

RESEARCH ARTICLE

A cross-sectional study on nurses' attitudes towards physical restraints use in nursing homes in Portugal

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Abstract

Aim: To explore nurses' opinions regarding restraint measures and attitudes towards physical restraints use in nursing homes.

Design: Cross-sectional study.

Methods: Nursing staff of 33 Portuguese nursing homes was asked to complete the Portuguese version of the Maastricht Attitude Questionnaire (MAQ), an instrument on attitudes regarding physical restraints (reasons, consequences and appropriateness of restraint use) and opinions about restraint measures (restrictiveness and discomfort). Descriptive statistics and bivariate analysis were performed.

Results: Data from 186 nurses were included in the analysis. Overall, nurses expressed neutral to moderately positive attitudes towards physical restraints usage. Nurses with longer professional experience reported a more positive attitude regarding the appropriateness of restraint use in their clinical practice. Wrist and ankle restraints were the measures that nurses reported feeling most uncomfortable using, and the most restrictive. Bilateral bedrails were globally assessed as a slightly restrictive measure and nurses reported not feeling uncomfortable using them.

KEYWORDS

attitudes, nurses, nursing homes, opinions, physical restraint

1 | INTRODUCTION

Physical restraints use in nursing homes persists, despite evidence about lack of effectiveness, safety and appropriateness of restraint measures such as belts, bedrails and tables fixed in chairs (Abraham et al., 2019; Bellenger et al., 2018). Decision-making about physical restraints use is complex and influenced by several factors, such as nurses' attitudes (Goethals et al., 2012). Previous studies identified

that nursing staff attitudes regarding physical restraints differ between countries, underlining the importance of more tailored and culturally sensitive interventions to reduce physical restraints use in nursing homes (Boscart et al., 2015; Hamers et al., 2009; Mayerl et al., 2019). Such studies have not been previously conducted in Portugal, being the present study a contribution to identify nurses' attitudes regarding the use of physical restraints in Portuguese nursing homes, allowing international comparison.

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2 | BACKGROUND

Physical restraints can be defined as “any action or procedure that prevents a person's free body movement to a position of choice and/or normal access to his/her body by the use of any method, attached or adjacent to a person's body that he/she cannot control or remove easily.” (Bleijlevens et al., 2016, p. 2309). Regular use of physical restraints in nursing homes has been a focus of international discussion for many years and still remains a hot research topic, since its prevention has proven to be challenging (Abraham et al., 2019). Considered an indicator of poor quality of care in nursing homes (Castle, 2003), physical restraints have been associated with several adverse effects. Some reported adverse effects include increased risk of functional and cognitive decline in nursing homes residents with dementia (Foebel et al., 2016), contractures, incontinence, pressure ulcers (Hofmann et al., 2015) and even deaths in nursing home residents (Bellenger et al., 2018).

Besides physical negative effects of physical restraints, negative psychological impact has been reported by persons who experienced been physical restrained (e.g. anger, fear, humiliation, demoralization, dehumanization, personal integrity violation) (Strout, 2010). Several studies highlighted a breach of the fundamental human rights of dignity and autonomy associated with the use of physical restraints in people with dementia (De Bellis et al., 2013).

Due to the adverse effects of physical restraints and questionable benefits associated with their use, restraint-free care is considered as standard care in nursing homes. Many countries have even implemented strict legal rules regarding physical restraints (Abraham et al., 2019). Despite this, prevalence of physical restraints use in nursing homes seems to remain high, with people with cognitive impairment and high dependency being most likely to be restrained, especially people with dementia (Jacobsen et al., 2017). This reality reinforces the need to identify the barriers to physical restraints use reduction (Kong et al., 2016).

Different methods for data collection, and different definitions of physical restraints, contributes to a wide variation found in literature regarding reported prevalence in nursing homes (Hofmann et al., 2015). This variation makes it difficult to compare study results and even to discuss them in clinical and political contexts (Bleijlevens et al., 2016). Bedrails are a paradigmatic example of this variation. Being reported as one of the most commonly used restraint measures (Hamers & Huizing, 2005; Hofmann et al., 2015), there is some controversy regarding the use of bedrails. It is striking that in some studies aiming to reduce physical restraints, bedrails are not classified as physical restraint measures (Castle, 2003; Muñoz et al., 2016) or are analysed separately from other physical restraint measures (Laurin et al., 2004). Bedrails are designed as safety devices. However, we should be careful with the application of this measure due to the risks and adverse consequences associated with its use. Although unintended, there is evidence of indiscriminate and misuse (Shanahan, 2012). Previous studies have indicated that nurses often do not classify bedrails as restraint measures. There is a need to change this opinion, due to the common use of this measure in clinical practice (Hamers et al., 2009).

Bedrails and other physical restraint measures are mainly used for safety reasons and their usage frequently create a dilemma among nurses. Despite having predominantly negative feelings towards physical restraints, nurses describe their use as necessary for their practice to ensure patients safety. When in doubt, nurses often decide in favour of physical restraints (Möhler & Meyer, 2014). Some of the barriers reported by staff to reduce physical restraints use in nursing homes include concerns about safety; unclear and inconsistent definitions of physical restraints and physical restraint-free care; non-involvement in decision-making to remove physical restraints; and insufficient resources and education (Kong et al., 2016). Positive attitudes towards physical restraints may cause resistance to attempts to reduce its use (Abraham et al., 2019; Hamers & Huizing, 2005). Since most educational interventions aiming to reduce physical restraints address nurses' attitudes towards physical restraints use (Möhler & Meyer, 2014), a description of nurses' attitudes is required to tailor the intervention.

In Portugal, studies on physical restraints are scarce. The need for national research aimed at preventing and reducing physical restraints has been highlighted (Faria et al., 2012). Despite this, prevalence numbers of physical restraints use in Portuguese nursing homes are unknown and no previous study on nurse's attitudes regarding physical restraints in Portugal was identified.

The present study is part of a larger ongoing mixed methods research project on quality of care for people with dementia recently admitted in Portuguese nursing homes, where high recourse to physical restraints in this population was identified (Ferrão & Henriques, 2019). We report results of the part of the project aimed to explore nurses' opinions on the restraint measures and attitudes towards physical restraints use in Portuguese nursing homes.

3 | THE STUDY

3.1 | Aims

This study aimed to explore nurses' opinions regarding restraint measures and attitudes towards physical restraints use in nursing homes and to investigate if nurse's attitudes towards the physical restraints use are influenced by individual characteristics.

3.2 | Design

A cross-sectional study design was used. This article followed the STROBE reporting standard for cross-sectional studies (von Elm et al., 2008).

3.3 | Sample and setting

The present study included a convenience sample of nurses working in nursing homes in Portugal (Lisbon and Tagus Valley Region).

To minimize selection bias, nursing homes invited to participate in the study comprised: both urban and rural areas from several different municipalities, different size facilities, privately and/or state reimbursement system.

In this study, a nursing home is defined according the following international definition “a facility with a domestic-styled environment that provides 24-hr functional support and care for persons who require assistance with ADLs and who often have complex health needs and increased vulnerability. Residency in a nursing home may be relatively brief for respite purposes, short term (rehabilitative), or long-term and may also provide palliative/hospice and end-of-life care.” (Sanford et al., 2015, p. 183).

A total of 30 institutions were contacted by e-mail and/or telephone to participate in the study (each institution may have one or several nursing homes). All nurses working in the institutions that agreed to participate were invited to take part in the study. Since we needed to test psychometric properties of the adapted MAQ scale, sample size determination was based on usual rules of thumb for at least 5–10 participants per item for factor analysis (Kyriazos, 2018).

3.4 | Measures

The outcome measures of this study were nurse's attitudes towards physical restraint usage and nurse's opinions regarding restrictiveness for patient and discomfort in usage of different physical restraint measures using Maastricht Attitude Questionnaire (MAQ). MAQ was originally developed in Dutch (Hamers & Huizing, 2005), after which, German and English versions have been translated and adapted (Bleijlevens et al., 2012; Hamers et al., 2009). This questionnaire is a self-filling instrument that includes the MAQ scale (an attitude's scale on physical restraints use with three subscales; reasons for restraint use, consequences of restraint use for the resident/patient and appropriateness of restraint use) that has shown good reliability in the Dutch and German versions (Hamers et al., 2009).

The MAQ scale answers are to be rated on a 5-point Likert scale (1 = strongly disagree; 5 = strongly agree) on statements like “I'm afraid of falls if I don't apply physical restraints” or “Restraints reduce the risk of serious injury to patients residents” (reasons for restraint use subscale); “Most residents/patients suffer adverse effects from physical restraints” or “Physical restraints reduce resident/patients quality of life” (consequences of restraint use for resident/patient subscale); “My ward/unit uses physical restraints far too often” or “Physical restraints are used too quickly” (appropriateness of restraint use subscale). Total MAQ scale score ranges from 1–5 and is calculated by adding up the scores and dividing the score by the total number of items. A score of 1 indicates a negative attitude (= against the use of physical restraint), while a score of 5 indicates a positive attitude. The same principle is used in the three subscales (Bleijlevens et al., 2012).

The other section of MAQ includes a 17-items on opinions regarding different restraint measures. Each restraint measure is evaluated on restrictiveness for resident/patient (3-point scale: 1 = not restrictive, 2 = moderately restrictive, 3 = highly restrictive) and the

extent of discomfort experienced by nursing staff in using each measure (1 = not discomforting, 2 = Moderately discomforting, 3 = Very discomforting) (Bleijlevens et al., 2012).

There wasn't a previous Portuguese version of MAQ, so to reduce bias related to the cross-cultural questionnaire use, we followed international guidelines proposed by Sousa and Rojjanasrirat (2011) to adapt a Portuguese version of the instrument. The process included translation and back-translation by independent translators, evaluation of translations by experts, pilot test and evaluation of the psychometric properties of MAQ scale. Since the purpose of this article isn't to explore the details of the translation, adaptation and validation process of the MAQ questionnaire, we only summarize here the main results. Content validity of questionnaire was obtained with expert consensus. The adapted Portuguese version of MAQ scale (comprising 18 items of the 22 items original version, maintaining the three original subscales) showed an acceptable reliability with Cronbach's alpha value of 0.76 (subscales: reasons for restraint use $\alpha = 0.74$; consequences of restraint use for the resident/patient $\alpha = 0.76$; appropriateness of restraint use $\alpha = 0.70$) and good construct validity, with well fit model ($\chi^2/g.l = 1.358$; TLI = 0.92; CFI = 0.931; RMSEA = 0.044).

3.5 | Data collection

Data collection occurred between October 2018 and March 2019. In each nursing home, the researcher had meetings with managers to discuss study aims and methods regarding data collection. The questionnaire, summary of the study and information letter to the participants were delivered to the coordinating nurse/technical director and institutional strategies for questionnaires delivery and collection by the researcher were agreed. Hard copies of questionnaires were distributed in an envelope according to the strategy agreed in each institution, with an information letter to the participant explaining the purpose of the study and information related to anonymity and voluntary participation. Nurses who decided to participate were asked to complete the questionnaire and return it as agreed in the institution, after which it was collected by the researcher.

3.6 | Ethical considerations

The study was approved by Ethical Committee of Nursing School of Lisbon (No. 1182/2017). Participants received written information about study aims, voluntary and anonymous participation. Implied informed consent was considered by returning the questionnaire completed.

3.7 | Data analysis

Analysis was carried out using statistical software IBM SPSS Statistics (Version 25). Descriptive statistics were used to analyse

TABLE 1 Bivariate associations between attitudes and characteristics of nursing staff

	MAQ total	p-Value	Subscale appropriateness	p-Value	Subscale reasons	p-Value	Subscale consequences	p-Value
Age	0.017	.815	0.181	.014	-0.018	.811	-0.083	.266
Gender								
Male	3.46 (0.37)	.458	3.72 (0.89)	.683	3.64 (0.61)	.145	3.24 (0.58)	.916
Female	3.37 (0.42)		3.71 (0.75)		3.43 (0.63)		3.21 (0.61)	
Experience (years)	0.049	.508	0.175	.017	0.056	.450	-0.092	.214
Experience (categories)								
0-3 years	3.37 (0.40)	.832	3.69 (0.75)	.032	3.39 (0.62)	.456	3.27 (0.60)	.489
4-10 years	3.38 (0.41)		3.59 (0.77)		3.53 (0.59)		3.21 (0.60)	
11-20 years	3.44 (0.50)		3.99 (0.78)		3.48 (0.72)		3.24 (0.66)	
+20 years	3.44 (0.28)		4.06 (0.68)		3.61 (0.74)		3.03 (0.41)	

Note: Values are means (standard deviations) of items rated on a 5-point Likert scale (1 = strongly disagree; 5 = strongly agree). Pearson's correlation coefficient was used to analyse associations between age, clinical experience years and MAQ total and sub-scores; Mann-Whitney was used to analyse differences between gender; one-way ANOVAs to analyse differences between clinical experience categories.

nursing staff individual characteristics, scores regarding attitudes and scores on opinions towards physical restraints measures, including percentages, means and standard deviation (SD). Bivariate analysis was conducted to investigate the association between the nurses' individual characteristics and attitudes towards physical restraints. Pearson's correlation coefficient was used to analyse associations between age, clinical experience years and MAQ total and sub-scores. Mann-Whitney was used to analyse differences between gender. One-way ANOVAs were used to analyse differences between clinical experience categories. A *p*-value less than .05 was set as statistical significance.

4 | RESULTS

4.1 | Study sample description

From the 30 institutions contacted, 18 accepted to participate, totalizing 33 nursing homes with 256 nurses working at the time of data collection. Capacity of nursing homes ranged between 30-340 residents, from urban and rural areas, privately and/or state reimbursement system, all of them staffed with nurses and physicians (some with permanent medical care) providing at least one of the following services: long-term care, middle-term care and functional rehabilitation (between 30-90 days estimated plan care, excluding intensive rehabilitation predictably shorter than 30 days) and caregiver respite care.

Out of the 256 questionnaires distributed, 186 were returned completed validly, resulting in a 72.7% valid response rate. Most participants were female (83.9%), aged between 21-60 years old, mean age was 30.35 (SD 7.73). Most participants reported having Bachelor degree in Nursing (88.2%), only 4.3% reported having a Master of Science in Nursing degree. Regarding clinical experience, it varied from less than one year to 40 years, mean 6.97 years of work (SD 7.16), 41.2% with 0-3 years of experience, 37.9% with 4-10, 14.8%

with 11-20 and 6% over 20 years. Only 8.14% of participants reported a nursing management position.

4.2 | Nurses' attitudes regarding physical restraints—MAQ Scale

Overall, nurses expressed neutral to moderately positive attitudes towards physical restraint use, with total scale mean score of 3.38 (SD 0.42, range = 2.09-4.64).

Regarding subscales, *consequences* mean score was 3.22 (SD 0.60, range = 1.60-4.20), *reasons* mean score was 3.46 (SD 0.63, range = 1.75-5.00). The mean score of the subscale *appropriateness* was the highest, 3.71 (SD 0.77, range = 1.25-5.00) indicating that nurses tend to consider the use of physical restraint as appropriate in clinical practice.

4.3 | Associations between attitudes and characteristics of nursing staff

Regarding association between attitudes and individual characteristics of nursing staff, a Pearson's *r* data analysis revealed a weak positive association between age and *appropriateness* (*p*-value < .05), and clinical experience and *appropriateness* (*p*-value < .05). Nurses who had worked for 11 or more years had significantly higher *appropriateness* values compared with those who had not worked for so long (*p*-value < 0.05). This result indicates that older nurses, and nurses with more clinical experience years, were more positive regarding the appropriateness of restraint use in clinical practice. Gender was not related to nurses' attitudes regarding physical restraints (all *p*-values > 0.05). Table 1 summarizes the results of associations between total scores on the MAQ, the scores on the MAQ subscales and characteristics of nursing staff.

4.4 | Nurses' opinions on restraint measures

Concerning nurses' opinions on restrictiveness of measures, wrist and ankle and tight sheet restraint measures, were rated as the most restrictive, and the measures that nurses feel more uncomfortable using. On the other hand, the measures considered less restrictive and with which the nurses reported not feel uncomfortable using were unilateral bedrail, sensor alarm systems and surveillance camera.

Bilateral bedrails were globally assessed as a slightly restrictive measure (with 53.0% of participants assessing it as moderately restrictive and 38.4% reporting it as a non-restrictive measure) and nurses reported not feeling uncomfortable using them (mean score = 1.28; *SD* 0.53). Mean scores of nurses' opinions regarding the restrictiveness of restraint measures and discomfort in using the measures are summarized in Tables 2 and 3.

5 | DISCUSSION

The results of this study put forward that, in general, nurses express neutral to moderately positive attitudes towards physical restraint use, tending to consider appropriate the use of physical restraints in their clinical practice. Similar results were reported in previous studies using the Maastricht Attitudes Questionnaire in several countries, since despite the differences found in the attitudes and opinions of nurses in each country, nurses globally reported neutral attitudes regarding the use of physical restraints, but considering its use as appropriate in their clinical practice (Boscart et al., 2015; Hamers et al., 2009). This common finding among studies reinforces the need to take into account the nursing staff assessment of appropriateness of the use of physical restraints in their clinical practice as a possible reason for resistance in reducing physical restraints. On the other hand, contrary to the results found by Hamers et al. (2009), where nurses with more work time experience seemed more aware of the impact of physical restraints use, revealing more negative attitudes about it, in the present study more experienced nurses revealed a more positive attitude regarding the appropriateness of physical restraints use in their clinical practice. Thus, the identification of differences between countries highlights the importance of developing effective and tailored interventions. It should be noted that the sample in the present study differed from samples carried out in other countries regarding professional experience, with nurses with more than 10 years of experience consisting only 20.8% of the sample (in the study by Hamers et al., the percentage of nurses with more than 10 years of experience varied between 47%–61% in the three countries involved). In fact, in the present study, the proportion of nurses with less than three years of experience was over 40% of the sample, revealing an important percentage of novice nurses in nursing staff. Contextual factors are recognized to be important for reducing restraint use in nursing homes, namely staff related factors, such as leadership and staff culture

(Jacobsen et al., 2017). Since nursing home leaders and more experienced nurses can act as role models for novice nurses, it seems important to develop strategies to promote their close involvement in educational interventions aimed to prevent and reduce physical restraints use.

Regarding nursing staff assessment of bilateral bedrails, the results of our study were like those presented by Boscart et al. (2015) and Hamers et al. (2009), with this restraint measure being assessed as slightly restrictive, with no discomfort reported by nurses in its use. Knowing that bilateral bedrails are a restraint measure commonly applied (Shanahan, 2012), often not being considered by health professionals as restraint (Kong et al., 2016), it becomes important to develop and disseminate clear guidelines on what is meant by restraint measures, avoiding inconsistent and unclear definitions and what implies restraint-free care. In this sense, the consensus reached by a multidisciplinary and internationally representative panel of experts on an accepted definition of physical restraints in older persons (Bleijlevens et al., 2016) was

TABLE 2 Opinions of nurses regarding degree of restrictiveness of physical restraint

Measure ^a	Values M (SD)
Wrist restrain	2.60 (0.57)
Ankle restraint	2.54 (0.58)
Tight sheet (a sheet over belly and upper legs that is tightened firmly under the mattress at both sides of the bed)	2.51 (0.55)
Vest restraint	2.50 (0.56)
Special sheet (fitted sheet including a coat enclosing the mattress)	2.39 (0.61)
Belt (all materials attached or adjacent to the waist)	2.17 (0.56)
Bedroom door locked	2.02 (0.70)
Chair on a board (a chair whose legs are fixed to a board)	1.93 (0.69)
Sleep suit (clothing that deters a person from self-undressing)	1.85 (0.74)
Ward/Unit door locked	1.79 (0.72)
(Wheel)/(Geri) chair with a locked tray table	1.76 (0.55)
(Geri) chair preventing rising (deep or overturned/reclined chair)	1.71 (0.57)
Full length both sided bedrails	1.70 (0.62)
Infrared barrier alarm system	1.41 (0.65)
Sensor alarm (include in-bed sensor mats, floor sensor mats and optiseats)	1.35 (0.59)
Camera surveillance	1.33 (0.62)
Full length one sided bedrail	1.30 (0.51)
All measures ^b	1.93 (0.30)

^aItems were rated on a 3-point Likert scale indicating 1 as not restrictive, 2 as moderately restrictive and 3 as very restrictive. Values are means (standard deviations).

^b"All measures" refers to the global average (standard deviation) of all restraint measures above.

TABLE 3 Opinions of nursing staff regarding degree of discomfort to use physical restraint

Measure ^a	Values M (SD)
Wrist restrain	2.49 (0.65)
Ankle restraint	2.47 (0.66)
Tight sheet (a sheet over belly and upper legs that is tightened firmly under the mattress at both sides of the bed)	2.43 (0.66)
Vest restraint	2.37 (0.65)
Special sheet (fitted sheet including a coat enclosing the mattress)	2.27 (0.62)
Belt (all materials attached or adjacent to the waist)	2.01 (0.67)
Chair on a board (a chair whose legs are fixed to a board)	1.81 (0.75)
Sleep suit (clothing that deters a person from self-undressing)	1.75 (0.74)
Bedroom door locked	1.71 (0.77)
(Geri) chair preventing rising (deep or overturned/reclined chair)	1.52 (0.59)
Ward/Unit door locked	1.49 (0.69)
(Wheel)/(Geri) chair with a locked tray table	1.47 (0.54)
Camera surveillance	1.34 (0.62)
Infrared barrier alarm system	1.29 (0.61)
Full length both sided bedrails	1.28 (0.53)
Sensor alarm (include in-bed sensor mats, floor sensor mats and optiseats)	1.22 (0.50)
Full length one sided bedrail	1.22 (0.45)
All measures ^b	1.78 (0.36)

^aItems were rated on a 3-point Likert scale indicating 1 as not discomforting, 2 as moderately discomforting, and 3 as very discomforting. Values are means (standard deviations).

^b"All measures" refers to the global average (standard deviation) of all restraint measures above.

a significant step, now it is necessary to translate it into several languages to allow its wide use.

It is also important to contemplate active discussions with nurses about their opinions on the use of bilateral bedrails in educational interventions. This will allow to explore the reasons that lead to its use, the consequences of its use and the decision-making criteria by exploring the possibility of using alternative measures (Registered Nurses' Association of Ontario, 2012).

Promotion of residents' safety is pointed out as a reason for using physical restraints and as a barrier to their removal (Kong et al., 2016). The belief on benefits of physical restraints use for residents, namely their safety, may constitute an obstacle to the reduction of physical restraints use. Nurses need to change their attitudes towards physical restraints use, reinforcing the need for educational interventions covering on myths and misconceptions about the use of physical restraints, adverse effects of its use, risk management and alternative measures (Möhler et al., 2012).

In addition, organizational culture of the institutions, lack of staff, high turnover, deficiency of alternative equipment and training, may contribute to nurse's positive attitudes regarding physical restraints (Abraham et al., 2019; Kong et al., 2016). Therefore, legislative measures, definition of institutional policies that promote an environment restraint-free, assuring adequate staff patient ratios, training and equipment within the scope of restraints alternative strategies, may constitute a way to change nurses' attitudes and thus contribute to reducing their use.

5.1 | Limitations

The present study has some limitations, namely the non-probabilistic sample, therefore, it is not possible to generalize conclusions about the attitudes of nurses in Portugal about the use of physical restraints. Beside this, being the first study using a Portuguese version of Maastricht Attitudes Questionnaire (MAQ), it would be important to reproduce the study in other samples to validate the model fit of MAQ scale.

6 | CONCLUSION

Nurses' attitudes towards physical restraint usage could hinder attempts to reduce their usage. Future approaches should account for how to change nurses' attitudes since this remains a factor promoting physical restraint use.

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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