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Nurses' perceptions of risks for occupational hazards in patient seclusion and restraint practices in psychiatric inpatient care: A focus group study

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ABSTRACT

Seclusion and restraint are regularly used to manage patient aggression events in psychiatric inpatient care, despite occupational safety concerns. There is currently a lack of information on how nurses perceive the use of patient seclusion and restraint as a risk for occupational safety. The aim of this study is to describe the risks for occupational hazards in patient seclusion and mechanical restraint practices as well as ideas for improvement identified by nurses. A qualitative descriptive design was adopted, using focus groups comprising nurses (N = 32) working in psychiatric inpatient care. The data were analysed using inductive content analysis, and the results were reported using the consolidated criteria for reporting qualitative studies (COREQ). Four themes of risk for occupational hazards were identified: patient-induced, staff-induced, organisation-induced and environment-induced risks. One significant finding was that nurses described that their actions can strongly contribute to occupational hazards during seclusion and mechanical restraint practices. The nurses gave various ideas for how occupational safety could be improved during seclusion and mechanical restraint events, ideas involving staff, the organisation, and environmental enhancements.

KEY WORDS: risks, occupational hazards, seclusion, psychiatric care, safety

BACKGROUND

Nurses working in psychiatric inpatient services are exposed to various occupational hazards (Fernandes & Marziale, 2014). Patient aggression constitutes a major occupational hazard, as 68.8% (N =717) of nurses working in general psychiatric hospitals have been on the receiving end of patient aggression (van Leeuwen & Harte 2017). Occupational hazards are defined as potential sources of adverse health effects or harms to a worker (Health and Safety Authority [HAS] 2019). A Swedish study analysing 1,702 incident reports from healthcare workers found that 11% of incidents and injuries occurred in psychiatric care settings (Wåhlin *et al.* 2019). It has also been reported that 44.6% (N = 322) of psychiatric nurses feel unsafe or very unsafe at work (Kelly *et al.* 2016). A significant proportion of occupational hazards occur during patient seclusion and restraint practices (Renwick *et al.* 2016). The use of restraint in Europe is reported to range between 4.5% and 9.4% (Lepping *et al.* 2016), and in Australia, there are between 8.6 and 10.2 physical restraint events per 1000 bed days (Oster *et al.* 2016). In Finland, the prevalence of seclusion is 6.9% and 3.8% for mechanical restraint (Välimäki *et al.* 2019).

Seclusion and mechanical restraint used in psychiatric care has raised ethical and practical dilemmas for nurses (Chaodun *et al.* 2019). On one hand, restraints are used to safeguard patient and staff safety by managing patient aggressive behaviour (Whittington *et al.* 2012, Muir-Cochrane *et al.* 2015, Wilson *et al.* 2017, Gerace & Muir-Cochrane 2019). On other hand, restrictive methods and a limiting environment itself may increase patients' aggressive behaviour (Bowers 2014), which may further increase the use of restraints, and expose nurses to occupational hazards (Wynn 2003, Lancaster *et al.* 2008, Stubbs 2009, Renwick *et al.* 2016). Studies on the topic of safety in mental health care services mostly focus on

quantitative measurements of self-harm, adverse events (Mills *et al.* 2018) and patient violence (Briner & Manser 2013), as well as adverse effects of coercive measures (Cusack *et al.* 2018).

Recent systematic reviews show that the use of seclusion and mechanical restraint can lead to physical harm and even to death of a patient (Kersting *et al.* 2019, Chieze *et al.* 2019). Studies indicate that the use of seclusion (Steinert *et al.* 2013, Whitecross *et al.* 2013) and mechanical restraint (Steinert et al 2013, Guzmán-Parra *et al.* 2019) may cause psychological distress or even symptoms of posttraumatic stress disorder. Moreover, it may have a negative effect on patient treatment satisfaction (Katsakou *et al.* 2010), increase the length of hospital stay (Chieze *et al.* 2019), and be detrimental to patient-staff relationship (Knowles *et al.* 2015). The wide array of negative consequences of coercive measures have stirred a global movement to reduce all forms of coercion in psychiatric care (United Nations [UN] 2008, Council of Europe 2019). Various organisations (e.g. The Royal Australian & New Zealand College of Psychiatrists [RANZCP] 2016, American Psychiatric Nurses Association [APNA] 2018, Mental Health America [MHA] 2019) have made position statements to reduce and abolish seclusion and restraint. However, psychiatric staff still regard coercive measures as being beneficial for safety in some cases (Kinner et al. 2017).

A link between occupational hazards and the use of coercive measures has been identified in the research literature. However, the mechanism of injury in restraints remains unclear (Lancaster *et al.* 2008, Stubbs 2009, Renwick *et al.* 2016, Vedana *et al.* 2018). The research on staff's perceptions of occupational hazards and the use of seclusion and mechanical restraint is also scarce, particularly studies using qualitative methods. As efforts to reduce the

use of coercive measures still continue worldwide, more knowledge for promoting occupational safety is still needed from the point of view of nurses working in clinical practice (Stevenson *et al.* 2015). To fill the existing knowledge gap, a qualitative approach usable for identifying possible risks for occupational hazards from the point of view of nurses (de Wet *et al.* 2018). We therefore aim to identify risk factors for occupational hazards and what could be done better in the future. The current paper is a part of larger research and development project (The Safety of Nurses during Seclusion and Restraint of a Psychiatric Patient, EriTurva 11617).

METHODS

Aim

The aim of this study is to describe the risks for occupational hazards in patient seclusion and mechanical restraint practices and ideas for improvement identified by nurses.

Study Design

A qualitative descriptive design with focus groups was used to gain a deeper understanding of the phenomenon (Sandelowski 2000): risks for occupational hazards in seclusion and mechanical restraint. Consolidated criteria for reporting qualitative studies (COREQ) guided the designing and reporting of our study (Tong *et al.* 2007).

Setting

The data were collected at one psychiatric hospital in southern Finland, which represents a typical psychiatric hospital in Finland with six inpatient and 17 outpatient units. It serves

approximately one million inhabitants in its area. Five inpatient units were invited to participate in the study because all of them had a seclusion room and the possibility to use mechanical restraint (one acute crisis unit, one psychogeriatric unit, one unit for patients with psychosis, two forensic psychiatric units). The units had a total of 100 hospital beds and a nursing workforce of 150.

In Finland, the use of coercive measures is directed by Finnish legislation. According to the Mental Health Act (1116/1990, 22§ 21.12.2001/1423), coercive methods such as seclusion, physical restraint, mechanical restraint and forced medication toward patients can be used to ensure the safety of that patient, other patients, and the health care staff. In this study, we focused on seclusion and mechanical restraint only because they should be used as last resort in patient care, as stated both in national legislation and international guidelines (National Institute for Health and Care Excellence [NICE] 2015, the Finnish Mental Health Act 1116/1990, 22§ 21.12.2001/1423). A patient can be secluded in a designated room if a patient is admitted for observation or during involuntary care. If needed, a patient can also be mechanically restrained to a bed suited for this purpose with belts and straps. The use of seclusion and mechanical restraint is decided by a physician. However, in urgent situations, other healthcare staff may temporarily seclude and mechanically restrain a patient. A physician must be informed immediately afterwards (Mental Health Act 1116/1990, 22§ 21.12.2001/1423).

Sampling and recruitment

Purposive sampling was used for nurses' recruitment (Palinkas *et al.* 2015). Due to the nature of the study wards, we assumed that all nurses working in the units held valid information for risks of occupational hazards related to the use of seclusion and mechanical restraint.

Participants from diverse backgrounds (various ages, education, work experience) were invited to participate to obtain different perspectives (Kitzinger 1995), as long as they had experience with seclusion and restraint practices. Other prerequisites to be included in the study were that the participant needed to be Finnish speaking and work in a study unit as a registered or a practical nurse. In Finland, all registered nurses are licensed professionals holding a bachelor's degree in nursing, while practical nurses are authorised professionals with an upper secondary education degree from a vocational institution (Ensio *et al.* 2019). Exclusion criteria were short-term substitute employment (>3 months) and being a nursing student.

For our study, the directors of nursing for each unit acted as contact persons and assisted in finding eligible participants who were interested in sharing their views on the topic. Two researchers (ML, JB) held information sessions in the study units for potential participants. The participants were given information about the purpose of the study, and the meaning of participation, voluntariness and confidentiality in this context. The directors of nursing informed research staff about nurses who were interested in joining the study. Further, researchers contacted them to agree on the dates for the focus group interviews. Altogether, 40 nurses showed a preliminary interest in participating, of which six refused and two were not able to participate due to a nurse shortage in their unit. Each group had 6–9 participants, which is in the range of the commonly suggested 4–12 (Parsons & Greenwood 2000). Thus, 32 nurses participated in the focus groups.

Data collection

We chose focus groups as the most suitable data collection method because they are useful for exploring the participants' knowledge and experiences of a specific phenomenon

(Kitzinger 1995). Focus groups were used for the data collection as they can provide rich data from fruitful discussion and interaction between participants. This method is suitable for exploring the knowledge and experiences of people (Kitzinger 1995) regarding sensitive topics (Jordan *et al.* 2007), such as our study includes. The focus groups were run between September and October 2017. Four researchers (3 females, 1 male) trained to conduct focus groups participated in the data collection. Two researchers, facilitator and co-facilitator, were present in each group. The facilitator guided the focus group and encouraged participants to participate in the discussion (Nyamathi & Shuler 1990). Consent was acquired for recording (Kitzinger 1995). Written notes were kept in case of recording failure.

The groups met in hospital meeting rooms, to which the participants had easy access. Refreshments were provided to create a comfortable atmosphere. At the beginning of the focus group, the participants were given written and oral information about the study and their rights as voluntary participants (Gill *et al.* 2008). To ensure consistency between the groups (Asbury 1995), an interview guide was used. The same questions were presented to all the participants: 1) What risks have you identified for occupational hazards when seclusion and restraint are used, and 2) What could you do as a work community to improve occupational safety? The questions were designed to be open enough for participants to pursue their ideas and elaborate about information that might not have been previously thought of (Chadwick *et al.* 2008). In addition, the participants filled out background information forms (age, gender, education, further education of coercive measures, work experience in psychiatric care, current working position).

Each focus group lasted 60–180 minutes (Asbury 1995). Nyamathi and Shuler (1990) state that, generally, four sessions are enough, and this was evident in our study; data saturation was reached as no new themes emerged from the fourth session.

Data analysis

The audio recordings were transcribed to facilitate data analysis. The data analysis was performed with inductive content analysis. Inductive content analysis was chosen because the existing knowledge about risks for occupational hazards are fragmented and limited (Elo & Kyngäs 2008). This method provides information directly from the study participants without using preconceived strategies, and thus provides a richer description of the phenomenon without missing any previously unidentified aspects (Hsieh & Shannon 2005).

First, the researchers immersed themselves in the data by reading the transcriptions several times. Second, the transcriptions were imported to QSR International's (2017) NVivo 12, qualitative data analysis software. Third, coding was performed, where sentences or parts of a sentence containing content relevant to the aim of the study were set as the meaningful unit of analysis. The coding was performed twice by two researchers (JV and TL) to ensure reliability. Fourth, codes were grouped into categories. These were then re-evaluated, and overlapping categories were combined. Categories not pertaining to the study aim were removed. Fifth, categories were grouped under broader headings. Categorisation was based on the interpretation of the data by two researchers (JV and TL) (Elo & Kyngäs 2008, Cook 2012), Last, the broader categories and sub-categories were defined and exemplified in the data (an example of the categorisation can be found in Table 1). The codes, sub-categories, categories and quotations of the data were translated from Finnish to English for the reporting of the results. The co-authors evaluated the outcome of the analysis (Cook 2012). During the

data analysis, no hidden meanings were analysed to avoid misinterpretation (Elo & Kyngäs

2008).

Table 1. about here

Ethical considerations

The study proposal was assessed by the Ethics Committee of the Helsinki and Uusimaa

Hospital District (12/13/03/03/2016). Permission to conduct the study was obtained from the

study organisation. Written informed consent was acquired from the participants after they

had received written and oral information (Byrne 2001). The anonymity and confidentiality

of the participants was guaranteed by using pseudonyms for names and locations (Orb *et al.*

2001). The research data were stored in a secure cloud service. Hard copies were stored

behind locked doors with access limited to the researchers of this study.

RESULTS

Characteristics of the participants

The average age of the participants (N = 32) was 39 years (range 23–60). Less than two-

thirds (59%) were females and registered nurses (59%). About one-third (38%) had 1–5 years

of work experience ranging from less than one year to 37 years (Table 2).

Table 2 about here

Risks for occupational hazards in patient seclusion and restraint

Patient-induced risks for occupational hazards

Patient-induced risks for occupational hazards refers to patients' verbal or physical aggression during seclusion and restraint. First, nurses described that patients' verbal aggression can cause occupational hazard, such as emotional burden.

> *Sometimes it just sticks to you, if the other [patient] calls you names or slurs, it can hit you about something that is going on in your personal life.*
> – group 4, interviewee 27

Second, the participants described that, during seclusion and restraint, the risk for physical aggression is high. Aggression can occur when patients are physically controlled and escorted to a seclusion room, when patients try to escape from seclusion, when nurses enter the room, or when nurses provide care to the secluded or restrained patient. Patients with infectious diseases pose a risk when a patient, for example, bites a nurse.

> *All these diseases, because the patients can have an infectious disease, like HIV, hepatitis, and then there are hospital bacteria, ESPL, MRSA.*
> – group 1, interviewee 7

Staff-induced risks for occupational hazards

Staff-induced risks for occupational hazards relate to the actions from staff. First, the participants identified high-risk actions by staff. These actions took place although they were against local treatment guidelines or recommendations. These included, for example, nurses

going alone into a seclusion room or not carrying personal alarms. Some may kneel close to a patient when providing care, examining, or talking with a patient.

> *When you go into seclusion, you shouldn't squat there. From an occupational safety [point of view] it is a very dangerous position, but some doctors and nurses did it a lot in unit X ... When the patient [tries to assault] you don't get out so easily [when squatted].*
> – group 3, interviewee 21

Further, nurses described a reluctance to assist in seclusion and restraint, as it is a high-risk action. This manifests in situations when colleagues do not respond to alarm calls made from the seclusion rooms, or they withdraw from events. Nurses also mentioned that staff having a false sense of safety can be a risk. They rely on their clinical judgement when assessing potentially violent patients.

> *Suddenly there is a situation where a patient punches their personal nurse without them being able to prepare for it properly. Because they have just gotten blind* [sic] *that the patient can be aggressive.*
> – group 3, interviewee 22

Second, nurses stated that there are problems in cooperation between staff. Staff may question each other's decisions during seclusion and restraint, creating mistrust among them. Nurses described these types of cooperation problems as infuriating and distracting from safe seclusion and restraint practices. In addition, breakdowns in the communication among staff members were seen as a problem. Dangerous situations may occur if staff involved in the seclusion or restraint are not briefed. This is especially crucial if staff members are aiding another unit.

If you go to a seclusion event in another unit, and then you are yourself a risk because you do not know the procedures of that ward. You are kind of a risk factor if you are not listening the others or they don't remember to tell those things.

– group 2, interviewee 15

Third, the participants identified that physically impaired nurses can put themselves and their fellow nurses at risk of occupational hazards when participating in seclusion and restraint as they are not fully functional. Even worse, some might – intentionally or not – conceal physical limitations.

The safety of some nurses, and if, for example, some nurse has a bad knee.

– group 2, interviewee 12

Organisation-induced risks for occupational hazards

Organisation-induced risks for occupational hazards span from the organisations' guidelines, practices, and allocation of resources. First, nurses stated that the organisation's guidelines for seclusion and restraint can be unclear. For some important topics, like the definition of a nurse's role and tasks during seclusion and restraint, no written guidelines exist, and nurses may therefore have difficulties taking appropriate actions, putting themselves at risk for occupational hazards.

I think that not every nurse is aware of what to do in that [seclusion and restraint] situation, and there is not a clear guideline on what to do with the patient. I have witnessed a situation where not everyone was aware of [what to do] and one nurse got a knee into his eye.

– group 1, interviewee 7

Second, a lack of training for seclusion and restraint practices was identified. Participants reported that new nurses are not sufficiently trained or initiated, and there is not enough continuing education provided for experienced nurses. Thus, some nurses may follow outdated practices and techniques.

> *Being aware of current practices is important. If one is not aware, then an employee can have 20 years of experience of psychiatric care, but his practices in seclusion and restraint situations can be from the 'stone age' which is a risk factor for everyone.*
> – group 4, interviewee 33

Third, a lack of staffing was reported to cause a risk of occupational hazards. Sometimes, there might not be enough nurses on duty to safely execute seclusion and restraint, especially during night shifts. Furthermore, nurses reported not having enough males in each shift. They stated that female nurses may lack the required physical strength for safe physical holding.

> *A bad situation, it is of course related to the resources, that we have awfully often, is to request help from somewhere else for seclusion and restraint situations, because it is possible that there are no men on the shift at all, and then it might take a while before we can provide services [to seclusion].*
> – group 1, interviewee 5

Environment-induced risks for occupational hazards

Risks for occupational hazards can emerge from the environment of the seclusion room. First, seclusion room design often forces nurses to work with poor ergonomics. Inconvenient working positions, such as physically holding a patient on a cement floor for a long time, can impair a nurse's ability to move. The rooms are small, which prevents nurses from safely escorting the patient into the room. Floors of seclusion rooms may be slippery so staff can fall. Furthermore, some patients can use materials (e.g. wooden door cases) found in the seclusion rooms as weapons.

> *The cramped space in the new building, goddammit. It is very difficult to use that, maximum one-meter wide hallway with four nurses and an aggressive patient, someone always has to remove their grip, so it [patient] can possibly kick some of us before we even get inside the seclusion door.*
> – group 3, interviewee 23

Second, nurses said that some equipment they use is unsuitable for safely administering seclusion and restraint. These include poor and slippery shoes that some wear; a shoe may fall off during seclusion and restraint. Equipment used for restraint (belts, beds) is heavy and difficult to use. In the study units, the nurses reported needing to carry a separate metal bed to the seclusion room for using restraints. Carrying these beds for restraints in a hurry might lead up to injuries. Sounds in seclusion rooms echo, and some patients may yell loudly, which puts the hearing of staff at risk. Nurses also described that the personal alarm systems are outdated and might not work inside the seclusion room.

> *I think that the size is one reason why people don't want to use them [alarm buttons].*
> – group 1, interviewee 4

Staff's ideas for improving occupational safety in seclusion and restraint practices

Staff-related ideas

Nurses felt that occupational risks could be reduced with the proper preparation and actions. First, preparation for seclusion and restraint situations is something that should be developed. This means that a plan should be made for seclusion and restraint, an appropriate number of nurses should be ensured, there should be clear roles for everyone (e.g. how each person should be positioned in the seclusion room), and any needed precautions should be taken.

> *At that point, when we know that a patient needs to be secluded, then we gather the group [of nurses] who will go to that situation and in some way already at that point clarify each nurse's role, so there won't be hassling.*
> – group 2, interviewee 14

Second, the participants identified communication as important. This means that information related to patients is shared among all staff members. During seclusion and restraint, it means that all nurses announce what they are doing as well as ask for instructions.

> *Communication between each other and that everyone knows what to do in that [seclusion and restraint] kind of situation.*
> – group 3, interviewee 23

Third, safe actions by nurses and availability of safety equipment were deemed important. Nurses should follow the given safety guidelines and practices, carry personal alarm systems, and remain calm and composed. Additionally, safe actions include, when patients need to be

restrained, nurses using a firm grip to ensure their own safety as well as that of the patient.

Safety equipment such as shields were mentioned as a precaution.

> *And then that calmness, when you are going to the seclusion room, in*
>
> *everything you do there; collect empty dishes and just that pacing yourself that*
>
> *you are not going there in a hurry.*
>
> – group 3, interviewee 24

Organisation-related ideas

Nurses came up with multiple ideas on the organisational level of the institutions. First, appropriate nursing resources were called for. Familiarity, i.e. being familiar with one's work group and each other's working habits, was seen as crucial. They also emphasised the need for having experienced nurses in each shift, to safely guide the seclusion and restraint situations. This requires designing working schedules accordingly.

> *And in the seclusion event there would be enough staff present, so that it would*
>
> *be safe for the patient and nurses.*
>
> – group 2, interviewee 14

Second, improvements for staff training was discussed, including enhanced initiation of new employees. Training should be frequent and regular, and ideally, the training should be done with co-workers to enhance cooperation. Ergonomics should be included in the training. The appropriateness of the current training was questioned.

> *Staff are so often beaten up at the units that I keep wondering should the*
>
> *training provided for the staff be re-evaluated. Are staff benefiting from the*
>
> *training, are the right things taught…*

– group 4, interviewee 27

Environment-related ideas

The participants felt that occupational safety could be greatly improved by renovating and modernising seclusion rooms. First, there should be more space to allow safer operations. The soundproofing of the rooms could also be improved. In cases of aggressive and disoriented patients, it could be useful to have a chain on the door, which would allow the door to be opened slightly. This would be useful in improving the safety of nurses when they are passing necessary things to the patient, and it would also facilitate communication between the nurses and the patient. To protect staff from slipping due to wet floors, nurses wished that in some cases the toilet seats could be closed.

> *There should be much more space and the doors need to be bigger—a*
>
> *possibility to open both sides [of the door] so that you could actually enter the*
>
> *room safely.*
>
> – group 3, interviewee 23

Second, regarding modern equipment, the participants wished for camera surveillance that would cover the entire seclusion room and the corridors leading to it from multiple angles. Enhanced camera surveillance would help nurses to be more aware of what is happening in the seclusion room before entering. Rooms could be equipped with technology that allows nurses outside the room to hear what is happening inside the seclusion room. In addition, participants brought up the need for better non-slippery shoes provided by the employer, durable and safe clothing, and reliable personal alarm systems to prevent occupational hazards.

Everyone would have good working shoes and when most of the people use civil clothes [their own clothing], they would have that kind of clothes that you can move in, instead of having tight jeans that you can't even squat in.

– group 2, interviewee 16

DISCUSSION

In this study, we aim to describe the risks for occupational hazards in patient seclusion and mechanical restraint practices, and ideas for improvement identified by nurses. This topic continues to be relevant as the Committee on Social Affairs, Health and Sustainable Development of the Council of Europe (2019) have urged European member states to abolish the use of coercive measures in mental health care. The Finnish National Mental Health Policy 2009–2015 has also aimed to reduce the use of coercive measures and ensure the safety of patients and staff (National Institute of Health and Welfare 2018). This study demonstrates that nurses were able to identify a variety of risks for occupational hazards in seclusion and mechanical restraint practices, which are the most commonly used coercive methods in Finnish psychiatric hospitals (Välimäki *et al.* 2019). The results are promising because being able to identify risks in one's own work enables the development of safer work practices and the prevention of future occupational hazards (United States Department of Labor 2019). In addition, development of safer work practices is also significant for patient safety. As Taylor *et al.* (2012) has already demonstrated, occupational safety and patient safety are linked together.

Previous research has shown that, in physical restraint situations, patients' aggressive behaviour has been found to be the factor most regularly mentioned in connection with occupational hazards for staff (Wynn 2003, Lancaster *et al.* 2008, Stubbs 2009, Renwick *et al.* 2016). The current study supports these existing results. However, nurses in our study produced a wider perspective of risks for occupational hazards. Nurses perceived that staff members and their actions have an important role in these hazards. We can only speculate what the reason for nurses' actions are. Drach-Zahavy and Somech (2010) offer some explanations for why nurses do not comply with safety rules. For example, to provide the best possible care to the patient, nurses are ready to risk their safety in order not to burden their colleagues. In addition, nurses may have a false sense of security, which put them at risk for occupational hazards (Lelipoulou *et al.* 1999, Drach-Zahavy & Somech 2010). Many organisations have extensive guidelines and rules for ensuring nurses occupational safety (Slemon *et al.* 2017). However, problems arise when nurses do not necessarily follow the safety guidelines and rules (Mark *et al.* 2007, Taylor *et al.* 2012). When considering staff's adherence to safety rules and guidelines, it is worth considering why staff do not follow them. On one hand, hospital safety guidelines are often enforced top-down on the staff. Top-down approaches to rules may cause staff to violate them, in order to reduce the workload that these rules may create (Otsuka *et al.* 2010). It has therefore been proposed that adherence to safety rules and guidelines could be improved with a bottom-up approach, where the staff are the experts in generating them (Hale & Borys 2013). As with many behavioural models aiming to change people's behaviour, it is important that staff are involved (Cooper *et al.* 2005). There is evidence of staff participation to improve safety, Sharpe's (2015) study engaged nurses as a vehicle to improve patient safety, and this led to significant improvements in patient safety (Sharpe 2015).

In our study, the participants highlighted the need for more nurses to ensure safety during seclusion and mechanical restraint practices. Previous studies have already shown that a low number of nurses is associated with increased use of coercive methods (McKeown *et al.* 2019). A qualitative study by Muir-Cochrane *et al.* (2014) and a survey study by Gerace and Muir-Cochrane (2019), both carried out in Australia, revealed that reasons to restraint may be associated with problems in staffing, such as a lack of resources on the ward, high turnover and a lack of training and experience of the staff (Muir-Cochrane *et al.* 2018). In our study, nurses also proposed that having more male nurses would safeguard patient safety. This comment may reflect the traditional assumption that female staff with less physical power cannot effectively use physical holding methods, as was found by Southcott & Howard (2007). On the other hand, the authors concluded that female nurses performing coercive measures does not have a detrimental effect to safety (Southcott & Howard 2007). Some studies have found that male nurses face more physical violence (Llor-Esteban *et al.* 2017, Renwick *et al.* 2019, Pekurinen *et al.* 2019). Regardless of gender, trauma-informed, compassionate and humanistic care should be the focus for secluded or mechanically restrained patients (Huckshorn 2004, Moylan 2009, Muir-Cochrane *et al.* 2019), rather than a showing of force by the staff (Bowers *et al.* 2011).

Risks related to environmental factors were found in our study, such as cramped seclusion rooms, unsuitable equipment, and hard and slippery floors. Moyo and Robinson (2012) have also reported that wet floors account for occupational hazards during restraining. In response to the environment-induced risks, nurses' ideas on how to improve the environment for better occupational safety involved simple, technical safety measures, including bigger rooms with more space, better soundproofing, chains on the door, and modern alarm and camera

equipment. Some of the ideas related to patient complaints; patients have also described that seclusion rooms are unpleasant and prison-like (Kontio *et al.* 2012, Tingleff *et al.* 2017) and often lack basic facilities such as lights, clean linens, and fresh air (Tingleff *et al.* 2017). However, when making changes to the environment, the focus should not only be on technical safety features, but on aspects that would allow nurses to provide therapeutic care (Curtis *et al.* 2013), even during seclusion and mechanical restraint (Tingleff *et al.* 2017).

The nurses in our study stressed the importance of training for physical restraint techniques. Indeed, previous studies have shown that a lack of adequate training may result in more occupational hazards (Renwick *et al.* 2016). The Working Party of the Steering Committee on Bioethics of the Council of Europe (2000) and NICE (2015) have both recommended that all staff who use restraints need to be trained for it. On the other hand, there are controversial ideas about the impact of nurses' training. Moyo and Robinson (2012) found in their study that increased training improved nurses' safety. On the contrary, participating in a refresher course on physical restraint can cause up to a sixfold increase in the risk of being injured (Moyo & Robinson 2012). The training itself may be dangerous, and injuries have been reported as an outcome of training during which nurses practice physical violence management (Putkonen *et al.* 2013). Therefore, the quality of the training should be seriously considered. On the other hand, it was found in a study by Kontio *et al.* (2014) that online training for nurses on ethical issues in patient seclusion and mechanical restraint resulted in a decreased length of mechanical restraint, which can be favourable for occupational safety. In general, the content and learning methods of the training should be re-evaluated, and the focus of the training should be on de-escalation and prevention of coercive measures (Lovell,

et al. 2015, Gaynes *et al.* 2017, Duxbury 2019) rather than on how to physically control the patient.

Limitations

This study holds limitations. First, we are not certain whether there was a selection bias in nurse recruitment or which, if any, perceptions were left out by selecting specific type of nurses to join the focus group interviews. Second, regarding our setting, we are aware that the use of seclusion and restraint varies across countries, and even regions, due to differences in cultures, traditions and policies (Steinert *et al.* 2010). The variety of seclusion and mechanical restraint practices should be kept in mind when assessing our results, and one needs to be cautious regarding the transferability of the findings. In order to enhance transferability, the setting and participants are described. Quotations are also used when presenting the findings (Graneheim & Lundman 2004). Third, the data analysis process was conducted in Finnish, and the codes, categories, and quotations have been translated from Finnish to English. There is the possibility that some meaning has been lost in the translation process (van Nes *et al.* 2010). Fourth, qualitative data analysis presents a challenge due to its interpretative nature. Therefore, the personal history and experiences of the researchers might have influenced the interpretation (Graneheim & Lundman 2004). To reduce this influence, two researchers coded and categorised the data and the co-authors evaluated the outcome of the analysis (Cook 2012).

Fifth, we chose focus groups as the most suitable data collection method because they are useful for exploring participants' knowledge and experiences of a specific phenomenon (Kitzinger 1995). We recruited participants from diverse backgrounds, differing in age, education, and

work experience, to achieve a variety of perspectives (Kitzinger 1995). However, having both junior and senior colleagues participating in the study could have impacted the participants willingness to express their opinions openly in the groups (Mansell *et al.* 2004). Therefore, we are not sure whether the data represent the true thoughts or situation in current practices. On the other hand, having colleagues in a focus group allows the participants to relate to each other or challenge each other (Kitzinger 1995). Lastly, the participants provided ideas on how to improve occupational safety in seclusion and mechanical restraint in psychiatric care. However, no changes were implemented into practice during present study, and therefore, we are not able to provide information on whether these ideas can really improve occupational safety in the use of seclusion and restraint.

CONCLUSIONS

The study examined nurses' perceptions of risks for occupational hazards during patient seclusion and mechanical restraint practices and ideas to improve occupational safety when using these coercive methods. As a result, we provide information that partly fills the existing knowledge gap regarding nurses' understanding of risks and safety issues in psychiatric hospital care. This knowledge is important because being aware of possible risks for occupational hazards in seclusion and mechanical restraint may be used to improve safety when using these measures. This study reveals that nurses identifies various risks for occupational hazards in seclusion and mechanical restraint. The significant finding of this study is that nurses' actions can expose them to occupational hazards. Nurses' ideas to improving occupational safety during seclusion and mechanical restraint were mostly related to improving the conditions they work in, the training and the importance of following given safety guidelines and practices.

RELEVANCE FOR CLINICAL PRACTICE

Nurses working in psychiatric inpatient care are at risk for occupational hazards during seclusion and mechanical restraint. Nurses need to be aware of the possible occupational risks in seclusion and mechanical restraint practices. Our findings indicate that risks for occupational hazards in seclusion and mechanical restraint do not only stem from patient aggression and violence, but from a broader array of risks. Identifying the risks in practice is the first step in developing safer work practices.

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