

Effects of the violence prevention intervention TERMA in forensic psychiatric inpatient care: protocol for an observational study

Panagiotis Doinakis, Lilas Ali, Anna-Kari Sjödin, Peter Andiné, Eirini Alexiou, Sara Wallström

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Table of Contents

Original Manuscript.....	5
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Preprint
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Abstract

Background: Aggression and violence are prevalent in forensic psychiatric inpatient care. These behaviours significantly impact treatment outcomes, work environments for staff, and strain relationships among patients and caregivers. Managing such behaviours poses a formidable challenge that necessitates innovative approaches and evidence-based interventions.

Objective: The aim of this project is to evaluate the violence prevention method Therapeutic Meeting with Aggression (TERMA) regarding perceived safety by patients and staff and adverse events within forensic psychiatric inpatient care. Additionally, the project will investigate whether the organisational culture affect the implementation of the TERMA method.

Methods: The project includes an observational study with a before and after design. Implementation of TERMA consists of an eight-seminar staff training program. Data sources include questionnaires, medical records, and registries. Quantitative data will be analysed with descriptive and comparative statistics. The project will also include qualitative interview studies.

Results: Participant enrollment began in February 2024 and will continue through 2025. Data collection and analysis are expected to be completed by early 2026, after which the study findings will be submitted for publication in peer-reviewed scientific journals.

Conclusions: Patients and staff at a forensic psychiatry inpatient facility in Western Sweden. Clinical Trial: NCT05932108

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Conclusions: Patients and staff at a forensic psychiatry inpatient facility in Western Sweden.

Trial registration number:
NCT05932108

Key words:

Mental health; Forensic psychiatry; De-escalation; Aggression; Staff training; Inpatient violence.

Introduction

Aggression and violence are common within forensic psychiatric inpatient care, encompassing verbal and physical threats, as well as escalations that may result in physical injuries [1-4]. A meta-analysis found that 17% of patients in psychiatric inpatient care had been involved in at least one incident of interpersonal violence [4] and research indicated that the proportion is even higher, exceeding 20%, in forensic psychiatric inpatient care [5]. Forensic psychiatric studies report a higher prevalence of violent patients compared to acute care settings and general psychiatric hospitals [6]. Several factors could contribute to the escalation of aggressive incidences in forensic psychiatric inpatient care including shortage of staff, insufficient knowledge or practice in management of aggression and changes in patient demographics, prevalence of mental health disorders, treatment approaches and institutional policies [6-9].

In psychiatric (inpatient) care aggression and violence have traditionally been seen as linked to mental illness and other individual patient characteristics. Therefore, response has centred on reactivity and control and staff education has emphasized self-defence and control and restraint techniques [10]. However, over the last two decades focus has shifted toward seeing aggressive patient behaviour as a result of complex interplay of diverse internal, external, and situational factors. Violent behaviour may lead to injury but may also have other consequences, such as diminished therapeutic relationship [11], lower job satisfaction and increased psychological stress [12, 13]. Previous research on staff and patient experience of aggression and violence that resulted in coercive interventions (including seclusion, restraint and medication) show that incidents negatively affect treatment, work environment, job satisfaction and therapeutic relationships between patients and staff [14]. Research also indicates that structured de-escalation methods increase active listening between staff and patients that helped reduce seclusion and coercive methods within the ward [15]. In addition, the use of coercive measures as a response to violent behaviour is problematic for both patients and staff and harmful for the therapeutic alliance [16]. Moreover, patients experience these measures punitively [17].

In order to reduce the use of coercive measures, the recommended response to potential violence and aggression risk in forensic psychiatry is de-escalation of the situation [11]. It involves staff intervention before a situation reaches a point where more restrictive measures become necessary [11]. Several de-escalation methods have been developed and are being used within psychiatric inpatient setting [18]. Examples of methods include Positive Behavioural Support (PBS) [19], M4 ("Managing the team, Managing the environment, Managing the patient, and Managing aggression") [20] the Bergen-model and the subsequent TERMA-model [21]. A common objective among these models is the reduction of coercive interventions but there are some distinct differences between the models [22]. PBS focuses on bolstering staff confidence and modifying perceptions of challenging patient behaviour with the primary objective of establishing a safe and secure environment [19]. It includes comprehensive staff training with a particular emphasis on enhancing communication skills and

employing tools to manage challenging patient behaviour [19, 22]. M4 centres on theoretical elements, including the analysis of organisational patterns of aggression and assigns emphasis on risk management [20]. The Bergen and TERMA-models place a central focus on treatment, communication, and the delivery of patient centred healthcare within the specific context of forensic psychiatric settings. The model is designed to address and mitigate aggression and violence using a system of low-intensity interventions organised according to the patient's aggression level, risk of violence, and history of prior violent acts [21]. At present forensic psychiatric hospitals employ a variety of de-escalation methods, emphasising both proactive and reactive measures to maintain a secure and therapeutic care environment [23]. Communicative and cognitive de-escalation in the form of verbal discussion is one of the most common practices in de-escalation, emphasizing stimulus reduction and attempting to guide patient away from unwanted behaviour [24].

One obstacle to successful implementation of new work practices is that staff resist the change [25, 26]. A certain degree of resistance is common and expected when new practices are introduced [25-27]. Resistance to change refers to the reluctance or opposition displayed by staff when confronted with alterations in their work environment, practices, or procedures [26]. This resistance can manifest in various forms, such as scepticism, reluctance to adopt new practices or active opposition to proposed changes [27, 28]. Several factors contribute to resistance to change including uncertainty and fear of the unknown, comfort with the status quo, lack of involvement in the change process, concerns about competence, previous negative experiences, workload and time constraints and current cultural and organizational factors [29]. A number of factors are important to induce staff receptiveness to change including work atmosphere, effective framework of well-established procedures and methods, visible support for the change from leadership [27], transparent and open communication about the reasons for the change, the expected benefits and how it aligns with broader organizational goals [29] regular updates and opportunities for staff to ask questions or express concerns [27, 30]. This significantly contributes to creating a sense of security and comfort, potentially resulting in a reluctance to embrace change or explore new techniques and work methodologies among experienced staff [28]. Additionally, staff needs the necessary resources, tools and technology to implement and sustain the changes effectively [27].

In Sweden someone, having been found guilty of a crime committed under the influence of a severe mental disorder, can be sentenced to forensic psychiatric care instead of prison. Forensic psychiatric care is compulsory, and the sanction is not determined by time, as stipulated by the Swedish Courts' Forensic Mental Health Act. Recent measurements indicate that the median care duration is 7.5 years but can be even longer [31]. Patients within forensic psychiatric care in Sweden represent a highly heterogeneous group [32]. Most common diagnoses include different forms of psychotic disorders, substance use disorders and personality disorders. Comorbidity is prevalent and two or three concurrent diagnoses is very common [33]. A large proportion of the patient population within forensic psychiatry consists of offenders having committed violent crimes

and as such, they present a distinctive set of challenges related to the management of aggression and violence [32, 34].

Delivering healthcare within the framework of mandatory care poses challenges including amotivation, non-compliance and impediments trust between patients and staff [35]. The indefinite duration of care adds complexity to the task of establishing a secure healthcare environment [31]. Forensic psychiatric inpatient care confronts these challenges and requires adaptation to ensure the effective implementation of treatment and the resulting discharge [36]. Violence and aggression are prevalent in forensic psychiatric inpatient care [4], posing a complex challenge that requires innovative and evidence-based interventions [5, 22]. Current recommendations, advocate for a proactive rather than reactive approach to dominate staff education [37].

There is, however, a lack of evidence regarding the de-escalation methods that are implemented and if staff culture affects the implementation. Therefore, the aim of this project is to evaluate the violence prevention method Therapeutic Meeting with Aggression (TERMA) regarding adverse events and perceived safety by patients and staff within forensic psychiatric inpatient care. Additionally, the project will investigate whether the organisational culture affect the implementation of the TERMA method.

Methods

The design of this study is observational with a before and after design. The protocol complies with the Standard Protocol Items: Recommendations for Interventional Trials (SPIRIT) [38, 39] and the results will be reported according to established recommendations.

Participants and setting

Participants meeting the study's inclusion criteria will be recruited from Sahlgrenska University Hospital in Gothenburg. The forensic psychiatric clinic consists of a total of 96 patient rooms, of which 12 are allocated to the high security ward and 84 dedicated to rehabilitation wards. The layout includes shared spaces such as a common room, a communal dining area, and a kitchen. Due to shortage of healthcare rooms, some patients share rooms. In total, staff, comprising of nurses, assistant nurses, psychiatrists and other various professional occupations, amount to approximately 290 people. These various professional categories collaborate within health teams to formulate comprehensive healthcare plans and treatment strategies. The study encompasses both patients and staff within the forensic psychiatry setting.

Inclusion criteria (Patients)

- Men and women ≥ 18 years of age committed to rehabilitation units.
- Placed under the jurisdiction of The Mental Care Act. (1991:1129) on Forensic Psychiatric Care (LRV).

- Understand (speak and read) Swedish.
- Assessed by the treating physician as mentally able to understand and consent to the study.
- Willing to participate and sign a consent form.

Exclusion criteria (Patients)

- Minors (≤ 17 years).
- Treated under different legislation than the jurisdiction of The Mental Care Act. (1991:1129) on Forensic Psychiatric Care (LRV).
- Cannot understand and speak Swedish. Thus, unable to understand the material of the study.
- Not assessed by the treating physician as or assessed and deemed mentally unable to participate in research.
- Unwilling to participate.

Inclusion criteria (Staff)

- Men and women ≥ 18 years of age working within forensic psychiatric inpatient care.
- Understand (speak and read) Swedish.
- Willing to participate and sign a consent form.

Exclusion criteria (Staff)

- Are not directly involved in patient care within forensic psychiatric inpatient facilities.
- Cannot understand and speak Swedish. Thus, unable to understand the material of the study.
- Unwilling to participate.

Enrolment

All patients in the included wards will be assessed for eligibility by a member of the research team together with ward staff and responsible physician. Eligible patients will be given information about the study and asked to participate. Patients will be informed, both orally and in writing, that their participation in the study is voluntary. They will also be assured that they can withdraw their consent at any time, and their decision to participate or not will not affect their care. Patients who indicate their willingness to participate will be issued a consent form. Alongside the return of the completed consent form by the patient, the patient will be provided with the E13 questionnaire, complete with a randomly assigned identification number to ensure confidentiality throughout the research process.

All staff will be assessed for eligibility by a member of the research team. Eligible staff will receive detailed information about the study and be invited to participate. Information will be provided both orally and in writing. Staff who

express their willingness to participate will be provided with a consent form. Alongside the return of the completed consent form the staff will be provided with two questionnaires (the E13 and the OVQ), complete with a randomly assigned identification number to ensure confidentiality throughout the research process.

Design and implementation of TERMA

The TERMA-model originates from Norway and has been used within both in- and outpatient psychiatric care [12]. When it was first introduced in Sweden it was given the name the Bergen model after the city it was developed in. At this time, it was to align with the model after Swedish healthcare laws. The Bergen model offers a specialized framework for managing aggression and violence within both in- and outpatient forensic psychiatric care [21, 40]. After the evaluation of the Bergen-model further modifications were made and the original name from Norway, TERMA, was adopted.

The core objective of TERMA is to proactively prevent aggression and violence by employing a tiered system of low-intensity interventions, which are stratified based on the patient's aggression level, risk of violence, and history of violent acts [21].

The TERMA- method is rooted in the principles of compassionate healthcare and emphasises treatment, communication, and effective management [21, 40].

The foundation of TERMA acknowledges the inherent capabilities of all individuals, each possessing a unique self-awareness, distinct life experiences, expectations, needs, preferences, and available resources such as talents, interests, and education [21]. Within TERMA, a central element involves a collaborative partnership between healthcare professionals and patients. They work together to formulate a personalised treatment plan, drawing upon the patient's individual illness history and collectively identifying potential obstacles to effective care [21].

The TERMA model is structured in a "cascading" order, wherein the response to violence or aggression escalates if the interventions at one level prove ineffective [21].

These levels are designed to correspond with specific situational demands and environmental factors, optimising their relevance and applicability

Primary Level: This level centres on the patient's daily behaviour and overall health status. It involves proactive measures aimed at understanding the patient's emotional state, stress, and anxiety management. Building trust and establishing balanced roles are key components at this stage.

Secondary Level: At this stage, the focus shifts to risk assessment and violence management. The aim is to cultivate mutual understanding between the patient and healthcare workers regarding the situation. The emphasis is in finding common ground and agreeing on acceptable solutions while preparing for further escalation if necessary.

Tertiary Level: When violence becomes inevitable, the tertiary level is activated. Here, the primary goal is to create a calm and secure environment for the patient, other patients, and staff. Clear leadership and low-intensity approaches

are vital for diffusing tension, and physical restraint, if required, is executed with precision. Following the resolution of the situation, a situational analysis is offered to the patient to enhance understanding and prevent future incidents.

The implementation of TERMA is conducted through a staff training program consisting of eight seminars [21, 22]. The seminars are divided into four theoretical sessions and four practical training sessions [21, 22]. The staff members first receive theoretical knowledge, followed by hands-on practice in restraint and self-defence techniques [21, 22]. This mixed format facilitates a holistic understanding of TERMA and equips staff with the skills necessary for implementation [21, 22]. The intervention, TERMA, will be uniformly implemented across all wards of forensic psychiatry at Sahlgrenska University Hospital.

Quantitative sources and collection of data

Data will be collected from questionnaires, medical records, and administrative registers. Questionnaire data will be obtained from both patients and staff at baseline, 6- and 12-month follow-up. To assess perceived safety, data will be gathered from both patients and staff members employing the E13 questionnaire [21]. The E13 questionnaire assesses self-reported safety, feelings of security, incidents of violence and coercion, measures of reaction and aggression, and underlying causes of aggression within the hospital wards. Respondents will be presented with 13 statements, and their level of agreement will be rated on a four-point Likert scale with a fifth option "do not know" also available, ranging from (1) "completely disagree" to (4) "completely agree" [21]. The questionnaire gives value "1" to statement options three and four on all items except for the three negative items (item 4, 8 and 12) where the value "1" was given to the statement options one or two [21]. All other options were given the value '0'. Thus the sum score range for each questionnaire of 0–13 [21].

The questionnaire "Instrument Organization Values Questionnaire" (OVQ) will be used to investigate the organisational culture in the wards. The survey will only be distributed to staff [27]. The OVQ is based on the concepts of the competing value framework (CVF), which measures the four dimensions within each business: collaboration, creation, competition, and control [27, 28]. These values compete in a very real sense for a business's limited resources (funding, time, and people). It contained 52 questions that can be answered on a ten-point Likert scale from "disagree" to "strongly agree" [26]. Data regarding incidents of threats and violence, patient and occupational injuries, and the application of coercive measures will be extracted from medical records and the local clinical registry known as MedControl PRO. These data points will be collected in three distinct phases: prior to the introduction of TERMA, at the six-month juncture following implementation, and upon the culmination of a twelve-month period. For staff members, supplementary descriptive data will be collected through a dedicated questionnaire, while analogous information pertaining to patients will be retrieved from their medical records.

Outcomes

The primary outcome will be change in perceived safety reported by both patients and staff, as measured by the E13 scale total score (0-13), between baseline and 6- and 12-months follow-up assessments. Secondary outcomes include changes in organisational culture, as measured by the OVQ and its subscales between baseline and 6- and 12-month follow-up assessments. Correlation between E13 and OVQ scores at baseline, 6-month follow-up and 12-month follow-up will be analysed. Number and severity of aggression incidents, frequency of coercive measures, from 1 year before baseline to 1 year after conclusion of the study.

Statistical analysis

Descriptive statistics and comparative statistics will be used in the analysis. All data will be analysed at a group level and reported using means and standard deviations. To analyse changes between the measurements, the plan is to use dependent sample t-tests (if data is normally distributed) or Wilcoxon-Signed Rank (if data is not normally distributed). Regression models will be used to explore the relationship between organisational culture and outcome of the implementation of TERMA. P-values will be considered statistically significant if they are $<.05$.

Qualitative data collection and analysis

This project will also include qualitative design using semi-structured individual interviews with both patients and staff members. Approximately 15-25 interviews are estimated to be suitable for answering the research questions in each study. Data collected from the interview will be analysed using appropriate qualitative method based on depth collected data and research questions [41]. Incorporating a qualitative design will facilitate greater understanding of patients' perceptions of threatening and violent incidents, their experiences with coercive measures, and the utilization of TERMA within a forensic psychiatric inpatient environment. Additionally, provide valuable insight into staff perspectives regarding their approach to working with TERMA, their reactions to instances of threat and violence, and the resulting impact of these dynamics on the overall work environment within a forensic psychiatric inpatient setting.

Patient and public involvement

In the current research project, patient representatives are actively involved in various stages of the study. They patient representatives have been consulted about data collection and outcome measures and methods have been made to engage them in interpretation of the data, as well as in the dissemination of the findings.

Ethics and dissemination

The study has been approved by the Swedish Ethical Review Authority

(Reference number 2023-02451-01). All steps of the project have been designed to adhere to the principles outlined in the Declaration of Helsinki [42]. Written and verbal informed consent will be obtained from all participants, with clear information provided about their right to withdraw from the study at any time. The vulnerable nature of patients in forensic psychiatric care has been taken into consideration during the planning of the project and special consideration will be taken when asking patients to participate in the project. They will also be reassured that participating in this research study will have no impact on their usual care. Permission obtained from the treating physician at each ward will be included in the project. The methods used will be carefully considered to align with the study's purpose and the principles of confidentiality and integrity will be strictly maintained throughout the process. The collected data will be stored in a secure database maintained by the department and the University. This database is anonymized, and all analyses will be conducted on de-identified data, minimizing the risk of breaching confidentiality. The collected data is treated with confidentiality and presented in a manner that participants cannot be identified.

Results

Recruitment of participants began in July 2023 and is scheduled to conclude by the end of 2024. Collection of data from patient and staff questionnaires will be completed 13 months thereafter. Data from administrative registries will be collected retrospectively for the entire time period. Collection of data for the qualitative studies is planned for second half of 2025 and 2026. Results from this project will be published in peer-reviewed scientific journals and presented at international conferences.

Discussion

This study protocol outlines an observational study aimed at evaluating the implementation of the de-escalation method TERMA within forensic psychiatry. Despite numerous de-escalation methodologies, here remains a significant gap in research regarding their effectiveness in forensic psychiatric care [18, 21, 22]. While the TERMA de-escalation model demonstrates promise, it currently lacks a robust body of research to support its application and assess its impact on perceived safety within forensic psychiatric inpatient wards. Previous evaluations of a version of TERMA have shown positive influence on ward climate in psychiatric inpatient units [21]. The TERMA model prioritizes treatment, effective communication, and compassionate healthcare within forensic psychiatric settings, while also emphasizing improved communication and individualized action plans.

Various factors contribute to the current state of aggression within forensic psychiatry, with a prominent factor being the shortage of staff in forensic psychiatry [9, 22]. In addition to assessing the intervention's effectiveness, this project aims to identify if organizational culture may be a factor affecting the success of the implementation. Conducting research to comprehend this phenomenon and address the existing knowledge gap is crucial for multiple reasons, including ensuring patient care and safety, fostering a secure work

environment for staff, enhancing education and practice, and holding relevance for the community [19, 40, 43]. Complex interventions, as described in this protocol, often involve multiple interacting components, making standardized methods and procedures less applicable [44]. This study combines questionnaires, data from medical records, and registries in the forensic psychiatric inpatient care setting, supplemented by qualitative data sources. A strength of the study is the use of validated questionnaires when assessing the effect of the implementation [44]. Data from these sources provides comprehensive insights into the impact of TERMA on perceived safety. The shortage in research regarding de-escalation methods and their implementation in forensic psychiatry underscores the significance for this study. Additionally, it will offer valuable information regarding the challenges and potential solutions when implementing a new de-escalation method within forensic psychiatry.

Abbreviations

TERMA

Therapeutic Meeting with aggression

M4

Managing the team, Managing the environment,
Managing the patient, and Managing aggression

LRV

Swedish forensic psychiatric care act

E13

Questionnaire 13

OVQ

Instrument Organization Values Questionnaire

Author contribution

All authors were involved in design of the project. SW is PI for the project. PD and SW drafted the manuscript with substantial contribution and critical revisions from all other authors. All authors reviewed and approved the final manuscript.

Conflicts of Interest

None declared.

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