



Expertise
and insight
for the future

Rashmi Pyakurel, Anni Vuorivirta

Nurses' Utilization of Guidelines on Physical Restriction in Neurological Wards

Metropolia University of Applied Sciences

Bachelor of Health Care

Degree Programme in Nursing

Bachelor's Thesis

25.04.2019

Author(s) Title	Rashmi Pyakurel, Anni Vuorivirta Nurses' Utilization of Guidelines on Physical Restriction in Neurological Wards
Number of Pages Date	18 pages April 2019
Degree	Bachelor of Health Care
Degree Programme	Degree programme in Nursing
Specialisation option	Nursing
Instructor(s)	Liisa Montin, PhD, RN, Senior Lecturer
<p>The purpose of this thesis was to describe the utilization of the guidelines on physical restriction in four neurological wards in HUS Helsinki University Hospital. The aim is to use the knowledge received to develop nursing in neurological wards.</p> <p>The data collection method was a questionnaire including 18 statements in four dimensions, namely implementing physical restriction, observing the patient, documentation and alternatives for using physical restriction. Each statement was followed by an answer option of I have used it – I have not used it – I do not know about this statement. There is a care guideline on physical restriction in use in HUS Helsinki University Hospital neurological and neurosurgical wards. The dimensions and statements in the questionnaire were directly based on this guideline. Out of 38 answer papers received 33 were included in the study. The data was analyzed by using descriptive statistical method.</p> <p>Results were assessed according to the four dimensions in the questionnaire. The five statements in the first dimension, implementing physical restriction, were well followed. The second dimension, observing the patient, had one statement that was well followed. The other two statements had notable number of answers "I do not know about this statement". Two statements in the third dimension, documentation, were well followed. Four had considerable number of answers "I have not used it" and one statement had significant number of "I do not know about this statement" answers. The fourth dimension, alternatives for using physical restriction, had the most discrepancy inside one dimension. Two statements were well followed. However, the other two statements were neither well used (n=10, n=5) nor known (n=13, n=9) by the respondents.</p> <p>The results of this thesis can be used to develop the way the guidelines are presented and promoted to the nursing staff in a way that they will be taken in to use. Hence, it can be used to develop nursing work.</p>	
Keywords	physical restriction, guidelines, neurological ward, nursing

Tekijä(t) Otsikko	Rashmi Pyakurel, Anni Vuorivirta Hoito-ohjeiden käyttö liittyen fyysiseen rajoittamiseen neurologisilla osastoilla
Sivumäärä Aika	18 sivua Huhtikuu 2019
Tutkinto	Sairaanhoitaja (AMK)
Tutkinto-ohjelma	Hoitotyö (nursing)
Suuntautumisvaihtoehto	Sairaanhoitaja
Ohjaaja(t)	Liisa Montin, TtT, sh, lehtori
<p>Tämän opinnäytetyön tarkoituksena oli kuvailla fyysisen rajoittamisen hoito-ohjeiden käyttöä HUS Helsingin Yliopistollisen Sairaalan neljällä neurologisella osastolla. Tavoitteena on käyttää saatua tietoa hoitotyön kehittämisessä neurologisilla osastoilla.</p> <p>Tiedonkeruumenetelmänä oli kyselylomake, jossa oli 18 suosituslauseketta neljässä eri osiossa. Nämä osiot olivat fyysisen rajoittamisen toteuttaminen, potilaan tarkkailu, kirjaaminen sekä vaihtoehtoja fyysisen rajoittamisen käytölle. Jokaisen suosituslausekkeen jälkeen oli vastausvaihtoehtoina Olen käyttänyt - En ole käyttänyt - En tiedä tästä suosituslausekkeesta. HUS:n neurokirurgisilla ja neurologisilla osastoilla on käytössä hoito-ohje potilaan fyysisestä rajoittamisesta. Kyselylomakkeen suosituslausekkeet ja osiot pohjautuivat suoraan tähän HUS:n hoito-ohjeeseen. Vastauksia saatiin 38, joista 33 sisällytettiin opinnäytetööhön. Aineisto analysoitiin kuvailevaa tilastollista menetelmää käyttäen.</p> <p>Tulokset määriteltiin kyselylomakkeen neljän osion mukaan. Ensimmäisen osion, fyysisen rajoittamisen toteuttaminen, viittä suosituslauseketta seurattiin hyvin. Toisessa osiossa, potilaan tarkkailu, oli yksi hyvin seurattu suosituslauseke. Muussa kahdessa suosituslausekkeessa oli huomattava määrä "En tiedä tästä suosituslausekkeesta" vastauksia. Kolmannessa osiossa, kirjaaminen, kahta suosituslauseketta seurattiin hyvin. Neljässä oli merkittävä määrä "En ole käyttänyt" ja yhdessä huomattava määrä "En tiedä tästä suosituslausekkeesta" vastauksia. Neljännessä osiossa, vaihtoehtoja fyysisen rajoittamisen käytölle, oli eniten eroavaisuuksia vastauksissa. Kahta suosituslauseketta seurattiin hyvin, mutta kahta muuta eivät vastaajat olleet käyttäneet (n=10, n=5) saati niistä tienneet (n=13, n=9).</p> <p>Opinnäytetyön tuloksia voidaan käyttää kehittämään tapaa, miten hoito-ohjeet esitellään hoitohenkilökunnalle siten, että ne otetaan käyttöön. Tämä puolestaan kehittää hoitotyötä.</p>	
Avainsanat	fyysinen rajoittaminen, hoito-ohjeet, neurologinen osasto, hoitotyö

Contents

1	Introduction	1
2	Background and previous literature	2
2.1	Background	2
2.2	Previous literature	3
3	Purpose, aim, study question	5
4	Data collection method, data collection, data analysis	5
4.1	Questionnaire	5
4.2	Data collection	6
4.3	Data analysis	7
5	Results	8
6	Discussion	11
6.1	Discussion of the results	11
6.2	Discussion of validity	13
6.3	Discussion of ethical considerations	14
7	Conclusion	15
	References	16

1 Introduction

The Finnish law regulates the care given against the patient's wishes and grounds for restraining them in the Mental Health Act (1116/1990 § 8-14, 22), in the Act on Welfare for Substance Abusers (41/1986 § 10-17, 26, 27), in the Communicable Diseases Act (1227/2016 § 60, 62-71) and in the Act on Special Care for the Mentally Handicapped (381/2016 § 32-34, 37-39, 42). As such, for a patient being treated in somatic ward there is no law overseeing physical restriction. On the contrary, the Constitution of Finland (731/1999 § 7) mandates personal integrity and liberty for all. The Health Care Act (1326/2010 § 8) states that all actions in health care must be based on evidence as well as good care and operational practices. These actions must be high quality, safe and adequately executed.

As per the Ethical Guidelines of Nursing (Assembly of the Finnish Nurses Association 1996), nurse must protect human life in a mission of promoting and maintaining health, preventing illness and alleviating suffering. While fulfilling this, nurse must respect patient's autonomy and self-determination as well as enable them to participate in decision-making in respect of their care. The nurse-patient relationship is based on open communication and interaction.

Every year in Finland cerebrovascular accidents affect around 14 000 people (Terveyskylä a), 1000 tumors of central nervous system are diagnosed (Terveyskylä b), brain injury befalls to about 15 000-20 000 people and at least 100 000 suffer symptoms following one (Aivovammaliitto). There are 56 000 Finns afflicted with epilepsy (Terveyskylä c), over 7000 with multiple sclerosis (Tienari 2016) and about 14 000 with Parkinson's disease (Suomen Parkinson-liitto ry 2015). Thus, people with neurological disorders are a notable patient group in health care.

Care guideline for physical restriction is available in HUS Helsinki University Hospital neurosurgical and neurological wards. References used for it are for example Finnish Medicine Agency Fimea, National Supervisory Authority for Welfare and Health Valvira, The Ministry of Social Affairs and Health as well as instructions from HUS Executive Senior Physician dated in 2009.

The purpose of this thesis was to describe the utilization of the guideline on physical restriction in four neurological wards.

2 Background and previous literature

2.1 Background

Patient safety is about the patient getting the care and treatment they need, and the given care being correct, as well as causing as little harm as possible. Safety of care, pharmacological treatment and medicinal equipment are all included in the concept of patient safety. (National Institute for Health and Welfare 2018.)

The Oxford Dictionary defines restriction as ‘the limitation or control of someone or something, or the state of being restricted’ and restraint as ‘deprivation or restriction of personal liberty or freedom of movement’. Restriction can be classified into three groups: physical restraint, chemical restraint and seclusion. Physical restriction includes specific equipment, such as wrist/ankle belt and bed rails, or using direct bodily interference, chemical restriction comprises of using medication in order to inhibit motion or demeanor, and seclusion is about forbidding patient to leave a certain place. (Springer 2015: 26.) Common equipment used to restrict patient’s autonomous movements are safety-belts and -vests, bed rails, tables attached to chairs, magnet belts and limb restraints (Valvira 2017). Possible consequences of inappropriate use of restrains in critically ill patients are for example major physical harm, hypertension, tachycardia and their already existing agitation getting worse (Nirmalan, Dark, Nightingale and Harris 2004: 791).

The specialty of neurology involves disorders of brain, spinal cord, peripheral nervous system and muscles (HUS a). Prominent diseases being treated are cerebrovascular disorders and cerebral hemorrhage, as well as brain injuries and tumors, epilepsy and multiple sclerosis. Common neurological symptoms include head ache, muscle weakness, tremor, numbness, clumsiness and dizziness. Furthermore, neurological disorders may cause impairment and disturbance in perception, logical thinking, production and understanding of speech, recognition and memory. (HUS b.) Several neurological disorders, such as cerebrovascular accident, brain injury, brain tumor, dementia or encephalitis, are associated with patient’s incapability to recognize their symptoms and changes of personality thus creating a situation of patient refusing offered treatment (Soinila 2014).

In this thesis the focus was on four wards in HUS area, namely two neurosurgical wards in Töölö Hospital, one neurological ward in Meilahti Tower Hospital and one neurological inpatient ward in Jorvi Hospital.

The guideline for physical restriction made for the neurological wards in HUS starts with defining actions that are used to protect the patient and actions that are used to restrain the patient, both including limitation of patient's movements. Then the guideline is divided in five specified segments, namely indications for physical restriction, implementing physical restriction, observing/monitoring the patient, documentation, as well as alternatives for physical restriction.

2.2 Previous literature

There are previous researches done concerning nurses' knowledge, attitude and practices related to physical restriction in acute care hospitals (Janelli, Stamps & Delles 2006) and in ICU (Kaya & Dogu 2018), as well as on determinants and decisions on using physical restraints by ICU nurses (Dolan & Looby 2017; Luk, Burry, Rezaie & Mehta 2015) and by nurses in acute elderly care (Goethals, Dierckx de Casterle & Gastmans 2013). In addition, there's researches done about educating nursing staff on physical restraints use (Huang, Chuang & Chiang 2009; Yeh et al. 2004) and a systematic review about nurses' attitudes in geriatric care towards using physical restraints (Möhler & Meyer 2014).

Descriptive study done in two New York hospitals surveyed registered nurses (n=216) on physical restriction, excluding nurses working in psychiatric units. Of all the nurses, 78% (n=169) affirmed informing patients about the reasons for physical restraint and 77% (n=167) of them reported trying alternative measures before restriction. Of all the respondents, 32.9% (n=71) admitted feeling guilty when placing restriction on patient with 44.4% (n=96) disagreeing and 22.7% (n=49) being undecided. Majority with 83.3% (n=180) saw sedation as a better option to physical restriction. (Janelli, Stamps & Delles 2006.) Descriptive study carried out in Sakarya, Turkey studied physical restriction by one-to-one interviewing intensive care nurses (n=97) in three different hospitals. The majority, 84.5% (n=82), of the nurses agreed always explaining the reason of restriction for patient compared to 14.4% (n=14) doing it only sometimes. Trying alternative

measures ahead of the use of restraints was done always by 78.4% (n=76) and sometimes by 19.6% (n=19) of the nursing staff. Only 18.5% (n=18) agreed to feeling guilty placing patient in physical restraints. (Kaya & Dogu 2018.)

Study done by semi-structured interviews and using qualitative descriptive design identified determinants of using physical restriction by surgical ICU nurses (n=13) in Boston. Three key reasons emerged, namely patient safety, patient behavior as well as non-restraint interventions and alternatives. (Dolan & Looby 2017.) Prospective observational study was carried out in two medical surgical ICUs in Toronto, Canada in order to describe nurses' decision-making and application of physical restriction. Data of patients (n=141), majority of them (84%, n=118) mechanically ventilated, was taken from medical records. In the case of 91% (n=128) of patients the restriction was done by wrist restraints, other types being four-point (all limbs) restraint, unilateral wrist-ankle and wrist-mitten restraint. Most common reason for applying physical restraint was patient's agitation (43%, n=107) like pulling endotracheal tube or other lines/tubes (n=54). Nurses considered alternative measures before physical restriction with 33% (n=46) patients, most frequent being communication (27%, n=26) including reorientation as well as sedation (21%, n=20). Reason for discontinuing physical restriction was documented with 57% (n=81) of patients, mainly when they became calm and cooperative (75%, n=56). (Luk, Burry, Rezaie & Mehta 2015.)

Study using qualitative interview design inspired by GT (grounded theory) and conducting semi-structured in-depth interviews was done in 34 hospitals across Flanders, Belgium to discover the decision-making process of acute geriatric nurses (n=21) in case of physical restriction. Nurses made the decisions related to the use of physical restraints with main objective being to ensure patient safety and to maintain peaceful environment in the ward. In most cases this decision-making included two phases namely, to form a picture of the patient and then making the actual decision. To form a picture nurses collected information about the patient, such as medical & functional condition and behavior, from various sources, like home care or family members. Making the actual decision was a process including watchful waiting, giving other chances and using alternative ways before making the "necessary evil" decision of using restraints and then reassessing and evaluating the made decision. (Goethals, Dierckx de Casterle & Gastmans 2013.)

Study using quasi-experimental pretest-posttest research design was done in a Taiwanese hospital to examine the effectiveness of a 90-minute education program for the improvement of nurses' physical restraint knowledge, attitude and self-reported practices. Of all the nurses (n=129), the intervention group (n=59) received the education whereas the control group (n=70) did not receive any additional education. With the intervention group the knowledge improved significantly, as well as there also being a significant positive difference in nurses' self-reported practices. However, overall the attitude within the intervention group did not change between the pretest and posttest. (Huang, Chuang & Chiang 2009.) In another study involving quasi-experimental research, novice ICU nurses (n=37) from Taiwanese medical center participated in four-hour physical restriction education between pre-test and post-test. After participating in this continuing education, there was significant improvements among the participants in restrain knowledge, in perception of restraint use as well as in attitude towards the use of restraints. The actual clinical practice of restraint use did not show significant statistical improvements, although there was for example difference in considering alternatives to physical restriction. (Yeh et al. 2004.) Systematic review of 31 studies was done to examine the attitudes of nurses towards the use of physical restraints in geriatric care. Even though these nurses mostly had unfavorable attitudes towards the use of restraints, in clinical practice they found restriction useful in various circumstances. Regardless of context, nurses found the usage of physical restraints improving patient safety by mainly preventing falls. (Möhler & Meyer 2014.)

3 Purpose, aim, study question

The purpose of this thesis was to describe the utilization of the guidelines on physical restriction in neurological wards. The ultimate goal is to use the knowledge received to develop nursing in neurological ward. The study question was: Have the nurses utilized the guidelines on physical restriction in neurological ward?

4 Data collection method, data collection, data analysis

4.1 Questionnaire

Questionnaire is a tool to collect responses to a set of statements or questions related to the field of study. It is used when data needs to be gathered from larger sample con-

currently and allows collecting data with limited time and resources. In addition, questionnaire protects privacy of the respondent as it can be answered independently and anonymously. Questions in a well-made questionnaire are short and obvious in their meaning thus guaranteeing that participants should understand them the same way. Constructing and wording the questions in a leading manner is to be avoided. (Maltby, Williams, McGarry & Day 2010: 108-112.)

Questionnaire is a method for acquiring primary data as it gives direct information from the subjects to the researcher. In a structured questionnaire form the order of statements and their content is same for all participants, thus making the conversion of obtained data for analyzing efficient and easy. (Kankkunen & Vehviläinen-Julkunen 2013: 114-116.) Conducting the questionnaire electrically online, even if being economic and ecological, can be challenging for acquiring sufficient number of responses. Having health care professionals participating during their working hours, it's crucial to consider the length of the form and estimated time for filling it. (Kankkunen & Vehviläinen-Julkunen 2013: 120.)

Questionnaire for this work was prepared by studying the guideline on physical restriction used in the wards, and the statements too were based on the guideline. Special attention was paid to make sure that the questionnaire was easy and quick to read and understand, and that there was no room for misunderstanding. Due to copyright reasons the questionnaire used in this work was not published.

4.2 Data collection

The main data for this thesis was collected using questionnaire. After preparing an adequate questionnaire approved by the mentor and having received the permission from HUS to conduct the survey, data was collected in the form of responses from registered nurses and practical nurses in neurological wards in HUS. The sample didn't include other staff in the ward. The maximum total number of respondents was n=127 nurses in neurological wards.

Questionnaire was handed out and retrieved personally during one visit to a ward in question. A cover letter was provided to the head nurses in advance to actual data collection. The date and time were decided together with the head nurses of the four wards. Before handing out questionnaires, the aim of the thesis was shortly described to the

target respondents. Since another student group doing a thesis was to conduct a separate questionnaire in the exact same wards, the two questionnaires were decided to be stapled together during data collection.

Questionnaire was presented in A4-sized paper in Finnish language with 18 items in four dimensions, namely A: Implementing physical restriction, B: Observing the patient, C: Documentation and D: Alternatives for using physical restriction. It consisted of clear and understandable statements followed by three different options with a place holder including 1. I have used it, 2. I have not used it and 3. I do not know about this statement. Dimension A included five statements concerning the measures to be taken and the physiological reasons to be treated before implementing physical restriction, reasons to discontinue the use of restraints and the need of informing both patient and family members. Dimension B included three statements regarding the access to call bell, door of the patient room being open all time and head of the bed kept elevated with the use of safety belts. Dimension C included six statements concerning the documentation of reasons, ways and effects of the restriction, time and ways of observation, information of the nurse and doctor having given the permit, as well as evaluations of the risks for pressure ulcers and falling. Lastly, dimension D included four statements regarding the use of support vest for covering drains and socks for protecting cannulas, as well as ways to provide feeling of being safe and support patient's orientation.

4.3 Data analysis

The maximum total number of respondents was $n=127$ in the neurological wards. In total 38 questionnaires were distributed, and all were received back. Thus, the overall response rate was 100%. Out of these, 5 responses were excluded due to non-specific answers, thus 33 responses being included in this work. The number of registered nurses and practical nurses that partook in the questionnaire was 25 and 3 respectively, whereas 5 respondents did not mark their nursing profession.

The data was analyzed using descriptive statistical method. Hence, the aim was not to find causal connections but to discover and state current circumstances (Kankkunen & Vehviläinen-Julkunen 2013: 57). Descriptive statistics is a set of methods for gathering, arranging, interpreting and visualizing information (Maltby et al. 2010: 176). The analysis method followed steps described by Walters and Freeman (2015: 489-504) of recording data, entry and storage of it, data checking, presenting it in graphs, and describing data.

Data was recorded using questionnaire in paper form. Once all questionnaires were answered by respondents, data was entered in SPSS and stored as a file. After storage, data was checked to examine the responses for missing values, incomplete information or wrongly answered. Following checking, results were presented visually using bar chart. Finally, data was described by tabulating it using statistical measure, frequency.

For using SPSS (IBM SPSS Statistics Base), the written data in the questionnaires were changed into numeric data. Having gotten the frequencies from SPSS, the results were moved into an excel file and made into bar charts.

5 Results

Results are reported according to the four dimensions presented in the HUS guideline and the questionnaire. These dimensions are implementation, observation, documentation and alternative options for physical restriction.

Implementing physical restriction

Statement 1 was about nursing interventions that need to be tested before implementing physical restriction. Statement 2 was about treating physiological reasons before restricting the patient. Statement 3 was about discontinuing the use of restraints when other means are sufficient. Statement 4 and 5 were about the need to inform the patient and family members respectively. The results are described in Figure 1.

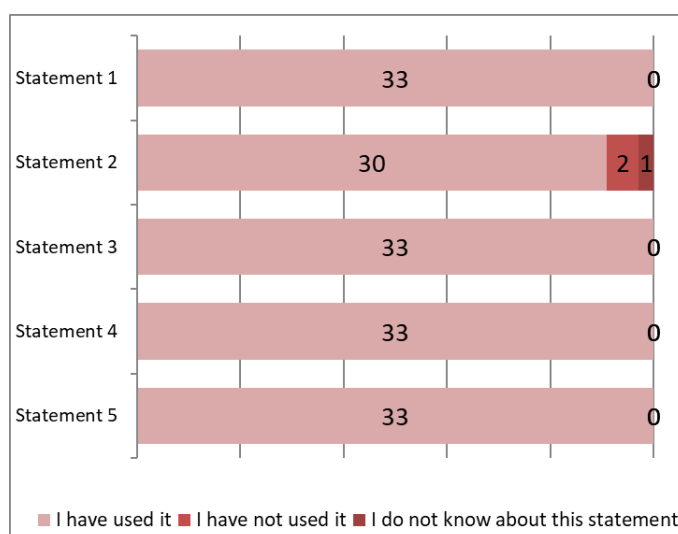


Figure 1. Results in dimension Implementing Physical Restriction.

Observing the patient

Statement 6 was about the patient having access to call bell. Statement 7 was about patient room door being kept open at all times. Statement 8 was about having to keep the head of the bed elevated when using safety belts. The results are described in Figure 2.

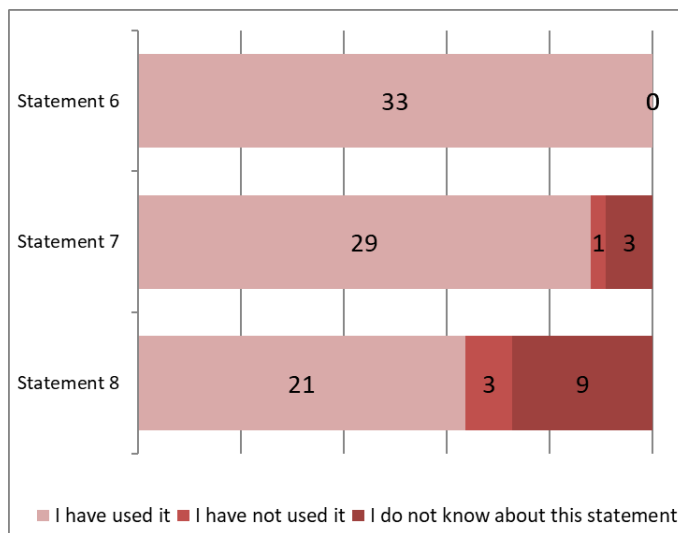


Figure 2. Results in dimension Observing the Patient.

Documentation

Statement 9 was about documenting before using physical restriction and statement 10 was about documenting the effects. Statement 11 was about documenting the observations every 2 to 3 hours. Statement 12 was about documenting nurse's professional information and having permit for restriction from the doctor. Statement 13 and 14 were about evaluating and documenting risks for pressure ulcers and falling respectively. The results of these statements are described in Figure 3.

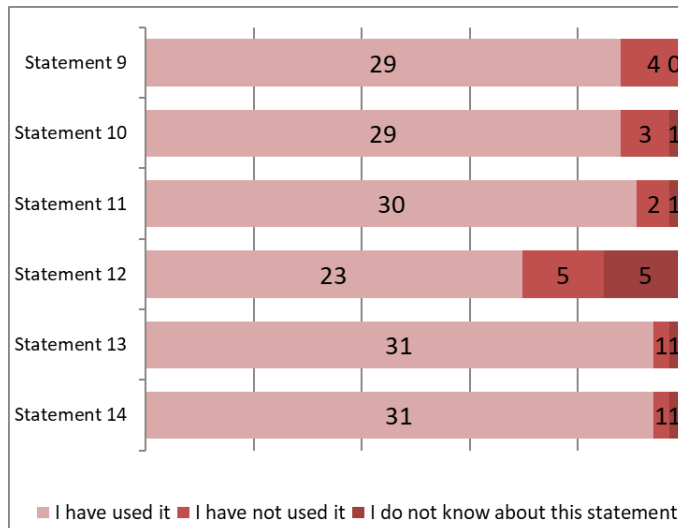


Figure 3. Results in dimension Documentation.

Alternatives for physical restriction

Statement 15 was about the usage of support vest or similar for covering drains. Statement 16 was about using socks to protect cannulas. Statement 17 was about the need to provide safe feeling to the patient. Statement 18 was about supporting the patient's orientation to time and place. The results of these statements are described in Figure 4.

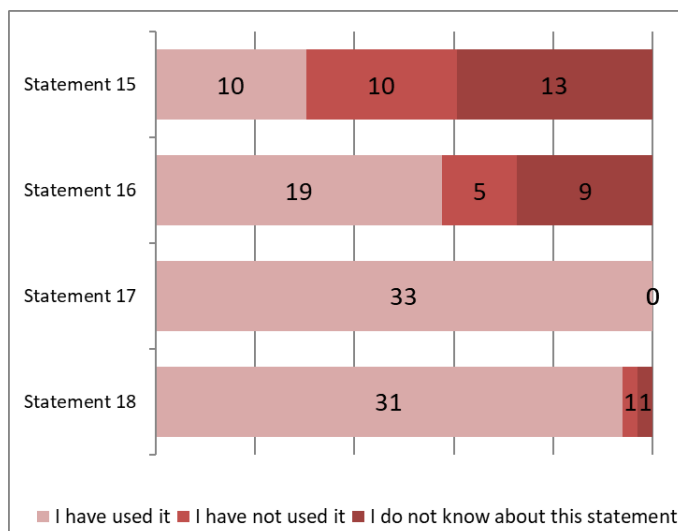


Figure 4. Results in dimension Alternatives for Physical Restriction.

6 Discussion

In discussion chapter the results are considered and contemplated. If possible, they are compared to previous studies connected to the topic. In addition, authors of the thesis reflect the results received.

6.1 Discussion of the results

In this work, previous studies and research was not found to have been conducted on the same topic, that is nursing guidelines and the usage of them. Thus, results could not be compared. However, two researches (Janelli, Stamps & Delles 2006; Kaya & Dogu 2018) had same kind of results to this work, showing commitment from the somatic side nurses to communicate with patients about the need of using physical restriction. In two studies' results (Huang, Chuang & Chiang 2009; Yeh et al. 2004) even a short-term education for somatic unit nursing staff was found to make an improvement on knowledge about physical restraints. So, could this kind of educational activity be implemented also in HUS to guarantee better commitment to the usage of guidelines.

According to the results, out of 18 statements in 12 different ones there were respondents answering to not using them. Why is the nursing staff not using these statements in the guideline. Is the reason for this because some statements are not suitable for a particular ward. Is it not promoted enough for the staff that the guideline should be followed. Is it that the management level has not made it clear that the statements are evidence-based.

According to the results, out of 18 statements in 11 different ones there were answers of not knowing about it. Why is the nursing staff not aware of some of the statements in the guideline. Is the reason that there has been a change of personnel. Is there no orientation and promotion about the guideline. Is it not easily accessible in the wards. Is the guideline available only in online or also in paper form. Is it a case of reading the guideline once and then forgetting the particular statements that are not so often used.

Since there is no law for implementing physical restriction on the somatic side of health care, it should be imperative to have accurate and usable guidelines to access. Moreover, these guidelines should truly be followed by the staff to ensure high-quality and evidence-based care and patient safety. (National Institute for Health and Welfare 2018;

The Health Care Act 1326/2010 § 8.) Could it be that a law of this matter would be of help and make a difference in equality of the care gotten in somatic field of health care.

Implementing physical restriction

Overall all five statements about implementation of physical restriction were well followed. This dimension handled aspects of patient wellbeing and communication between the nurse and the patient as well as their family. Could the results be connected to the nursing ethics as presented in Ethical Guidelines of Nursing (Assembly of the Finnish Nurses Association 1996) with alleviating suffering and respecting the patient's autonomy in best possible way. Only with statement 2 was there exception with three answers. Is it possible that the physiological reason mentioned in the statement is the actual cause in neurological ward for using restriction, thus not having the opportunity to treat it before having to use restraints.

Observing the patient

According to the results, statement 6 about the call bell was used by every respondent. The reason for this might be that it is seen as a vital part of patient safety by the nurses, to provide care needed and cause as little harm as possible (National Institute for Health and Welfare 2018). Three respondents did not know about statement 7 and nine respondents did not recognize statement 8. Could it be that since statement 8 especially might not be a frequently used nursing observation method, the respondents have not concentrated on remembering and using it.

Documentation

Except four respondents, statement 9 was used by all the others. Since this is about documenting reasons for restriction before implementing it, could it be that the acute nature of the situation doesn't give opportunity to the respondents. Three respondents answered not documenting the effects of restriction in statement 10. Maybe it is seen as a part of overall observation and documentation and not considered separately. With statement 11 two respondents had not used, and one did not know about it. Since this statement contained specific frequency of documentation to be done, this might explain the result. According to the results, out of 33 respondents, five did not use and five did not know about statement 12. This statement requires the nurse to separately document their professional information, but the patient record system used in HUS records this

information by default while documenting. This aspect could explain the scattered result. Statements 13 and 14 were used by 31 of the respondents, evaluating and documenting risks for pressure ulcers and falling.

Alternatives for physical restriction

According to the results, statement 15 was used the least in all 18 statements. Ten of the respondents had not used and 13 of them did not know about it. Since the statement mentions about using a safety vest, could it be possible that there is not one easily available in the ward. With statement 16, five respondents had not used and nine did not know about it. Maybe it was not seen as a practical tool to be used outside its actual intended usage. The high number of not knowing, same with previous statement 15, is noteworthy. Is it that the respondents don't consider the mentioned alternative ways useful. Or are there other alternative ways used in the wards for these situations. Statement 17 was well followed with 100% of respondents using it. Providing the feeling of being safe to the patient could be seen as one of the principles in nursing ethics (Assembly of the Finnish Nurses Association 1996). Lastly, statement 18 was also well followed with only one respondent not using and one not knowing about it. This might be connected to promoting and maintaining psychological wellbeing of the patient (Assembly of the Finnish Nurses Association 1996).

6.2 Discussion of validity

Validity is about the relation between the belief what we measure and the intent of what we want to measure (Roberts, Priest & Traynor 2006: 41). In other words, validity ensures the survey tool consistently measures the right thing which intended by researcher. There are three types of validity. Content validity concerns subjective evaluation of measurement to check if the measurement makes sense. It is achieved by verifying that the measurement tools include right concepts. To carry out content validity, statement of experts and credibility of the experts is important. Thus, to confirm content validity the credibility of expert who provided content validity is reported. The other validity measures, construct validity and criterion-related validity are reported using statistical measure. Construct validity measures whether the measurement tool reflects concepts related to the variable. Construct validity is carried out using for example factor analysis. Criterion-related validity shows correlation between the measurement tool and external variables to show the actual performance of the measurement. (Houser 2008: 298-299.)

In this work, among different validity measures, only content validity was carried out. The thesis mentor provided expert judgement needed for content validity.

Reliability mainly concerns with the ability of tools, instruments and measurements to produce consistently equivalent results in different situations. When the instrument is reliable, variability in the result can be attributed to the actual data rather than on instrument itself. (Roberts, Priest & Traynor 2006: 41.)

The number of potential respondents having been $n=127$, in total 38 questionnaires were distributed and received back. Despite of clearly written statements as well as written and verbal instructions from the authors, 5 papers out of 38 needed to be excluded due to nonspecific answers. Thus, in this work $n=33$ responses were used. Even with this limitation, the results can be used and are valid in the neurological wards in HUS.

6.3 Discussion of ethical considerations

Research Methods for Nursing and Healthcare (Maltby et al. 2010: 348-349) describes four main ethical bases for when creating a study, namely autonomy, beneficence, non-maleficence and justice. Autonomy relates to informed consent, anonymity, confidentiality and privacy of the participants. Beneficence is about doing good for all involved such as respondents, co-workers, clients and society as a whole. Non-maleficence deals with doing no harm to any of the participants. Lastly, justice relates to being fair and sincere thus not forcing anyone to partake in a research against their own wishes.

The registered nurses and the practical nurses partaking in the questionnaire did it anonymously and confidentially with their privacy respected. Respondents were let known about the nature of the thesis and given possibility to decline or quit participating, thus guaranteeing informed consent. Depending on the specific research, completing the questionnaire altogether can be taken to imply consent from the participant (Maltby et al. 2010: 124). This thesis will aid nurses in the field of health care as well as society. No harm was caused by the writers to anyone during this work. All actions were taken in fairness throughout the thesis process.

As to the directions of The Finnish Advisory Board on Research Integrity (TENK) the writers of this thesis referenced authors and sources accordingly and refrained from misconducts such as falsification. The writers acted honestly, meticulously and rigorously while collecting, storing, analyzing and presenting the data and the following results.

(Tutkimuseettinen neuvotte-lukunta 2013: 6-8.) The written work was periodically checked using plagiarism database program Turnitin (Metropolia 2019). Permission to conduct the work was granted by HUS and a cover letter was provided to the wards through head nurses in advance to actual data collection.

7 Conclusion

As it is stated in the Health Care Act (1326/2010 § 8), actions in health care, nursing included, need to be evidence-based. Well researched guidelines are a way to guarantee this principle to take place in units and wards. However, even adequate guidelines won't make a difference if they are not followed. According to the results of this work, use of the guideline on physical restriction in neurological wards had noteworthy discrepancies. Some of the statements were well followed, whereas some statements were not followed or even known about by the respondents.

The results of this thesis can be used to develop the way the guideline is presented to the nursing staff in a way that it will be taken into use in everyday care work. This development as a result will affect quality of nursing. The higher level, leadership and management, should consider factors such as needing new educational ways to inform the staff about the guideline, the availability of the guideline on the wards and how to promote its importance in evidence-based quality nursing care. Regardless of the topic, commitment from the leadership and management level motivates and sets an example for the employees in health care units and wards.

In future, it would be interesting to repeat this data collection using the same questionnaire and compare whether the results vary.

References

Act on Special Care for the Mentally Handicapped. Laki kehitysvammaisten erityishuolosta. 1977. 23.6.1977/519 muutoksineen.

Act on Welfare for Substance Abusers. Päihdehuoltolaki. 1986. 17.1.1986/41 muutoksineen.

Aivovammaliitto. *Aivovammat.* Available at <<http://www.aivovammaliitto.fi/aivovammat/>> Accessed 7 October 2018.

Assembly of the Finnish Nurses Association, 1996. *Ethical Guidelines of Nursing.* Available at <<https://sairaanhoitajat.fi/artikkeli/ethical-guidelines-nursing/>> Accessed 6 October 2018.

Communicable Diseases Act. Tartuntatautilaki. 2016. 1227/2016.

Constitution of Finland. Suomen perustuslaki. 1999. 11.6.1999/731 muutoksineen.

Dolan, J. & Looby, S.E.D., 2017. Determinants of nurses' use of physical restraints in surgical intensive care unit patients. *American Journal of Critical Care* 26 (5), 373-379.

Goethals, S., Dierckx de Casterlé, B. & Gastmans, C., 2013. Nurses' decision-making process in cases of physical restraint in acute elderly care: A qualitative study. *International Journal of Nursing Studies* 50 (5), 603-612.

Health Care Act. Terveystieteidenhuoltolaki. 2010. 30.12.2010/1326 muutoksineen.

Houser, J., 2008. Precision, Reliability, and Validity: Essential Elements of Measurement in Nursing Research. Kotzer, A (ed). *Journal for Specialists in Pediatric Nursing* 13 (4), 297-299.

Huang, H-T., Chuang, Y-H. & Chiang, K-F., 2009. Nurses' Physical Restraint Knowledge, Attitudes, and Practices: The Effectiveness of an In-Service Education Program. *Journal of Nursing Research* 17 (4), 241-247.

HUS a. Helsinki University Hospital. *Neurologia.* Available at <<http://www.hus.fi/sairaanhoito/sairaanhoitopalvelut/neurologia/Sivut/default.aspx>> Accessed 5 October 2018.

HUS b. Helsinki University Hospital. *Neurologiset sairaudet.* Available at <http://www.hus.fi/sairaanhoito/sairaanhoitopalvelut/neurologia/neurologiset_sairaudet/Sivut/default.aspx> Accessed 5 October 2018.

Janelli, L.M., Stamps, D. & Delles, L., 2006. Research for practice. Physical restraint use: a nursing perspective. *MEDSURG Nursing* 15 (3), 163-167.

Kankkunen, P. & Vehviläinen-Julkunen, K., 2013. *Tutkimus hoitotieteessä*. 3rd ed. Helsinki: Sanoma Pro Oy.

Kaya, H. & Dogu, O., 2018. Intensive care unit nurses' knowledge, attitude and practices related to using physical restraints. *International Journal of Caring Sciences* 11 (1), 61-70.

Luk, E., Burry, L., Rezaie, S., Mehta, S. & Rose, L., 2015. Critical care nurses' decisions regarding physical restraints in two Canadian ICUs: A prospective observational study. *Canadian Journal of Critical Care Nursing* 26 (4), 16-22.

Maltby, J., Williams, G.A., McGarry, J. & Day, L., 2010. *Research Methods for Nursing and Healthcare*. England: Pearson Education Limited.

Mental Health Act. Mielenterveyslaki. 1990. 14.12.1990/1116 muutoksineen.

Metropolia, 2019. *Turnitin*. Available at <<https://tietohallinto.metropolia.fi/display/tietohallinto/Turnitin>> Accessed 2 April 2019.

Möhler, R. & Meyer, G., 2014. Attitudes of nurses towards the use of physical restraints in geriatric care: A systemic review of qualitative and quantitative studies. *International Journal of Nursing Studies* 51 (2), 274-288.

National Institute for Health and Welfare, 2018. *Potilasturvallisuus*. Available at <<https://thl.fi/fi/web/sote-uudistus/palvelujen-tuottaminen/potilasturvallisuus>> Accessed 9 October 2018.

Nirmalan, M., Dark, P.M., Nightingale, P. & Harris, J., 2004. Physical and pharmacological restraint of critically ill patients: clinical facts and ethical considerations. *British Journal of Anaesthesia* 92 (6), 789-792.

Oxford Dictionaries. *Restraint* 1.2. Available at <<https://en.oxforddictionaries.com/definition/restraint>> Accessed 9 October 2018.

Oxford Dictionaries. *Restriction* 1.1. Available at <<https://en.oxforddictionaries.com/definition/restriction>> Accessed 9 October 2018.

Roberts, P., Priest, H. & Traynor, M., 2006. Reliability and validity in research. *Nursing Standard* 20 (44), 41-45.

Soinila, S., 2014. Neurologian erityisongelmia. In S. Soinila & M. Kaste (eds.) *Neurologia*. Helsinki: Kustannus Oy Duodecim.

Suomen Parkinson-liitto ry. *Parkinsonin tauti*. Updated 22.9.2015. Available at <<https://www.parkinson.fi/parkinsonin-tauti>> Accessed 18 October 2018.

Terveyskylä a. *Mikä on aivoverenkiertohäiriö*. Available at <<https://www.terveyskyla.fi/aivotalo/sairaudet/aivoverenkiertoh%C3%A4iri%C3%B6t/mik%C3%A4-on-aivoverenkiertoh%C3%A4iri%C3%B6>> Accessed 7 October 2018.

Terveyskylä b. *Aivokasvainlajit ja yleisyys*. Available at <<https://www.terveyskyla.fi/aivotalo/sairaudet/aivokasvaimet/yleist%C3%A4-aivokasvaimista/aivokasvainlajit-ja-yleisyys>> Accessed 7 October 2018.

Terveyskylä c. *Tilastotietoa epilepsiasta*. Available at <<https://www.terveyskyla.fi/aivotalo/sairaudet/epilepsia/tietoa-epilepsiasta/tilastotietoa-epilepsiasta>> Accessed 18 October 2018.

Tienari, P., 2016. MS-tauti. *Lääkärin käsikirja*. Helsinki: Kustannus Oy Duodecim.

Tutkimuseettinen neuvottelukunta. Varantola, K., Launis, V., Helin, M., Spoof, S.K. & Jäppinen, S. (eds.), 2013. *Hyvä tieteellinen käytäntö ja sen loukkausepäilyjen käsitteleminen Suomessa*. Helsinki.

Valvira, 2015. *Liikkumista rajoittavien turvavälineiden käyttö*. Updated 10.11.2017. Available at <https://www.valvira.fi/terveydenhuolto/potilaan-asema-ja-oikeudet-oikeudet/liikkumista_rajoittavien_turvavälineiden_kaytto> Accessed 9 October 2018.

Walters, S. & Freeman, J., 2015. Descriptive Analysis of Data. In K. Gerrish & J. Lathlean (eds.) *The Research Process in Nursing*. 7th ed. West Sussex: John Wiley & Sons, Ltd.

Yeh, S-H., Hsiao, C-Y., Ho, T-H., Chiang, M-C., Lin, L-W., Hsu, C-Y. & Lin, S-Y., 2004. The Effects on Continuing Education in Restraint Reduction on Novice Nurses in Intensive Care Units. *Journal of Nursing Research* 21 (3), 246-255.