08 \pm .584$). Systematic monitoring of safety and falls is an essential practice to decrease the prevalence of this type of accident⁽²⁶⁾. Professionals have the responsibility of reducing its incidence and, therefore, care provided by them and their efforts must ensure elderly people's safety and well-being⁽²⁶⁾. In addition, policies and legislations must allow the detection of wrong practices and the management of situations in which safety may be compromised⁽²⁶⁾. Examination of medical records showed that this sphere was neglectful, with lack of information on the fall and its mechanism, which hindered elderly people exposed to fall risk or admitted to the center because of a fall's receiving special care, as recommended⁽¹²⁾.

This record failure entails continuity of care when patients get back home. Elderly people hospitalized because of a fall episode or exposed to fall risk must be the target of adequate preparation for hospital discharge, with the process initiating during the inpatient phase and going on until the outpatient phase, being based on a partnership with the elderly people, and involving coordination with those who deliver care in the community. Absence of this coordination manifests itself as increase in fall risk and in post-discharge prevalence⁽²⁾.

Although the results were promising and the intervention, structured in the training, communication, leadership, monitoring, and mutual support domains, improved the practices and behaviors of the team regarding fall risk management oriented toward hospitalized elderly people, the present study had limitations related to its own characteristics. The intentional sample and the adopted method do not allow to generalize results, and the pre and postintervention evaluation without a control group does not allow to assess the impact of this intervention on fall prevalence.

CONCLUSION

The present action research study aimed to evaluate the efficacy of an intervention program in the practices and behaviors of a health team regarding fall prevention in hospitalized elderly people. The intervention, based on TeamSTEPPS®, was organized into five domains: team training, communication, leadership, monitoring, and mutual support and was validated by an expert board in a previous study.

The results of the implementation of the intervention pointed to improvement in the mentioned practices and behaviors by the hospitalized elderly risk of fall management team, namely discussion of risk factors and fall prevention measures, group decision-making related to the preventive measures to be applied to each elderly person,

communication, interest in identifying the causes of falls to prevent their recurrence, and implementation of a more rigorous documentation of fall mechanisms.

The present study allows to discuss the positive impact leaders can have on the implementation and dynamization of an intervention structured in the team's practices to manage fall risks. Fall risk management oriented toward hospitalized

elderly people has to move away from the biomedical model, steer interventions toward biophysiological risk factors, and seek creative and evidence-based solutions to be used and developed by the team.

Future studies with a quasi-experimental methodology must evaluate the impact of this intervention on fall prevalence.

RESUMO

Objetivo: Avaliar a eficácia de um programa de intervenção nas práticas e comportamentos da equipe de saúde para prevenir a queda a idosos hospitalizados. **Método:** Estudo de investigação-ação, misto e longitudinal, com aplicação de uma intervenção baseada no "TeamSTEPPS", organizada em cinco domínios: formação da equipe, comunicação, liderança, monitorização e suporte mútuo. A população foi constituída por enfermeiros e auxiliares de um serviço de medicina de um centro hospitalar português. Os dados foram obtidos por consulta aos processos, entrevistas e pela aplicação da escala de avaliação das práticas e comportamentos das equipas na gestão do risco de quedas de idosos. **Resultados:** Os resultados da aplicação da escala de práticas e comportamentos das equipas na gestão do risco de queda dos idosos apontam para uma melhoria em todos os indicadores dessa escala, com claras melhorias na discussão dos fatores de risco e das medidas preventivas a implementar. **Conclusão:** A intervenção promove a tomada de decisão sobre as medidas preventivas a serem aplicadas a cada idoso, melhora a comunicação e o interesse em identificar as causas de quedas, para prevenir a sua recorrência.

DESCRIPTORES

Idoso; Hospitalização; Acidentes por Quedas; Equipe de Assistência ao Paciente; Enfermagem Geriátrica.

RESUMEN

Objetivo: Evaluar la eficacia de un programa de intervención en prácticas y conductas del equipo de salud para prevenir caídas de ancianos hospitalizados. **Método:** Estudio de investigación-acción, mixto y longitudinal, con aplicación de una intervención basada en el "TeamSTEPPS", organizada en cinco dominios: formación del equipo, comunicación, liderazgo, monitoreo y soporte mutuo. Población constituida por enfermeros y auxiliares de un servicio de medicina en un centro hospitalario portugués. Datos obtenidos mediante consulta de los procesos, entrevistas y aplicación de escala de evaluación de las prácticas y conductas de los equipos en la gestión del riesgo de caída en ancianos. **Resultados:** Los resultados de la aplicación de la escala de prácticas y conductas de los equipos en la gestión del riesgo de caída de los ancianos apuntan a una mejora en todos sus indicadores, claramente expresada en la discusión de factores de riesgo y medidas preventivas a implementarse. **Conclusión:** La intervención promueve la toma de decisiones sobre medidas preventivas a aplicarse con cada anciano, mejora la comunicación y el interés en identificar las causas de caída para prevenir su reiteración.

DESCRIPTORES

Anciano; Hospitalización; Accidentes por Caída; Grupo de Atención al Paciente; Enfermería Geriátrica.

REFERENCES

- Weil T. Patient falls in hospitals: an increasing problem. *Geriatr Nurs*. 2015;36(5):342-7. doi: 10.1016/j.gerinurse
- Hill A, Etherton-Beer C, McPhail SM. Reducing falls after hospital discharge: a protocol for a randomised controlled trial evaluating an individualised multimodal falls education programme for older adults. *BMJ Open Quality*. 2017;7:e013931. doi: 10.1136/bmjopen-2016-013931
- Baixinho CL, Dixe MA. Team practices in fall prevention in institutionalized elderly people: scale design and validation. *Texto Contexto Enferm*. 2017;26(3):e2310016. doi: https://dx.doi.org/10.1590/0104-07022017002310016
- Vaccari L, Lenardt M, Willig M, Betiolli S, Oliveira E. Safety of the hospital environment in terms of preventing falls on the part of the elderly: a descriptive study. *OBJN*. 2014;13(3):271-81. doi: https://doi.org/10.5935/1676-4285.20144753
- Walsh CM, Liang LJ, Grogan T, Coles C, McNair N, Nuckols TK. Temporal trends in fall rates with the implementation of a multifaceted fall prevention program: persistence pays off. *J Comm J Qual Patient Saf*. 2018;44(2):75-83. doi: 10.1016/j.jcjq.2017.08.009
- Stephenson M, McArthur A, Giles K, Lockwood C, Aromataris E, Pearson A. Prevention of falls in acute hospital settings: a multi-site audit and best practice implementation project. *Int J Qual Health Care*. 2016;28(1):92-8. doi: https://doi.org/10.1093/intqhc/mzv113
- Aryee E, James S, Hunt G, Ryder H. Identifying protective and risk factors for injurious falls in patients hospitalized for acute care: a retrospective case-control study. *BMC Geriatr*. 2017;17:260. doi: https://doi.org/10.1186/s12877-017-0627-9
- Najafpour Z, Godarzi Z, Arab M, Yaseri M. Risk factors for falls in hospital in-patients: a prospective nested case control study. *Int J Health Policy Manag*. 2019;8(5):300-6. doi: 10.15171/ijhpm.2019.11
- Luzia MF, Cassola TP, Suzuki LM, Dias VLM, Pinho LB, Lucena AF. Incidence of falls and preventive actions in a University Hospital. *Rev Esc Enferm USP*. 2018;52:e03308. doi: http://dx.doi.org/10.1590/S1980-220X2017024203308
- Cameron ID, Dyer SM, Panagoda CE, Murray GR, Hill KD, Cumming RG, Kerse N. Interventions for preventing falls in older people in care facilities and hospitals. *Cochrane Database Syst Rev*. 2018;(9):CD005465. doi: 10.1002/14651858.CD005465.pub4
- Singh I, Okeke J. Reducing inpatient falls in a 100% single room elderly care environment: evaluation of the impact of a systematic nurse training programme on falls risk assessment (FRA). *BMJ Open Quality*. 2016;5:u210921.w4741. doi: http://dx.doi.org/10.1136/bmjquality.u210921.w4741
- Quigley P. We've made gains in preventing falls, but more work remains [editorial]. *Am Nurse Today*. 2015;10(7).

13. Toren O, Lipschuetz M. Falls Prevention in Hospitals-the Need for a New Approach an Integrative Article. *Nurse Care Open Acces J*. 2017;2(3):93-6. doi: <http://dx.doi.org/10.15406/ncoaj.2017.02.00040>
14. Spiva L, Robertson B, Delk ML, Patrick S, Kimrey MM, Green B, et al. Effectiveness of team training on fall prevention. *J Nurs Care Qual*. 2014;29(2):164. doi: <http://dx.doi.org/10.1097/NCQ.0b013e3182a98247>
15. Godlock G, Christiansen M, Feider L. Implementation of an Evidence-Based Patient Safety Team to Prevent Falls in Inpatient Medical Units. *Medsurg Nurs*. 2016;25(1):17-23. doi: PMID 27044124
16. Kuhne GW, Quigley BA. Understanding and using action research in practice settings. In: Quigley BA, Kuhne GW, editors. *Creating practical knowledge trough action research: posing problems, solving problems, and improving daily practice*. São Francisco: Jossey-Bass; 1997. p. 23-40.
17. Cunha LFC, Baixinho CL, Henriques MA. Preventing falls in hospitalized elderly: design and validation of a team intervention. *Rev Esc Enferm USP*. 2019;53:e3479. doi: <http://dx.doi.org/10.1590/S1980-220X2018031803479>
18. Sousa LM. As propriedades psicométricas dos instrumentos de hétero-avaliação. *Enformação*. 2015;6:20-4.
19. Cohen J. *Statistical power analysis for the behavioral sciences*. Hillsdale: Erlbaum Associates; 1988.
20. Stephenson M, Mcarthur A, Giles K, Lockwood C, Aromataris E, Pearson A. Prevention of falls in acute hospital settings: a multi-site audit and best practice implementation project. *Int J Qual Health Care*. 2016;28(1):92-8. doi: 10.1093/intqhc/mzv113
21. Gu Y, Balcaen K, Ni Y, Ampe J, Goffin J. Review on prevention of falls in hospital settings. *Chin Nurs Res*. 2016;3(1):7-10. doi: <https://doi.org/10.1016/j.cnre.2015.11.002>
22. Wingood M, Renfro M, Cameron K. Interdisciplinary approach to fall prevention: research, practice and policy. *Innov Aging*. 2017;1 Suppl:373. doi: <https://doi.org/10.1093/geroni/igx004.1357>
23. Colon-Emeric CS, McConnell E, Pinheiro SO, Corazzini K, Porter K, Earp KM, et al. CONNECT for better fall prevention in nursing homes: results from a pilot intervention study. *J Am Geriatr Soc*. 2013;61(12):2150-9. doi: 10.1111/jgs.12550
24. Quigley P, White S. Hospital-based fall program measurement and improvement in high reliability organizations. *Online J Issues Nurs*. 2017;18(2):5. doi: <https://doi.org/10.3912/OJIN.Vol18No02Man05>
25. Baixinho CL, Dixe MA, Henriques MAP. Falls in long-term care institutions for elderly people: protocol validation. *Rev Bras Enferm*. 2017;70(4):740-6. doi: <https://doi.org/10.1590/0034-7167-2017-0109>
26. Brown DK, Fosnight S, Whitford M. Interprofessional education model for geriatric falls risk assessment and prevention. *BMJ Open Quality*. 2018;7:e000417. doi: 10.1136/bmjoc-2018-000417

