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Original research article

MANAGEMENT OF NURSING CARE FOR AGGRESSIVE PATIENTS IN INTENSIVE CARE

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Abstract

Introduction: Aggressive behaviour in intensive and acute care threatens healthcare professionals' safety, well-being, and quality of care.

Aim: The primary aim of this study was to explore healthcare professionals' preparedness to manage aggressive behaviour in intensive and acute care settings. Secondary aims included examining the reported use of preventive measures, such as the Brøset Violence Checklist (BVC), training in aggression management, de-escalation techniques, and protective equipment.

Methods: A convergent mixed-methods observational study was conducted in 2024–2025. The quantitative component consisted of a non-standardised questionnaire completed by 118 respondents. The qualitative component comprised an exploratory series of semi-structured interviews with five informants.

Results: No significant quantitative associations were found between BVC use, training, protective equipment, or de-escalation, and lower aggression incidence. Qualitative findings indicated context-dependent effectiveness influenced by experience, training relevance, organisational factors, and institutional support; de-escalation was preferred but situation-dependent.

Conclusion: Aggression management in intensive and acute care cannot rely on isolated tools; effective prevention requires a system-level approach combining context-sensitive training, appropriate predictive tool use, organisational support, and structured post-incident debriefing.

Keywords: *Aggression; Aggressive behaviour; De-escalation; Healthcare professionals; Management; Patient*

INTRODUCTION

Aggression in healthcare settings, including verbal abuse, threats, and physical assaults, is an ongoing problem in hospital care and most often affects healthcare professionals in high-acuity settings. Evidence from emergency departments (ED) and intensive care units (ICU) shows that aggression remains common and can threaten staff safety and disrupt the delivery of care (Benning et al., 2024; Berger et al., 2024).

In the intensive care units, aggressive behaviour often occurs alongside agitation, pain, delirium, hypoxia, metabolic derangements, intoxication, or neurological impairment. These conditions can reduce patients' ability to communicate and control their behaviour and increase the likelihood of escalation during essential nursing and life-saving procedures. Therapeutic options and guideline-based approaches in intensive care therefore support structured assessment and management of agitation and related symptoms to

reduce preventable escalation and harm (Aubanel et al., 2020; Seo et al., 2022). However, escalation is not driven only by clinical factors and can also be shaped by system and communication conditions in everyday practice (Eshah et al., 2024).

Several system and communication factors can increase the risk of aggression in everyday hospital practice. Eshah et al. (2024) describe common triggers such as long waiting times, understaffing, overcrowding, miscommunication, high expectations from patients and relatives, and inadequate security measures. These factors show that prevention must address both clinical and organisational conditions.

Managing aggression in hospital settings needs more than one measure. It usually combines clinical stabilisation, therapeutic communication, environmental and security steps, and learning after incidents. Clinical management includes non-pharmacological approaches and, when needed, medication based on the cause and severity of symptoms. Bak et al. (2019) emphasise that careful indication and monitoring are essential, and that benefits should be weighed against possible adverse effects.

When preventive strategies and clinical stabilisation are not enough and there is an immediate risk of harm, restrictive measures may be used. However, restraints involve clinical, ethical, and legal risks. Acevedo-Nuevo et al. (2021) highlight that restraints in intensive care should be used only with a clear indication, thorough documentation, and close monitoring.

At the organisational level, prevention works better when incidents are regularly reported, reviewed, and used for learning and improvement. Gqaleni et al. (2024) suggest that structured incident reporting and learning guidance in specialised units may increase institutional awareness and support more targeted prevention strategies. Eshah et al. (2024) also note that incidents are often not reported because staff may perceive reporting as complex or ineffective, or may worry that managers will not support them. Strengthening prevention therefore also depends on visible administrative support, staff education, and security improvements, so that reporting leads to real follow-up actions and staff feel protected.

In the Czech Republic, violence against healthcare workers is a well-documented but underreported issue. Pekara et al. (2017) highlight that normalisation of such incidents and a lack of institutional support contribute to the low visibility of workplace violence. Suggested measures include structured education, de-escalation techniques, protective equipment, and validated risk assessment tools such as the Brøset Violence Checklist (BVC). Nevertheless, the use of these measures in Czech healthcare settings is often uneven and inconsistent.

The present study examines the management of nursing care for aggressive patients in intensive care, with a focus on healthcare professionals' preparedness to respond to aggressive behaviour. It further explores the reported use and perceived effectiveness of preventive measures in routine practice, including structured risk assessment tools, training in aggression management, protective measures for staff, and the implementation of de-escalation techniques in intensive care settings.

MATERIALS AND METHODS

Study design

This study was designed as an observational mixed-methods study with a convergent design. A convergent mixed-methods study was conducted between January 2024 and May 2025 in selected hospitals within the Liberec and South Bohemian regions. Quantitative and qualitative data were collected concurrently, analysed separately, and subsequently integrated to provide a comprehensive overview of aggression management practices in intensive care units (ICU), anaesthesiology and resuscitation departments, and emergency departments (ED).

The study did not involve the implementation of a new intervention protocol. The examined practices reflected existing institutional measures routinely applied in participating departments. These included the use of predictive tools such as the Brøset Violence Checklist (BVC), the application of de-escalation techniques, prior participation in training related to aggression management, and the availability of protective measures. Participants self-reported their exposure to these

practices, and analyses were based on comparisons between participants reporting use or non-use of specific measures. No formal intervention or control groups were defined.

Quantitative sample

The quantitative component of the study comprised 118 healthcare professionals (HCPs) who completed an online questionnaire. Participation was voluntary and anonymous. Respondents included registered nurses, paramedics, and other medical healthcare professionals working in acute and intensive care settings.

The study did not involve any experimental intervention or control groups. Instead, analyses were based on participants' self-reported exposure to existing institutional measures, including comparisons between participants with and without prior training in aggression management, and between participants reporting use or non-use of the Brøset Violence Checklist (BVC) in clinical practice.

Of the total sample, 61 respondents (51.7%) were registered nurses, 45 (38.1%) were paramedics, 6 (5.1%) were practical nurses, 1 respondent (0.8%) was a registered nurse with specialisation in intensive care, and 5 respondents (4.2%) reported other professional roles. The largest proportion of respondents worked in emergency departments (n = 55; 46.6%). Other respondents were employed in surgical intensive care units (n = 26; 22.0%), anaesthesiology and resuscitation departments (n = 18; 15.3%), internal medicine intensive care units (n = 7; 5.9%), psychiatric care settings (n = 3; 2.5%), and neurointensive care units (n = 2; 1.7%). The remaining respondents (5.9%) represented single cases from various departments and were categorised as working at "other workplaces" for analytical purposes.

Regarding professional experience, 83 respondents (70.3%) reported a length of practice of up to 15 years, while 35 respondents (29.7%) had more than 15 years of professional experience. In terms of educational background, 33 respondents (28.0%) held a bachelor's degree in paramedicine, 23 (19.5%) had completed specialised training in intensive care (ARIP), 12 respondents (10.2%) had secondary healthcare education, and 12 (10.2%) reported completion of a higher vocational programme, such as a diploma in general nursing (DiS.) or a bachelor's degree in general nursing. Lower frequencies were observed for other educational levels, including higher vocational education in paramedicine (DiS.) (n = 8; 6.8%), a master's degree in nursing (n = 5; 4.2%), and doctoral studies in nursing (n = 1; 0.8%). Ten respondents (8.5%) reported other types of education outside standard nursing or healthcare pathways.

Women constituted the majority of the sample (n = 90; 76.3%), while men accounted for 28 respondents (23.7%). The most represented age group was 20–29 years (n = 52; 44.1%), followed by 30–39 years (n = 27; 22.9%), 40–49 years (n = 26; 22.0%), and 50–59 years (n = 13; 11.0%). Most respondents worked in a multi-shift operation (n = 96; 81.4%), whereas 22 respondents (18.6%) reported working in a single-shift schedule.

Qualitative subsample

The qualitative component included five informants who were purposively selected from the quantitative sample based on their relevant and diverse experiences with aggressive patient behaviour. Selection aimed to ensure variation in clinical setting and professional background. It included healthcare professionals working in an anaesthesiology and resuscitation department, a surgical intensive care unit, and an emergency department. Informants comprised two registered nurses and three paramedics with professional experience ranging from 2 to 11 years. Semi-structured interviews were conducted and typically lasted 15–20 minutes. The interviews explored HCPs' subjective perceptions of aggression management, contextual barriers and facilitators, and experiential insights relevant to institutional practice, including de-escalation strategies, use of the Brøset Violence Checklist (BVC), preventive measures, and attitudes towards restrictive interventions.

Qualitative data were analysed using an inductive open coding approach. Interview transcripts were read repeatedly to ensure familiarisation with the data, and initial codes were generated line-by-line to capture meaningful units related to experiences with aggressive patient behaviour and its management in intensive and acute care settings. Approximately 30–40 initial codes were identified across the dataset. These codes were subsequently

compared, refined, and grouped based on conceptual similarity, resulting in two subcategories and three overarching categories capturing experiential, predictive, and preventive aspects of aggression management.

The analytical process was iterative and involved constant comparison across interviews to identify recurring patterns and differences in informants' accounts. Analytical rigour was supported through reflexive memo writing and by maintaining a transparent audit trail documenting key analytical decisions. Credibility was further enhanced through the use of direct quotations to preserve the authenticity of informants' perspectives.

The qualitative component was exploratory in nature. Data collection was guided by the aim of capturing diverse professional experiences across selected clinical settings. Although no substantially new themes emerged in the later stage of analysis, thematic saturation could not be reliably established given the small number of informants.

Criteria for inclusion in the study:
- Current employment as a healthcare professional (nurse, paramedic) in an intensive care environment (intensive care units, anaesthesiology and resuscitation departments, and emergency departments).
- At least 12 months of clinical experience in intensive care.
- Voluntary participation with signed informed consent.
- Willingness to reflect on personal experiences with aggressive patients.

Criteria for exclusion from the study:
- Administrative or non-clinical roles.
- Healthcare professionals currently on leave or not involved in patient care.
- Less than one year of experience in an intensive care setting.
- Incomplete or invalid responses to questionnaires.

Sampling and participant selection

Purposive sampling was used to recruit healthcare professionals regularly exposed to aggressive patient behaviour across intensive care units, anaesthesiology and resuscitation departments, and emergency departments. Selection focused on medical healthcare professionals with direct clinical experience in managing aggressive patients in acute and intensive care settings.

For the qualitative component, stratified purposive sampling was applied to ensure diversity in professional roles, length of clinical experience, and organisational context. This approach supported the collection of rich, experience-based narratives relevant to aggression management practices.

Data collection

Data were collected between January 2024 and May 2025. Quantitative data were obtained using a custom-designed, non-standardised online questionnaire. The questionnaire consisted of 42 items covering seven domains: demographic characteristics, previous exposure to patient aggression, use of preventive and safety measures, application of the Brøset Violence Checklist (BVC), use of de-escalation techniques, training history related to aggression management, and perceptions of institutional support and personal safety.

Qualitative data were collected through in-person semi-structured interviews. Five informants were purposively selected from the quantitative sample to ensure representation across emergency departments, intensive care units, and anaesthesiology and resuscitation departments. The interviews focused on personal experiences with aggressive patient behaviour, strategies used to manage aggression, perceived effectiveness and limitations of de-escalation techniques, emotional and professional impact of aggressive incidents, and suggestions for system-level improvements in safety and support.

Statistical analysis

Quantitative data were analysed using IBM SPSS Statistics version 27. Descriptive statistics were used to summarise sample characteristics and response distributions. Data normality was assessed using the Shapiro–Wilk test.

The choice of parametric or non-parametric statistical tests was guided by the distribution of the data and the level of measurement of the analysed variables. For normally distributed continuous variables measured on an interval scale, parametric tests were applied. When assumptions of normality were not met

or when ordinal data were analysed, non-parametric tests were used.

Accordingly, group comparisons were conducted using chi-square tests for categorical variables, and Mann–Whitney *U* or Kruskal–Wallis tests for non-parametric continuous variables. Correlations were explored using Spearman's rank correlation coefficient. Statistical significance was set at $p < 0.05$. The quantitative analyses were exploratory in nature and aimed to describe patterns and associations rather than to test causal relationships.

Qualitative analysis: Qualitative data were analysed using inductive open coding and thematic analysis. Codes were generated line-by-line, compared across interviews, and iteratively grouped into subcategories and overarching categories. The qualitative findings were subsequently used to contextualise and explain patterns observed in the quantitative results.

Ethical aspects

The study was conducted in accordance with the ethical principles outlined in the Declaration of Helsinki, as revised in 2013. All data were anonymised and processed in line with applicable national and European data protection laws. Participant identity and personal information were safeguarded throughout the study. Ethical approval was granted by the hospital administration. All participants provided informed consent, and ethical standards were upheld throughout, including maintaining anonymity, voluntary participation, and compliance with data protection regulations.

RESULTS

Sample characteristics

A total of 118 healthcare professionals (HCPs) participated in the quantitative component of the study. Of these, 90 participants were women (76.3%) and 28 were men (23.7%). The sample was characterised by a marked predominance of younger respondents, with the 20–29 age group accounting for 44.1% of participants. Participants represented medical healthcare professionals working in acute and intensive care settings, including intensive care units, anaesthesiology and resuscitation departments, and emergency departments across selected hospitals in the Liberec and South Bohemian regions.

Overview of qualitative analysis: Qualitative analysis using open coding resulted in approximately 30–40 initial codes reflecting informants' experiences with aggressive patient behaviour in intensive and acute care settings. These codes were subsequently grouped into two subcategories and three overarching categories, capturing experiential, predictive, and preventive aspects of aggression management. Qualitative findings are presented alongside quantitative results to illustrate and contextualise the observed patterns.

Experiences with aggressive patients: Quantitative data indicated frequent exposure of HCPs to aggressive patient behaviour in acute and intensive care settings. Physical assaults, verbal aggression, and threats were reported across all clinical environments included in the study.

Qualitative findings further illustrated the nature and impact of these experiences. Informants described aggressive incidents as often unpredictable and emotionally distressing, and frequently associated with altered mental states such as intoxication, delirium, postoperative confusion, or psychiatric comorbidity. One informant described a particularly severe incident: "The patient attacked me with scissors and nearly stabbed me in the neck." Such experiences were reported to influence professional behaviour, leading to increased vigilance, heightened situational awareness, and a stronger focus on personal safety during patient interactions.

Use of de-escalation techniques: Quantitative analysis did not identify a statistically significant association between self-reported use of de-escalation techniques and the occurrence or frequency of physical assaults in the past 12 months. Similarly, no significant relationship was found between the use of de-escalation techniques and the combined occurrence of violent behaviour.

In terms of perceived effectiveness, 19% of respondents rated de-escalation techniques as unequivocally effective, 74% perceived them as effective only in specific situations, and 7% reported limited effectiveness. None of the respondents described these techniques as completely ineffective. Regarding frequency of successful de-escalation, 11% reported being successful almost always, 62% often but

not consistently, 25% occasionally, and 3% almost never.

Qualitative interviews helped explain this variability. Informants consistently described de-escalation as the preferred first-line strategy when patient cooperation and cognitive capacity allowed. However, de-escalation was frequently perceived as ineffective in cases involving delirium, severe confusion, or intoxication. As one informant noted: "Verbal de-escalation did not help at all; the patient was completely unresponsive to us."

Use of the Brøset Violence Checklist (BVC): Quantitative comparison of respondents who reported using the Brøset Violence Checklist (BVC) with those who did not revealed no statistically significant difference in the frequency of physical assaults experienced in the past 12 months (χ^2 test, $p > 0.05$). No significant difference was observed in the self-reported success of de-escalation interventions (Mann–Whitney U test, $p > 0.05$).

Regarding perceived usefulness, 30% of respondents rated the BVC as very useful and 20% rated it as somewhat useful. In contrast, 45% considered the tool minimally useful or ineffective, and 5% were unable to assess its usefulness.

Qualitative findings reflected this variability. While some informants valued the BVC as a structured approach to risk assessment, others reported relying more heavily on clinical experience and situational judgement in dynamic clinical contexts. One informant stated: "It is a useful tool because it is no longer just a matter of gut feeling; we have objective grounds to rely on."

Training, prevention, and safety measures: Quantitative analysis found no statistically significant differences in subjective perception of safety between respondents who had completed aggression management training and those who had not (Mann–Whitney U test, $p > 0.05$), nor between respondents with and without access to protective equipment ($p > 0.05$). However, subgroup analysis indicated that respondents who had completed a self-defence course reported a significantly higher sense of safety when protective equipment was available (Mann–Whitney U test, $p = 0.032$).

Qualitative interviews highlighted that the perceived effectiveness of training varied substantially depending on its practical relevance. Informants frequently reported that theoretical training alone was insufficient, whereas practical components, peer discussion, and experiential learning were perceived as more beneficial. Safety was often described as being influenced more by experience, team support, and the ability to remain calm under pressure than by any single protocol or piece of equipment.

Attitudes towards physical restraints: Attitudes towards physical restraints were described as ambivalent. While informants acknowledged the ethical and psychological burden associated with their use, most considered restraints a necessary last-resort measure in situations where other strategies proved ineffective. The application of restraints was framed primarily as a protective intervention aimed at preventing harm to both staff and patients, rather than as a punitive response.

DISCUSSION

The present study examined the management of aggressive patient behaviour in intensive and acute care settings using a convergent mixed-methods design. By integrating quantitative survey data with qualitative interview findings, the study captured not only the frequency of aggressive incidents and the reported use of preventive measures, but also healthcare professionals' subjective perceptions of their effectiveness. This approach revealed a persistent gap between interventions recommended in academic literature and those that are practically feasible and effective in everyday clinical practice. Such discrepancies reflect a broader mismatch between theoretical assumptions and the realities of healthcare delivery.

Consistent with previous international and Czech research, aggressive patient behaviour emerged as a chronic and widespread phenomenon rather than an isolated occurrence. All respondents in the quantitative sample reported prior experience with aggressive patients, corroborating findings by Wang et al. (2025), who documented high prevalence rates of workplace violence among healthcare professionals in intensive care environments. Similar to observations by Pekara et al. (2017), the present findings suggest that un-

der-reporting of aggressive incidents remains common, potentially obscuring the true scale of the problem and limiting the development of effective institutional prevention strategies.

Quantitative analyses did not demonstrate statistically significant associations between individual preventive measures – such as the use of predictive tools, participation in training, or application of de-escalation techniques – and reduced exposure to violence. At face value, these findings might suggest limited effectiveness of the examined interventions. However, qualitative findings provided important contextual explanations that help interpret these results more accurately.

With regard to predictive instruments, particularly the Brøset Violence Checklist (BVC), the findings indicated limited applicability in intensive and somatic care settings. Although many respondents perceived the BVC as partially useful, its use was not associated with a lower incidence of aggressive behaviour or improved de-escalation outcomes. Informants explained that in rapidly evolving clinical situations, healthcare professionals often relied more on clinical judgement and situational awareness than on structured prediction tools. These findings align with the meta-analysis by Hvidhjelm et al. (2023), which demonstrated strong predictive validity of the BVC primarily in psychiatric settings, while reporting weaker performance in non-psychiatric environments. Similarly, Spencer et al. (2024) highlighted that the tool's high specificity but low sensitivity limits its usefulness for predicting sudden aggressive escalation in somatic care.

Training and education in aggression management were generally viewed as important, yet their perceived effectiveness varied considerably. Quantitative analyses did not show a direct association between training participation and increased subjective safety. Qualitative insights suggested that this inconsistency was largely attributable to the nature of training content. Informants frequently described theoretical instruction as insufficiently transferable to real-life clinical situations, whereas practical, experience-based elements were perceived as more beneficial. These findings correspond with conclusions by Somani et al. (2021) and Mitchell et al. (2024), who emphasised the importance of simulation-based and experiential learning in enhancing preparedness, confidence, and psychological resilience among healthcare professionals.

De-escalation techniques were widely regarded as a preferred first-line strategy in managing aggressive behaviour. However, their effectiveness was described as situational rather than universal. Quantitative analyses did not confirm a protective effect of de-escalation techniques alone, while qualitative findings highlighted that their success depended on patient cognitive status, intoxication, delirium, and the unpredictability of incidents. This nuanced interpretation corresponds with contrasting evidence reported by Celofiga et al. (2022), who observed significant reductions in aggression following structured de-escalation training in psychiatric units, and by Lavelle et al. (2024), who noted inconsistent evidence for de-escalation effectiveness in somatic care contexts.

An important contribution of this study lies in its emphasis on organisational and contextual determinants of safety. Informants consistently highlighted the importance of team cooperation, institutional support, access to protective equipment, clear escalation pathways, and the presence of security personnel. In high-risk situations where verbal strategies failed, escalation to physical restraint or involvement of security services or police was often perceived as unavoidable to ensure the safety of both staff and patients. These findings reinforce the notion that aggression management cannot rely on isolated interventions but requires a coordinated, system-level approach.

Integration of quantitative and qualitative findings: The integration of quantitative and qualitative findings represents a central strength of this mixed-methods study. While the quantitative analyses identified patterns in reported exposure to aggression and the use of preventive measures, they did not demonstrate straightforward associations between individual interventions and reduced violence. The qualitative findings played a critical explanatory role by illuminating why such associations may not emerge in real-world clinical environments.

Informants described how the effectiveness of preventive strategies – including predictive tools, training, and de-escalation techniques – was strongly shaped by contextual

factors such as patient condition, situational dynamics, organisational culture, staffing levels, and professional experience. These insights explain why quantitative results did not support simple cause-effect relationships between specific measures and perceived safety or aggression reduction.

In this sense, the qualitative component did not function as a parallel strand, but rather as an interpretative framework that contextualised and expanded the quantitative findings. The integration of both data sources demonstrates that aggression management in intensive and acute care cannot be adequately captured through quantitative indicators alone. Instead, it requires an understanding of experiential, situational, and organisational factors that influence how preventive measures are applied and perceived in practice.

The interpretation of these findings should also take into account the demographic composition of the sample, particularly the predominance of younger respondents, as both age and professional experience may shape confidence, situational judgement, and perceived preparedness in the management of aggressive patient behaviour.

Limitations

Several methodological limitations must be acknowledged. These include the regional scope of the sample and voluntary participation, both of which may have limited the generalisability of the findings. In addition, the demographic composition of the quantitative sample was uneven. Besides the predominance of women, which only partly reflects the structure of the healthcare workforce, the youngest age group (20–29 years) represented 44.1% of respondents. As age and professional experience may influence the perception and management of aggressive patient behaviour, this distribution may have affected the findings and their broader transferability.

The qualitative component was exploratory in nature and involved a relatively small number of informants. Although purposive sampling ensured diversity in professional background and clinical setting, the limited sample size restricts the transferability of the qualitative findings. Given the small number of interviews, thematic saturation could not be reliably established. The qualitative results should therefore be interpreted as illustrative and exploratory, serving to deepen understanding of the investigated phenomenon.

In addition, the quantitative sample size allowed only basic descriptive and exploratory analyses and did not permit robust inferential conclusions. Nevertheless, the results provided a credible depiction of real experiences and practices among healthcare professionals in the Czech healthcare context.

CONCLUSION

This study demonstrated that aggressive patient behaviour represents a persistent and routine challenge in intensive and acute care settings. Both quantitative and qualitative findings confirmed that healthcare professionals are regularly exposed to verbal and physical aggression, which significantly affects their sense of safety and professional well-being.

The results showed that individual preventive measures, such as predictive tools, de-escalation techniques, or training programmes, cannot be evaluated in isolation. Their effectiveness was highly context-dependent and influenced by patient characteristics, organisational conditions, and professional experience. The absence of statistically significant associations in the quantitative analyses highlighted the complexity of aggression management in real clinical environments, rather than the ineffectiveness of the examined measures.

Qualitative findings provided essential explanatory insights, demonstrating that healthcare professionals rely heavily on situational judgement, teamwork, and experiential learning when managing aggressive behaviour. Predictive tools and formal training were perceived as supportive only when embedded within clear institutional frameworks and complemented by practical, experience-based education.

Overall, the findings underscore the need for a comprehensive, system-level approach to aggression management in healthcare settings. Such an approach should integrate context-sensitive training, appropriate use of predictive instruments, organisational support, and structured post-incident interventions. Strengthening these components may contribute to improved safety for healthcare professionals and higher quality of patient care.

Author contributions
The authors were responsible for the design and implementation of the study, data collection and analysis, and manuscript writing.

Conflict of interest
The authors have no conflict of interest to declare.

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