TEAM PRACTICES IN FALL PREVENTION IN INSTITUTIONALIZED ELDERLY PEOPLE: SCALE DESIGN AND VALIDATION

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ABSTRACT

Objective: determine and elaborate the psychometric characteristics of nursing team practices and develop a behavior scale for fall risk management in institutionalized elderly people.

Method: the scale was designed based on a literature review and observation of the work of the teams in a long-term care institution for the elderly. The content of the scale was analyzed and the concordance index of the 14 initial items was checked by nine experts. The scale was applied to a sample of 152 caregivers from six long-term care institutions for the elderly. The research conformed to ethical principles. The anonymity of the participants and the confidentiality of the data were ensured.

Results: after the determination of the psychometric characteristics, it was observed that the unidimensional scale had six items, with a Cronbach's alpha of 0.918 and a score ranging from 6 to 30 points. Analysis of the results revealed that information about risk factors and team discussions regarding preventive measures are not always present, allowing specific team members to value different measures, which impairs continuity of the care and individualization of the measures before the assessed risk.

Conclusion: the scale shows suitable psychometric features and can be used in investigation and clinical practice to assess the practices and behaviors of nursing teams in fall risk management in institutionalized elderly patients.

DESCRIPTORS: Falls. Elderly people. Caregivers. Risk management. Psychometry. Behavioral assessment scale.

PRÁTICAS DAS EQUIPAS NA PREVENÇÃO DE QUEDA NOS IDOSOS INSTITUCIONALIZADOS: CONSTRUÇÃO E VALIDAÇÃO DE ESCALA

RESUMO

Objetivo: construir e determinar as características psicométricas da escala de práticas e comportamentos das equipes na gestão do risco de queda dos idosos institucionalizados.

Método: a escala foi desenhada com base na revisão da literatura e na observação do trabalho das equipes numa instituição de longa permanência para idosos. Foi realizada a análise de conteúdo e a verificação do índice de concordância dos 14 itens iniciais por nove juízes. A escala foi aplicada a uma amostra de 152 cuidadores de seis instituições de longa permanência para idosos. A investigação respeitou os princípios éticos. Garantiu-se o anonimato e a confidencialidade dos dados.

Resultados: após a determinação das caraterísticas psicométricas, verificámos que a escala, unidimensional, ficou constituída por seis itens, com um Alfa de Cronbach de 0,918, pontua entre 6 e 30 pontos. A análise dos resultados permite constatar que a informação sobre os fatores de risco e a discussão em equipe sobre as medidas preventivas nem sempre são mantidas, possibilitando que elementos diferentes da equipe possam valorizar medidas diferentes, o que não garante a continuidade de cuidados e a individualização das medidas face ao risco avaliado.

Conclusão: a escala tem boas características psicométricas, podendo ser usada na investigação e na prática clínica para avaliar as práticas e os comportamentos das equipes na gestão do risco de queda em idosos institucionalizados.

DESCRITORES: Quedas. Idosos. Cuidadores. Gestão de riscos. Psicometria. Escala de avaliação comportamental.

PRÁCTICAS DE LOS EQUIPOS EN LA PREVENCIÓN DE CAÍDAS EN LOS ADULTOS MAYORES INSTITUCIONALIZADOS: CONSTRUCCIÓN Y VALIDACIÓN DE ESCALA

RESUMEN

Objetivo: construir y determinar las características psicométricas de la escala de prácticas y comportamientos de los equipos en la gestión del riesgo de caída de los ancianos institucionalizados.

Método: la escala fue diseñada con base en la revisión de la literatura y en la observación del trabajo de los equipos en una institución de larga permanencia para adultos mayores. Se realizó el análisis de contenido y la verificación del índice de concordancia de los 14 ítems iniciales por nueve jueces. La escala fue aplicada a una muestra de 152 cuidadores de seis instituciones de larga permanencia para adultos mayores. La investigación respetó los principios éticos. Se ha garantizado el anonimato y la confidencialidad de los datos.

Resultados: después de la determinación de las características psicométricas, verificamos que la escala, unidimensional, quedó constituida por seis ítems, con un Alfa de Cronbach de 0,918, puntualiza entre 6 y 30 puntos. El análisis de los resultados permite constatar que la información sobre los factores de riesgo y la discusión en equipo sobre las medidas preventivas no siempre se mantienen, posibilitando que elementos diferentes del equipo puedan valorar medidas diferentes, lo que no garantiza la continuidad de cuidados y la individualización de las medidas frente al riesgo evaluado.

Conclusión: la escala tiene buenas características psicométricas, pudiendo ser usada en la investigación y en la práctica clínica para evaluar las prácticas y los comportamientos de los equipos en la gestión del riesgo de caída en ancianos institucionalizados.

DESCRIPTORES: Caídas. Ancianos. Cuidadores. Gestión de riesgos. Psicometría. Escala de evaluación del comportamiento.

INTRODUCTION

Falls interfere with healthy and active aging, representing a serious public health issue.[1-2] Fall episodes are associated with high costs with regard to both individual quality of life and social welfare.[3]

With estimated incidence of 32.5% to 68% in long-term care (LTC) institutions, falls are an issue for institutionalized elderly people, who show significantly higher incidence of the problem than the elderly people living in communities.[4-5] This may be explained by higher levels of dependency and higher incidence of chronic conditions in the institutionalized population.[3,6]

The cumulative effect of fearing the falls themselves, post-fall syndrome, and secondary injuries poses a potential risk of epidemy and increased health resource costs in a society with an exponential increase of the elderly population. Falls, rather than being isolated events, also involve prevention of health issues in the elderly and observation of their behavior, socioeconomic conditions and environment.[7]

Epidemiological studies on this subject focus on biophysiological risk factors and usually overlook environmental and behavioral aspects in the genesis of falls. Research stresses that the physical spaces and the presence of institution staff make facility environments different from homes, and may increase fall risk.[6]

A literature review shows that most guidelines value teamwork to solve this serious public health issue. However, little is known about individual and collective work practices and how communication, recording and surveillance of patients after fall episodes are carried out by caregivers. To help solve this problem, new interventions and new intervention designs are necessary, mainly those that take into account the relationship between residents and professionals[8] and value characteristics other than biological ones. This is a critical point, considering that elderly people present distinct features when compared to the general population: they have biological, psychological, cultural, socioeconomic and epidemiological peculiarities that must be studied separately.[2]

In Portugal, information regarding individual and collective work practices and communication, recording and surveillance of patients after fall episodes is not available. A literature survey reveals that there is no scale to assess team practices and behaviors when it comes to managing fall risks. The design of such an instrument is pertinent, not just to evaluating fall risk management by teams, but also to using it to obtain new data about the prevalence of falls. This can help in data collection and control of fall episodes.

Given this scenario, the present study aimed to determine the psychometric characteristics of a scale to assess the practices and behaviors of nursing teams regarding fall risk management in institutionalized elderly people.

METHOD

A literature search did not reveal any instruments to assess the practices and behaviors of

caregivers and teams in LTC institutions in the area of fall risk management. To design a new scale, a predefined protocol with the following steps was applied: definition of the object of evaluation; data collection in databases; observation of the context; interviews with nurses, caregivers and residents; material selection for definition of the items to be included in the tool; scale development; analysis of the agreement of the items; pretest; scale reformulation; and application and validation.

A bibliographical survey allowed definition of the suitability of the items to the concept of fall risk management in LTC institutions. According to the World Health Organization, fall risk management is defined as the process of planning, organizing, leading and controlling the resources that allow identification, evaluation and management of all risks that cause unintentional change in body position to a lower level. This promotes decision-making and establishment of priorities to ensure the safety of elderly people, based on evidence and different social responses to the elderly.

After the concept definition, a database query allowed the identification of a set of indicators that are associated with teamwork, from risk evaluation to intervention and communication about fall episodes. Nonetheless, information about teamwork and its contribution (or lack thereof) to fall prevention is present as recommendations, and evidence of its efficiency is low. For this reason, the researches had to interview experts on falls and gather information from a population with characteristics similar to the ones in the sample of the study, by observing and interviewing professionals. One of the authors obtained permission to visit a LTC facility for one month, during which the functions developed by the institution staff were observed.

Item elaboration respected the criteria of clarity, accuracy, trust, consistency, suitability, semantics, reliability, usefulness, validity and consensus.[9] At this stage, the semantic equivalency of a few terms was verified by consulting Portuguese dictionaries.

The analysis of the items was performed by nine experts; four had published material on the topic and five were specialized nurses who had more than five years of experience in managing equipment for elderly people. This criterion is based on the results of a study by Benner, who concluded that nurses go through five levels of experience: novice, advanced beginner, competent, proficient and expert. Experience in nursing leads to proficiency,

which can be understood as the association between theoretical and practical knowledge.[10]

Because studies conducted by clinical practice nurses were not found in this area, and considering the complexity of the phenomenon in question, the authors judged that their expertise was a crucial criterion. Nurses with more than five years of activity have a theoretical background and experience that provides them with empirical, aesthetic, ethical, personal and intuitive knowledge that was valuable for the validation of the scale.[10]

The questionnaire was designed and sent out on Google Drive®. To standardize the analyses by the experts, the form included explanations of the operational definition of the tool, the proposed items, and the indicators for their analysis: presentation, clarity of the statements, readability, interpretation and representativeness of the items. Regarding the latter, the answers were associated with a score in a Likert scale from 1 to 4 (1=non-representative; 2=needs significant changes to become representative; 3=needs minor changes to become representative; 4=representative).[9]

The participants evaluated the first version of the instrument; the form included a topic requiring them to rate the items. They were also asked to give their opinion of the clarity of the items and the difficulty of understanding and filling out the form. These written impressions were used to improve the items by sharing the comments and inspecting the understandability of the material and the guidelines.

The criterion for keeping an item in the scale was a minimum concordance of 80% of the experts.[9,11]

Before the evaluation, the professionals were contacted by phone to ensure that they met the inclusion criteria, ask them to collaborate in the research, and ask them to fill out the questionnaire. This contact, which was made in order to obtain the professional's authorization and to ask them to return the form, assumed an intention to join the study; consequently, signature of the term of free and informed consent was not requested.

To validate the content of the tool, the content validity index was applied to each of the items (CVII) and to the whole protocol (CVI). The inter-rater agreement (IRA) was employed to evaluate the reliability or agreement between the experts.

Once the first version of the scale was ready, the examining board was called to test understanding by the target population. A pretest was

carried out with 23 professionals from an LTC institution to verify understanding of the material and suitability of the questions and the Likert scale. This experiment also allowed a critical view of the content and format of the instrument with regard to clarity, understandability of the items, and average time to fill in the form, which was around 15 minutes.

The sample for evaluation of the psychometric characteristics of the scale consisted of 152 professionals from six LTC facilities; they authorized the study and met the previously defined inclusion criteria: to be providing direct care to institutionalized old people and to freely agree to join the study. The professionals who had intermediate management positions or worked in home support were excluded from the sample.

The number of participants in this investigation followed the guidelines required for validation: ten people per item.[9, 11] Some authors defend different points, arguing that the reliability of an instrument relies on a minimum number of people, or that five participants are enough to evaluate an indicator. However, the authors of the present study chose to get a sample ten times larger than the number of items to obtain a stable factorial solution.

The final version of the tool was organized in two parts: part 1, with demographic data (age, gender), education, defined as frequency of training (graduation from a degree program and continuing education) and professional experience, defined as years of professional activity in that specific institution; and part 2, showing the Scale of Practices and Behaviors of Teams for Fall Prevention (SPBTFP).

This tool seeks to determine the frequency with which healthcare professionals believe they have developed specific teamwork practices for fall prevention, that is, it is a self-reported set of measures. It uses a Likert scale whose five possible answers were; "never," "occasionally," "sometimes," "often," and "always." The first page gave instructions for filling out the scale and using the Likert scale. The instrument was filled in by the participants, without the presence of the researcher.

Regarding the formal and ethical procedures, authorization to carry out the study was required by the boards of the institutions. The Ethics Com-

mittee of the Catholic University of Portugal issued a positive report (Ref. ICS/268/2012) related to the investigation. All the caregivers signed the free and informed consent form.

To guarantee the anonymity of the participants, two boxes were placed at each of the six institutions; the consent document was to be placed in one, and the protocol in the other. Data collection lasted 15 days because of shift schedules. When the boxes were opened, anonymity and the confidentiality were ensured by labeling the boxes with codes representing institutions.

Statistical treatment of the data was performed with SPSS version 19.0 software. The reliability of the scale was tested by internal consistency analysis and determination of Cronbach's alpha coefficient.[9,11] Varimax orthogonal rotation was used for factorial analysis of the principal components, with extraction of factors with proper values higher than 1. Cattell's scree test plots were used to verify the number of factors to retain, and Kaiser-Meyer-Olkin (KMO) and Bartlett's tests were run to measure the quality of the correlations between the variables and examine the validity of the factorial matrix.[11]

Given the characteristics of the variables in the scale and the non-normal distribution determined by application of the Kolmogorov-Smirnov test, the Mann-Whitney U test and Spearman's rank correlation test were used equally.

In the statistical treatment, the missing answers were replaced by the mean value of the valid cases of the variable in the situations in which the non-answers corresponded to less than 10% of the total number of questions in the instrument.[11]

RESULTS

Content validation

The sample contained nine experts, of whom 66.6% were females, and was heterogeneous in terms of specialty (five nurses, one medical doctor, one physical educator and two physical therapists) and post-graduate degrees.

In the analysis of the first round, it was observed that 12 items obtained concordance higher than 80% among the judges, as shown in Table 1.

Table 1 – Agreement among the experts after the first round of evaluation regarding the items of the scale. Lisbon, Portugal, 2014. (n = 9)

Indicators on Scale of Practices and Behaviors of Teams for Fall Prevention	CVII*	IRA†	CVI‡
1. The team discusses the fall risk factors of the different residents.	1	0.86	0.92
2. The team discusses the fall prevention measures to be applied to each elderly person.	1		
3. The team decides the preventive measures to be applied to each elderly person.	0.88		
4. Communication is crucial to preventing falls.	1		
5. Through communication, I can understand, evaluate, interpret and convey relevant elements for fall prevention.	1		
6. I usually show interest in identifying the causes of falls.	0.88		
7. During the integration of new staff members, I inform them about fall risk factors and preventive measures.	0.77		
8. I tell the family about the preventive measures implemented.	0.77		
9. I feel fulfilled about the work developed on fall prevention.	1		
10. I feel fulfilled about how I identify fall risks.	0.88		
11. I feel fulfilled about the fall prevention measures that I implement.	0.88		
12. I am interested in identifying fall risks.	1		
13. I am interested in fall prevention in elderly people.	1		
14. I feel motivated to learn to assess fall risks in the elderly people to whom I provide care.	0.88		

*Content validity index applied to the items of the protocol; †Inter-rater agreement applied to the dimensions of the protocol; ‡Content validity index of the protocol.

Items 7 and 8 did not achieve consensus higher than 80%; the two experts that considered the items non-representative suggested changes that were introduced in the protocol. As for item 7, one of the experts suggested that the item should be rewritten as "New staff members are informed about fall risk factors and preventive measures during orientation." Regarding item 8, the sentence was changed to "The family is told about the implemented preventive measures". The rephrased items were resent to the experts and obtained CVII scores of 0.88 and 1, respectively.

In semantic analysis, the 23 caregivers unanimously considered the items clear.

Psychometric characteristics of the Scale of Practices and Behaviors of Teams for Fall Prevention

To evaluate the psychometry of the scale, 232 instruments were distributed in the six LTC institutions; 152 forms were returned, corresponding to 65.52% of the total number. The sample consisted of women only, with an average age of 47.02±10.40 years. They had been working for 13.10±8.35 years, and 11.90±8.19 of them were dedicated to the institution in question. Sixty-eight percent of the sample had started their professional activities without a specific focus on work in LTC facilities, and 66.7% attended continuous education courses; in 50.8% of the cases, the training was shorter than 150 hours; 38.1% of the participants attended courses longer than 200 hours.

The SPBTFP initially consisted of 14 items, which were reduced to 6, and presented a Cronbach's alpha of 0.918, as shown in Table 2.

Table 2 – Pearson's coefficient and Cronbach's alpha of the items with the total without the item in the Scale of Practices and Behaviors of Teams for Fall Prevention. Lisbon, Portugal, 2014. (n = 152)

Content of the items	Pearson's coefficient of the total without the item	Cronbach's alpha without the item
1. The team discusses the fall risk factors for the different residents.	0.807	0.897
2. The team discusses the fall prevention measures to be applied to each elderly person.	0.799	0.898
3. The team decides the preventive measures to be applied to each elderly person.	0.769	0.903
4. Communication is crucial to preventing falls.	0.734	0.907
5. Through communication, I can understand, evaluate, interpret and convey relevant elements for fall prevention.	0.774	0.902
6. I usually show interest in identifying the causes of falls.	0.728	0.908
Total alpha		**0.918**

The total correlation varied from 0.728 and 0.807. Cronbach's alpha without a specific item ranged from 0.898 and 0.908.

Regarding the validation of the protocol, it was observed that the factorial analysis with Varimax rotation provided a KMO value of 0.869, and the Bartlett's test of sphericity gave a value of 731,788 (p < 0.001). The six items are grouped in one factor that explains 70.088% of the total variance. Table 3 shows these results.

Table 3 – Analysis of principal components of the Scale of Practices and Behaviors of Teams for Fall Prevention. Lisbon, Portugal, 2014. (n = 152)

Content of the items	H2	Factor
1. The team discusses the fall risk factors for the different residents.	0.752	0.867
2. The team discusses the fall prevention measures to be applied to each elderly person.	0.741	0.861
3. The team decides the preventive measures to be applied to each elderly person.	0.706	0.840
4. Communication is crucial to preventing falls.	0.674	0.821
5. Through communication, I can understand, evaluate, interpret and convey relevant elements for fall prevention.	0.726	0.852
6. I usually show interest in identifying the causes of falls.	0.666	0.816
Total explained variance 70.088		
KMO 0.869		
Bartlett's test of sphericity 731.789; p < 0.001		

Practices and behaviors of teams for fall prevention

According to the judgement of the professionals, the item of the SPBTFP with the highest score was "Communication is crucial to preventing falls" (Ẍ=4.45±0.86); the items with the lowest scores were "The team discusses the fall prevention measures to be applied to each elderly person" (Ẍ=3.91±1.03) and "The team decides the preventive measures to be applied to each elderly person" (Ẍ=3.91±1.05). Table 4 exhibits the results of this analysis.

Table 4 – Sample characterization regarding team practices and behaviors for fall prevention according to the caregivers' opinion. Lisbon, Portugal, 2014. (n=152)

Content of the items	Mean	SD
1. The team discusses the fall risk factors for the different residents.	3.98	1.05
2. The team discusses the fall prevention measures to be applied to each elderly person.	3.91	1.03
3. The team decides the preventive measures to be applied to each elderly person.	3.91	1.05
4. Communication is crucial to preventing falls.	4.45	0.86
5. Through communication, I can understand, evaluate, interpret and convey relevant elements for fall prevention.	4.27	0.89
6. I usually show interest in identifying the causes of falls.	4.36	0.89
Total (6-30)	**24.88**	**5.79**

The analysis of the percentages for each answer to the indicators revealed that fall risk factors were always discussed by teams in 38.8% of the situations; for preventive measures, the value was 31.6%; and for decision-making, the percentage was 33.6% of the professionals.

The Mann-Whitney U test showed that there wa no statistically significant difference between the SPBTFP and having had or not having had a training before and during the professional activity (p>0.05).

The Spearman's correlation test revealed no statistically significant differences between years of professional activity, age and practices and behaviors regarding falls in elderly people (p>0.05).

DISCUSSION

Falls are a serious and worldwide issue in LTC institutions, where, in addition to individual risk factors, the presence of staff and the organization of

work routines may increase the risk of occurrence.[6] In spite of efforts to characterize this phenomenon, it is recognized that the biomedical model, with the evaluation of biophysiological risk factors, has been predominant in the research on fall risks, and that there is a gap between evidence and translation of knowledge into clinical practice.[12]

This transfer process in LTC institutions is complex, not just because of its nature, but also because of the dimension of teams and diversity of practices. A literature review showed that little is known about teamwork in fall risk management and how it can influence the prevalence of falls.

It is important to emphasize that changes in organizations and the development of conditions that allow for support of the effective use of evidence-based interventions result in increased safety and quality of life of the institutionalized elderly people.[12]

The contribution of the present study to the state of the art in the area is the design, content validation, and application of a scale to assess practices and behaviors of teams regarding fall risk management in LTC facilities, in accordance with guidelines for the use of specific instruments to evaluate practices and behaviors.[9]

Content validation was performed by a heterogeneous examining board. This characteristic is advocated by some authors to guarantee the validity of the results, taking into account that multidisciplinarity provides more valid predictive consensus.[13]

With an IRA=0.86 and a total CVI=0.92, the items achieved high consensus among the experts.

Analysis related to validation of the protocol uncovered psychometric properties, with a Cronbach's alpha=0.918, compatible with high internal consistency in the scale.[9,11]

The last six items proved discriminatory, causing the correlation item-total to vary from 0.728 and 0.807.[9]

In the application of the scale, the item with the highest score was "Communication is crucial to preventing falls" ($\dot{X}$=4.45±0.86). A study describing the introduction of a multi-intervention protocol, which implied a multiprofessional team, revealed that combined interventions for fall prevention that include training the team to improve interdisciplinary communication about the risk of falls in the residents were effective in decreasing the number of fall episodes.[14]

Professionals consider communication to be essential in preventing falls because it allows them to understand, evaluate, interpret and convey relevant elements for fall prevention ($\dot{X}$=4.270±0.895). This is why decisions about the preventive measures to adopt are always made by teams in 33.6% of the caregivers, who usually show interest in identifying the causes of falls ($\dot{X}$=4.360±0.894). Communication, organizational policies and teamwork are crucial to decreasing the prevalence of fall episodes.[15]

A longitudinal, quasi-experimental study whose objective was to evaluate the efficacy of a curriculum of fall prevention based on TeamSTEPPS showed that combining team training with improved communication about fall risks was effective in reducing the prevalence of falls.[16]

The first item of the last version of the protocol addresses team discussions of fall risks for different residents; the average for answers was $\dot{X}$=3.980±1.052, and identifying risk factors is crucial to implementing preventive measures and preventing accidents. The evaluation of fall risk must be performed with every patient, and discriminating the different probabilities of suffering accidents is the first step in any prevention program.[3]

This information is corroborated by the results of another study, which concluded that one out of five elderly people just admitted to institutions fall in the first days of stay. The authors attributed this to the fact that the institution staff was more familiar with older residents[15] and adjusted preventive measures and surveillance to them, to the detriment of new patients.

The present study found that risk factors are discussed by teams in 38.8% of the situations, which means that they are not debated by the staff most of the time, pointing to an underestimation of fall risks.

The items of the scale with the lowest score were "The team discusses the fall prevention measures to be applied to each elderly person" ($\dot{X}$=3.91±1.03) and "The team decides the preventive measures to be applied to each elderly person" ($\dot{X}$=3.91±1.05). This data reveals sporadic practices regarding the implementation and maintenance of individualized preventive measures, which can impact fall risks. Interventions that combine multiple components and are developed by multidisciplinary teams can effectively decrease the number of fall episodes.[16]

This type of intervention, like all the others that refer to information, education and instruction of elderly people, is crucial to guaranteeing their safety during institutionalization. The results of the present study confirm that improving communication between residents and professionals about

preventive measures and health promotion may ensure that appropriate and specific interventions are implemented to reduce the incidence of falls.[17]

One study concluded that improvement of staff communication through sharing accurate information about the behavior and health condition of, and medicines being taken by, residents, along with other risk factors, may contribute to a decrease of 12% in fall episodes.[18] The high prevalence of falls in LTC facilities justifies, as the health community advocates, cooperation between multiprofessional health teams at all levels of care to identify residents who have a history of falls or are more likely to suffer accidents.[19]

Prevention of falls in LTC institutions poses many challenges and requires a combination of medical treatment, rehabilitation and changes in the environment. Preventive interventions can be introduced at the level of professionals' or residents' organizations.[18] Future studies should associate fall occurrences with the practices of teams.

It is assumed that it is essential to develop a culture of safety in LTC institutions that allows residents to maintain their autonomy, determination and independence during institutionalization. This philosophy should also encompass the excellence of the care given by nurses and other professionals and efficient communication and teamwork.[14,18] This is why the design of programs that guarantee the safety of the elderly people is an ethical imperative in nursing caregiving and care management.

The engagement of residents in these programs is paramount, in order to decrease the prevalence of falls; the level of safety of their practices and behaviors must be taken into consideration.[20]

The limitations of the present study are related to the type of sample – intentional – which does not allow for extending the results to the rest of the population, and to the fact that the measures are based on self-report, which may cause the answers to be influenced by what is considered socially expected.

CONCLUSION

The present study had as its objective the design, content validation and design validation of the Scale of Practices and Behaviors of Teams for Fall Prevention for institutionalized elderly people.

The original 14 items were evaluated by a heterogeneous sample of nine experts; with an IRA score of 0.86 and a total CVI score of 0.92, the items obtained high consensus among the judges. The heterogeneity of the examining board provided a more valid predictive consensus.

After validation of the protocol, the final version presented six items, and a Cronbach alpha of 0.918; the item-total correlation varied from 0.728 to 0.807.

The scale has appropriate psychometric characteristics and can be used to determine the practices and behaviors of teams in fall risk management in institutionalized elderly people.

Future studies could associate fall prevalence with the practices and behaviors of teams, assessed through the scale, as well as the effectiveness of prevention programs addressing improvement in the practices and behaviors.

REFERENCES

1. Lee HC, Chang KC, Tsauo JY, Hung JW, Huang YC, Lin SI. Effects of a multifactorial fall prevention program on fall incidence and physical function in community-dwelling older adults with risk of falls. Arch Phys Med Rehabil [Internet]. 2013 [cited 2016 May 8]; 94(4):606-15. Available from: doi: 10.1016/j.apmr.2012.11.037. Epub 2012 Dec 6.

2. Brito TA, Fernandes MH, Coqueiro RS, Jesus CS. Falls and functional capacity in the oldest old dwelling in the community. Texto Contexto Enferm [Internet]. 2013 Jan-Mar [cited 2016 May 8]; 22(1):43-51. Available from: http://www.scielo.br/pdf/tce/v22n1/pt_06.pdf

3. Baixinho CL, Dixe MA. Falls in institutions for older adults: characterization of fall occurrences and associated risk factors. Rev Eletr Enf [Internet]. 2015 Dec [cited 2016 Apr 27]; 17(4). Available from: http://dx.doi.org/10.5216/ree.v17i4.31858.

4. Nitz J, Cyarto E, Andrews S, Fearn M, Su S, Haines T, et al. Outcomes from the implementation of a facility-specific evidence-based falls prevention intervention program in residential aged care. Geriatr Nurs [Internet]. 2012 [cited 2016 May 8]; 33(1):41-50. Available from: doi: 10.1016/j.gerinurse.2011.11.002. Epub 2011 Dec 30.

5. Burland B, Martens P, Brownell M, Doupe M, Fuchs D. The evaluation of a fall management program in a nursing home population. Gerontologist [Internet]. 2013 [cited 2016 May 8]; 53(5):828-38. Available from: doi: 10.1093/geront/gns197. Epub 2013 Jan 25.

6. Deandrea S, Bravi F, Turati F, Lucenteforte E, Vecchia C, Negri E. Risk factors for falls in older people in nursing homes and hospitals. A systematic review and meta-analysis. Arch Gerontol Geriatr [Internet]. 2013 [cited 2016 May 8]; 56(3):407-15. Available from: doi: 10.1016/j.archger.2012.12.006. Epub 2013 Jan 5.

7. Kalula SZ, Scott V, Dowd A, Brodrick K. Falls and fall prevention programmes in developing countries: environmental scan for the adaptation of the Canadian falls prevention curriculum for developing countries.

J Saf Res [Internet]. 2011 [cited 2016 May 8]; 42(6):461-72. Available from: doi: 10.1016/j.jsr.2010.12.003. Epub 2011 Nov 10.

8. Whitney J, Close JCT, Lord S, Jackson SHD. Identification of high risk fallers among older people living in residential care facilities: a simple screen based on easily collectable measures. Arch Gerontol Geriatr [Internet]. 2012 [cited 2016 May 8]; 55:690-5. Available from: doi: 10.1016/j.archger.2012.05.010. Epub 2012 Jul 7.

9. Waltz C, Strickland O, Lenz E. Measurement. Nursing and health research. 4th. Ed. New York (US): Springer Publishing Company; 2010.

10. Blum CA. Using the Benner Intuitive-humanistic Decision-making Model in action: a case study. Nurse Educ Pract [Internet]. 2010 [cited 2016 May 8]; 10(5):303-7. Available from: doi: 10.1016/j.nepr.2010.01.009. Epub 2010 Mar 3.

11. Maroco J. Análise estatística com o SPSS Statistics. Lisboa: Report Number; 2011.

12. Fixsen D, Scott V, Blasé K, Naoom S, Magar L. When evidence is not enough: the challenge of implementing fall prevention strategies. J Saf Res [Internet]. 2011 [cited 2016 May 8]; 42(6):419-22. Available from: doi: 10.1016/j.jsr.2011.10.002. Epub 2011 Oct 31.

13. Scarparo AF, Laus AM, Azevedo ALCS, Freitas MRI, Gabriel CS, Chaves LDP. Reflections on the use of delphi technique in research in nursing. Rev Rene. 2012; 13(1):242-51.

14. Jackson KM. Improving nursing home falls management program by enhancing standard of care with collaborative care multi-interventional protocol focused on fall prevention. J Nurs Educ Practice [Internet]. 2016 [cited 2016 May 8]; 6(6):84-96. Available from: https://doi.org/10.5430/jnep.v6n6p84.

15. Leland N, Gozalo P, Teno J, Mor V. Falls. Newly admitted nursing home residents: a national study. JAGS [Internet]. 2012 [cited 2016 May 8]; 60(5):939-45. Available from: doi: 10.1111/j.1532-5415.2012.03931.x.

16. Spiva L, Robertson B, Delk ML, et al. Effectiveness of team training on fall prevention. J Nurs Care Quality [Internet]. 2014 [cited 2016 May 8]; 29(2):164-73. Available from: http://dx.doi.org/10.1097/NCQ.0b013e3182a98247

17. Duffy A. The assessment and management of falls in residential care settings. BJN [Internet]. 2013 [cited 2016 May 8]; 22(5): 259-63. Available from: doi: 10.12968/bjon.2013.22.5.259.

18. Colon-Emeric CS, McConnel E, Pinheiro SO, et al. CONNECT for better fall prevention in nursing homes: results from a pilot intervention study. J Am Geriatr Soc [Internet]. 2013 [cited 2016 May 8]; 61(12):2150-9. Available from: doi:10.1111/jgs.12550.

19. Nascimento JS, Tavares DMS. Prevalence and factors associated with falls in the elderly. Texto Contexto Enferm [Internet]. 2016 [cited 2016 May 8]; 25(2):e0360015. Available from: http://dx.doi.org/10.1590/0104-07072016000360015.

20. Baixinho CL, Dixe MA. Construction and validation of the Scale of Practices and Behaviors of Institutionalized Elderly to Prevent Falls. Universal J Public Health [Internet]. 2016; 4(3):139-43. Available from: doi: 10.13189/ujph.2016.040303.

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