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Morse Fall Scale: translation and transcultural adaptation for the portuguese language

MORSE FALL SCALE: TRADUÇÃO E ADAPTAÇÃO TRANSCULTURAL PARA A LÍNGUA PORTUGUESA

MORSE FALL SCALE: TRADUCCIÓN Y ADAPTACIÓN A LA LENGUA PORTUGUESA

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ABSTRACT

The study aimed to translate and adapt the Morse Fall Scale from English into the Portuguese language. This was performed in seven steps: authorization by the author of the scale; translation into Portuguese; evaluation and structuring of the translated scale; reverse translation into English; evaluation and validation of the scale by a committee of experts; evaluation of clarity of items and operational definitions with 45 professionals; evaluation of agreement between raters and the reliability of reproducibility, related to data from the evaluation of 90 patients, performed by four evaluators/judges. The clarity of the scale was considered very satisfactory, with a confidence interval of 73.0% to 100% in the option *very clear*. For the concordance of responses, the results showed Kappa coefficients of approximately 0.80 or higher. It was concluded that the adaptation of the scale was successful, indicating that its use is appropriate for the population of Brazilian patients.

DESCRIPTORS

Inpatients
Accidental falls
Risk factors
Safety
Validation studies

RESUMO

Estudo realizado com o objetivo de traduzir e adaptar a *Morse Fall Scale* da língua inglesa para a portuguesa. Foi realizado em sete etapas: autorização pela autora da escala; tradução para o português do Brasil; avaliação e estruturação da escala traduzida; tradução reversa para o inglês; avaliação e validação da escala pelo comitê de especialistas; avaliação da clareza dos itens e definições operacionais por 45 profissionais e avaliação da concordância entre avaliadores e confiabilidade da reprodutibilidade, quanto aos dados referentes à avaliação de 90 pacientes, por quatro avaliadores/juízes. Quanto à clareza da escala, as proporções foram consideradas muito satisfatórias, com intervalo de confiança entre 73% a 100% na opção *muito claro*. Quanto à concordância das respostas, os resultados apresentaram coeficientes Kappa em torno de 0,80 ou superiores. Concluiu-se que o processo de adaptação da escala foi bem sucedido, indicando que seu uso é apropriado para a população de pacientes brasileiros hospitalizados.

DESCRITORES

Pacientes internados
Acidentes por quedas
Fatores de risco
Segurança
Estudos de validação.

RESUMEN

Estudio efectuado objetivando traducir y adaptar la *Morse Fall Scale* del inglés al portugués. Fue realizado en siete etapas: autorización de la autora; traducción al portugués brasileño; evaluación y estructuración de la escala traducida; traducción revertida; evaluación y validación de la escala por comité de especialistas; evaluación de claridad de ítems y definiciones operativas por 45 profesionales y evaluación de concordancia entre evaluadores y confiabilidad de la reproductibilidad; en cuanto a los datos referentes a la evaluación de 90 pacientes, por parte de cuatro evaluadores/jueces. Respecto a la claridad de la escala, las proporciones fueron consideradas muy satisfactorias, con intervalo de confianza entre 73% y 100% para *muy claro*. Acerca de la concordancia de respuestas, los resultados presentaron coeficientes Kappa de aproximadamente 0,80 o superiores. Se concluye en que el proceso de adaptación fue exitoso, indicando que su uso es apropiado para la población de pacientes brasileños hospitalizados.

DESCRIPTORES

Pacientes internos
Accidentes por caídas
Factores de riesgo
Seguridad
Estudios de validación

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INTRODUCTION

A fall is an event in which an individual suddenly falls to the ground or another lower level, without loss of consciousness[1]. It may also be defined as an unintended event that results in a change in position of the individual to a lower level, in relation to his initial position[2].

This event may have numerous risk factors involved, such as age over 65 years, changes in the level of consciousness, bladder and/or bowel incontinence[3-4], neurological and cardiovascular diseases[5], use of psychoactive medications[6-7], previous falls, altered gait, functional disability, cognitive impairment, excessive physical activity, and with a lower substantiation, the female gender[8].

Falls can have serious consequences and are among the leading causes of trauma in the elderly[9]. They can have the consequence of increasing the length of hospital stay and cost of treatment, in addition to causing discomfort to the patient[10].

A large variety of factors have been identified in the literature that are considered to be risks for falls. Publications of some scales constructed to assess the specific conditions of individuals related to the risk of falls were found in the literature, such as the Berg Balance Scale (BBS)[11], which assesses the development of functional tasks and the Timed Up and Go Scale (TUG)[12], which assesses the person's basic mobility. A specific scale for assessing the risk of falls was also identified, the Morse Fall Scale (MFS)[13], published in the English language and not yet validated for the Portuguese language, which stood out because of its apparent simplicity of its items of assessment.

A specific scale for assessing the risk of falls was also identified, the Morse Fall Scale (MFS), published in the English language and not yet validated for the Portuguese language, which stood out because of its apparent simplicity of its items of assessment.

This scale was published by Morse in 1989 and consists of six criteria for assessing the risk of falls: history of falling, secondary diagnosis, ambulatory aid, intravenous therapy/heparin lock, gait, and mental status. Each criterion evaluated receives a score ranging from zero to 30 points, totaling a risk score, which is classified as follows: low risk, 0-24; medium risk, 25-44; and high risk ≥45[13].

This classification was tested by other researchers, who recommended further studies to assess the MFS, because factors that are not covered within this scale may interfere in determining the risk for falls. They also suggested the consideration of the local reality to determine the best cutoff related to the risk for falls[14-15].

Therefore, considering that the MFS has not been validated for the Brazilian reality and that no published research in Brazilian journals was found, the aim of this study was to translate and culturally adapt the Morse Fall Scale into Brazilian Portuguese.

METHOD

The translation and adaptation of the Morse Fall Scale into Brazilian Portuguese occurred in seven steps. The first step was to electronically contact the author, Janice Morse, who authorized the translation and adaptation. The following steps (second to seventh) were based on a widely used translation and adaptation protocol[16] that consisted of: initial translation (Portuguese version), evaluation and validation by expert committee, back translation (translation to English), study of clarity and assessment of agreement among evaluators/judges in the application, reliability, and reproducibility of the scale. At all stages, contact was maintained with the author of the original scale.

The translation of the MFS from English into Portuguese, as well as its operational definitions, was performed by two qualified and sworn independent translators. Each translator received a document containing instructions for development of the translation. Within the instructions, an emphasis was placed on semantic translation (semantic equivalence); notes regarding the difficulty in translation (from zero – no difficulty to ten - maximum difficulty), as well as a record of the aspects that contributed to the establishment of the degree of difficulty in the translation for each evaluation criterion of the scale was requested.

The third stage utilized a committee of specialists, formed by a sworn translator, a nursing professor, a doctorally prepared epidemiologist, a doctorally prepared nurse in gerontology, a doctorally prepared nurse in Health Sciences, a doctorally prepared nurse in psychology, one physiotherapist with a master's degree in pediatrics, and a professor of Portuguese with a doctorate in humanities. All members of the Committee, with the exception of the translator and the professor of Portuguese, had extensive experience in evaluation and monitoring of adult patients and were involved in studies related to patient safety. The panelists discussed and structured the version of the MFS in Portuguese.

In the fourth step, the Portuguese version was sent to a bilingual translator who performed the translation to the English language, establishing, as in the second step, the attribution of notes about the difficulty with this activity.

In the fifth step, the Committee of Specialists evaluated the translation into English, comparing it to the original MFS and validating the translation and adaptation for the Portuguese language. In the sixth step, the Portuguese version was evaluated for clarity of the items included in the translated and adapted scale (experimental and cultural equivalence). For this, the translated and adapted version for the Portuguese language was evaluated by 45 health professionals (nurses and physiotherapists), with more than

one year of experience in the area. After individually reading the MFS (items and their operational definitions), the option that best suited their perception (very clear, partially clear or unclear) was chosen. It was also asked that they justify the choice of the *partially clear* or *unclear*, and even that they suggest reformulations.

The seventh and final step consisted of a study of the agreement between evaluators/judges in the administration of the scale and its reliability and reproducibility. In this step, the final version of the MFS translated and adapted into Portuguese was administered to 90 patients randomly selected from an inpatient medical-surgical unit of a university hospital in the south of the country.

Each patient was assessed by four professionals (two nurses and two physiotherapists) simultaneously, but independently, to ensure that the assessment of each professional occurred at the same time in the hospitalization of the patient. Professionals did not communicate with each other during data collection, which occurred under the supervision of the researchers, to prevent influencing the definition or choice of options.

The answers given by the four professionals were analyzed using the Kappa coefficient[17], to evaluate the agreement between raters/judges in the application of the scale. This can be defined as a measure of association used to describe and test the degree of agreement (reliability and accuracy) among the professionals. The following classification was adopted: 0=poor; 0 to 0.20=weak; 0.21 to 0.40=probable; 0.41 to 0.60=moderate; 0.61 to 0.80=substantial; and, 0.81 to 1.00=almost perfect[18].

To assess the estimated fraction of the total and individual variability of the responses among evaluators/judges, an intraclass correlation coefficient (ICC) was applied, in which the following interpretations were considered: <0.4 – poor; ≥0.4 and <0.75 – satisfactory; and, ≥0.75 - excellent[19].

The ethical aspects were respected; the translation, adaptation, as well as the final version of the scale in Portuguese were authorized by the author of the Morse Fall Scale. The research project was approved by the Committee on Ethics in Research of the *Pontifícia Universidade Católica do Rio Grande do Sul*, Protocol OF. CEP-1272/09. The participants, including professionals and patients, were informed about the objectives of the research, and afterwards, all signed the Terms of Free and Informed Consent form.

RESULTS

Given the universality of the format of the questionnaire validated by the experts, it was maintained (operational and item equivalence) with slight changes in the items, as shown in Chart 1.

The semantic equivalence between both scales was discussed, also considering the degree of difficulty assigned by the translators for the translation of each item, with the establishment of scores from zero to ten points.

To establish a consensus among the translators and the members of the Committee of Specialists, an evaluation process was established which opted for a conceptual translation and not the literal translation of terms included in the Morse Fall Scale.

Chart 1 – Morse Fall Scale in English and the translated version for Brazilian Portuguese - Porto Alegre, 2011

Morse Fall Scale - original version[13]	Morse Fall Scale translated and adapted for Brazilian Portuguese	Pontos
1. History of falling	**1. Histórico de quedas**	
No	Não	0
Yes	Sim	25
2. Secondary diagnosis	**2. Diagnóstico Secundário**	
No	Não	0
Yes	Sim	15
3. Ambulatory aid	**3. Auxílio na deambulação**	
None/Bed read/Nurse assist	Nenhum/Acamado/Auxiliado por Profissional da Saúde	0
Crutches/Cane/Walker	Muletas/Bengala/Andador	15
Furniture	Mobiliário/Parede	30
4. Intravenosys Theraphy/Heparin lock	**4. Terapia Endovenosa/dispositivo endovenoso salinizado ou heparinizado**	
No	Não	0
Yes	Sim	20
5. Gait	**5. Marcha**	
Normal/Bed rest/Wheelchair	Normal/Sem deambulação, Acamado, Cadeira de Rodas	0
Weak	Fraca	10
Impaired	Comprometida/Cambaleante	20
6. Mental status	**6. Estado Mental**	
Oriented to own ability	Orientado/capaz quanto a sua capacidade/limitação	0
Overestimates/forgets limitations	Superestima capacidade/Esquece limitações	15

The items *history of falling*, *secondary diagnosis*, *ambulatory aid*, *gait* and *mental status* were defined by the translators with a zero score of difficulty. The item *Intravenous Therapy/Heparin lock* received a score of five and ten for the degree of difficulty concerning the expression *Heparin Lock*. After consensus among translators and the committee of specialists, it was translated and adapted as *saline or heparin flushed catheter*.

The word *Ambulatory*, translated as mobilization, was adapted for *walking*, the Portuguese word used to signify to walk[20], and consistent with the operational definition of the item (Chart 2). In the same item, the first option is, in English, assistance by the nurse. In the Brazilian health care reality, in which other professionals have an important role, especially physiotherapy, the term was extended to health professionals.

The term *Mental Status* was widely discussed by the group because the issue does not evaluate the mental state of the person, but rather the perception of limitations for locomotion. Authorization for translation of the item as *perception about the ability/limitation for locomotion*, was requested from the MFS author, but this alteration was not authorized. The other items were simply translated, requiring no adaptation for the Portuguese language.

The operational definitions of each item in the Morse Fall Scale were also translated, which are presented in Chart 2. In the item, history of falls, the history of falls during hospitalization or in a recent period is referred to as *yes*. The author was questioned as to the definition of *recent period*; she reported that it was a period of three months prior to the inquiry.

Chart 2 – Operational definitions of each item of the Morse Fall Scale, translated and adapted into the Brazilian Portuguese language – Porto Alegre, 2011

Item	Operational definition
1. History of falling	
No	If the patient has no history of falling in the last three months.
Yes	If the patient has fallen during the period of hospitalization or has a recent history (within three months) of falling for physiological causes, such as seizures or impaired gait prior to admission.
2. Secondary diagnosis	
No	If the patient's records show only one medical diagnosis.
Yes	If the patient's records show more than one medical diagnosis.
3. Ambulatory aid	
None/ bedridden /Assistance from health professional	If the patient wanders without auxiliary equipment (crutches, cane or walker), or If wanders with the aid of a member of the healthcare team, or if uses a wheelchair or is bedridden and do not get out of bed alone.
Crutches/Cane/Walker	If the patient uses crutches, cane or walker.
Furniture/wall	If the patient moves leaning on furniture / walls.
4. Intravenous Therapy/ Heparin saline or heparin flushed catheter	
No	If the patient does not have intravenous device. Note: when the patient has a totally implanted device, it is considered a zero score when not in use.
Yes	If the patient has an intravenous continuous infusion device or not (salinized or heparin flushed).
5. Gait	
Normal/Bed rest/Wheelchair	A normal gait is characterized by heads up walking, freely swinging arms at the side and stride without hesitation. The patient has the same score if he is bedridden and / or uses a wheelchair (without walking).
Weak	The steps are short and can be faltering. When the gait is weak, although the patient leans forward while walking, he is able to raise his head without imbalance. Also, if he needs to use some furniture for support, it is in a lightweight way, only to feel safe, not to stay upright.
Impaired / tottering	The patient uses short, tottering steps and may have difficulty rising from a chair, needs to support the armrests to lift and/or boost the body (makes several attempts to get up, boosting the body). With this type of gait, the patient's head is down and he looks at the floor. Due to lack of balance, the patient grabs at furniture, at a person or uses any equipment as an aid for gait (crutches, cane, and walker) to hold, and cannot walk without this help. When the healthcare team member aids this patient to walk, he notes that the patient actually relies on him, and when the patient leans on a railing or furniture and does it firmly until the joints of his fingers become pale.
6. Mental status	
Oriented / Knows own ability / limitation	By asking the patient "Are you able to go to the bathroom by yourself or do you need help?" Check if the response is consistent with the information contained in the medical record and/or evaluation. If so, the patient is classified as capable.
Overestimates/forgets limitations	By asking the patient "Are you able to go to the bathroom by yourself or do you need help?" Check if the answer is not consistent with information from medical records and/ or if the evaluation or assessment of the patient is unrealistic. If this happens, the patient is overestimating his abilities and forgetting his limitations.

After translation and consensus among the Committee of Specialists and the research coordinators, the MFS was back translated into English in order to assess the maintenance of the essence of the original scale, which was confirmed.

Table 1 shows the proportions of nurses and physiotherapists who considered the items and operational definitions of the Morse Fall Scale, translated and adapted into the Brazilian Portuguese, to be *very clear*. These ratios can be considered estimates of the true proportion of nurses and physiotherapists who attributed maximum clarity to the item. Confidence intervals were also constructed for proportions that considered the item to be very clear. All lower limits of the confidence intervals ranges were above 73.9%.

Table 1 – Confidence intervals for proportion who considered the items and operational definitions of the Morse Fall Scale, translated and adapted into Brazilian Portuguese, to be *very clear* – Porto Alegre, 2011

Morse Fall Scale items translated into Brazilian Portuguese	Nurses			Physiotherapists			Total		
	$\hat{p}$ very clear	% IC 95% p very clear		$\hat{p}$ very clear	% IC 95% p very clear		$\hat{p}$ very clear	% IC 95%$\hat{p}$ very clear	
		LI	LS		LI	LS		LI	LS
1. History of falls									
No	100	–	–	91	73.9	100.0	**98**	**93.5**	**100.0**
Yes	100	–	–	82	59.0	100.0	**96**	**89.5**	**100.0**
2. Secondary diagnosis									
No	88	77.4	99.1	73	46.4	99.0	**84**	**73.9**	**95.0**
Yes	91	81.6	100.0	91	73.9	100.0	**91**	**82.8**	**99.4**
3. Help with walking									
No one/ Bedridden/ By healthcare professional	88	77.4	99.1	82	59.0	100.0	**87**	**76.7**	**96.6**
Crutches/ Cane/ Walker	100	–	–	91	73.9	100.0	**98**	**93.5**	**100.0**
Furniture / Wall	100	–	–	91	73.9	100.0	**98**	**93.5**	**100.0**
4. Intravenous therapy									
No	88	77.4	99.1	91	73.9	100.0	**89**	**79.7**	**98.1**
Yes	94	86.2	100.0	100	100.0	100.0	**96**	**89.5**	**100.0**
5. Gait									
Normal/ No walking/ Bedridden/ Wheelchair	97	91.4	100.0	75	50.5	99.5	**91**	**83.2**	**99.4**
Weak	100	–	–	91	73.9	100.0	**98**	**93.5**	**100.0**
Compromised/ Tottering	97	91.4	100.0	82	59.0	100.0	**93**	**86.0**	**100.0**
6. Mental status									
Oriented/ Capability for their ability/limitation	94	86.2	100.0	100	–	–	**96**	**89.5**	**100.0**
Overestimate ability/Forgets limitation	94	86.2	100.0	91	73.9	100.0	**93**	**86.0**	**100.0**

*$\hat{p}$: estimated true proportion p, LI: lower limit LS: upper limit.
Note: (n = 45 professionals).

The evaluation of agreement between evaluators/judges in the application of the scale (Table 2) was performed using the Kappa coefficient for the K-Judges[17], having reached the classification of almost perfect (0.819 to 1.000) on all items of the translated scale, with the exception of the Gait item, that was classified as substantial (0.798).

The evaluation of the total and individual estimates of variability of the measures between the evaluators/judges, considering the final score obtained, had the ICC value of 0.982 (p<0.01). Therefore, the Morse Fall Scale, translated and adapted into Brazilian Portuguese, presented excellent reproducibility.

Table 2 – Coefficients of k agreement simultaneously calculated for the four judges – Porto Alegre, 2011

Items	Kappa	Z-statistic	p-Valor
1. History of falls	0.983	11.04	<0.01
2. Secondary diagnosis	0.982	10.55	<0.01
3. Ambulatory aid	0.854	9.03	<0.01
4. Intravenous therapy	1.000	15.32	<0.01
5. Gait	0.798	17.55	<0.01
6. Mental status	0.819	8.32	<0.01

Note: (n=90 patients)

DISCUSSION

Throughout the different stages in the translation and adaptation of the Morse Fall Scale into the Portuguese language, it was possible to identify the major viability of its application to the Brazilian reality. Few adjustments were necessary because the scale items were clear and easy to apply.

The items *secondary diagnosis*, *ambulatory aid* and *intravenous therapy* had a minimum percentage of around 75% of evaluators who chose the option *very clear*, compared to the other items on the scale that had a minimum percentage of around 87% for the same option.

This aspect generated an initial concern for researchers, but a more consistent evaluation of the reasons for the lack of choice of the *very clear* option demonstrated that these occurred because of questions that went beyond the assessment of the writing clarity and, in another moment, it could contribute to the improvement of the scale.

The secondary diagnosis item led to a question about considering only the medical diagnosis. This was probably pointed out because the various institutions use the nursing diagnoses of NANDA International, Inc. (NANDA-I)[21]. Regarding the ambulatory aid item, the inclusion of aid from the family/caregiver was suggested, since in the Brazilian reality the presence of the family is increasing. Studies reinforce the need for family member presence in the hospital, especially in the monitoring of elderly people, facilitating the team interaction with the caregiver[22].

For the intravenous therapy/saline or heparin flushed catheter item, professionals who evaluated the clarity of the item considered that if the patient did not have a continuous infusion device, there would not be any risk and the item should not be scored. However, it is important to remember that the procedures for catheter placement are painful, and when the patient uses it, he directs special attention to it, which can be the object of distraction during mobilization/walking, putting him at risk for falls.

Regarding the concordance among evaluators/judges in the application by nurses and physiotherapists of the MFS translated and adapted into Brazilian Portuguese, the results can be considered extremely positive, since there were differentiated professional areas involved. The items, history of falls, secondary diagnosis, ambulatory aid and intravenous therapy/saline or heparin flushed catheter, and mental status were the ones that obtained greater agreement among evaluators/judges, with Kappa coefficients classified as almost perfect (0.983; 0.982; 0.854; 1.000; and 0.819, respectively). It can be said that these items were easy to understand and their operational definitions have been well-established.

Only the *gait* item received a substantial Kappa coefficient classification (0.798), demonstrating that, although there were discrepancies between the evaluators/judges, the coefficient continued to have a high magnitude. However, this merits attention because the prior knowledge of the professionals about the operational definitions, and the individual perception of each item, may have influenced the understanding.

It can be considered that the results obtained in the concordance evaluation between evaluators/judges in the application of the scale were excellent. The variability of individual scores resulting from the sum of scores assigned by the different judgments, by applying the ICC, did not exceed the total variability, demonstrating high reliability in the application of intra-rater/judge agreement. The results were also found in the evaluation of the original scale[13], with an ICC of 0.96, and in another study where the MFS was applied with a Chinese population[15], with the ICC of 0.97.

CONCLUSION

This study achieved the proposed objective of performing the translation and cultural adaptation to Brazilian Portuguese of the Morse Fall Scale. Regarding the clarity of the scale items translated, taken individually, the minimum percentage of 73.9% of the professionals evaluated items as *very clear*, which indicates that majority of the target audience should attribute maximum clarity to the items. The agreement between the evaluators/judges in applying the rating scale also reached nearly perfect on the majority of the items. Likewise, the intrarater/judge variability was classified as excellent. Since consensus is almost unattainable in practical situations, these may be considered extremely satisfactory results.

This was the first step in the adaptation of the Morse Fall Scale for the Brazilian reality. Further studies, some already in progress, are necessary to identify cutoff points for predicting the risk of falls and to analyze more consistently the effectiveness of the Morse Fall Scale translated and adapted into Brazilian Portuguese.

This study contributed to disclosure of a structured scale that can be widely and systematically used by professionals and institutions in assessing the risk of falls in hospitalized patients and, thereby, it can support the planning of strategies for patient safety.

REFERENCES

1. American Geriatrics Society; British Geriatrics Society. Clinical Practice Guideline for Prevention of Falls in Older Persons [Internet]. 2010 [cited 2011 Mar 17]. Available from: http://www.americangeriatrics.org/health_care_professionals/clinical_practice/clinical_guidelines_recommendations/2010/
2. Sociedade Brasileira de Geriatria e Gerontologia. Quedas em idosos: prevenção. Projeto Diretrizes da Associação Médica Brasileira e Conselho Federal de Medicina. São Paulo; 2008.
3. Cohen L, Guin P. Implementation of patient fall prevention program. J Neurosci Nurs. 1991;23(5):315-9.

4. Hitcho EB, Krauss MJ, Birge S, Dunagan WC, Fischer I, Johnson S, et al. Characteristics and circumstances of falls in a hospital setting. J Gen Intern Med. 2004;19(7):732-9.

5. Fabrício SCC, Rodrigues RAP, Costa Junior ML. Causas e consequências de quedas em idosos atendidos em hospital público. Rev Saúde Pública. 2004;38(1):93-9.

6. Chaimowicz F, Ferreira TJXM, Miguel DFA. Uso de medicamentos psicoativos e seu relacionamento com quedas entre idosos. Rev Saúde Pública. 2000;34(6):631-5.

7. Woolcott JC, Richardson KJ, Wiens MO, Pate B, Marin J, Khan KM, et al. Meta-analysis of the impact of 9 medication classes on falls in elderly persons. Arch Intern Med. 2009;169(21):1952-60.

8. Gama ZAS, Gómez-Conesa. Factores de riesgo de caídas en ancianos. Rev Saúde Pública. 2008;42(5):946-56.

9. Biazin DT, Rodrigues RAP. Profile of elderly patients who suffered trauma in Londrina - Paraná. Rev Esc Enferm USP [Internet]. 2009 [cited 2011 Mar 17];43(3):602-8. Available from: http://www.scielo.br/pdf/reeusp/v43n3/en_a15v43n3.pdf

10. Diccini S, Pinho PG, Silva FO. Assessment of risk and incidence of falls in neurosurgical inpatients Rev Latino Am Enferm. 2008;16(4):752-7.

11. Christofoletti G, Oliani MM, Gobbi LTB, Gobbi S, Stella F. Risco de quedas em idosos com doença de Parkinson e demência de Alzheimer: um estudo transversal. Rev Bras Fisioter. 2006;10(4):429-33.

12. Marin MJS, Castilho NC, Myazato JM, Ribeiro PC, Candido DV. Características dos riscos para quedas de uma unidade de saúde da família. REME Rev Min Enferm. 2007;11(4): 369-74.

13. Morse J. Preventing patient falls. Thosand Oaks: Sage; 1997.

14. Schwendimann R, Geest S, Milisen K. Evaluation of the Morse Fall Scale in hospitalised patients. Age Ageing. 2006;35(3):311-3.

15. Chow SKY, Lai CKY, Wong TKS, Suen LKP, Kong SKF, Chan CK, et al. Evaluation of the Morse Fall Scale: Applicability in Chinese hospital populations. Int J Nurs Stud. 2007;44(4):556-65.

16. Guillemin F, Bombardier C, Beatona D. Cross-cultural adaptation of health-related quality of the measures: literature review and proposed guidelines. J Clin Epidemiol. 1993;46(12):1417-32.

17. Siegel S, Castellan Jr NJ. Estatística não-paramétrica para ciências do comportamento. 2ª ed. Porto Alegre: Artmed; 2006.

18. Landis JR, Koch GG. The measurement of observer agreement for categorical data. Biometrics. 1977;33(1):159-74.

19. Szklo R, Nieto FJ. Epidemiology: beyond the basics. Burlington (MA): Jones & Bartlett Learning; 2000. p. 343-404.

20. Ferreira ABH. Dicionário Aurélio da língua portuguesa. 5ª ed. Curitiba: Positivo; 2010.

21. North American Nursing Diagnosis Association (NANDA). Diagnóstico de enfermagem da NANDA: definições e classificação: 2009-2011. Porto Alegre: Artmed; 2009.

22. Pena SB, Diogo MJD. Factors favoring the participation of aged inpatients' caregivers in care. Rev Latino Am Enferm. 2005;13(5):663-9.

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