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a questionnaire-based survey**

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ARTICLE



Staff responses to interventions aiming to reduce mechanical restraint in adult mental health inpatient settings: a questionnaire-based survey

Martin Locht Pedersen^{a,b} , Frederik Alkier Gildberg^{a,b} , Søren Bie Bogh^c , Søren Birkeland^{a,b,c}  and Ellen Boldrup Tingleff^{a,b} 

^aForensic Mental Health Research Unit Middelfart, Department of Regional Health Research, University of Southern Denmark, Middelfart, Denmark; ^bPsychiatric Department Middelfart, Mental Health Services in the Region of Southern Denmark, Middelfart, Denmark; ^cOPEN, Odense Patient data Explorative Network, Odense University Hospital, /Department of Clinical Research, University of Southern Denmark, Odense, Denmark

ABSTRACT

Purpose: To explore mental health staff's responses towards interventions designed to reduce the use of mechanical restraint (MR) in adult mental health inpatient settings.

Methods: We conducted a cross-sectional, questionnaire-based survey. The questionnaire, made available online *via* REDCap, presented 20 interventions designed to reduce MR use. Participants were asked to rate and rank the interventions based on their viewpoints regarding the relevance and importance of each intervention.

Results: A total of 128 mental health staff members from general and forensic mental health inpatient units across the Mental Health Services in the Region of Southern Denmark completed the questionnaire (response rate = 21.3%). A total of 90.8% of the ratings scored either 'agree' (45.2%) or 'strongly agree' (45.6%) concerning the relevance of the interventions in reducing MR use. Overall and in the divided analysis, interventions labelled as 'building relationship' and 'patient-related knowledge' claimed high scores in the staff's rankings of the interventions' importance concerning implementation. Conversely, interventions like 'carers' and 'standardised assessments' received low scores.

Conclusions: The staff generally considered that the interventions were relevant. Importance rankings were consistent across the divisions chosen, with a range of variance and dispersion being recorded among certain groups.

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Mechanical restraint; mental health staff; physical restraint; psychiatry; restrictive practices



Introduction


Violent and aggressive behaviour in mental health inpatients towards others or themselves may be addressed by various interventions, including the controversial and widely used restrictive practice of mechanical restraint (MR) [1–3]. MR is used as a safety measure and involves the use of equipment such as handcuffs or restraining belts to restrict the patient's movement [4]. However, MR use is controversial as it may potentially cause harm, including trauma and injuries, to patients and staff involved in the procedure [5–7]. Additionally, the use of MR contributes to health inequality, including institutional racism against some ethnic minorities reported to be restrained more than others [8–10]. Thus, reducing MR and other restrictive mental health practices has become an international priority [4,11].

MR use varies across settings and, e.g. a recent review found that MR was more commonly used in Japan than in countries like the US, Australia and New Zealand [12]. Such variations in MR use may also be prominent within countries, such as the UK, where MR is limited to adults in high-secure services [4]. Furthermore, researchers have reported that

mental health staff consider other types of restrictive practices to be more favourable than MR, the use of which receives lower approval ratings [13,14]. In Denmark, a particular political and clinical requirement to reduce the use of MR has been present since 2014, but the desired goal of a 50% reduction in MR in 2020 was not sufficiently achieved; conversely, MR use has increased in recent years [15]. Additionally, the use of MR in Denmark may amount to ill-treatment according to The Council of Europe's Committee for the Prevention of Torture and Inhuman or Degrading Treatment or Punishment [16].

Evidence suggests that a broad range of interventions may serve to reduce the use of MR among inpatients in mental health, encompassing both general and forensic settings. A review by Väkiparta et al. [17] identified that interventions such as case review, staff training and a therapeutic atmosphere in the mental health setting proactively reduced MR. Similarly, a reduction in MR episodes was demonstrated by using physical therapy to manage arousal among Danish patients suffering from mania [18]. Furthermore, a legal change in 2018 – introducing immediate judge's decisions in

CONTACT Martin Locht Pedersen  martin.locht.pedersen@rsyd.dk  Forensic Mental Health Research Unit Middelfart, University of Southern Denmark, Østre Hougvej 70, Middelfart, Denmark; Psychiatric Department Middelfart, Mental Health Services in the Region of Southern Denmark, Middelfart, Denmark

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cases of MR lasting over 30 min – reduced both the incidence and duration of MR in mental health hospitals in Germany [19], mirroring similar findings in Swiss and US forensic inpatient treatment following policy changes [20,21]. Additionally, in an acute forensic mental health unit for women in Australia, researchers tested a protocol designed to prioritise less restrictive interventions for preventing aggression, and MR rates were reduced following its introduction [22]. Useful interventions to reduce the use of MR have been reported to include the predefined programmes ‘Six Core Strategies’ and ‘Safewards’ [23,24]. In a recent comprehensive review of 221 records, Baker et al. [23] identified 150 unique interventions aimed primarily at reducing seclusion and/or restraint (e.g. mechanical, physical or chemical restraint) in adult mental health inpatient settings, spanning acute, forensic and intensive care units. However, despite the above initiatives, the literature on such interventions in mental health remains diverse, often containing multiple components delivered in various ways, and vary in scope and quality. This diversity in interventions poses challenges in identifying the most effective intervention strategies [17,23–25]. Therefore, as suggested by others [23,26], although evidence-based interventions to reduce MR use are likely to include multiple components rather than individual approaches, mental health practice should pay more attention to examining the acceptance of the latter when appropriate to generate the best applicable evidence and understanding of their use, even if they are used in a range of strategies.

Whereas legal guidelines generally consider MR a last resort [27,28], its utilisation is significantly influenced by staff behaviour. For instance, past experiences may shape staff perspectives as to when MR is warranted [29,30]. In a review covering acute, general and secure settings, inconsistencies in the impact of professional experience on restraining decisions were highlighted, with experience both increasing and decreasing the probability of MR [29]. Furthermore, in forensic mental health, staff-patient interactions frequently cause tension [27,31]. Some authors have argued that little difference exists in the characteristics of these interactions across various mental health settings [32] and that conflict and tension is a part of mental health practice in general [33]. However, unique circumstances in forensic services, such as restrictive and prolonged admissions, may affect the use of restrictive practices differently [27]. Staff fear, rooted in awareness of individual patients’ criminal history, may substantially affect forensic care and ward culture, resulting in heightened distrust and a custodial care approach [34–36]. As suggested by Laiho et al. [37], staff’s inclination for control may prompt immediate resort to restrictive practices as the perceived sole solution for managing violent and aggressive behaviour. However, reports from various mental health contexts indicate that staff sometimes resort to MR solely to maintain control, deeming it necessary and justifiable to ensure safety [29,38–40]. Such attitudes may not align with a therapeutic paradigm that prioritises treatment needs and timely intervention [30,41,42]. Therefore, to ensure the most effective implementation of MR reduction programmes, involving mental health staff in the planning and development of interventions aimed at reducing MR use is of paramount importance. This may foster sustainable change in

the organisational culture towards reducing MR use [41,43]. Although several studies have reported on staff’s perceptions of MR use and strategies for a reduction in MR use, knowledge regarding specific interventions and their perceived effectiveness ranking remains unexplored. This knowledge is essential for prioritising interventions to be implemented in mental health practice.

Considering the above, this study aimed to explore mental health staff’s responses towards interventions designed to reduce MR use in adult mental health inpatient settings, particularly if multiple interventions are implemented as sequential components in order of importance as part of a comprehensive programme. The research questions were as follows: (I) How do mental health staff members perceive the relevance of different interventions to reduce MR use? and (II) What is the relationship between staff’s attitudes towards the relevance of interventions and their rankings of their effectiveness? We hypothesise that forensic staff will perceive and prioritise interventions to reduce MR differently than their non-forensic counterparts, e.g. due to the restrictive nature of forensic mental health settings [27,37], placing importance on more conventional variables in practice. Therefore, both general and forensic contexts were considered to elucidate the nuanced factors influencing the use of MR in these settings, ultimately contributing to a more comprehensive understanding of effective intervention strategies in adult mental health inpatient settings. Also, from a clinical perspective, we hypothesise that experiential and educational backgrounds and levels could influence intervention prioritisation.

Methods

Design

For this study, we conducted a cross-sectional, questionnaire-based survey. The method and result descriptions align with the American Association for Public Opinion Research reporting guidelines [44]. This study constitutes the third phase of a larger research project aimed at reducing MR use. The first phase involved a thematic re-analysis of existing interview data regarding perceptions of conflict situations and MR episodes from the perspective of 19 patients [45], 15 carers [46] and 24 staff [47] from adult forensic mental health settings. These qualitative data were analysed to explore patients’, carers’ and staff members’ perceptions on why MR was used and to collect their perspectives on interventions that may serve to reduce its use. To expand this insight with already developed interventions internationally aiming to reduce MR episodes, we conducted a systematic review in the second phase [26]. The review included 41 studies of evaluated evidence-based interventions aiming to reduce MR in adult mental health inpatient settings [26]. By merging the findings from these two prior phases, the interventions employed in this study were developed and used in the present questionnaire.

Setting

The study was conducted in the Mental Health Services in the Region of Southern Denmark; the third largest of the five

Danish Regions with approximately 1.2 million inhabitants. The adult (≥ 20 y) mental health services in the Region of Southern Denmark comprise six publicly funded free-of-charge hospital departments providing care and treatment in emergency, inpatient and outpatient settings. From three of these hospital departments, eight general and six forensic (medium secure) mental health inpatient units ($N=14$) were selected for this study. The general units were, to some extent, diagnosis based and could be either open, closed or integrated units.

National legislation on MR in Denmark

According to Danish legislation, only belts, hand and foot straps, and gloves may be used as means of MR and only to the extent necessary to prevent individuals from (I) harming themselves or others, (II) harassing fellow patients or (III) committing acts of extensive vandalism [48]. A medical doctor decides on MR use after examining the patient. However, in situations in which waiting for a doctor's decision would be unreasonable from a safety point of view, nursing staff may use a belt for fixation. The doctor must then be contacted immediately thereafter to decide on any further MR use.

Participants

We invited 610 mental health staff members from the three hospital departments, including those from the 14 selected units and some staff members who were not associated with a specific unit but employed in one of the three hospital departments. Only medical, nursing and pedagogical professionals were eligible questionnaire respondents, encompassing roles from upper management to frontline staff. The 610 invited were the total number of registered employees who met the inclusion criteria. The professionals were defined as follows: (I) medical staff were medical doctors, (II) nursing staff were nurses or nursing assistants and (III) pedagogical staff were pedagogues or pedagogical assistants. We excluded individuals who failed to meet the eligibility criteria of the study.

Survey procedure

The staff members were invited to participate *via* their electronic work mail system. In addition to providing relevant information about the study and its purpose, the invitation contained a link to a four-part questionnaire survey, which was made available online *via* REDCap. The survey was distributed on 20 April 2023, and reminders were sent to non-respondents on 4 May 2023 and again on 18 May 2023. Access to the survey was closed 14 days after the final reminder had been sent.

Questionnaire

The first part of the questionnaire comprised seven questions related to sociodemographic information, including gender,

age, education, place of employment and levels of experience in mental health, forensic mental health and use of coercion and restrictive practices. The second part of the questionnaire aimed to explore staff perceptions of different types of coercion and restrictive practices, along with when and how they may be used. This second part is not reported in the present study but will be analysed and published separately given its different focus. It was included in the questionnaire with the goal of minimising any potential disruption to health employees. The third part of the questionnaire presented 20 interventions designed to reduce MR use, such as 'de-escalation methods' and interventions focusing on the 'work environment' (improving the staff's work environment) and 'prevention of substance abuse'. Participants were instructed to rate each intervention on a four-point Likert-type scale, indicating the extent to which they agreed that the intervention was relevant for reducing MR (i.e. 'strongly disagree', 'disagree', 'agree' and 'strongly agree'). A concise description accompanied each intervention. An English translation of these descriptions is provided in [Supplementary Table 1](#). All interventions and their descriptions were developed and selected based on insights from re-analysis of existing interview data and the systematic review described above. The fourth part of the questionnaire was guided by the third part. Participants who rated interventions as relevant or very relevant (those answering 'agree' and 'strongly agree') were asked to rank their selected interventions in order of importance, placing the most important to implement at the top and the least important to implement at the bottom of their list.

Legal and ethical considerations

According to Danish legislation, approval from an ethics committee was not required for this questionnaire-based survey, as such approval is required only when the project involves human biological material [49]. The Legal Office and the Chief Medical Officer of the Mental Health Services in the Region of Southern Denmark granted permission to conduct the study. Participants could withdraw from the study at any time. This self-determination and liberty to respond were emphasised in the cover letter of the invitation mail. The cover letter also assured respondents that their answers would remain confidential, including in the reporting of findings. Data were processed and stored in accordance with the European Union General Data Protection Regulation (Journal number: 22/2085).

Analysis

Sociodemographic characteristics and intervention ratings are presented as categorical variables, with numerical values and percentages indicating their distribution. To compare respondents' and non-respondents' sociodemographic variables, the Chi-squared test was employed. Because the respondents selected different interventions and as the number selected for ranking by each respondent varied, we used the average ranks method [50] to explore and assess the importance of

rankings. A statistician guided this approach and helped address the imbalance stemming from each respondent's threshold for categorising interventions as 'important'. When using this method, ranked interventions maintain their assigned ranking values (i.e. if a participant ranks three interventions, they get the rank values 20, 19 and 18), whereas the non-ranked interventions ('disagree' or 'strongly disagree' ratings) were treated as ties. Each tied intervention was then given a score equal to the average of the 'missing' ranks, ensuring a balanced analysis. The statistical analyses were conducted using Stata 18.0 and a p -value ≤ 0.05 was considered statistically significant.

Results

Characteristics of the sample

The sampling and recruitment procedure is depicted in Figure 1. From the total number of 610 invited staff members, 128 mental health staff members participated in the questionnaire-based survey, yielding a response rate of 21.3%. Respondents differed from non-respondents as they were more likely to be male and work in forensic mental health. Most of the respondents had no specialised training in mental health, relying solely on their professional educational background (71.1%). Additionally, a substantial portion (61.7%) rated themselves as being very experienced in the use of coercion and restrictive practices. A large proportion of the respondents (39.8%) had no forensic mental health experience. For more detailed information on the respondents' and the non-respondents' sociodemographic characteristics, please refer to Table 1.

Rating of the interventions' relevance

Table 2 shows the staff relevance rating of each intervention with respect to reducing MR. Overall, a combined total of 90.8% stated 'agree' (45.2%) or 'strongly agree' (45.6%) when asked to assess the relevance of the interventions. This pattern was observed across most interventions, with interventions such as 'patient-related knowledge' and 'staff attitude' receiving the highest agreement ratings. However, notable disagreement about the relevance of the interventions was evident for 'carers' (involving family members or others within the patients' network) (35.2%), 'massive staff presence' (33.6%) and 'standardised

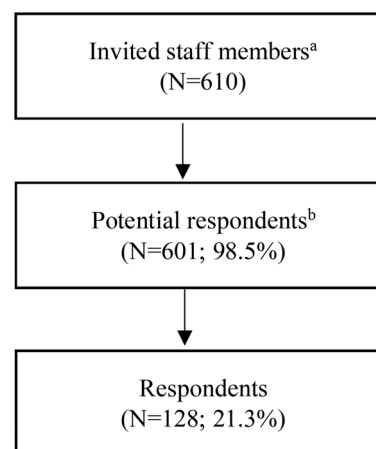


Figure 1. Flowchart of the sampling and recruitment procedure for the questionnaire, including response rate. ^aMedical, nursing and pedagogical staff from three mental health hospital departments in the Region of Southern Denmark. ^bThe professionals were invited via their electronic work mail system, which occasionally malfunctioned.

Table 1. Sociodemographic characteristics of respondents and non-respondents ($N=601$), n (%).

Characteristics		Respondents $n=128$	Non-respondents $n=473$	p -value
Gender	Female	89 (69.5)	376 (79.5)	0.017
	Male	39 (30.5)	97 (20.5)	
Educational background	Medical staff ^a	23 (18.0)	112 (23.7)	0.26
	Nursing staff ^b	95 (74.2)	336 (71.0)	
	Pedagogical staff ^c	10 (7.8)	25 (5.3)	
Workplace	Esbjerg ^d	16 (12.5)	142 (30.0)	<0.001
	Middelfart ^e	73 (57.0)	177 (37.4)	
	Odense ^d	39 (30.5)	154 (32.6)	
Specialised in mental health	No	91 (71.1)		
	Yes	37 (28.9)		
Age	<36 years	23 (18.0)		
	36–50 years	50 (39.1)		
	>50 years	52 (40.6)		
	Unknown	3 (2.3)		
Work experience in mental health settings	<4 years	32 (25.0)		
	5–9 years	33 (25.8)		
	10–19 years	31 (24.2)		
	≥ 20 years	32 (25.0)		
Work experience in forensic mental health settings	0 years	51 (39.8)		
	1–4 years	30 (23.4)		
	5–9 years	23 (18.0)		
	≥ 10 years	24 (18.8)		
Self-rated experience with the use of restrictive practices in mental health settings	Much experienced	79 (61.7)		
	Some experience	38 (29.7)		
	Little or no experience	11 (8.6)		

The p -values are based on the Chi-squared test for the categorical variables. Statistically significant p -values are marked in bold.

^aMedical staff were a medical doctors.

^bNursing staff were nurses or nursing assistants.

^cPedagogical staff were pedagogues or pedagogical assistants.

^dGeneral mental health settings.

^eForensic mental health settings.

Table 2. Rating of interventions concerning relevance in reducing the use of mechanical restraint ($N=128$), n (%).

Intervention	Strongly disagree	Disagree	Agree	Strongly agree
1. Patient-related knowledge	0 (0.0)	1 (0.8)	25 (19.5)	102 (79.7)
2. De-escalation methods	0 (0.0)	1 (0.8)	56 (43.8)	71 (55.5)
3. Knowledge of psychology	0 (0.0)	6 (4.7)	75 (58.6)	47 (36.7)
4. Knowledge of patient-related care	0 (0.0)	9 (7.0)	69 (53.9)	50 (39.1)
5. Staffing level	0 (0.0)	2 (1.6)	38 (29.7)	88 (68.8)
6. Work environment	0 (0.0)	3 (2.3)	49 (38.8)	76 (59.4)
7. Building relationship	0 (0.0)	1 (0.8)	40 (31.3)	87 (68.0)
8. Staff attitude	0 (0.0)	0 (0.0)	37 (28.9)	91 (71.1)
9. Alternative solutions for diversion	0 (0.0)	2 (1.6)	64 (50.0)	62 (48.4)
10. Supportive conversations	0 (0.0)	5 (3.9)	67 (52.3)	56 (43.8)
11. Agreements and rules ^a	1 (0.8)	12 (9.4)	80 (63.0)	34 (26.8)
12. Prevention of medication non-adherence	0 (0.0)	2 (1.6)	67 (52.3)	59 (46.1)
13. Prevention of substance abuse	0 (0.0)	3 (2.3)	62 (48.4)	63 (49.2)
14. Collaboration	0 (0.0)	1 (0.8)	56 (43.8)	71 (55.5)
15. Choice of alternative	1 (0.8)	23 (18.0)	70 (54.7)	34 (26.6)
16. Summoning interdisciplinary team	2 (1.6)	19 (14.8)	76 (59.4)	31 (24.2)
17. Carers	7 (5.5)	38 (29.7)	59 (46.1)	24 (18.8)
18. Massive staff presence	1 (0.8)	42 (32.8)	51 (39.8)	34 (26.6)
19. Standardised assessments	10 (7.8)	42 (32.8)	56 (43.8)	20 (15.6)
20. Availability	0 (0.0)	2 (1.6)	59 (46.1)	67 (52.3)
In total	22 (0.9)	214 (8.4)	1156 (45.2)	1167 (45.6)

The percentages do not always sum to 100% due to rounding accuracy.

^aThe proportion was calculated based on 127 respondents.

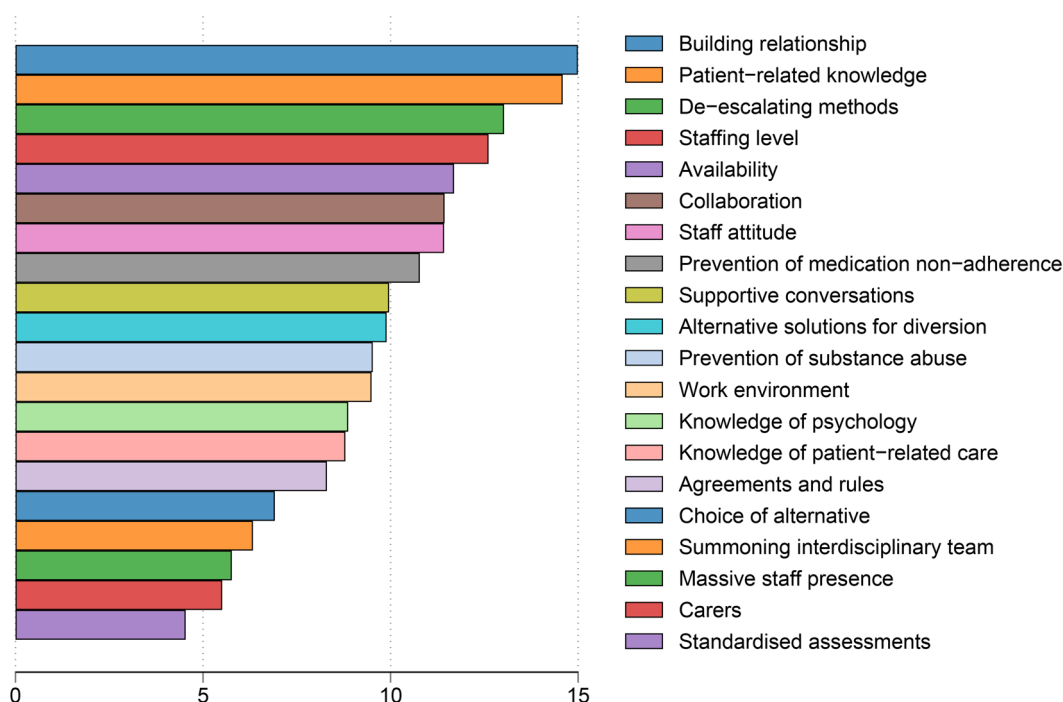


Figure 2. Staff members' ranking of the importance of the interventions ($N=128$). The average ranks method was used to explore and assess the rankings of importance.

assessments' (staff conducting ongoing assessments of patients' behaviour) (40.6%). For these three interventions, the combined percentage of 'disagree' and 'strongly disagree' responses accounted for more than a third of all answers.

Interventions ranked by order of importance

Figure 2 illustrates the staff's importance ranking of the interventions, i.e. their order of priority. Overall, the two interventions labelled 'building relationship' (staff's relational work with patients) and 'patient-related knowledge' (staff's

knowledge about each patient) seemed exceptionally important for mental health staff in reducing MR as they claimed the highest ranks. Conversely, the intervention 'standardised assessments' obtained the lowest rank value. The data revealed a similar pattern in the top and bottom rankings across general and forensic mental health settings (detailed in [Supplementary Figure 1](#)). Furthermore, while minor differences were observed in the order of priority interventions between the two setting types, the forensic population exhibited the widest range of variance and dispersion.

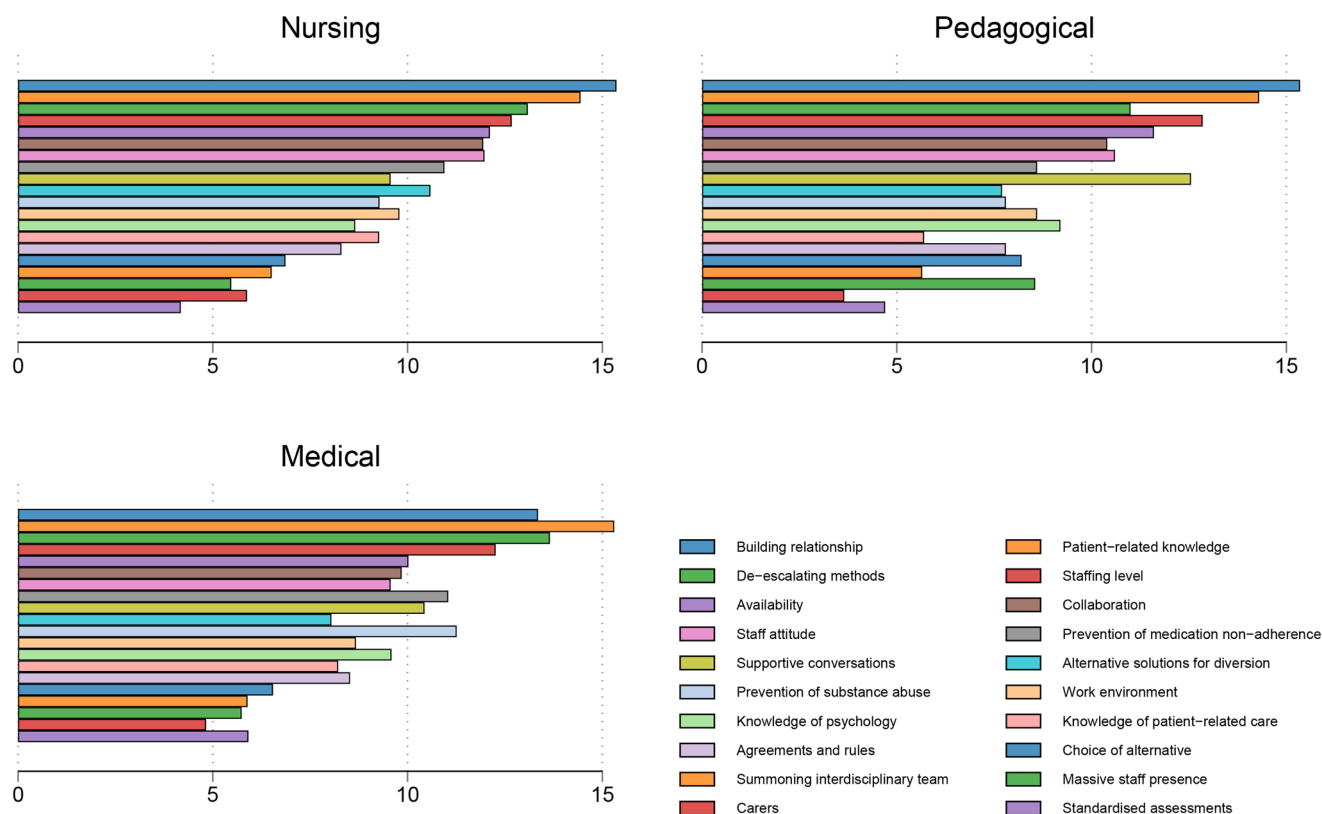


Figure 3. Ranking of interventions by educational background. The average ranks method was used to explore and assess the rankings of importance among the respondents (N=128) presented by the following groups of professionals: medical staff (medical doctors), nursing staff (nurses and nursing assistants) and pedagogical staff (pedagogues and pedagogical assistants).

A comparison of educational backgrounds and levels also exposed differences in the prioritisation of interventions. These differences were evident among medical, nursing and pedagogical staff (Figure 3), and between individuals with specialised training in mental health and those without such training (available in Supplementary Figure 2), when compared to their counterparts. For instance, medical staff assigned substantially greater importance to interventions labelled 'prevention of substance abuse' and 'standardised assessments', whereas nursing staff emphasised interventions as 'alternative solutions for diversion' (strategies to distract the patient, e.g. going for a walk and smoking) and 'carers' more than the other groups. Pedagogical staff notably prioritised interventions like 'supportive conversations' and 'massive staff presence', which diverged from the priorities observed among the medical and nursing staff. Similarly, staff with specialised training in mental health placed substantially greater importance on interventions labelled 'prevention of substance abuse' and 'carers', aligning with the rankings of medical and nursing staff. In contrast, their non-specialised counterparts attached notably more importance to interventions like 'alternative solutions for diversion', aligning with nursing staff priorities. Additionally, they also emphasised, e.g. the 'staffing level' intervention.

In terms of the levels of experience, distinct differences were observed concerning self-rated experience with the use of coercion and restrictive practices in mental health, and the staff's order of intervention priority (Figure 4). These disparities were particularly pronounced for interventions such as

'work environment' and 'carers'. The perceived importance of the 'work environment' intervention showed an increase with higher degrees of reported experience in using coercion and restrictive practices among the staff. Conversely, the intervention labelled 'carers' was attributed substantially more importance by staff who indicated having limited experience in this area, compared to their more experienced counterparts. Upon dividing the data based on years of work experience in both mental health settings and forensic mental health settings specifically (Supplementary Figures 3–4), the most substantial variations and dispersion were observed within the forensic population. Similar to the trends observed for coercion and restrictive practices experience, the prioritisation of the interventions 'work environment' and 'carers' also exhibited differences based on the experience level in the various mental health services. In this regard, it is particularly noteworthy that the importance of the 'carers' intervention decreased after a substantially shorter work experience in forensic mental health than in the broader mental health context.

Discussion

In this survey, we explored Danish mental health staff's attitudes towards 20 interventions designed to reduce MR use. In more than nine out of every ten cases, the respondents rated the interventions as relevant or very relevant in reducing MR. However, three interventions in particular stood out

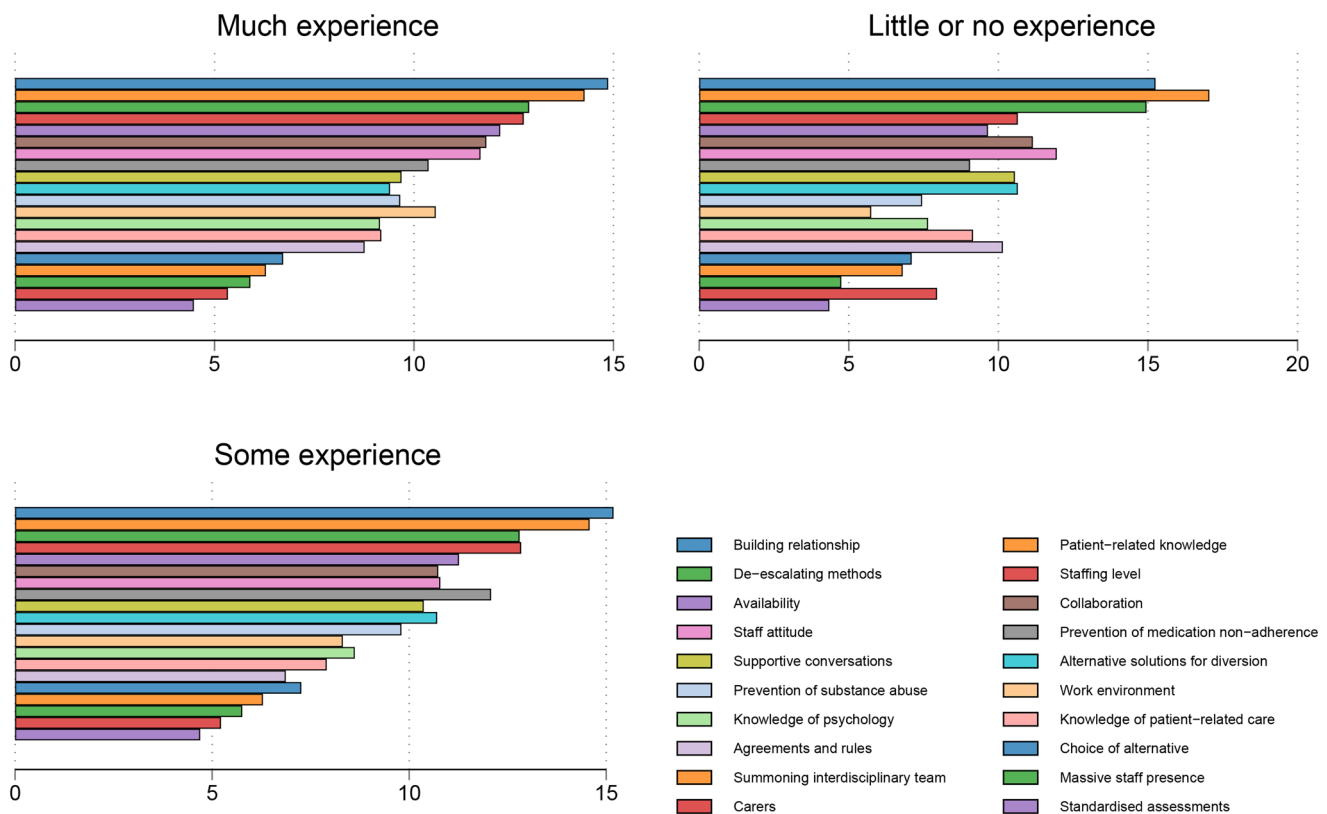


Figure 4. Ranking of interventions by self-rated experience with the use of coercion and restrictive practices in mental health settings. The average ranks method was used to explore and assess the importance rankings of the respondents (N=128).

negatively, with more than a third of the respondents disagreeing or strongly disagreeing with the relevance of these interventions. This suggests that staff may disagree on the relevance of individual interventions within a larger reduction programme. This disagreement could potentially affect the implementation and administration of these interventions, potentially affecting the overall success of the reduction programme if not addressed proactively. As reported by Doedens et al. [41], mental health staff express a need for less intrusive interventions to reduce the use of restrictive practices. However, they still perceive such practices as necessary in mental health settings, especially when they feel unsafe in their everyday practice [41]. Therefore, the staff's confidence and trust that the individual interventions work for the desired purpose are crucial. This study provided essential knowledge and insights about variables and interventions that need to be considered when implementing efforts to shift staff cultures towards using less MR in adult mental health inpatient settings.

This study was designed to rank staff prioritisations of interventions based on their perceived relevance and to determine their order of importance if these interventions were implemented as sequential components within the context of a larger programme. Existing research on reducing MR and other restrictive mental health practices faces a challenge due to the lack of distinction between interventions, both during implementation phase and in the reporting of findings [17,23–25]. The present study endeavoured to address this challenge. Indeed, consistent implementation of interventions seems crucial to discern their individual effects

[23]. Our study findings demonstrated the potentially useful priority positions of various interventions for reducing MR use, thus aligning with directives from international calls in the field [4,11]. From the staff's perspective, the most important interventions to implement were 'building relationship' and 'patient-related knowledge' as staff consistently ranked these interventions higher than other interventions. This pattern was evident across the data, regardless of the division chosen. Enhancing meaningful staff-patient relationships and knowing about each patient and their specific needs are widely acknowledged as critical components of good mental healthcare [38]. Furthermore, with regard to reducing MR use specifically, these results may be expected as they align with central components of initiatives such as Safewards [23,24], which has been widely implemented across mental health settings, including in Denmark [51]. Safewards has been continuously implemented in adult mental health inpatient settings in Southern Denmark's Mental Health Services Region since 2015 [52]. Additionally, in Denmark, the collection of patient-related knowledge as a means to reduce the use of restrictive practices, including that of MR, is a high priority stated in the Mental Health Act's individual-oriented prevention strategies. This process must begin during admission-related conversations [51]. The validity of the above findings is supported by international analyses in the field [17,24,30].

Our findings showed that the intervention 'standardised assessments' was ranked low in terms of importance for reducing MR use. This finding may be considered surprising for several reasons. First, standardised protocols or tools to

assess patient behaviour and the need for aggression-prevention strategies have shown some promise in various studies worldwide [17,22,53,54]. Second, several standardised assessment tools, such as the Brøset Violence Checklist (BVC) and the Short-Term Assessment of Risk and Treatability (START), are recommended and implemented in mental health settings in Denmark to reduce the use of MR and other restrictive practices [51,53,54]. However, despite these potential benefits, our findings seem to reveal resistance to or lack of use of standardised assessments among certain staff members. This may potentially explain the low value assigned to these elements in the present study. Moreover, this resistance may be attributed to factors such as lack of time to perform the assessments or inadequate training in properly using such tools [54]. It is beyond the scope of our study to answer why standardised assessments were ranked low, but it is potentially concerning if staff routinely employ protocols or tools to make decisions without a strong belief in their effectiveness. In contrast, as shown in Figure 3, medical staff members tended to perceive the importance of 'standardised assessments' more favourably than other health-care professionals. This difference in perception may potentially be explained by a stronger tradition within this staff group for adopting similar approaches, e.g. in other aspects of mental health patient treatment [55,56].

Another distinction was noted among staff with different educational backgrounds and levels regarding their opinions on the importance of the 'carers' intervention. Generally, this intervention ranked low in the staff's prioritisation. This lower overall importance ranking contrasts with findings by Tingleff et al. [46], which suggested that carers desire to be informed, included and involved by mental health staff in matters related to MR episodes as they consider that such involvement may potentially reduce MR use. The lack of importance attributed to this intervention in the present study may be explained by the absence of family-oriented practices in certain mental health settings [57,58]. However, as shown by our findings, nursing staff and those with specialised training in mental health exhibited a greater appreciation for involving carers in MR episodes than their counterparts did. The higher importance placed on 'carers' intervention among nursing staff may be attributed to various reasons, with a primary explanation being the growing interest in and use of family-centred care across the nursing disciplines [59]. Thus, it may be more ingrained in their practice to view carers as a means of reducing MR and emphasising the crucial interdisciplinary nature of mental health practice. The higher importance attributed to the involvement of carers by specialised staff may potentially be explained by additional knowledge they may have acquired during their training. Even so, this intervention ranks low in the collected data, and some mental health settings, such as complex and restrictive fields, may present challenges in engaging with family members [46,60]. Additionally, several studies have revealed that family members often lack trust and confidence in staff, highlighting the necessity of specialised competencies to effectively engage and interact with them [61].

Finally, we found that experience level substantially influenced the prioritisation of interventions. For instance,

individuals with prior experience in the use of coercion and restrictive practices exhibited different preferences when prioritizing interventions than did staff with little or no experience with such practices. In a review by Laiho et al. [37], the authors also noted the impact of nurses' previous experiences with seclusion and restraint, a staff group most likely to administer MR, on their decision-making regarding these restrictive practices. Several studies seem to confirm that the management of violence and aggression in mental health settings, along with the subsequent decisions concerning the use of MR or other interventions, are affected by staff experience [29,30,37]. However, evidence suggests that decision-making is not solely reliant on experience. Instead, it constitutes a complex decision-making process influenced by various factors [62]. For example, in a recently published review of nurses' clinical decision-making in the use of rapid tranquillisation [63], the results revealed decision-making as complex timeline beginning with the nurse becoming aware of situational changes and considering alternatives, negotiating voluntary medication with the patient, administering rapid tranquillisation and ending with the experience of being on the other side. Additionally, various factors such as staff resources and divergent attitudes among colleagues regarding managing violent and aggressive behaviour embedded these impact points [63]. Furthermore, as suggested by Riahi et al. [29], hospital leaders should consider environmental factors that may affect MR use to promote a restraint-minimisation approach in mental health practice. Our findings support this conclusion by revealing that the staff's appreciation for the intervention 'work environment' increased with their level of experience. Hence, to optimally reduce MR use in mental health, an approach should be adopted that focuses on improving and understanding the impact of staff experience [29,30]. Essentially, staff's prior experience in mental health contexts or use of coercion and restrictive practices should be viewed not as an obstacle but as a valuable resource in reducing MR use.

In reflecting on staff's generally positive attitudes towards the majority of interventions aimed at reducing MR use, considering the broader implications for future initiatives is crucial. Despite consensus on the relevance of most interventions, the persistent use of MR calls for a deeper exploration into the multifaceted nature of mental health practices in future research. Alignment with international initiatives, such as Safewards, underscores the global recognition of the importance of some of the intervention measures in the present study. However, challenges may lie in understanding the complex interplay of factors contributing to MR use, even when these interventions are deemed relevant. In this regard, the present study sheds light on the nuanced differences in staff's responses to specific interventions and emphasises the need, in comprehensive reduction programmes, to distinguish interventions from one another when assessing effectiveness, as suggested by others [17,23–26]. For instance, identifying interventions that face resistance, such as 'standardised assessments' and 'carers' in the present study, highlights potential areas for targeted improvement and further investigation [26]. Furthermore, the ongoing MR use may also be due to a

lack of staff training and education in conflict strategies and reduction interventions; therefore, many staff members may see the use of restrictive practices in managing violent and aggressive behaviour as a necessary part of mental health practice [38]. Additionally, our findings suggest that interventions can be viewed as interconnected components within larger programmes, and the observed variations in prioritisation across groups in our study underscore the need for tailored strategies that acknowledge the diverse dynamics that may emerge within different mental health settings [1,27,64]. Thus, successful MR reduction programmes may need to be comprehensive and adaptable, considering the intricate relationship between interventions and the unique contexts in which they are implemented. The present study encourages a more nuanced approach to programme design to reduce MR use in adult mental health inpatient settings.

Limitations

Several limitations need to be taken into consideration. First, the survey response rate was relatively low, which is reflected in the sample size. While our response rate and sample size were comparable to or even higher than those of similar studies [39,41,65], some of our findings may potentially have diverged in a larger or differently composed sample of healthcare professionals. Second, related to the previous point, invitations to participate in this questionnaire study were distributed shortly before a main holiday period in Denmark. This timing may potentially have affected the number of respondents. Third, employing a structured online questionnaire survey as the data collection method carries the risk of eliciting only a superficial understanding of a complex topic. Thus, future studies may achieve a more in-depth and comprehensive knowledge of the interventions by adopting qualitative research designs. Fourth, as outlined in the Method section, the present study constitutes the third phase of a larger project and builds on insights from the two preceding phases. Since the initial phase of this larger project is rooted in a forensic mental health context, a possibility exists that relevant knowledge for the present study from other mental health contexts may have been overlooked. This forensic orientation from the inception of the research may potentially have biased the present study conducted across various mental health contexts and skewed findings towards a forensic understanding of the research subject. However, apparent distinctions between general and forensic mental health practices do not seem to be mirrored in staff interactions with patients or in the meaning they ascribe to these situations [32], suggesting that our forensic starting point may not be a critical factor. Fifth, mental health services and their respective demographics may be relatively consistent across Denmark. Hence, we believe that the findings of this study may hold national generalisability. When making international comparisons of the findings, acknowledging that treatment, care and legal cultures vary among countries is of paramount importance [1,64,66]. These differences may influence staff attitudes

towards various other interventions and their perceived importance in reducing MR use. In addition, a disagreement exists between the staff's attitude towards certain interventions and what theory and evidence have emphasised in relation to MR reduction. This is important to note in relation to the generalisability of the findings. Future research may therefore consider adding a preceding teaching programme to ensure that respondents are fully aware of what measures are more important for MR reduction.

Conclusions

This study explored mental health staff's attitudes towards 20 interventions designed to reduce MR use in adult mental health inpatient settings. Based on the responses from 128 staff members, the results indicated that 'building relationship' and 'patient-related knowledge' were consistently ranked highest among the interventions, whereas interventions such as 'involving carers' and using 'standardised assessments' were ranked low. This pattern was consistent across the data. However, notable distinctions emerged among staff with different educational backgrounds and educational levels regarding interventions such as 'carers', with nursing staff and those with specialised mental health training attributing higher importance to this intervention than the remaining respondents. Lastly, experience level substantially influenced the prioritisation of interventions.

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ORCID

Martin Loch Pedersen  <http://orcid.org/0000-0003-3620-3523>
Frederik Alkier Gildberg  <http://orcid.org/0000-0001-9075-6108>
Søren Bie Bogh  <http://orcid.org/0000-0002-6207-0501>
Søren Birkeland  <http://orcid.org/0000-0001-7857-3181>
Ellen Boldrup Tingleff  <http://orcid.org/0000-0001-6464-4911>

Data availability statement

The data that support the findings are not publicly available, but they may be made available upon reasonable request to the authors.

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