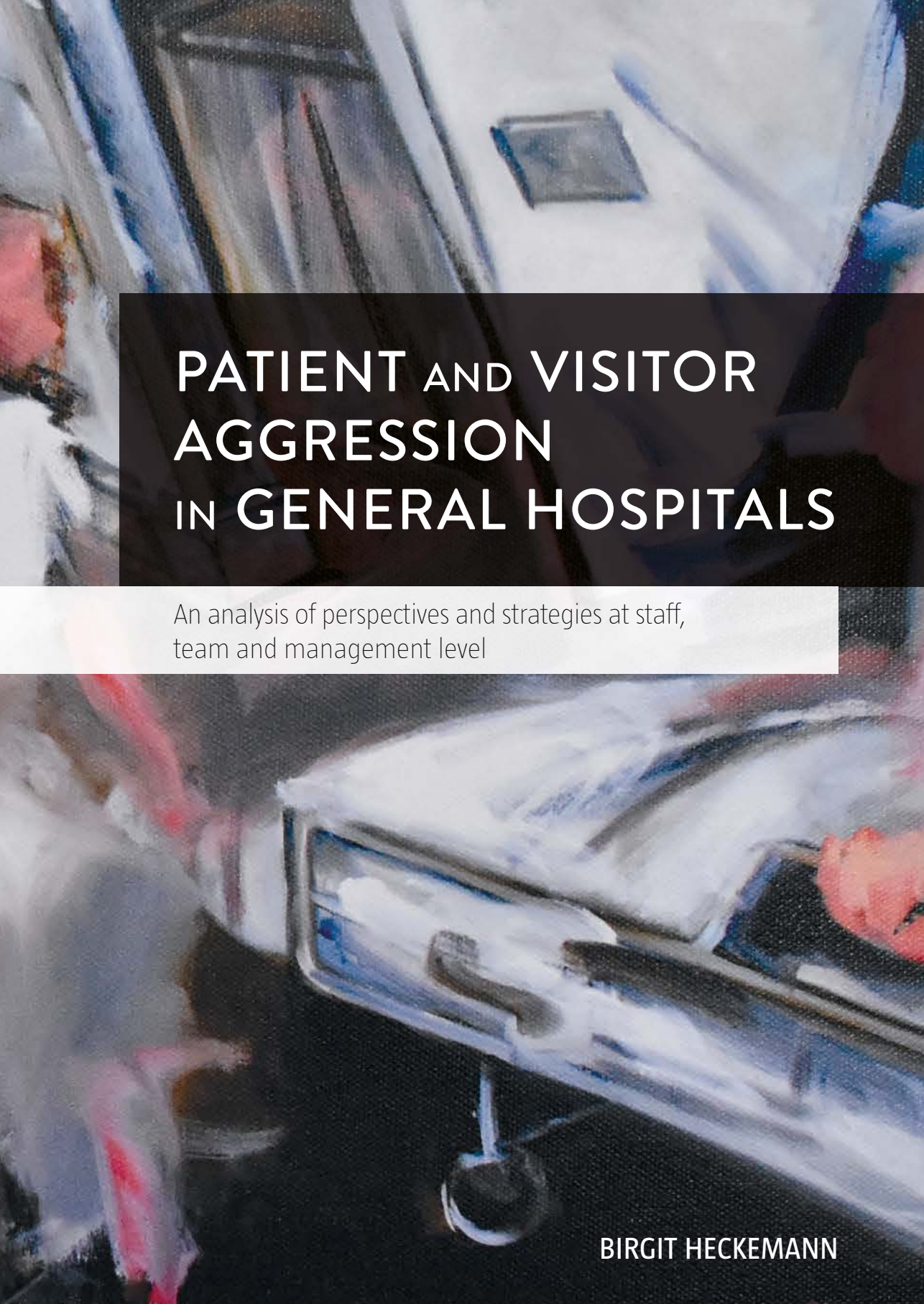

PATIENT AND VISITOR AGGRESSION IN GENERAL HOSPITALS

An analysis of perspectives and strategies at staff, team and management level

BIRGIT HECKEMANN

The research presented in this thesis was conducted at CAPHRI Care and Public Health Research Institute, Department of Health Services Research of Maastricht University in collaboration with Bern University of Applied Sciences, Health Division, Applied Research & Development in Nursing, Bern, Switzerland. CAPHRI participates in the Netherlands School of Primary Care Research *CaRe*.

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Contents

Chapter 1

General Introduction

Aggression

'[…] *we don't hate aggression; we hate the wrong kind of aggression but love it in the right context*.' (Sapolsky, p.19)[1]

Without doubt, aggression can be highly entertaining. A myriad of movies and competitive sports events provide a suitable context for this 'right' kind of aggression to be acted out. Yet aggression feels 'wrong' in many contexts. It certainly feels out of place in healthcare institutions, which should be safe places for the delivery of efficient, high quality patient care and treatment. However it is often the very people that healthcare organisations are supposed to care for, patients and visitors, who show aggressive behaviours.[2]

Patient and visitor aggression (PVA) is a serious hazard in healthcare with adverse effects on patient care, staff and organisations. PVA reduces patient safety.[3] Patient safety is currently a priority topic and major concern within healthcare organisations worldwide.[4] Furthermore, PVA has been linked to increased staff turnover and the intention to leave the healthcare profession, both have a financial impact on healthcare organisations.[5,6] The global shortage of healthcare workers (currently 7.9 million, expected to increase to 12.9 million by 2035) creates the urgency to ensure staff safety and motivation by providing a safe, enabling and supportive work environment.[7]

Healthcare professionals in any clinical area, but nurses in particular, face a higher than average risk of experiencing aggression compared with other professions.[2,8] PVA entails dire personal consequences for staff, burdens healthcare organisations with unproductive expenses, and its negative impact on both patient safety and quality of care.[9,10] Emergency departments as well as mental health and geriatric wards are known high-risk PVA settings.[11] However, PVA is also a serious problem in general hospital nursing,[2,12] and this setting has to date received too little attention.

Addressing PVA in general hospitals at policy (macro), organisational (meso) and staff (micro) level should reduce human suffering and liberate resources for more beneficial uses.[13] Yet strategic recommendations appear to have limited effect as PVA incidence rates remain high.[2] Ensuring safe, low-aggression work environments is a key responsibility for nurse managers, but to date there is no research evidence investigating their specific role and behaviours. Furthermore, the factors that influence staff and managers' motivation to prevent and manage PVA within healthcare organisations remain underexplored.

This thesis offers an analysis of perspectives and strategies for the prevention and management of PVA at staff-, team- and management level with a focus on the general hospital setting. This first chapter introduces the topic

PVA and relevant guiding models. In addition, it provides an overview over the aims and objectives of this PhD project, and an outline of this thesis.

1 Definition of patient and visitor aggression

In the context of this thesis, the term 'patient' is defined as a person using the healthcare system to receive diagnostic, therapeutic or preventive services delivered by healthcare professionals. 'Visitors' are persons accompanying or visiting the patient using healthcare services. Visitors include friends, family or other persons who maintain close, direct contact with the patient.

Aggression, an innate, deeply human force is not easily defined because the way it is perceived is inherently context bound.[1,14] Depending on the research discipline, aggression will be classified as an offensive or defensive force (biology), impulsive or premeditated (criminology), reactive or spontaneous, emotional or instrumental (behavourism).[1] The context-bound nature of aggression also hampers efforts to find a uniform definition within nursing science, which in turn impedes efforts to conduct meaningful research on the topic.[15] In an attempt to address this problem, Rippon[15] proposed a definition that comprises the following dimensions:

- Intent: aggression is an intentional behaviour aimed at harming another living being.
- Expression: aggression can be physical or verbal, emotional or psychological, active or passive, with direct or indirect focus on the victim, with or without a weapon, it can be directed towards oneself or another being.
- Emotional state: aggression can occur along with emotions such as anger, or in the absence of emotion.

Although providing a valuable overview, Rippon's[15] definition does not consider certain important aspects such as violence against objects or property, and non-intentional aggression. Cognitively impaired patients, for example, may display aggression that is not necessarily intended to cause harm, but is nevertheless a risk to the personal safety of staff involved.[16] Importantly, what constitutes aggressive behaviour is culturally dependent. Behaviours that are acceptable in one culture (e.g. hitting a spouse) are inappropriate, insulting and unlawful in another.[17,18] What is perceived to be an aggressive act is very much an internal personal construct, and thus dependent on a person's own notion of what constitutes aggression.[19,20] Furthermore, Rippon's[15] definition solely focuses on the negative appraisal and excludes the aspect of aggression as a potentially positive force. Aggression can be regarded as morally neutral, that is not as per se undesirable or pathological behaviour.[21] Instead, aggression may be an adaptive, socially accepted behaviour. A patient, for example, might act

assertively by standing up for her rights. In this case, the aggressive behaviour may not infringe another person's limits, standards, or norms.[20] In contrast, maladaptive aggression will be perceived as socially unacceptable.[21,22] This type of aggression occurs in situations were patients or visitors are physically assaulting, verbally abusing, threatening, harassing or physically intimidating healthcare staff.[23] Judging what constitutes an act of PVA is thus as much a cultural as an individual interpretation.[18,20]

Framing aggressive behaviour as adaptive or maladaptive behaviour also helps to distinguish the terms aggression and violence, which are often conflated.[15] Rippon[15] differentiates these terms by degree of expression and reserves the term violence '[…] *for those acts of aggression that are particularly intense, and are more heinous, infamous or reprehensible*' (Rippon, p. 456).[15] Within the adaptive/maladaptive frame of reference, assertiveness and severe violence occupy extreme ends of the spectrum. Therefore, the term 'aggression' rather than 'violence' is employed throughout this thesis and the focus is on behaviours that would be classified as maladaptive aggression. One further aspect that is thus far missing in the definition of PVA is the particular setting in which the aggressive behaviours occur, that is healthcare organisations. Based on the above discussion, the following definition of PVA has been applied in this thesis:

The term PVA denotes maladaptive behaviour that transgresses cultural and personal limits, standards or norms and/or endangers a person's health, safety, property, or wellbeing. PVA includes intentional or unintentional insults, threats, and physical or psychological attacks against property or a person at work, which are committed by persons from outside a healthcare organisation, including customers, residents and clients.[19,20,24]

2 Patient and visitor aggression: prevalence, incidence and consequences

Most incidents of PVA occur in mental health, accident and emergency departments and geriatric wards, where dementia and delirium are the main causes for aggressive behaviours.[2,5] Accordingly, the majority of research literature and available guidance pertains to these clinical areas. However PVA is a problem in all care areas of general hospital nursing. In a Swiss survey, 50% of healthcare staff reported that they experienced PVA in the preceding twelve months.[12] Concurring, an international systematic review found that approximately 63% of all nurses had encountered nonphysical or verbal aggression, while 32% had been physically assaulted during the previous year.[2] Verbal aggression is the most common form of PVA across all healthcare settings, while physical aggression appears predominantly in geriatric settings

such as long-term care facilities and nursing homes, but also on mental health wards and in emergency departments.[2,5,11]

Patient and visitor aggression has a broad negative impact on the quality of patient care, on the individual wellbeing of staff members, and on the productivity of healthcare organisations in general. PVA compromises the quality of patient care, because it causes disruptions in unit operations, treatment errors, delays in task completion, and increases in patient waiting times.[3,25,26] PVA reduces staff job satisfaction and motivation and can lead to anxiety. It also causes increased staff turnover and premature departure from the nursing profession.[5,6] Moreover, staff may suffer bodily injury, as well as psychological consequences such as posttraumatic stress disorder, burnout or depression through PVA.[9] The traumatic effects of aggression on staff contribute to increased direct and indirect cost within organisations. The direct costs in relation to PVA, such as staff sustaining injuries or leaving employment, amount to an estimated £69 million per year in England.[27] This figure excludes indirect human cost associated with PVA, such as increased absenteeism and reduced work performance.[6,9,11,28]

3 Guiding models

3.1 The General Aggression Model

The General Aggression Model (GAM) is a social cognitive meta-theory. It combines a number of theories into a comprehensive map of factors that influence the development of aggressive behaviour (Figure 1). These factors include personal predispositions, environmental factors, as well as underlying biological, psychological and neurocognitive factors.[29,30] The model describes these factors in proximate and distal processes.

Distal processes comprise biological (e.g. attention control, cognitive inhibition) and persistent environmental background modifiers (e.g. cultural norms). These influence an individual's personality and propensity for aggression. The proximate processes are related to situations that may trigger aggressive behaviour. The proximate processes comprise three stages

1. Inputs such as person factors (e.g. personality traits, attitudes, and genetic predispositions, gender etc.) and situational characteristics (e.g. presence of a provocation or an aggressive cue)
2. Routes (cognitive, affective and arousal) of processing and interpreting the inputs. These may influence a person's preparedness to behave aggressively

3. The outcome, either a thoughtful response or an impulsive action, depending on the ability to consciously control appraisal and decision processes

Inputs, routes and outcomes determine how an ongoing interaction or *episode* develops, whether an escalation can be avoided, or a situation spirals out of control.[29,30] Importantly, the appraisal of a situation determines its outcome. Appraisal may be automatic, i.e. spontaneous and without particular awareness. Automatic appraisal thus produces an impulsive reaction. If, however, the immediate appraisal is important and/or unsatisfactory and a person has resources such as time and cognitive capacity to reappraise a situation, he or she may search for a new, alternative interpretation of the situation. A reappraisal leads to a more considerate response, which, depending on a person's internal state, may indeed consist of thoughtful aggressive retaliation or revenge (see Figure 1).

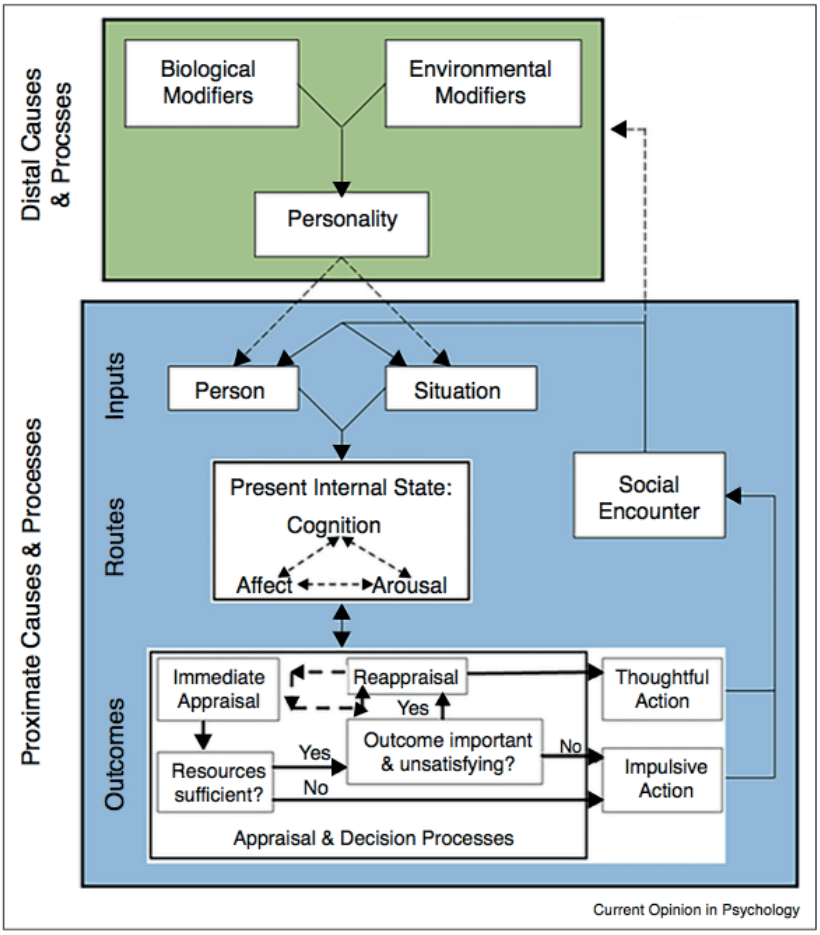

Figure 1 The General Aggression Model (GAM): proximate and distal causes and processes. With permission from Allen JJ, Anderson CA: General Aggression Model. The International Encyclopedia of Media Effects. Wiley-Blackwell; 2017

As a general model, the GAM offers a comprehensive set of factors that explain how aggressive situations occur. Risk factors for PVA in the workplace emerge from a combination of features of the work environment, the social context and particular situations.[17] Several attempts have been made to identify and combine the salient factors that influence aggression in the healthcare setting.

3.2 The Conceptual Model of Origins of Violence at Work

Based on a literature review, Curbow[31] conceived a model with a specific focus on the healthcare setting. *The Conceptual Model of Origins of Violence at Work in the Health Care System*[31] maps risk factors against different factor levels. The factor levels include the individual patient- and staff characteristics and the interaction. In addition, the model comprises the organisational, community, and societal environment in which the encounter takes place (Table 1). Importantly, this model lists factors that are specific to patient characteristics. Research shows that certain patient factors such as age >65 years, cognitive deficits such as dementia, drug or alcohol abuse, a psychiatric diagnosis or delirium as well as a state of emotional arousal, anxiety, stress and/or pain make aggressive behaviour more likely.[32,33]

Table 1 The Conceptual Model of Origins of Violence at Work: influencing factors (Curbow[31])

Factor level	*Number of risk factors (n)*	*Risk factors (examples)*
Individual	15	Cognitive deficits Psychiatric diagnosis Age, gender, job title …
Interactional	3	Confrontational style Rushed Presence of other
Work organisation	7	Job demands and control Waiting times Presence of security features Shift work …
Community/neighbourhood	7	Level of crime, poverty, drug use Density Home ownership …
Societal	5	Economic situation Cultural acceptance of expression of anger Cultural acceptance of expression of violence …

The factors identified by Curbow[31] influence the encounter between healthcare staff and patient or visitor. Figure 2 illustrates the interaction between these factors. The impact that individual factors have on the interaction may vary considerably between different healthcare settings and patient groups. However, the model's main limitation is that it takes the perspective of the health care provider and only marginally includes the patient / visitor experience.

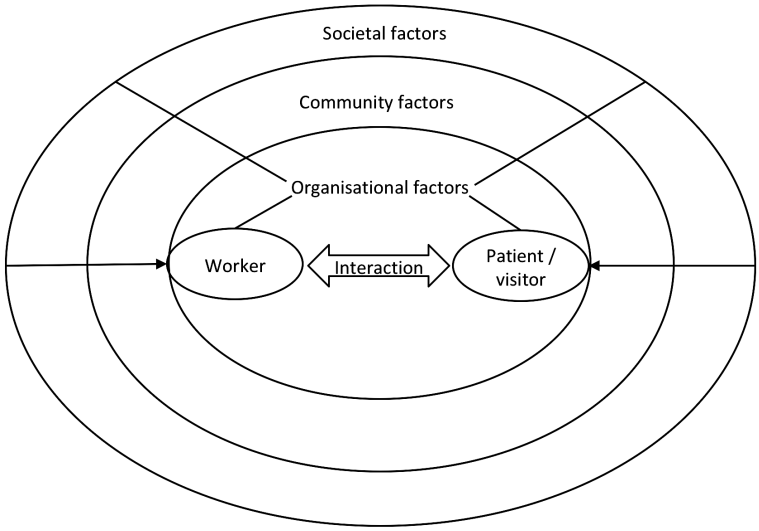

Figure 2 Model of Origins of Violence in the Workplace (adapted) (Curbow[31])

3.3 Cognitive Model of Patient Aggression Towards Health Care Staff

A further model, the *Cognitive Model of Patient Aggression Towards Health Care Staff*,[34] fills this gap in that it adds the patient perspective, while focusing exclusively on the interactional factors at play in encounters in healthcare. Winstanley[34] describes the degree to which such situations challenge patients' cognitive processing skills. Often, hospitalized patients feel anxious and vulnerable. The close contact, intimate examinations or invasive procedures elevate levels of perceived threat in patients who are already anxious about being in a healthcare institution. If patients do not attribute a positive or benign intent to the procedure or examination, they may perceive these as acts of violence perpetrated by healthcare staff. As a consequence, a patient's

emotional state of anxiety in combination with negative appraisal of treatment can trigger flight or fight reactions. These can instigate aggression or result in prevailing levels of anxiety (Figure 3). Winstanley's[34] model is important and relevant because it highlights that neither staff nor patient should be blamed for aggressive incidents. Rather, aggressive incidents arise from the interplay of a number of factors. Importantly, the model shows that interactions between patients and healthcare staff require consideration. Healthcare staff must be aware of the emotional challenges of healthcare encounters and approach patients in a manner that reduces anxiety.

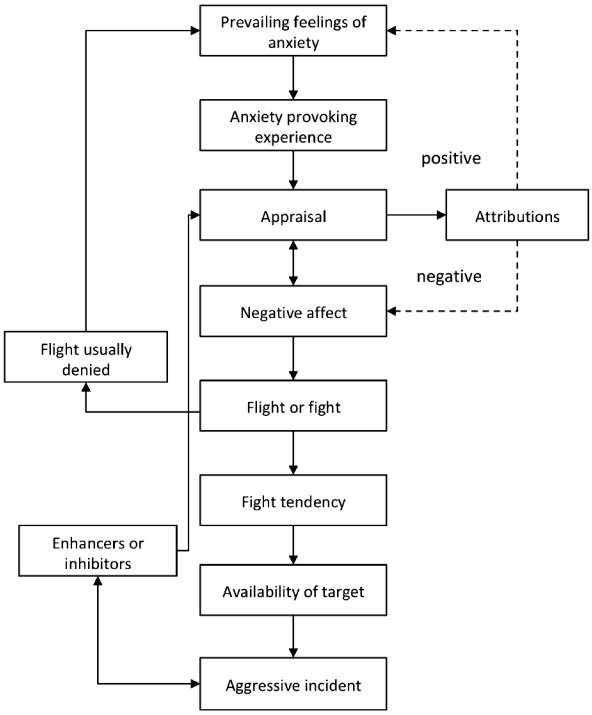

Figure 3 The Cognitive Model of Patient Aggression Towards Health Care Staff (adapted from Winstanley[34])

In summary, a number of models can be used to explain the emergence of PVA incidents as a result of personal, interactional, situational and societal factors. The GAM,[30] which serves as a model to explore, at a general level, an individual's disposition to act aggressively is complemented by models that consider the specific factors related to healthcare settings and encounters between staff and patient, as well as predisposing patient factors such as age, emotional state or specific diagnoses e.g. dementia, delirium.

3.4 The Reasoned Action Approach

Thus far, aggression has been examined with a view to the mechanisms that evoke aggressive behaviours in the individual and in personal interactions between healthcare professionals and patients or visitors. However, aggression does not merely affect interpersonal relationships, but also organisations. Creating the conditions that minimize the occurrence of PVA within an organisation is an important, yet to date little researched aspect of PVA. Nurse managers are proxies of healthcare organisations. As such, they are instrumental to creating low-aggression workplaces.[35,36] However, their roles, behaviours and attitudes remain to date under-researched.

The Reasoned Action Approach (RAA)[37] is a theoretical framework to guide the systematic investigation of human behaviours. The RAA works from the premise that a number of factors and determinants shape human behaviour in a causal sequence of processes. Figure 4 shows this sequence and its respective factors and determinants: A number of background factors–individual (e.g. mood, personality), social (e.g. education, culture race, ethnicity) and information (media, knowledge) factors–may influence a person's underlying beliefs regarding their behaviour.

In combination, the determinants 'beliefs' 'attitudes', 'perceived social norms' and 'perceived behavioural control' inform a person's behavioural intentions, although each may have different relative importance in forming an intention. For example, a person's attitude may be more important than the perceived social norms in shaping their intention. The resulting intentions can vary in strength. The stronger the behavioural intentions are, the greater the likelihood that the behavioural action will be performed. A further factor that influences and moderates the performance of an intentional behaviour is an individual's actual control, i.e. the degree to which a person is capable and able to perform the behavioural action.[37]

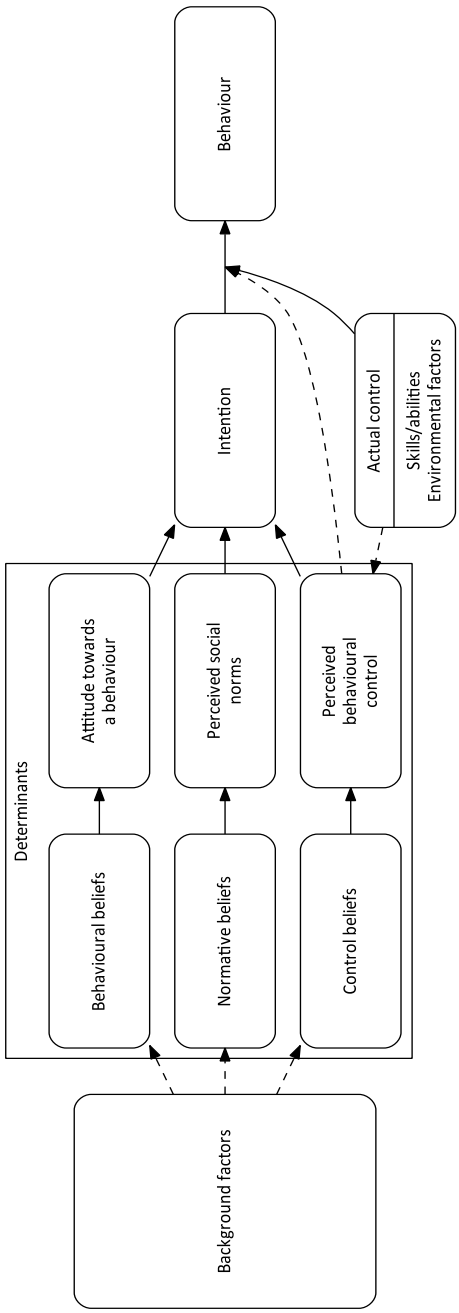

Figure 4 The Reasoned Action Approach (adapted) (Fishbein and Ajzen[37])

The structure of the RAA[37] enables systematic analysis of why behaviours occur. In this respect, it resembles the GAM,[30] as both serve as explanatory models. Theoretically, the RAA[37] could be used to analyse the antecedents and risk factors for aggressive behaviour. However, the GAM[30] has a specific focus on explaining and exploring human aggression and violence, whereas the RAA[37] is applicable to analysing all types of human behaviours. Since the work described here examines the availability and implementation of recommended strategies to counter PVA at staff/team and organisational level (instead of mechanisms underlying aggressive incidents), the RAA[37] was chosen as a framework to guide the investigation.

3.5 Strategies Addressing Violence in Healthcare: the SAVEinH model

In recognition of the severity of the problem, an increased awareness of PVA at policy level has spawned a plethora of national and international guidelines on the management of workplace aggression in healthcare. There is consensus that in order to address PVA effectively, collaborative action needs to be taken at macro- (community, policy), meso- (organisational) and micro (team/individual) level.[32,38,39] Hahn[32,38] developed the SAVEinH (Strategies Addressing Violence in Healthcare) model, which provides an inventory of risk factors and relevant strategies for addressing PVA in healthcare organisations at macro-, meso- and micro-level (Table 2). The SAVEinH model[32,38] is based on a review of literature, [40] established general and healthchare-specific models on aggression,[3016,31,41] and research into PVA in the general hospital setting.[12,33] The SAVEinH model[32,38] was conceived to assist diagnosis of specific PVA risks, reflection on PVA causes and incidents, and to provide a toolbox of appropriate prevention and intervention strategies.[32]

The original SAVEinH model layout was modified for the purposes of this thesis to increase clarity of the presentation. The respective levels (staff/team, organisation, community) were clearly labelled, as were target problem areas and strategies. The model's contents were adopted, yet some linguistic changes were made to enhance conciseness. The adaptations were approved by the model's author.[32]

Table 2 The SAVEinH model (adapted)

Level	*Stakeholder group*	*Target problem areas*	*Strategies*
Community (macro)	Professional organisations	PVA as a topic of priority	- Provide adequate professional development - Communication with politicians, communities and healthcare professionals
	Policy makers	PVA as a topic of priority	- Collecting and providing data (incidence) - Safety laws and health insurance
Organisation (meso)	Hospital managers	Developing, organizing and implementing PVA prevention and management programs	- Position statement regarding PVA - Quality measures and development e.g. ward culture and atmosphere, care processes, personal relationships - Guidelines and standards, e.g. incident reporting, post incident counselling - Targeted interdisciplinary training - Information and communication with public/community about PVA
Individual/ team (micro)	Staff nurses	Patient care areas - Highly technical environment - Outpatient clinics - Close physical contact with patient - Junior or inexperienced staff	- Training to enhance skills and knowledge covering - Patient information needs and transfer - Assessment of emotional state, e.g. anger, frustration, anxiety, stress and cognitive state, e.g. disorientation and adequate intervention - Communication skills - Reflection on (potentially) violent situation - Dealing with own personal emotions in aggressive situations

Level	*Stakeholder group*	*Target problem areas*	*Strategies*
Individual/ team (micro)		Patient or visitor characteristics: - Patient: adults aged 65 and over, - Patient: physical condition, e.g. pain, - Patient: cognitive state e.g. disorientation - Patient or visitor: emotional state - Critical care situations - Negotiating treatment options - Counselling	

4 Conceptual model

The SAVEinH model[32,38] and the RAA[37] were combined to serve as a conceptual framework to guide this thesis (see Figure 5). The SAVEinH model guided the choice of levels (micro and meso) and strategies to counter PVA. The inquiry presented in this thesis focuses on the micro- and meso-level to match the scope of the work to the available time and resources. The resulting conclusions translate into recommendations to inform research and practice in an organisational context. The macro or community level was considered out of the scope of this thesis. Although important, conducting research to develop policy recommendations for political decision-making requires different approaches and was left for future projects.

The RAA[37] guided the areas of investigation in the individual studies (see Figure 5, conceptual model). The RAA[37] was chosen because its structure enables a systematic analysis of why behaviours occur. The categories provided by the RAA[37] facilitated a systematic enquiry at micro- and meso-level. In combination with the SAVEinH model[32,38] it enables investigation of the hitherto under-explored question why strategies against PVA often fail and the respective influence of managers, their roles, behaviours and attitudes towards the prevention and management of PVA. The results add to a currently scant body of knowledge pertaining to the role of managers in dealing with PVA. Finally, this research is conducted as a mixed methods project with an adapted exploratory sequential design[43] that combines qualitative and quantitative research approaches. Figure 5 provides an overview of the conceptual model that guides this thesis.

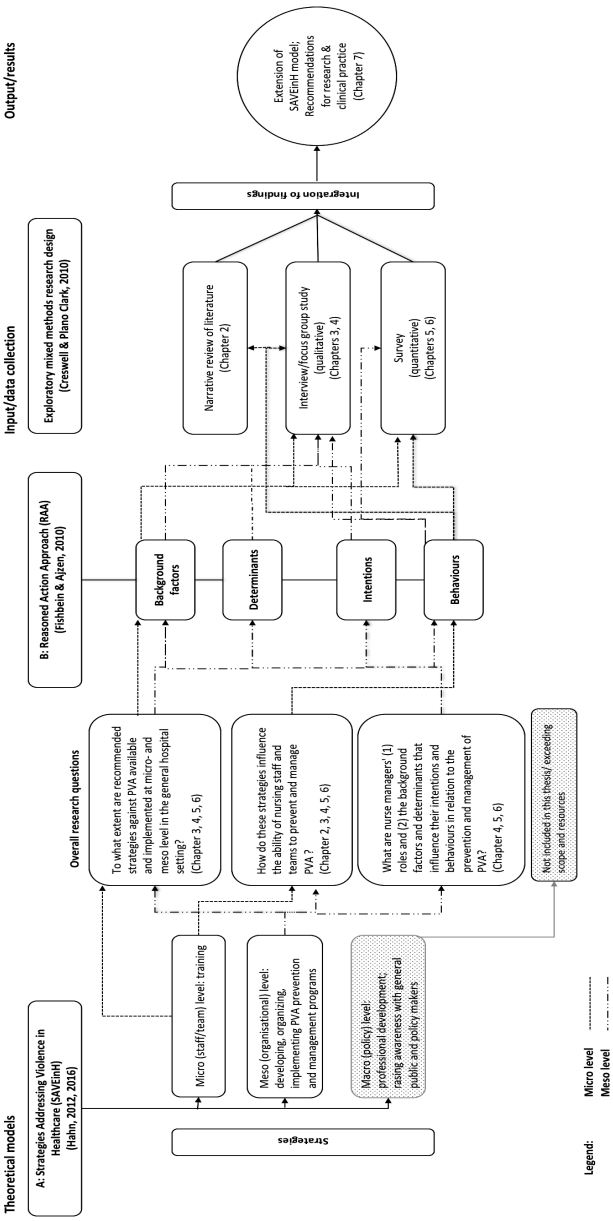

Figure 5 Conceptual model of thesis

5 Addressing PVA in healthcare–state of the art

5.1 Addressing PVA at the macro-level

Various actions have been taken at policy level to address workplace aggression. The European Framework Directive on Safety and Health at Work has been issued by the European Community (EEC) (Directive 89/391 EEC) to ensure minimum safety and health standards at workplaces throughout the European Union (EU). EU directives are legal, binding acts and EU member states are obliged to transpose directives into national law within a set time frame. While being at liberty to apply stricter national rules, the majority of EU countries translated Directive 89/391 EEC into general workplace safety legislation. The legislation ensures the rights of workers and obliges employers to assess workplace risks and take preventive measures. The same applies to the non-EU country Switzerland where workplace safety for all sectors is regulated through national legislation. However, some EU countries, such as the United Kingdom and the Republic of Ireland, introduced PVA-specific zero tolerance policies or guidelines pertaining to healthcare,[8,44] thus emphasising the importance of wellbeing of employees in a sector that is severely affected by third-party aggression. Moreover, while some EU countries such as the Netherlands and the United Kingdom systematically monitor incidence rates of workplace aggression per employment sector,[8,45] this is not practised in German-speaking countries, despite PVA incident rates being high: an Austrian study including general hospitals, some with psychiatric departments, and geriatric institutions found that 78% of all employees had experienced PVA during a data collection phase of 13 weeks.[46] In Switzerland, Hahn et al.[12] found that 73% of healthcare staff in general hospitals had experienced PVA in the 12 months prior to data collection. Eighty percent of healthcare staff in Swiss nursing homes reported PVA within a twelve months time frame.[47] In Germany, 56% of health care staff working in facilities for the disabled, in general hospitals, outpatient clinics or inpatient geriatric care facilities experienced physical violence and 78% reported exposure to verbal aggression within 12 months prior to data collection.[48]

5.2 Addressing PVA at the meso-level

Addressing PVA in healthcare requires broader action than mere compliance with legislative requirements. The ultimate aim should be to create a good

'perceived violence climate'.[49] A good perceived violence climate is characterized by an organisational culturein which th e processes for managing risks of aggression are part of everyday practice and in which management and staff are committed to the prevention and reduction of PVA.[39,49] Corresponding, recommendations to address PVA emphasise the importance of including all relevant stakeholders in the systematic development of an anti-PVA strategy that is suited to local organisational requirements.[32,38,39] Specific measures at organisational level include:

- Education and training for staff on the prevention and management of patient and visitor aggression
- Provision of staff support after aggressive incidents
- Preparation, education, and empowerment of managers to support staff
- Systematic risk assessments and management of workplace hazards
- Organisational security responses (public engagement, interagency liaison, e.g. police forces, inclusion of all stakeholders)
- Organisational policies to support and guide staff and security services on the prevention, management and reporting of patient and visitor aggression
- An organisational position statement regarding patient and visitor aggression [32,38,39]

Healthcare managers at all levels are key persons for establishing safe work environments.[35,36] Healthcare managers also have particular credibility with staff as they have both experiential understanding of the service provision as well of organisational structures and positions. However, in order to fulfil their role in supporting staff in dealing with PVA, they need to understand expectations, to be up to date with the relevant knowledge and to be empowered to effectively address PVA.[39] This appears to be problematic in practice. Within healthcare organisations, there is often a lack of concerted effort and commitment across management levels to prioritize the reduction of PVA.[50,51] Moreover, managers may be unresponsive to workplace aggression or prioritize service concerns over staff safety.[26,51-53] Workplace culture has occasionally been found to obstruct the implementation of effective PVA prevention and management strategies, as staff, for example, may be expected to tolerate PVA as part of their job. Such an attitude discourages incident reporting and hampers incident investigation.[54,55] Supportive workplace cultures and teamwork, on the other hand, have been found to reduce workplace aggression.[49,52] Despite the key role that managers play in the prevention and management of PVA, their perception of PVA has rarely been investigated, as the majority of research output has focused on the experience of PVA from a staff perspective. Furthermore, research on how managers contribute to the creation of low-aggression, positive workplace climates in clinical practice remains scarce, but requires attention considering managers' important role.

5.3 Addressing PVA at the micro-level

The literature on the personal staff factors that influence the experience of PVA is somewhat contradictory. While some studies report no significant association between PVA and age, gender, professional education, experience and time in current workplace,[12,33] other studies conclude that younger staff members are more likely to experience verbal and physical abuse compared to older staff.[26,42] Yet PVA is always multifactorial and, importantly, patient factors such as age over 65, cognitive impairment, critical care situations, and close physical proximity have been shown to increase the risk of PVA, as do certain high-risk clinical settings such as emergency departments.[32,42] Furthermore, a disrespectful staff attitude and behaviour towards patients has been identified as causal factor for aggression.[41,56] Therefore, while it may be difficult to influence certain patient characteristics, the PVA risk can be reduced if staff members are able to maintain positive respectful interpersonal relationships with patients and visitors.

Training for all staff, but particularly regular training for personnel working in high-risk areas is recommended as the strategy of choice.[39] The training content should be tailored to participants' specific needs and should equip staff with prevention and risk assessment strategies, de-escalation, communication and interaction skills.[32,38,39] Training generally addresses a range of skills, knowledge, and attitudes, and may also include breakaway techniques, self-defence and physical restraint techniques.[16,57] Despite a plethora of guidance on training contents, research evidence proving training benefits is limited.[58] Furthermore, literature reviews examining the effect of training in mental health and emergency settings point to a generally low quality of research studies.[59-63] Thorough evaluation is crucial to determine whether aggression management training meets the stated objectives and is appropriate for the target group. It would also be desirable to measure the extent to which training courses represent value for money.[58] There is, however, currently insufficient research evidence on the effect of aggression management training, especially in the general hospital sector. A further problematic aspect of staff training in general hospitals is that it is generally directed at individual persons, rather than at teams, even though team-based approaches have been found to mitigate PVA.[52] The ability to deal with PVA strategically and consistently as a team is often not nurtured in wards where only individual members of staff receive training, as knowledge is generally not disseminated within the team.[64] Teams on general hospital wards do thus not necessarily change or reflect on their approach to dealing with PVA as a result of training. All in all, current practice does not reflect best-practice guidelines, which have long recommended a therapeutic team approach to managing PVA.[65]

PVA is the result of the complex interplay of individual, interactional, social, societal, cultural and environmental factors. Exploring how these factors

are related to violence is one important step towards creating low aggression environments in healthcare.

6 Problem statement

Despite efforts to address PVA at the macro-, meso- and micro-level, it prevails as a serious problem across all healthcare settings. This is probably due to its complex nature and multiple influencing factors such as organisational culture, staff, patient, interactional and situational factors. Current guidance on how to address PVA emphasises the importance of a strategic approach that includes all stakeholders and that addresses PVA at all staff levels. Crucially, healthcare managers are change agents in this process. Whether and how these staff and management levels interact to transpose strategies into practice is currently not well understood. Several gaps in knowledge have been identified in this introduction, namely

a. Knowledge about the effects and effectiveness of staff training is insufficient, especially in the general hospital setting.
b. The availability, implementation and influence of strategies to address PVA in clinical practice are unknown.
c. The nurse managers' roles and relevant background factors and determinants influencing their behaviours in the prevention and management of PVA have not been investigated.

7 Aim, objectives and research questions

7.1 Aim and objectives

The overall aim of this thesis is to investigate to which extent recommended strategies to counter PVA at staff/team and organisational level are implemented into clinical practice, with a focus on the general hospital setting. To this end, we investigate the availability and implementation of recommended strategies against PVA and examine their influence in clinical practice. We also explore of the role and behaviours of nurse managers and the background factors that influence their behaviours.

We expect this investigation to provide not only an overview of available PVA strategies, but also a comprehensive inventory of reasons and mechanisms why these strategies may fail in clinical practice.

The objective of this thesis is to contribute to the development of a framework that specifically considers the role of nurse managers and

organisational factors for the creation of safer workplaces for nurses and other healthcare workers.

7.2 Outline and research questions

This PhD project comprises five studies with investigations at micro- (staff/team) and meso- (organisational) level. Since nurses are the largest professional group with the highest risk of exposure to PVA in healthcare[8] we conduct this inquiry from the nurse perspective. The investigation commenced from the micro-level (Chapter 2 and 3). These studies were 'stand-alone' projects, while the studies described in Chapters 4 to 6 were conducted as part of a larger, international, investigation, PERoPA[*] (Perception of Patient and Visitor Aggression). The PERoPA project examines the prevention and management of PVA at the organisational level, from a nurse manager perspective.[66]

The following overall questions were addressed in this research:

- To what extent are recommended strategies against PVA available and implemented at the micro- and meso-level in the general hospital setting? (Chapters 3, 4, 5, 6)
- How do these strategies influence the ability of nursing staff and teams to prevent and manage PVA? (Chapters 2, 3, 4, 5, 6)
- What are nurse managers' (I) roles, (II) the influencing background factors and determinants affecting their intentions and behaviours in relation to the prevention and management of PVA? (Chapters 4, 5, 6)

The following research questions were addressed in each chapter:

Chapter 2 provides a narrative review of the effect of staff training on the prevention and management of PVA. The aim of this study is to review and collate current research evidence on the effect of aggression management training for nurses and nursing students working in general hospitals, and to derive recommendations for future research.

Chapter 3 investigates the effect of aggression management courses on staff nurses in an interview study with a before and after design. The research questions are: (I) How does aggression management training affect nurses'

[*] Further information on PERoPA is available on the project website: https://www.gesundheit.bfh.ch/de/forschung/pflege/projekte/aggression_im_gesundheitswesen/peropa_the_nurse_managers_perspective_englisch/tabs/overview.html

attitude towards and coping with PVA? (II) How does aggression management training influence nurses' PVA prevention, early intervention and de-escalation strategies?

Chapter 4 reports a qualitative interview and focus group study. The study explores the attitudes, social norms, and underlying beliefs that inform nurse managers' (lower, middle and higher management level) behaviours in the prevention and management of patient and visitor aggression in general hospitals. The research question is: What are the (I) background factors, (II) determinants and intentions, and (III) behaviours of nurse managers in the prevention and management of PVA in a general hospital setting?

Chapter 5 investigates team factors in an international survey that captures the nurse managers' perspective. The study addresses two research questions: (I) Are there differences in nurse managers' characteristics, team factors and perceived team efficacy between the participating countries? (II) Is perceived team efficacy related to nurse managers' characteristics and/or team factors?

Chapter 6 investigates, in an international survey from a nurse manager's perspective, the provision of organisational support in general and mental health hospitals. The study aims (I) to describe the availability of organisational support in addressing PVA and (II) to explore the relationship between organisational support and perceived team efficacy from the viewpoint of nurse managers (lower, middle, higher level) from Switzerland, Germany and Austria.

Chapter 7 contains a general discussion of the major findings related to the management and prevention of PVA at the micro- and meso-levels in healthcare organisations (see Figure 5). The findings of all studies are incorporated to extend the current version of the SAVEinH model.[32,38] Implications for clinical practice and further research are derived.

7.3 Ethical considerations

All studies comprised with this PhD project were conducted according to the University of Maastricht's as well as Swiss national legal and regulatory requirements. The study reported in Chapter 2, a narrative literature review did not require ethical approval. Data for this study were exclusively sourced from published articles. Ethical clearance for the studies described in Chapters 3-6 was obtained from the responsible cantonal ethics committees in Switzerland, where the data collection took place. In all cases, the ethics committees decided that the studies did not fall under the Swiss Human Research Act and were thus exempt from a formal application.

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Chapter 2

The effect of aggression management training programmes for nursing staff and students working in an acute hospital setting. A narrative review of current literature

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Abstract

Background: Patient aggression is a longstanding problem in general hospital nursing. Staff training is recommended to tackle workplace aggression originating from patients or visitors, yet evidence on training effects is scarce.

Aims: To review and collate current research evidence on the effect of aggression management training for nurses and nursing students working in general hospitals, and to derive recommendations for further research.

Design: Systematic, narrative review.

Data Sources: Embase, MEDLINE, the Cochrane library, CINAHL, PsycINFO, pubmed, psycArticles, Psychology and Behavioural Sciences Collection were searched for articles evaluating training programs for staff and students in acute hospital adult nursing in a 'before/after' design. Studies published between January 2000 and September 2011 in English, French or German were eligible of inclusion.

Review Methods: The methodological quality of included studies was assessed with the 'Quality Assessment Tool for Quantitative Studies'. Main outcomes i.e. attitudes, confidence, skills and knowledge were collated.

Results: Nine studies were included. Two had a weak, six a moderate, and one a strong study design. All studies reported increased confidence, improved attitude, skills, and knowledge about risk factors post training. There was no significant change in incidence of patient aggression.

Conclusion: Our findings corroborate findings of reviews on training in mental health care, which point to a lack of high quality research. Training does not reduce the incidence of aggressive acts. Aggression needs to be tackled at an organisational level.

1 Introduction

Aggression is perceived as an increasing problem in healthcare.[1] Exposure to aggression may lead to post-traumatic stress disorder, burnout, heightened stress levels and intention to leave the profession.[2,3] Aggression may surface as 'horizontal violence' or 'bullying' by colleagues or managers, or as 'patient or visitor aggression' (PVA).[4] Workplace aggression can be defined as

> '*Incidents where staff are abused, threatened or assaulted in circumstances related to their work, including commuting to and from work, involving an explicit or implicit challenge to their safety, well-being or health*'[5]. [This*] 'includes physical and psychological violence, such as verbal abuse, harassment, bullying/ mobbing and threat*.'[6]

Globally, nurses are at high risk of becoming victims of workplace aggression. An American study revealed that almost one third of nurses had experienced physical and/or psychological workplace aggression.[7] A European study including nursing staff employed in day care, home care, and hospitals across 10 European Union countries reported that nurses frequently experienced PVA in France (39%), the UK (29%), Germany (28%), and Belgium (23%).[8]

While most PVA occurs in psychiatric, geriatric, and accident and emergency departments,[8-10] PVA is also common in medical and surgical departments.[1] PVA is caused by the interplay of multiple factors: characteristics of patient/visitor and staff (e.g. age or gender), factors relating to interactional, environmental, social, and cultural context as well as workflow issues (e.g. understaffing, long waiting times).[11,12]

Systematic, multi-component strategies of risk assessment and reduction, evaluation/review systems, all tailored to local requirements, are recommended to tackle PVA. Regular, adequate staff training is part of an overall strategy. Training programs have to address staff needs and local risk profiles for maximum benefit.[4,13]

Training generally addresses a range of skills, knowledge, and attitudes, and may also include breakaway techniques, self-defense and physical restraint techniques.[4,14] High quality scientific evidence on the effect of aggression management training[14] aimed at acute general hospital staff is scarce. An effect is '*a change that results when something is done or happens*'.[15] The effects of PVA management training can be manifold, for example changes in staff attitude and confidence, or incidence of PVA.

2 The study

2.1 Aims

The aim of this study was to review and collate current research evidence on the effect of aggression management training for nurses and nursing students working in general hospitals, and to derive recommendations for future research.

2.2 Design

A critical systematic review of current evidence, reported narratively, to account for the heterogeneous nature of the studies included.

2.3 Methods

We searched electronic databases in September 2011 (Embase, MEDLINE, Cochrane library, CINAHL, PsycINFO, PubMed, psycArticles, Psychology and Behavioural Sciences Collection, Google Scholar) using the search string: "(nurs* OR healthcare staff) AND (violence OR aggression) AND (training OR intervention OR management)". This search yielded 380 records. We screened the results against the following inclusion criteria:

- All types of studies (qualitative, quantitative or mixed method) examining the effect of aggression management training programs for staff and students in acute hospital adult nursing in a 'before/after' design, published between January 2000 and September 2011, in English, German, or French language.

Author BH initially searched and screened the literature. Screening of titles versus inclusion criteria and removal of duplicates yielded 23 eligible studies. Authors BH and AZ independently screened the 23 records (based on the abstracts, then on the full texts) for match with inclusion criteria and excluded 14 articles, because they pertained to mental health or community settings (7 articles), did not evaluate training (5 articles), had no before/after design (1 article), or re-analysed previously published data (1 article). The final sample comprised nine studies. Figure 1 illustrates the sampling process.

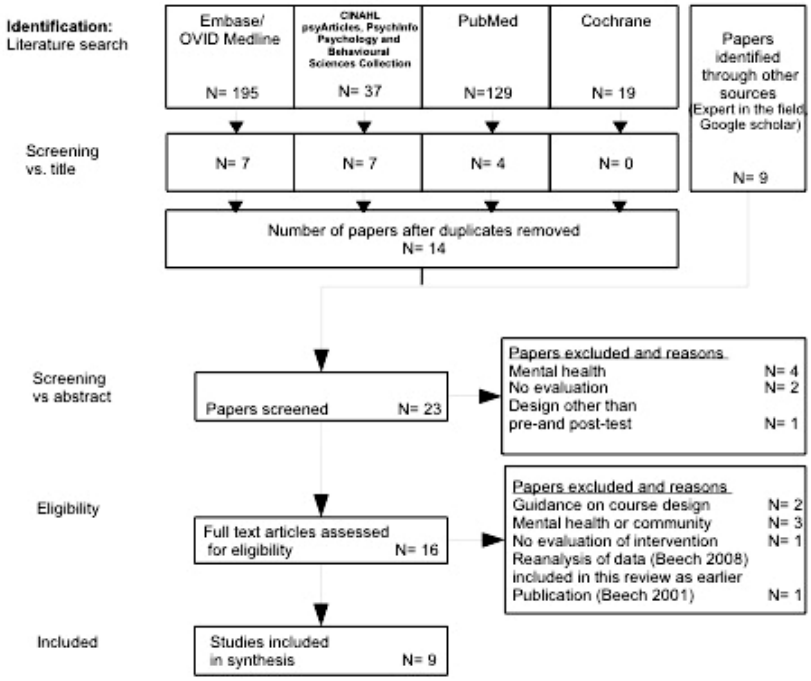

Figure 1: Diagram of sampling process

2.4 Data extraction, quality assessment and outcome measures

We assessed the studies for methodological quality with the 'Quality Assessment Tool for Quantitative Studies'.[16] The tool has been evaluated for interrater reliability, content and initial construct validity.[17] Studies were assessed on 18 criteria in six domains (selection bias, study design, confounders, blinding, data collection methods, withdrawals and drop-outs). Studies were rated as "strong", "moderate" or "weak" in each domain. An accompanying algorithm consolidates the six ratings into a single score. Ratings were recorded on a spreadsheet. The studies were independently assessed by BH and AZ. The agreement between the two raters was high at 88.9% and the interrater reliability for overall quality rating was 0.77 (Cohen's Kappa). Three studies, which had been authored by co-authors of this article were reviewed by independent assessors (SK, MF and BHü) to reduce bias. Overall ratings were determined by consensus.

3 Results

Of the nine included studies, four were cohort studies without control groups,[18-20] two were longitudinal cohort studies,[21,22] one was a pre-test post-test non-equivalent control study,[23] one was a quasi-experimental, pre-test post-test design control study[24], and one was a within-and- between groups design study.[25]

Five studies were conducted in schools of nursing,[18,21,22,24,25] two in emergency departments,[19,26] and a further two were carried out in acute hospitals. The target populations were diverse. Five studies focused on nursing students at various stages of their training,[18 21 22,24,25] three included all hospital staff, personnel in patient care as well as clerical staff.[19 20 23] One study included emergency department nurses.[26] See Table 1 for the studies' characteristics.

3.1 Methodological quality of included studies

The design was weak in two studies,[20,23] moderate in six studies[18,19,21 24-26] and strong in one study.[22]

3.2 Characteristics of training programmes

The training programmes were disparate in length and delivery mode. Course contents were fairly homogeneous: All programmes addressed theoretical models of aggression, causes, triggers, and influencing factors, prevention, management and legal aspects. Verbal and non- verbal communication and de-escalation techniques were also included. Six courses featured breakaway or escape techniques.[18,21,22,24-26] Four courses included coping and post-incident aftercare.[20,22,24,25] Although all programme contents were based on current guidance, only the programme by Nau, et al.[22] was explicitly designed to reflect nursing students' needs. There is no indication whether other trainings included in this review were specifically tailored to staff needs. Table 2 provides details of courses' aims, objectives and duration of training.

3.3 Training evaluation: instruments, outcome measures and outcomes

Four studies assessed the effect of the course immediately pre- and post training.[18,20,23,25] The remaining five studies had a longitudinal design with varying data collection points. Table 3 lists assessment instruments (outcomes) and time points of evaluation.

Table 1 Study details and overall study quality

Authors	*Country*	*Study design*	*Setting/ sample*	*Sample size*	*Overall study quality rating*
Beech[18]	UK	Pre / post intervention evaluation, no control	One nursing school	N = 58	moderate
Doyle and Klein[23]	USA	Quasi experimental, pre- / post-test non-equivalent control group design	Metropolitan hospital. Healthcare/ clerical staff.	Intervention group N = 89 Control group N =51	weak
Fernandes, et al.[19]	Canada	Cross sectional prospective survey	All staff, emergency department, one hospital	No information	moderate
Beech and Leather[21]	UK	Repeated measures longitudinal design, with variable baseline.	One nursing school	N = 243	moderate
Deans[26]	Australia	Non-experimental, one group, pre- / post-test	Emergency department nurses, district hospital	N = 40	moderate
Grenyer, et al.[20]	Australia	Pre- /post-test design, two pilot samples	One hospital	'train the trainer ' N = 15 'healthcare staff' N = 48	weak
Zeller, et al.[24]	Switzerland	Quasi-experimental, pre- / post-test	Three nursing schools	Experimental group: N = 57 Control group N = 60	moderate
Nau, et al.[22]	Germany	Quasi-experimental longitudinal pre- / post-test	One nursing school	N = 63	strong
Nau, et al.[25]	Germany	Pre- / post-test, in-and-between-groups	One nursing school	N = 78	moderate

Table 2 Aggression management training: course contents and duration of intervention

Authors	*Aggression management training programmes: contents*	*Contents tailored to (N/K = not known)*		*Duration of intervention*
		General hospital setting?	*Particular staff group?*	
Beech[18]	- Theories, risk factors, incidence - Safer verbal, non-verbal approaches - Maintaining personal safety, breakaway skills	N/K	N/K	3-days
Doyle and Klein[23]	- Hospital policy on violence - Types of assault, threats, risk factors & prevention strategies - Early signs or assaultive behaviour	N/K	N/K	One-day drop-in session or film and discussion
Fernandes, et al.[19]	- "Nonviolent Crisis intervention model" (The Crisis Prevention Institute, Brookfield, WI) - Risk factors, physiological & psychological triggers, prevention & management strategies - Staff attitudes, listening, verbal, non-verbal skills - Types of physical attacks, defence techniques - Post-incident management	N/K	N/K	4-hours
Beech and Leather[21]	- Theories, models, early signs - Health service statistics, legal issues, patient & staff rights - Non-provocative approach and interaction, breakaway skills - Mental illness - Increasing self esteem, confidence, maintaining own safety - Non-provocative approaches	N/K	N/K	3-days

Authors	*Aggression management training programmes: contents*	*Contents tailored to (N/K = not known)*		*Duration of intervention*
		General hospital setting?	*Particular staff group?*	
Deans[26]	- Work environment, staff responsibilities - Colleagues' strengths /weaknesses - Causes, types, triggers of aggression - Effective communication, avoidance, deflection, escort techniques	N/K	N/K	1-day
Grenyer, et al.[20]	- Risk assessment, prevention, management, 'zero tolerance'	N/K	Some adaption possible due to modular structure	2-days 'train the trainer' 4 modules: health care staff
Zeller, et al.[24]	- Theory, causes - Reflection: own aggression, fear - De-escalation, communication, interaction in aggressive situations - Post incident care, security, prevention	N/K	N/K	4 days (24x50 min lectures)
Nau, et al.[22]	- Dealing with aggressive situations, prevention, assessment, coping, aftercare	N/K	Yes	3-days
Nau, et al.[25]	- Dealing with aggressive situations, prevention, assessment, coping, aftercare	N/K	N/K	24 sessions in one week

3.4 Instruments: outcome measures

The studies employed one or several instruments to collect data on the training effect. Beech,[18] Beech and Leather[21] and Zeller et al.[24] used a questionnaire comprising 20 items to assess attitude changes.[18] This tool was based on a questionnaire developed by Collins[27]. Grenyer et al.[20] used the original tool by Collins[27] to capture changes in attitude.

Three studies[20,22,24] also employed a questionnaire to assess participants' confidence developed by Thackrey.[28] This 10-item tool covers 'perceived ability', 'preparedness', 'safety and effectiveness in managing aggressive situations'. Three further authors collected data with purpose-designed tools.[19,23,26]

All nine training programmes focused on developing competency. In health care, competency comprises four elements: knowledge, skills, attitudes, and problem-solving ability.[29] All studies included in this review assessed the effect of training by measuring one or several of the aforementioned elements. All studies reported an overall positive training effect based on measurement of changes as perceived by the individual (attitude, confidence, skills) or external assessment of competence (knowledge and practical/problem solving skills) through written or real-life scenarios, or knowledge testing. Two studies also included assessment PVA incidence rates and types of acts of aggression.[19,26] (Table 4)

3.5 Effect of training on attitudes

There is no unambiguous evidence that training to enhance the management of PVA changes staff attitudes. Four studies evaluated the effect of the training on individuals' attitude towards PVA.[18,20,21,26] The overall ratings of participants' attitude were higher post training, with enhanced self-ratings in areas such as self-respect, prevention or prediction of aggression, and patient motivation or responsibility for becoming aggressive. However, the majority of changes were not statistically significant across the studies. Significant post intervention changes were observed in attitude towards prevention/prediction of aggressive behaviour, approach towards dealing with aggression and self- respect/staff rights in one study[21] and in attitude towards patients' responsibility for aggression.[20]

Table 3 Training evaluation: instruments for outcomes, measures, and time points of evaluation

Authors	*Instruments*	*Element of competency: attitudes and confidence, knowledge, skills, problem solving*	*Other*	*Evaluation time points*
Beech[18]	Questionnaire based on Collins (1994)	Attitude		Pre- and post-training
Doyle and Klein[23]	Violence in the Workplace Knowledge Test (VWKT), [23]	Knowledge		Pre- and post-training
Fernandes, et al.[19]	Survey: incidence and nature of PVA	Attitude, risk factor identification	Incidence and nature of PVA, impact on staff	Survey at baseline, 3 and 6 months
Beech and Leather[21]	Questionnaire based on Collins [27], [30], and [31], competence assessment (written scenarios)	Attitude & confidence, knowledge, skills		2x pre training, immediately post-intervention and three-month follow up
Deans[26]	Purpose-designed questionnaire	Attitude & confidence	Frequency and nature of aggressive incidents	Pre- and three-month post-training
Grenyer, et al.[20]	Questionnaires: Collins [27], Thackrey [28], written scenarios	Attitude, confidence, problem solving, knowledge		Pre-and post-training
Zeller, et al.[24]	Questionnaires: Thackrey [28], Beech [32] (German versions)	Attitude & confidence		Pre-test, post-intervention and three-month follow up.

Authors	*Instruments*	*Element of competency: attitudes and confidence, knowledge, skills, problem solving*	*Other*	*Evaluation time points*
Nau, et al.[22]	Questionnaire: Thackrey [28] (German translation), questionnaire: perceived changes in everyday practice	Confidence	Perceived changes in everyday practice post-training	Pre-test, two post-test (after training + 2 weeks into next placement)
Nau, et al.[25]	De-escalating Aggressive Behaviour Scale [33]	Problem solving: De-escalating aggressive situations		Pre- and post-training

Table 4 Outcome measures

	Beech [18]	Doyle and Klein [23]	Fernandes, et al. [19]	Beech and Leather [21]	Deans [26]	Grenyer, et al. [20]	Zeller, et al. [24] *	Nau, et al. [22]	Nau, et al. [25]
A: Self reported individual outcomes									
Attitude									
…aggressive behaviour is predictable/preventable	(↑+/-)			(↑*)		(→)			
…training is important	(→)								
…feeling supported by co-workers and organisation, being aware of co-workers strengths and weaknesses					(↑+/-)				
…patient motivation/responsibility for aggression	(↑+/-)			(↑+/-)		(↑*)			
…aggression is part of the job (self respect & staff rights)	(↑+/-)			(↑*)					
…provocative approach				(↑*)					
Confidence									
…able to stay safe/ feeling safe			(↑)	(↑*)		(*)	(↑*)	(↑*)	
…in managing aggressive situations (non-physical intervention skills)	(↑+/-)			(↑+/-)	(↑)	(*)	(↑*)	(↑*)	
…in physical intervention skills	(↑*)				(↑)	(*)	(↑*)	(↑*)	

* Questionnaire by Beech [32] included items about attitudes and perceived skills in dealing with aggression. Changes in attitude and perceived skill were not reported in this study with a focus on skills development.

	Beech [18]	Doyle and Klein [23]	Fernandes, et al. [19]	Beech and Leather [21]	Deans [26]	Grenyer, et al. [20]	Zeller, et al. [24] *	Nau, et al. [22]	Nau, et al. [25]
…in working with aggressive patients							(↑*)	(↑*)	
Awareness: own feelings/reactions					(↑)		(↑*)	(↑*)	
Changes: in daily practice								descriptive	
Knowledge and skills					(↑*)		(↑*)	(↑*)	
B: Self reported incidence of PVA									
Incidence of PVA			(↓+/-)		(↓)		pre training		
Impact of incident on staff (reaction, coping, injuries)			descriptive						
Details of aggressor and nature of incident (verbal/physical)			descriptive		descriptive		pre training		
C: Externally assessed knowledge, competencies, problem solving									
Responses to written scenarios				(↑*)	post training				
Problem solving: practical exercise (de-escalation)									(↑*)
Risk factor identification/ early warning signs		(*)							
Recommended (standard) behaviour		(*)							
Legal framework		(*)							

	Beech [18]	Doyle and Klein[23]	Fernandes, et al.[19]	Beech and Leather[21]	Deans[26]	Grenyer, et al.[20]	Zeller, et al.[24] *	Nau, et al.[22]	Nau, et al.[25]
Institutional policies and procedures		(*)			(↑*)				
Theories of aggression		(*)							

(↑*) statistically significant increase post-intervention; (↓) (reduction); (↑) (increase); non-significant change post-intervention; (↓+/−) some significant changes post-intervention in category; (→) no significant change post-intervention; (*) overall category statistically significant scores, but no breakdown of individual scores provided.

3.6 Effect of training on confidence

Seven studies assessed the effect on individuals' confidence.[18-22,24,26] The overall effect of the training on participants' confidence was positive, with significant increases in confidence reported by three studies.[20,22,24] Grenyer et al.[20] observed increased confidence scores with the number of training modules completed. However, Fernandes et al.[19] found that staff did not constantly feel safe when dealing with aggression, feelings varied depending on the situation, yet overall staff reported feeling safer in their workplace compared with baseline. The feeling of safety also seems to decrease with time elapsed after training: Beech and Leather[21] found significant changes on “maintaining safety” and “prediction and prevention”, but no increased confidence in practical ability to manage PVA: while there was a significant increase in how participants perceived their practical ability to manage PVA before the training, there was a drop below baseline three months after the training. Concurring, Nau et al.[22] found that participants' confidence in dealing with physical patient aggression decreased 4-8 weeks after training, although it remained significantly increased compared to baseline.

3.7 Knowledge and skills

Four studies included external assessment of knowledge and skills.[20,21,23,25]
Doyle and Klein[23] tested staff knowledge to establish whether a poster presentation or conventional training session was more effective and observed a statistically significant improvement in mean post-test scores on knowledge in both groups. Beech and Leather[21] and Grenyer et al.[20] used written scenarios post training to test participants' knowledge on risk factor detection. Four studies included external assessment of knowledge and skills. [20,21,23,25]

Doyle and Klein[23] tested staff knowledge to establish whether a poster presentation or conventional training session was more effective and observed a statistically significant improvement in mean post-test scores on knowledge in both groups. Beech and Leather[21] and Grenyer et al.[20] used written scenarios post training to test participants' knowledge on risk factor detection. Both studies found increases in risk factor detection following training compared with baseline, with Beech and Leather[21] detecting even further improvement on the 3-month follow-up. Nau et al.[25] assessed students' practical de-escalation skills through videotaped scenarios that were rated by experts based on the “De-escalating aggressive Behavioural Scale” (DABS),[33] a 7-item 5-point Likert scale, which represents desired behaviours in aggressive situations, such as communicating effectively with the patient, as well as inopportune staff reactions. Nau et al.[22] found that students' de-escalating performance improved significantly on every item of the DABS after the training.

3.8 Effect on incidence rates of PVA

Two studies collected data on incidence rates, details of the nature of aggressive acts (physical/verbal),[19] and its impact on staff.[26,19] Fernandes et al.[19] reported an overall significant decrease in verbal PVA and an initial decrease in physical PVA after the training compared to baseline, but also observed a slight increase in incidence 6 months after the training compared to 3 months of follow up. Deans[26] found a non-significant decrease in incidence of PVA in the 3-month period following the training.

4 Discussion

This review presents research evidence on the effect of aggression management training for nurses and nursing students working in an acute general hospital setting.

The distribution of study quality scores in our sample corroborates other published reviews synthesizing evidence on the effect of staff training in mental health and emergency nursing.[34-36] All nine studies included in this review reported positive effects relating to one or more of three domains: individual attitude and confidence, incidence of aggression, and individual competence.

Changes in attitude and confidence are frequently examined to determine the effect of aggression management training.[13,37] Seven out of the nine studies assessed either changes in confidence, attitude, or both, and concluded that the training had positively influenced staff. These multiple sources thus indicate that training interventions truly have a positive effect on attitude and confidence regarding management of aggression. Staff attitude towards underlying causes for patient aggression has been found to determine the way they manage aggressive behaviour.[38] While confidence in ones' ability is crucial for performing well, it must also be underpinned by actual ability.[39] Confidence levels in nurses increase with clinical experience, yet judgment accuracy does not increase in line: Experienced nurses may be particularly overconfident in challenging and complex situations. [40] Excessive confidence in ones' aggression management skills may be dangerous.[22] Nurses therefore need to be aware of their limitations in managing PVA.

Participants' theoretical knowledge,[23] risk factor identification[20,21] and practical de-escalation skills[25] increased. Results are equivocal with regards to incidence reporting. Fernandes et al.[19] reported an initial decrease in PVA per shift and employee in an emergency department, but also observed a slight increase in incidents on a follow up after 6 months. Deans[26] also found a trend towards reduced incidence of PVA 3 months after the training. Incident reporting is a questionable outcome measure: a reduction in reporting of PVA may be attributed to enhanced PVA management. However, training may also

lower barriers to reporting, resulting in apparent increases.[13] Furthermore, established workplace or organisational culture may not actively support prevention of PVA and thus prevent staff from applying newly acquired aggression management techniques.[9] Current guidance recommends a whole organisation approach based on partnership working and integration of health and safety, policy and service provision perspectives.[37] However, it fails to address cultural change. According to Senge et al.[41] sustainable change in organisations requires 'outer shifts' such as processes, strategies, practices, etc., as well as 'inner shifts' in people's values, aspirations and behaviours across all staff and management levels. Guidance on aggression management appears to emphasize 'outer shifts', with too little focus on how to affect those 'inner shifts' that are essential for sustained cultural change.

A slight reduction in PVA as observed by Deans[26] might result from seasonal variations rather than staff competence.[42] Still, frequent exposure to PVA poses health risks. Training should therefore include elements to strengthen nurses' resilience against harmful effects of PVA, protecting their health and foster wellbeing.[13]

This review has some limitations. First, the nine reviewed studies feature disparate aims and designs. The programmes varied in length and delivery methods. This hampered direct comparison. However, course topics were fairly homogenous and conformed to current guidance.[37] Second, the programmes were delivered to staff with diverse professional experience and workplace settings. It has been proposed that nursing students' training needs and risks of exposure to PVA in their daily practice differ from those of fully trained staff. Students lack competencies in detecting, managing and coping with aggressive situations.[10,43] According to Benner's,[44] 'novice to expert model' nursing students should be taught analytical skills, while examples from practice should be discussed with more experienced practitioners. Benner[44] maintains that clinical experience leads to expertise and intuitive management of complex situations, such as PVA. Intuition is highly valued in nursing and has been extensively researched descriptively, yet its efficacy in decision-making remains unconfirmed.[45] Clinical experience does not necessarily lead to better judgment ability.[40] Therefore aggression management programmes for nurse students and experienced nurses should cover both analytical[46] and reflective learning: Student nurses need a sound knowledge base, while experienced nurses have to recognize professional insecurity to reduce the risk of being overconfident [40] when dealing with PVA.

A third limitation is that co-authors of this study have authored studies reviewed in this manuscript. To reduce potential bias, the respective studies were reviewed independently.[22,24] We included studies published between 2000 and 2011. To our best knowledge one potentially relevant study published between 2011 and 2014 by Gerdtz et al.[47] was not included in this review due to its recent publication date. Gerdtz et al.[47] evaluated the impact of a rapid

intervention model aimed at modifying nurses' attitude towards aggression in an emergency room setting. They found only limited evidence for the programme achieving this aim and their findings are therefore in line with our equivocal results on the impact of aggression management training on attitude change.

5 Conclusion

This review collated evidence on the effect of aggression management training for acute general hospital nursing staff and students. Training increases nurses' knowledge about risk assessment, management of aggression. It boosts confidence in dealing with PVA, yet training effects no significant long-term reduction in incidence of PVA. This underscores current recommendations to address PVA in a whole organisation approach, which includes ‘outer shifts’, i.e. staff training, health and safety guidance and policies. However, ‘inner shifts’ i.e. changes in the values, aspirations and behaviours that promote active prevention of PVA across all hierarchy levels are crucial to reduce PVA. Therefore achieving cultural changes across all hierarchical levels within an organisation needs to be part of an overall strategy.

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Chapter 3

The participant's perspective: Learning from an aggression management training course for nurses. Insights from a qualitative interview study

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Abstract

Background: Aggression management training for nurses is an important part of a comprehensive strategy to reduce patient and visitor aggression in healthcare. Although training is commonplace, few scientific studies examine its benefits.

Aim: To explore and describe, from a nurse's perspective, the learning gained from attending aggression management training

Design and methods: This was a descriptive qualitative interview study. We conducted semi-structured individual interviews with seven nurses before (September/October 2012) and after they attended aggression management training (January/February 2013). Interview transcripts were content-analysed qualitatively.

Ethical issues: The study plan was reviewed by the responsible ethics committees. Participants gave written informed consent.

Findings: Aggression management training did not change nurses' attitude. Coping emotionally with the management of patient and visitor aggression remained a challenge. Nurses' theoretical knowledge increased, but they did not necessarily acquire new strategies for managing patient/visitor aggression. Instead, the course refreshed or activated existing knowledge of prevention, intervention and de-escalation strategies. The training increased nurses' environmental and situational awareness for early signs of patient and visitor. They also acquired some strategies for emotional self-management. Nurses became more confident in dealing with (potentially) aggressive situations. While the training influenced nurses' individual clinical practice, learning was rarely shared within teams.

Conclusions: Aggression management training increases skills, knowledge and confidence in dealing with patient or visitor aggression, but the emotional management remains a challenge. Future research should investigate how aggression management training courses can strengthen nurses' ability to emotionally cope with patient and visitor aggression. More knowledge is needed on how the theoretical and practical knowledge gained from the training may be disseminated more effectively within teams and thus contribute to the creation of low-conflict ward cultures.

1 Introduction

Aggression in healthcare settings is a complex problem with serious negative consequences. Aggression may be expressed verbally (e.g. threats, harassment, bullying, verbal abuse), or physically (e.g. slapping, kicking, biting, stabbing).[1,2] Perpetrators may be co-workers, managers, patients or visitors.[3] The majority of acts of physical or verbal aggression originate from patients or visitors.[4-9] While most incidents of patient or visitor aggression (PVA) arise in mental health and accident and emergency departments,[10,11] PVA also occurs in other clinical settings, such as medical and surgical departments.[12,13] Frequent staff exposure to aggression hampers recruitment and retention and engenders a multitude of problems in the workforce, such as heightened risk of burnout, sleep disturbance, anxiety, as well as intent to leave the profession.[6,9,14,15] PVA is influenced by a variety of internal, external and interactional factors,[16] however there is to date no comprehensive theory of PVA and how it emerges in the inpatient setting.[17] The development, application and evaluation of a theory that amalgamates current scientific knowledge will be a crucial to step towards better management of PVA in clinical practice.

Initiating and maintaining a nurse-patient relationship that is underpinned by an attitude of positive evaluation, emphasizes equality, patient participation and autonomy may prevent PVA.[18-21] Today, inpatient care is often delivered in a fast-paced environment with rapid turnover. This allows little time for establishing caring relationships. The necessity to penetrate patients' physical privacy during nursing interventions may induce feelings of fear or threat. These can trigger aggressive patient responses.[22] Aggressive episodes develop over five phases (trigger, escalation, crisis, plateau and post crisis depression phase).[23] Detecting aggression, intervening and de-escalating at an early stage is essential.[24] Regular aggression management (AM) training is recommended as part of an overall strategy to address PVA. Training should increase theoretical knowledge and foster interactional competencies, such as preventing and de-escalating PVA verbally and non-verbally in a non-coercive, collaborative, and interactional approach.[25] AM training also aims to modify nurses' attitudes towards PVA, as attitudes influence the management of PVA.[26] Nurses' attitudes have been examined from a number of vantage points:[11] The experience of aggression,[27] the prediction and patient motivation for aggression,[27] nurses' attitudes towards physical assault,[28] and causal factors as well as management of aggression.[29] In clinical practice, nurses are perpetually challenged to cope with the emotional impact of PVA.[6,9] The importance of strengthening the ability to manage demanding situations has only recently been acknowledged. Fostering staff's coping skills and resilience for better management of the long-term psychological impact of PVA are now recommended components of AM training.[30,31] Although there is no lack of recommendations for designing AM training, scientific evidence proving its

actual benefits is limited:[32] a number of literature reviews synthesizing evidence on the effect of AM training point to predominantly low quality of research.[33-37] In practice, AM training evaluation has been criticized for failing to go beyond 'happy sheets', i.e., feedback forms filled in by course participants on completion of the training.[25,32] Such feedback forms tend to elicit the course participants' immediate satisfaction with the training, the aspects they liked and disliked.[38] In-depth evaluation is crucial to determine if AM training meets the stated objectives and is appropriate for the target group, as well as to ensure appropriate allocation of financial resources for costly training courses.[32]

2 The study

2.1 Aims

The aim of this study was to obtain insight, from a nurses' perspective, into learning gained from attending AM training. Our research questions were:

1: How does AM training affect nurses' attitude towards and coping with PVA?

2: How does AM training influence nurses' PVA prevention, early intervention and de-escalation strategies?

2.2 Design

We conducted semi-structured qualitative interviews before and after an AM training for registered nurses working in Swiss hospitals. The interviews were content analysed.[39] Emerging themes were compared to establish the influence of AM training on nurses' attitudes towards and ability to cope with, prevent, and manage PVA.

2.3 Description of the aggression management training programs

Nurses participated in either AM training 'A' or 'B'. Both programs were developed at Swiss universities of applied sciences and delivered in October and November 2012 ('A'), or from October until December 2012 ('B').

Trainings 'A' and 'B' were similar in content, teaching methods and input time. The main difference was that training 'B', being part of a degree pathway, featured more theoretical input on legal and institutional aspects. Table 1

provides details of both training programs. Nurse education in Switzerland has undergone substantial reform over the past two decades. Today, diploma level nursing is taught at bachelor's degree level across five Swiss universities of applied sciences. Prior to reform, nurses obtained a diploma by training in schools of nursing which were linked to hospitals. Program 'B' participants had qualified before the transition to tertiary nurse education was completed. They were working clinically and studying part-time towards a Bachelor of Science (BSc) degree.

Table 1 Details of aggression management training ‘A' and 'B'

Details: aggression management training ‘A’ and ‘B’	*A*	*B*
Duration	8.5 hours theory, 3.5 hours practical training (scenarios)	11 hours theory, 2 hours practical training (scenarios)
Participants	Seven registered nurses	21 registered nurses following a BSc course
	Training A and B	
Teaching methods	- Theoretical input sessions/ presentations, brainstorming, reflection, small-group work, discussion practical exercises, role play/ scenarios	
Contents	- Aggression theories - Factors influencing the development of aggression (early warning signs, de-escalation and intervention strategies) - Prevention strategies - Assessing aggressive/challenging behaviour - Reflection potential consequences of own attitude/ behaviour in critical situations - Reflection on team strategies - Safety management within organisation	
Practice sessions (participants were divided into two groups)	Two scripted scenarios, professional actor playing an aggressive patient. All students played at least one scenario. Peer and tutor feedback.	

2.4 Sample

Registered nurses qualified at diploma level and participating in either AM training 'A' or 'B' were eligible for inclusion. Participants were recruited from a population of 28 eligible nurses. Course attendants received an invitation and information letter via the respective institutions organising the course. They were invited to reply directly to the researcher. This approach ensured that course leaders remained unaware of who participated, and limited the researcher's access to contact details of study volunteers. The invitation and information letter outlined the study's objectives and the main researcher's professional background. A total of nine nurses replied to the invitation. One respondent declined to participate due to lack of time, and one respondent was unavailable after initial email exchange. The final sample consisted of seven nurses who participated in two interviews each: one interview before and one after the AM training.

2.5 Data collection and analysis

Interviews were conducted in September / October 2012 (1-4 weeks before AM training) and between January / February 2013 (3-12 weeks after AM training) by BH in German. BH prepared for the task by interview simulation. Interview guides were modified from Naish, et al.[40] (written permission obtained). Naish, et al.[40] identified key issues in aggression within a primary healthcare and community setting. Naish et al.'s[40] guide was translated into German and adapted to the study's purposes by consensus of a team of healthcare researchers, comprising, amongst others, two experts on aggression management in healthcare. We developed one guide for the interviews before the training and one for interviews after the training. Table 2 shows section headings and example questions for both guides. The guides were pilot-tested on two volunteer healthcare professionals. Testing revealed that no further changes were necessary. The study participants chose the mode of interview: face-to-face, SKYPE™ non-video-telephony (Microsoft Corp., Redmond, Washington, USA), or telephone. Face-to-face interviews were conducted in a quiet meeting room on the hospital premises. Telephone or Skype interviews took place at the participants' choice of location. Table 3 (below) shows participants' choice of interview mode and respective duration.

All interviews were digitally recorded and transcribed by BH. BH coded both before and after AM training interviews. The base unit of analysis was the sentence. Sentences in a sequence logically pertaining to particular ideas or thoughts were coded as a single unit. An initial round of deductive (template)

coding [41] and content memo writing was followed by inductive coding. In a third cycle, the coding was reviewed and condensed. HEB and BH reviewed the resulting coding frame and memos. Differences were resolved through discussion.[42] BH and HEB collaboratively condensed, connected and interpreted the categories.[43] The initial interviews provided a baseline, i.e. a description of the situation before the AM training for comparison with the results of the interviews after the AM training. We created an audit trail of the code lists from the different stages of the coding process in MAXQDA®, a software for computer-assisted qualitative data analysis (VERBI GmbH, Berlin, Germany).

Figure 1 illustrates the coding process. Figures 2 and 3 show the final coding templates before (Figure 2) and after the training (Figure 3).

Table 2 Interview guides before and after the AM training. Section headings and example questions

*Section headings (*Naish et al.[40])*	*Interview questions before training (Examples)*
Meaning* (perception of aggression and violence)	'What does aggression in the workplace mean?' 'How is aggression in the workplace expressed?' 'How does workplace aggression affect your team?'
Experiences* (incidents and fears)	'Can you give an example of an aggressive situation in your workplace?' 'How did you feel in this situation?' 'How often do you experience aggression in the workplace?'
Beliefs* (e.g. stereotyping of patients, vulnerability of staff)	'Do you think there are particular persons or groups who tend to become aggressive? 'In you opinion, what are triggers for aggressive behaviour?'
Strategies* (changes to date or proposals for change)	'What does your employer do to support you in dealing with PVA?'
Personal strategies	'How do you deal with aggressive patients?'
Expectations	'What are your expectations regarding the AM training course?'
*Section headings (*Naish et al.[40])*	*Interview questions after training (Examples)*
Feedback on training program	'What was the most important element of the training?' 'Why was this particularly important?'
Meaning* (perception of aggression and violence)	'How often do you encounter aggression in your workplace?' 'How does aggression affect your team?'
Experiences* (incidents and fears)	'How do you feel when dealing with an aggressive patient?' 'Can you give me an example of an aggressive situation and how you dealt with it?'
Beliefs* (e.g. stereotyping of patients, vulnerability of staff)	'How do you rate your ability to deal with aggression?' 'How do you define aggression in the workplace?' 'How do you feel about patients who are aggressive towards you?'
Strategies* (changes to date or proposals for change)	'What could be done to better support staff?'
Personal strategies	'Which strategies to you employ today to deal with aggression?'

Table 3 Participants' choice of interview mode and interview duration

	Interviews before AM training				*Interviews after AM training*			
Participant	*Interview mode*			*Duration*	*Interview mode*			*Duration*
	Face-to-face	*Telephone*	*Skype (non-video)*		*Face-to-face*	*Telephone*	*Skype (non-video)*	
Nurse 1		×		49:48		×		40:08
Nurse 2	×			53:58		×		47:08
Nurse 3		×		29:04		×		38:30
Nurse 4	×			39:11		×		51:25
Nurse 5		×		32:02		×		53:30
Nurse 6			×	45:15			×	46:54
Nurse 7		×		50:40		×		28:54

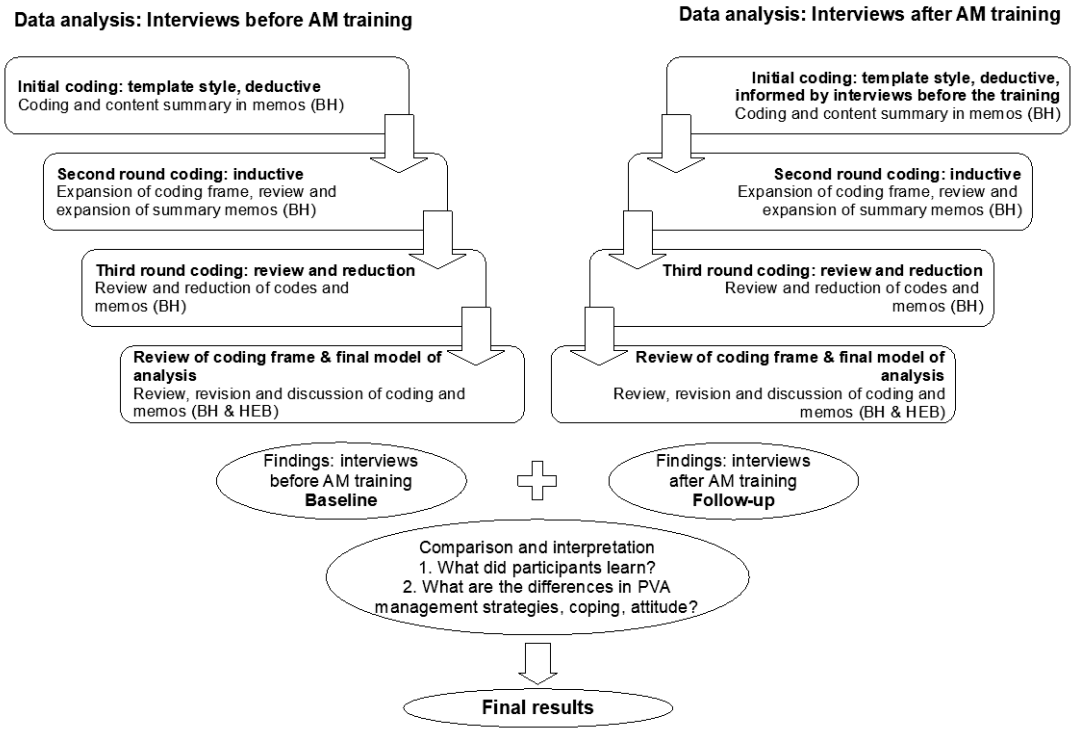

Figure 1 The coding process

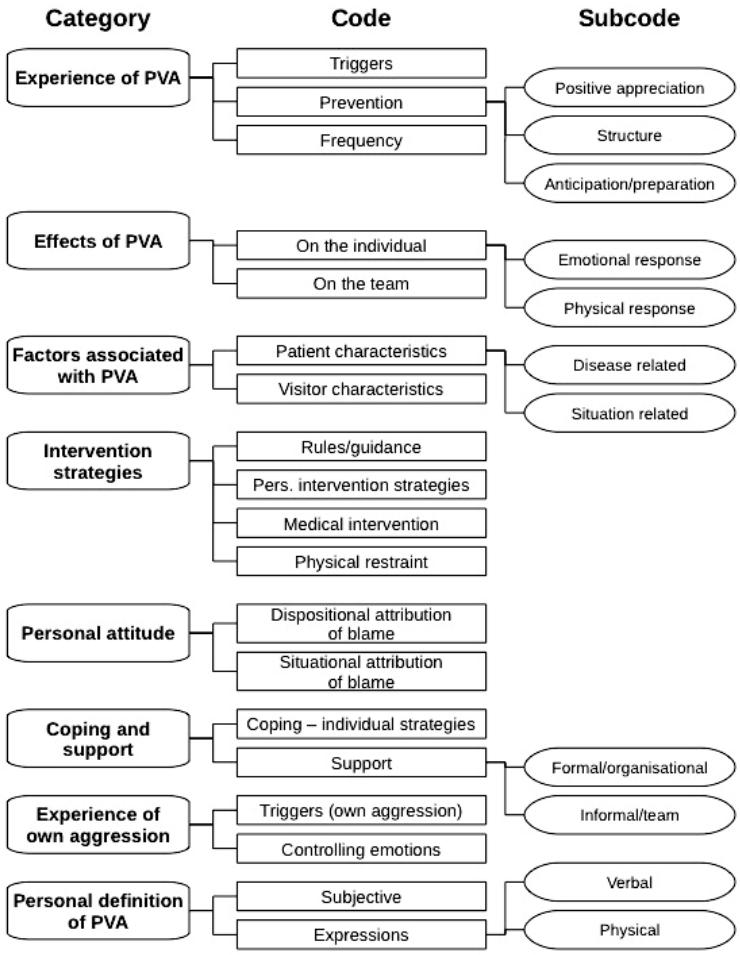

Figure 2 Final model of analysis: the initial situation baseline (interviews before aggression management training

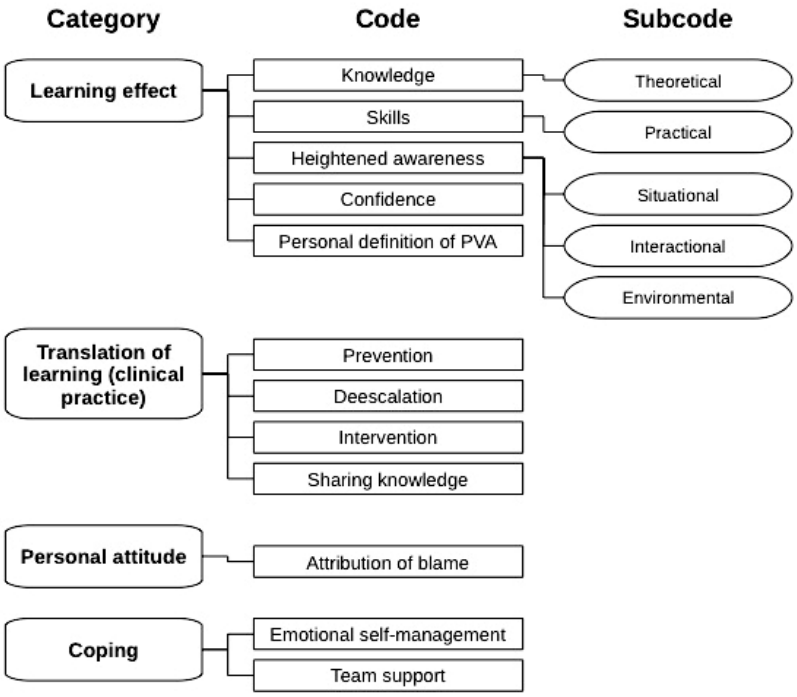

Figure 3 Final model of analysis: the follow-up interviews (after aggression management training)

3 Ethical considerations

The two responsible Swiss cantonal ethics committees reviewed the study plan and decided that a formal application was not necessary. The respective organizers of the training (one hospital–training 'A' and one university of applied sciences–training 'B') gave permission for the study in writing. All study participants gave written informed consent. They were advised that participation was voluntary and that they could withdraw from the study at any point. To ensure data protection, all personally identifiable information was coded in the interview transcripts.

4 Validity and rigour

Credibility, authenticity, criticality and integrity are primary criteria of validity in qualitative research.[44] We strengthened the credibility and authenticity, that is

the study's interpretive and descriptive quality[44] by interpreting the interviews at a fairly superficial level: we treated language as 'a vehicle of communication, not itself an interpretive structure'.[45] By remaining closer to the data than researchers with other methodological orientations (e.g. phenomenology or grounded theory), we increased the transparency of our interpretations for our readers.[45] We addressed the criterion of criticality[44] by creating an auditable trail comprising the raw interview data, coding records and handwritten notes.[46] The handwritten notes also strengthen our study's integrity, as they are a track record of our discussions and thoughts during the interpretation process.[44]

5 Findings

Four participants were female, three male. Two had between 1-5 years, four between 6-10 and one more than 10 years of clinical nursing experience. They encountered varying degrees of PVA within their clinical areas. Four nurses who worked on mixed speciality or medical wards rarely (i.e. less than once a week) experienced PVA either as verbal aggression (snubbing of staff, rudeness) or physical attacks mainly originating from confused patients or patients suffering from dementia. Three nurses employed in intensive care, an emergency department, or heroin-assisted treatment experienced verbal or physical PVA frequently (i.e. several times a week to daily).

Four categories described the effect of AM training: (i) learning effect, (ii) translation of learning into clinical practice, (iii) attitudes towards patients' behaviour and (iv) coping and self-management of emotions. The categories are described in more depth in the following section.

5.1 Learning effect

Nurses gained knowledge on theories of aggression, influencing interactional factors (e.g. body language, physical proximity), situational and environmental factors (e.g. architectural features and lighting). Some nurses became aware of the subjectivity of aggression and the complexity and multifactorial nature of PVA. Interestingly, the nurses did not necessarily acquire new PVA management strategies. Instead, the training refreshed existing knowledge, or nurses recognised that they had previously been using de-escalation strategies intuitively. Practical exercises such as a role-play deepened the learning experience as nurses practiced de-escalation and aggression management skills in a safe but realistic setting. Overall, the training increased nurses' confidence in dealing with aggressive situations, particularly in those

participants who had been less experienced in dealing with PVA. Participants also became more aware of their own limitations. Particularly nurses who were frequently exposed to aggression appreciated that not all situations can be controlled or completely de-escalated:

> *Nurse 7: '[…] most of the times my goal […] is to stop the aggression and to try to help someone out of their aggressive behaviour. The training showed me quite plainly that this is sometimes […] too high a goal, which is simply not achievable. […] In such [very difficult] situations the goal may well be to prevent physical violence.'*

5.2 Translation of learning into clinical practice

The learning affected participants' prevention, early intervention and de-escalation of PVA. However, they rarely shared their learning with their colleagues.

Prevention

Before attending AM training. Nurses highlighted the importance of preventing PVA by approaching patients in a respectful manner. They strove to avoid conflict by taking the patient seriously and being responsive, i.e. communicating with the patient and finding consensus. Nurses tried to be flexible and accommodate patients' wishes to prevent conflict situations.

After the AM training. Nurses' retained prevention strategies, but had somewhat refined them. They strove, for example, to keep patients informed during waiting periods. The nurses reported paying more attention to maintaining an appropriate physical distance. They were more aware of their tone of voice, gestures, body posture and positioning in their interactions with patients or visitors. They were also more mindful of patients' facial cues or gestures and, as a result, noticed and appropriately addressed situations with potential for aggression earlier.

Early intervention and de-escalation

Before the AM training. Most nurses described how they managed early stages of the assault cycle by communicating and showing empathy. If this strategy failed, most nurses removed themselves from a situation before it became confrontational:

> *Nurse 6: 'I crave harmony very, very much […] I start to make concessions, I try to come to a compromise, I try to achieve a lot through talking, particularly with aggressive patients, […] [sometimes] I might send in a colleague or maybe the physician […].'*

One nurse described a more proactive approach.

> Nurse 7: '*[…] You notice these tiny little signals […] that indicate the beginnings of aggression and that require immediate intervention on our behalf. […] [My strategy] depends on the patient. Because, if I do not know someone at all, I would probably say: 'Oh, you are frightening me, you look as if you could go up the walls and destroy our furniture. […].*' *And then, very often, there is a deep breath and, then the reply: 'yes, you are right'. And then, violence is almost not possible any more.*'

After the AM training, nurses employed the de-escalation strategies more consciously as their actions were now underpinned by theoretical knowledge:

> Nurse 2: *'[The training] showed me some strategies, clarified the goes and no-goes […]. These were actually not [new strategies]. [Laughing] But there are some things that you have to […] hear a hundred times and refresh time and time again, so they remain somewhat present and that you […] internalize [them].*'

Some nurses highlighted the importance of using strategies in a genuine and authentic fashion, rather than playacting them. Nurses felt they had more options to respond to aggressive behaviour. They also became more discerning about using sedation and restraint in response to patient aggression:

> Nurse 6: '*[I learned] that in some situations, you definitely can't avoid sedation or restraint, but in very, very many [situations] these [measures] can have the opposite effect and you don't have to restrain people just to spare the team […].*'

5.3 Attitude towards patient's behaviour

'Attitude towards PVA' in this study was defined as 'nurses' favourable or unfavourable evaluation of patient responsibility for PVA',[46] that is the extent to which nurses held patients accountable or attributed blame for their aggressive behaviour. The attitude determined nurses' emotional response to PVA. If underlying factors such as an illness or side effects of medication caused the PVA, nurses did not attribute blame and tended to remain emotionally detached. Nurses attributed blame if behaviour was perceived as a disproportionate reaction, as disrespectful or offensive. This triggered emotional responses in nurses. The majority of nurses reacted by withdrawing and minimising personal contact to avoid further conflict.

> Nurse 1: '*[…] In those situations where you know exactly why this person is confused and why he is aggressive I succeed, I believe, to dissociate [myself from taking PVA personally] relatively well, but this is more difficult if, for example, someone, because he has to wait for his meal or so, becomes very aggressive. [This behaviour] is, from my point of view, exaggerated*.'

Nurses' attitude towards PVA did not change after AM training. In the interviews

following the intervention, one nurse illustrated vividly how behaviour that she perceived as disrespectful challenged her, as in her role as a nurse, she was expected to show respect towards patients at all times:

> Nurse 4: '*[…] [the AM training] was at a good point in time. […] Because I had been in this situation where this patient insulted me for being a 'German nurse' and this hurt me quite a bit. I was thinking […] 'I DON'T have to put up with this' […] why do I always have to understand everything? Just because I am a nurse, [patients] cannot treat me however way they want. […] But then, you always have to look at these trigger factors and such […]. I often think […] hey, I have to pull myself together, […] the patient could also pull himself together. […] I still find this difficult. Because, in this training, it is being conveyed that […] the patient cannot help but be aggressive, whereas I think: Sure! […] I have been brought up to show another person respect, why then, does [the patient] not do this?*'

5.4 Coping

Coping has been defined as 'efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person' (p.141).[47] This study focused on how nurses managed their own emotions evoked by aggressive situations.

Before the AM training: Nurses highlighted that staying calm and controlling one's own emotions when facing PVA were hallmarks of professionalism, but they also talked about how upsetting, anger- or fear-inducing the experience of PVA could be. When nurses themselves became angry, they tried to calm themselves down by justifying, explaining or trying to understand the patient's situation. If they were too upset, they had to remove themselves from the situation. Team colleagues were an important resource for coping with these emotions:

> Nurse 2: *'[…] you just go into the room where we prepare the medications and drag someone in with you and quickly let off steam. […]. [Maintaining] mental hygiene is actually important. To outsiders, this sounds very judgmental, very derogatory, very devaluing, yeah? And, you have to tell yourself, 'well, I need this now' and then you can go in [to the patient's room again] [pause] and it is ok again.*'
>
> Nurse 5: '*Well, we talk about the patients […]. You have to, how do you say, get rid of your aggression somehow and crack some jokes about the patient and such. I mean, we work a lot with humour. It is actually not good if someone else hears this, but well, we get rid of a lot [through humour], we laugh a lot during the breaks […].*'

Mutual social support from colleagues was important in aggressive situations (i.e. coming to each other's aid), and for provision of aftercare:

> Nurse 7: *'[…] the communication with my colleagues [is important], to confirm that how we acted was ok, that [we took] the right decision. But also to reflect on, where there would have been points where we could have acted even better*.'

After the training. The interviews after AM training showed that emotional self-management of PVA had not changed to a large degree. Team and individual colleagues remained as important a resource for coping with PVA, but some nurses also talked about having obtained new personal strategies to cope with their own emotions by creating some space between themselves and the aggressive situation. Some participants explained how they were better able to let go of their emotions and better able to choose how to respond to the patient:

> Nurse 4*: '[…] you should find your own strategy […]. Look out of the window, count to ten, or, well look at the clock or [do] anything that's quickly [done], that's not obvious to the other person, but that somewhat removes you from the situation, from the feeling the situation triggered in you*.'

The ability to manage one's own emotions appeared not to have increased substantially. Remaining emotionally dissociated remained a challenge. Perceived changes were subtle and expressed in tentative language:

> Nurse 2: *'Yes, [I let off steam with my colleagues] maybe a little, well, less. Maybe a little later, or so, […] because I can be a bit more relaxed in the [aggressive] situation, because I may not be drawn into it sooooo easily*.'

Figure 4 illustrates the findings of this study.

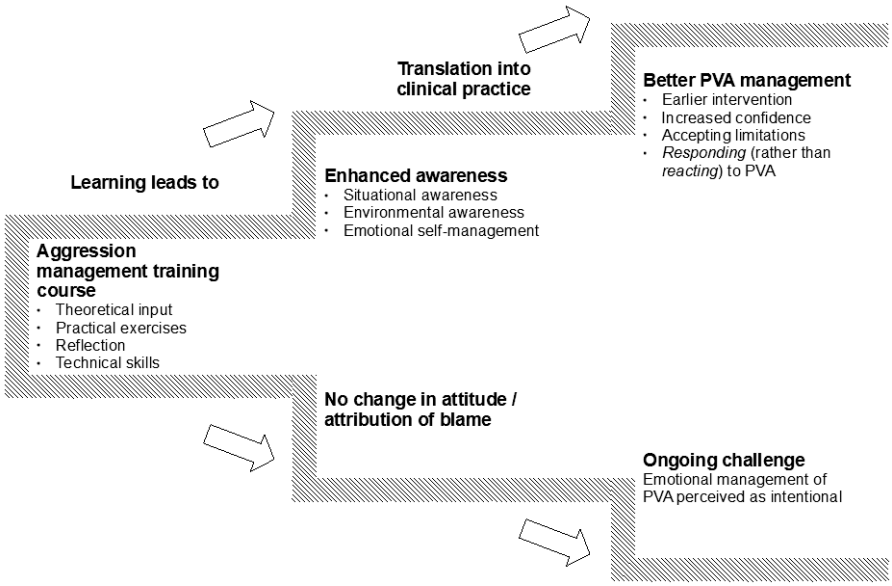

Figure 4 Results: learning from an aggression management course

6 Discussion

This qualitative, longitudinal, before-and-after interview study provided insight into nurses' learning from AM training. The results show that AM training had a subtle yet tangible influence on how nurses deal with PVA. Most learning occurred at the level of skills and knowledge, managing the emotional impact of PVA remained challenging.

Learning effect

The AM training mostly refreshed, activated, and extended existing strategies to manage PVA. It also increased nurses' situational, interactional and environmental awareness for PVA. These findings are in line with recent research results.[48] An increase in confidence in dealing with PVA, as reported by our participants, has also been shown in a number of quantitative studies.[49-52] However, some nurses who were more skilled and routinely exposed to aggression in their clinical environments also realised that some situations cannot be solved or de-escalated entirely: every new situation poses a unique challenge.[53] This somewhat more accepting stance towards one's own ability or even inability to solve every conflict may be related to self-compassion and better emotional coping with the effects of PVA.[54,55] This aspect has to date not been researched in relation to the management of PVA.

Translation of learning into clinical practice

Our participants reported more proactive prevention and management of PVA. In essence, they were enabled to choose a more conscious and deliberate *response* to PVA, rather than automatically *reacting* to it. Our findings correspond with those of a recent mixed methods study investigating the effect of a training session for emergency department staff (MOCA-REDI).[48] The effect of the training was assessed quantitatively in a before and after intervention staff survey, as well as qualitatively through interviews with ward managers. The qualitative MOCA-REDI interviews revealed that some staff paid more attention to preventing aggression.[48] Interestingly, this observation from a ward manager view is confirmed from a staff nurse perspective in our study. However, our study does not provide an answer as to whether the training generated sustained changes. Establishing new behaviours requires time and consistency.[56] Our follow-up period of 3-12 weeks may have been too short to capture such effects. Furthermore, the participants shared their learning only to a limited extent within their teams and reported no change in work routines. Teamwork is essential in creating a low-conflict ward environment.[57] In order to maximize the benefit of AM training, it may be beneficial to train whole teams rather than individual staff. AM training may thus be connected to a learning approach that enables long-term capacity and competence within the whole organisation.[58]

Attitude towards patient behaviour

We worked from the premise that the nurses' attitude, i.e. the positive or negative evaluation of a patient's behaviour, determines the nurse's response.[47] The Attitude Towards Aggression Scale (ATAS)[27] has been developed as a tool to assess staff attitude towards aggression across five domains: (i) offensive, (ii) communicative, (iii) destructive, (iv) protective and, (v) intrusive.[27] Offensive, destructive and intrusive patient behaviour will be evaluated negatively, protective or communicative behaviour will be evaluated positively.[27] Our participants described attribution of blame in line with the ATAS.[27] However, an important new finding in our study is the emotional impact of negatively evaluated aggression. Patient insults, critique or rejection can be perceived as social rejection, a threat to one's own self-esteem, or perceived control[59] and trigger challenging emotions such as anger, frustration, impatience or fear.

Coping

Although the participants acquired some strategies to help them calm down or to somewhat disengage themselves from their emotions, managing feelings of anger or fear remained a challenge. This finding affirms recent recommendations to equip staff with strategies to reduce the emotional impact of PVA.[30,31] The nurses identified team support as crucial in dealing with PVA. They often vented their feelings to a colleague or discussed issues within the

team. Teamwork has been highlighted as essential role in creating supportive, low-conflict ward environments.

Limitations

A number of limitations apply to this study. The sampling strategy entails response bias, as those nurses who participated may have been more interested in the topic of PVA than those who declined. The number of seven participants is small, but we achieve strong face validity thanks to the longitudinal design, where each after-training data point can be compared to a tightly corresponding baseline data point. The question how large or small a sample should be is surrounded by controversy. Our sample size is commensurate to the available resources, research questions, and design to determine the sample size,[60] and we believe that the basis of our findings is solid in this respect. The scope of the study was narrow, but the sample was varied. It comprised male and female nurses from different clinical backgrounds with a range of experience of PVA. This variety added to the credibility of the results.[42] Seven participants were recruited out of a population of 28 nurses. The low response rate may be ascribed to a lack of incentives to participate and that they voluntarily contributed to this study in their spare time. Considering the small sample size, we cannot claim to have reached data saturation. Further qualitative research is needed to explore if our findings can be translated or reproduced in different cultural contexts. Furthermore, the study's confirmability would have been enhanced by member checking.[42]

To enable maximum flexibility, we offered our participants to choose between telephone, Skype or face-to-face interview. Although the use of a telephone and Skype video-telephony for data collection have been questioned, an empirical study demonstrated that there are no significant disadvantages of a telephone versus a face-to-face interview, on the contrary, the anonymity of a telephone conversation might add to the results.[61] Likewise, a review on Skype video-telephony concludes that computer-based interviewing is not necessarily inferior to face-to-face data collection.[62]

7 Conclusion

AM training is an important element of an overall strategy to tackle PVA, yet to date evidence on the benefits of AM training is scarce. This study offers a unique perspective as the first qualitative interview study to investigate nurses' learning from AM training. Nurses reported increased situational and environmental awareness as well as increased confidence and improved technical skills for preventing and managing aggression. However, managing the emotional impact of PVA remained a challenge. The findings highlight the

necessity for fostering skills to cope with the emotional impact of PVA as part of AM training.

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Author contributions

Birgit Heckemann participated in study conception/design. Birgit Heckemann and Helga E. Breimaier participated in data collection/analysis. Birgit Heckemann drafted the manuscript. Helga E. Breimaier, Ruud J.G. Halfens, Jos M.G.A. Schols and Sabine Hahn critically revised the intellectual content. Ruud J.G. Halfens, Jos M.G.A. Schols and Sabine Hahn supervised the study.

Ethical approval

Two responsible cantonal Swiss ethics committees reviewed the study plan and decided that a formal application was not necessary.

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Chapter 4

Nurse managers: determinants and behaviours in relation to patient and visitor aggression in general hospitals. A qualitative study

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Abstract

Aim(s): To explore nurse managers' behaviours, attitudes, perceived social norms, and behavioural control in the prevention and management of patient and visitor aggression in general hospitals.

Background: Patient and visitor aggression in general hospitals is a global problem that incurs substantial human suffering and organisational cost. Managers are key persons for creating low-aggression environments, yet their role and behaviour in reducing patient and visitor aggression remains unexplored.

Design: A qualitative descriptive study underpinned by the Reasoned Action Approach.

Method(s): Between October 2015 and January 2016, we conducted five focus groups and 13 individual interviews with nurse leaders in Switzerland. The semi-structured interviews and focus groups were recorded, transcribed and analysed in a qualitative content analysis.

Findings: We identified three main themes: (1) Background factors: 'Patient and visitor aggression is perceived through different lenses'; (2) Determinants and intention: 'Good intentions competing with harsh organisational reality'**;** (3) Behaviours: 'Preventing and managing aggressive behaviour, and relentlessly striving to create low-aggression work environments'.

Conclusion(s): Addressing patient and visitor aggression is difficult for nurse managers due to a lack of effective communication, organisational feedback loops, protocols and procedures that connect the situational and organisational management of aggressive incidents. Furthermore, tackling aggression at an organisational level is a major challenge for nurse managers due to scant financial resources and lack of interest. Treating patient and visitor aggression as a business case may increase organisational awareness and interest. Furthermore, clear communication of expectations, needs and resources could optimize support provision for staff.

Summary statement

Why is this research needed?

- Incidence of patient and visitor aggression in healthcare remains high and incurs substantial human suffering and organisational cost.
- Nurse managers are key persons in the prevention and management of patient and visitor aggression, but their behaviours, attitudes, and roles in the clinical setting with regard to aggressive incidents remain underexplored.

What are the key findings?

- Patient and visitor aggression is perceived from a situational and/or organisational perspective; both entail specific behaviours.
- Communication between staff nurses and management should be strengthened. Formal incident reports in particular are to date mainly used for statistical purposes, but should also serve as a tool to enhance communication between nursing staff and management.
- Addressing patient and visitor aggression at an organisational level is particularly challenging due to a lack of awareness within the organisation and scant financial resources.

How should the findings be used to influence policy/research/ education?

- Feedback loops, structured information exchange and data collection on patient and visitor aggression within the nursing team potentially improve its prevention and management.
- Nurse managers should develop prowess in presenting a strong business case for an anti-aggression strategy, comprising number of aggressive incidents, costs incurred, potential savings, and benefits to raise awareness in organisations that prioritize economic considerations.

1 Introduction

Nurses are a staff group at particular risk for experiencing verbal or physical aggression in the workplace.[1-3] Patients and visitors are the primary source of aggression in healthcare.[1] Approximately 60 % of all nurses worldwide report having experienced nonphysical or verbal violence, and 30% have been exposed to physical aggression.[1] Although the majority of patient and visitor aggression (PVA) occurs in mental health and accident and emergency departments, all clinical settings are affected.[4,5] This study focused on the general hospital setting. PVA is a complex phenomenon that occurs in many forms such as

> *« [...] insults, threats, or physical or psychological aggression exerted by people from outside the organisation, including customers and clients, against a person at work, that endangers their health, safety or well-being. There may be a sexual or racial dimension to the violence. Aggressive or violent acts take the form of*
>
> - *Uncivil behaviour–lack of respect for others*
> - *Physical or verbal aggression–intention to injure*
> - *Assault–intention to harm the other person. […] ».*[6]

PVA has long been recognized as a problem by policy makers. Efforts in research and politics to lower incidence rates have resulted in a plethora of recommendations and guidance on how to address PVA.[7,8] Despite these initiatives, PVA incidence remains high and the ensuing human and financial costs are a major burden on health systems.[9,10] Nurse managers are key persons for establishing safer, supportive, low-aggression work environments.[11-13] Their beliefs, attitudes and behaviours with regard to PVA are important for effective PVA management and staff protection.[14-16] Supportive managers increase the safety of work environments.[16] However, some research evidence shows that nurse managers may underreport or ignore PVA and staff protection to prioritize consumer friendliness or to protect a public image.[15,17,18] Despite their important role in creating low-aggression work environments, nurse managers' beliefs, attitudes and behaviours remain to date unexplored.

2 Background

Underpinned by the *Reasoned Action Approach* (RAA),[19] this study explores nurse managers' beliefs, attitudes and behaviours in relation to the prevention and management of PVA in the general hospital context. The RAA is the most recent version of a model that has been developed, refined and measured over the course of 45 years.[20,21] The RAA assumes that human behaviour is the

result of a causal sequence of decision-making processes. Decision-making is affected by certain determinants (i.e. attitudes, perceived social norms, perceived behavioural control, and their underlying beliefs) and certain background factors (e.g. training, professional position and experience, etc.). These factors and determinants influence a person's intentions and, eventually, their actual behaviour. Figure 1 shows the relationship between background factors, determinants, intentions and behaviours according to the RAA model.[19] The RAA helps to identify the salient beliefs, i.e. attitudinal, normative and control beliefs, which influence behaviour. Furthermore, it facilitates understanding which of those salient beliefs need to be changed to promote the desired behaviour, in this case the optimal prevention and management of PVA.[22] Fishbein and Ajzen[19] describe a formative research approach, which, among other steps, involves the elicitation of salient beliefs. We applied this qualitative elicitation procedure, because to date managers' underlying beliefs with regard to PVA have not been scientifically documented.

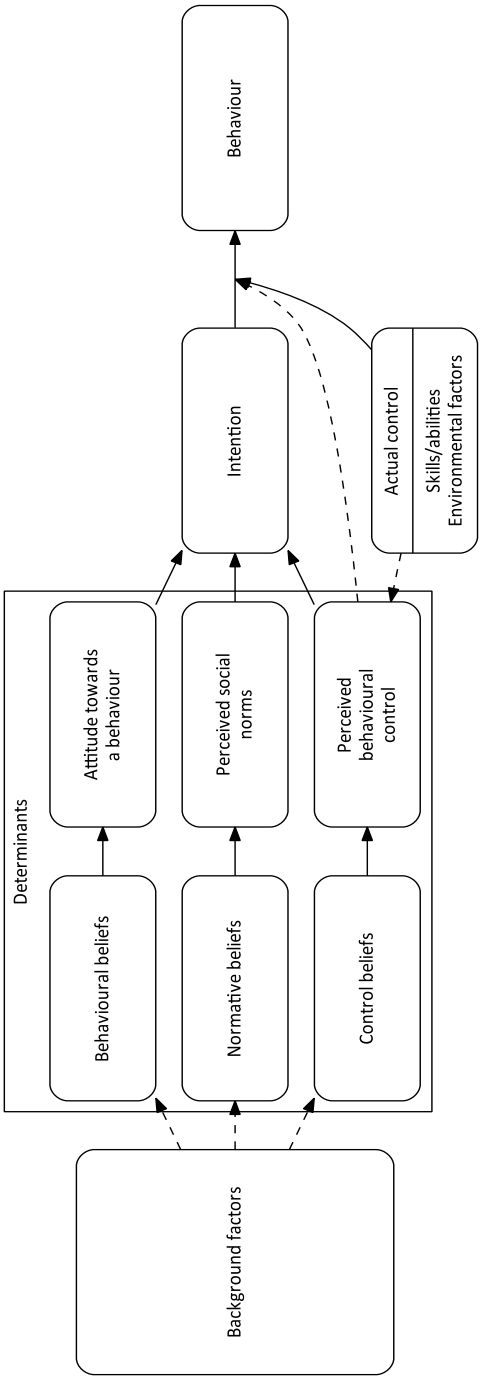

Figure 1 The Reasoned Action Approach, adapted from Fishbein and Ajzen[19], p.22.

3 Aims

The aim of this study was to explore (1) behaviours of nurse managers in the prevention and management of PVA in an acute hospital setting, (2) their intentions and salient determinants, and (3) relevant background factors.

4 Design

This study comprised semi-structured focus groups and individual interviews. Data were processed in a qualitative content analysis according to Schreier[23,24] The data collection, analysis and interpretation were guided by the RAA.[19]

5 Sample/participants

5.1 Participants and population

Our target population consisted of nurse managers working in general hospitals in the German speaking regions of Switzerland. We included ward managers, divisional managers, and directors of nursing, as well as their respective deputies.

5.2 Sampling strategy

We chose a convenience sampling strategy and invited nursing directors of 15 hospitals from within the authors' professional networks to participate in the study. An invitation, information material and registration forms were emailed in October 2015. Those directors of nursing who wanted to support the study distributed the invitation among their colleagues. We did not specifically ask for inclusion of what typically are considered higher (e.g. emergency departments, intensive care) or lower-risk (e.g. maternity) wards.

5.3 Setting

Six general hospitals in the German speaking regions of Switzerland agreed to participate in the study. In addition to accident and emergency services, the hospitals provided medical, intensive, intermediate, surgical as well as

gynaecology and maternity care. Four of the participating hospitals had between 200 and 275 beds; one had 360 and one approximately 1000 beds.

6 Data collection

All interviews and focus groups were conducted in German. Divisional directors and directors of nursing took part in individual interviews, while ward managers were interviewed in focus groups. This approach enabled us to include a maximum number of managers with our given resources, because in any hospital the number of ward managers will exceed the number of divisional managers and directors.

6.1 Individual interviews

As per each participant's preference, we conducted the individual interviews either face-to-face (N=4) (KAP) or by telephone (N=11) (BH) between 26 October 2015 and 23 November 2015. Interviews lasted between 14 and 71 minutes. Appointments for the interviews were scheduled via email exchange between participants and BH.

6.2 Focus groups

Five semi-structured face-to-face focus groups with a minimum of four and a maximum of seven participants took place between 2 December 2015 and 14 January 2016. The focus group interviews took place in private meeting rooms at participating hospitals. During the interviews, only the moderator (KAP) and the participants were present.

6.3 The topic guide

BH, SH, KAP developed the topic guide that facilitated the data collection. The content of the guide was tested during two individual interviews (BH) and one focus group (KAP). BH and KAP discussed the guide and considered it suitable for the purpose of the study. Table 1 shows the key topics and questions of the interview guide.

Table 1 Topic guide

Topic area	*Key questions*
Management of PVA (perceptions, beliefs, attitudes, perceived behavioural control)	– How do you react when PVA occurs in you area of responsibility? – What is important to you in the management of PVA? (With regards to your staff and to patients or visitors) – Are your values shared across the organisation? – How important do you consider the topic PVA within your organisation?
Prevention of PVA (social norms, perceived behavioural control)	– What is particularly important in your role in the prevention of PVA? – Where do you see room for improvement? – In your particular role, how do you consider your chances of achieving change? – Where do you see barriers for change?

All individual interviews and focus groups were digitally recorded and transcribed according to a transcription guide. To ensure the quality of the transcripts, the written record of the interviews was checked against the digital recording and typing errors were corrected (BH).

7 Ethical considerations

The study was conducted in compliance with Swiss national legal and regulatory requirements. The study protocol was reviewed by the local Swiss ethical board, which confirmed that the study plan did not warrant a full ethical application, as it did not fall under the Swiss Federal Act on Research Involving Human Beings. All participants gave informed written consent. Moreover, to ensure confidentiality, all personal information was de-identified in the interview transcripts and other documentation.

8 Data analysis

The interviews were processed in a qualitative content analysis according to Schreier[23,24] The language was assumed to carry little or no underlying meaning and the data were thus interpreted at a low level of inference with a focus on facts rather than on detecting latent meaning.[25] The RAA was used to provide an initial template to guide the coding process (see Supplementary Information for the initial and final coding templates). The template comprised

the RAA's factors and determinants (see Figure 1), as well as definitions of and examples for each category or code. While all authors contributed to the analysis (cf. Table 2) BH took overall responsibility. The analysis comprised five cycles (Table 2). The transcripts were managed with MAXQDA software (VERBI GmbH, Berlin, Germany) for computer-assisted qualitative data analysis.

Table 2 Coding plan and coding process

Cycle	*Coding phase*	*Main coder*	*Review*
Preparation for coding	Developing initial template based on RAA[19]	BH	Definition of codes (SH, GK, RH; JS)
Cycle 1 (Theory driven)	Trial and adaptation of the initial coding template	BH	Coding frame (SH, GK, RH; JS)
Cycle 2 (Data driven)	Structural coding of all interviews, condensing meaning of coded units in memos[26]	BH	Coded text segments, definition of codes and memos (SH, FJST)
Cycle 3 (Data driven)	Splitting and splicing of data[27]	BH	–
Cycle 4 (Data driven)	Linking of data[27]	BH	Results (SH, FJST, GK)
Cycle 5 (Theory driven)	Interpretation and identification of themes	BH	Interpretation (SH, FJST)

9 Validity, reliability, rigour

The inclusion of various hospitals, clinical specialties and different management levels ensured the veracity of our findings. The diversity within our sample enabled us to access a wide range of perspectives on the topic. This study is theoretically grounded within a theoretical framework, the RAA.[19] The theoretical grounding enables critical review of and contextualising the findings within a particular school of thought. Furthermore, discussions among the authors of this study during the different stages of data analysis added to the dependability of our results. Yet as with all qualitative research, the transferability of this study will be limited.[28] To mitigate this risk, we endeavoured to be precise with our description of the setting and sample and used illustrative quotes from the interviews to support our findings.

10 Findings

Forty managers from across three management levels took part in this study. Twenty-seven ward managers (21 female, six male) were included in the focus groups. Eight divisional managers (four female, four male) from various clinical specialities (Table 3), as well as five directors of nursing (four female, one male) were interviewed individually.

The study findings are presented under three main themes: (1) Background factors: PVA is perceived through different lenses; (2) Determinants and intentions: 'Good intentions competing with harsh organisational reality'; (3) Behaviours: 'Managing aggressive behaviours and relentlessly striving to create safer work environments'.

Table 3 Clinical specialities: divisional and ward managers

	*Divisional managers (n=8)***	*Ward managers (n=27)*
Accident & Emergency (incl. ambulance services)*	0	5
Intermediate care	1	2
General surgery	2	3
General Medicine	4	6
Intensive care	0	3
Interdisciplinary care	2	4
Nephrology & Dialysis	0	1
Obstetrics, Gynaecology & Maternity	1	2
Optimising nursing care	2	0
Palliative Care & Medicine	0	1

*In Switzerland, ambulance services may be integrated with Accident and Emergency departments

**Three divisional managers were responsible for more than one division

10.1 Theme 1: Background factors: 'PVA is perceived through different lenses'

Personal factors

All participants were qualified nurses with one to several decades of professional experience in healthcare. While some participants, typically at higher management levels, had no recent experience of PVA, some ward managers, particularly those working in high-risk areas such as accident and emergency departments, intensive care or medical wards, reported experiencing PVA as part of their everyday work.

> *"[On our ward] it is actually both visitors and patients [who are aggressive. We experience] also a lot of verbal aggression… We obviously also have physical aggression, but what happens every day are verbal attacks."* (FG3, B2)

All participants had experienced verbal or physical PVA at some point in their careers and perceived PVA to be a drain on resources and a disruption to care delivery. Although PVA was seen as an unavoidable part of nursing practice, managers considered aggressive behaviour against nursing staff unacceptable.

Since participants were recruited from three different management levels, their job descriptions and experience of PVA varied. Ward managers oversaw the day-to-day running of their respective ward or unit, provided patient care and ensured the quality of care and service delivery. The divisional managers were involved in all aspects of service coordination, development and performance. They were also the link between ward staff and the nursing directorate, as they maintained close contact with ward managers and relayed information about serious PVA incidents to the nursing directorate. Directors of nursing were engaged in planning, developing and directing the overall operation of the nursing divisions in accordance with legal requirements and guidelines. Depending on their professional role, frequency of patient contact and communication links with superiors, participants perceived PVA through different 'lenses' (Figure 2). Those participants with frequent exposure to PVA regarded it primarily through a 'situational lens', with a focus on how to deal with aggressive situations at the ward level. In contrast, managers with less direct exposure, such as divisional directors and directors of nursing were prone to view PVA through the 'organisational lens'. They focussed on issues such as improvement of the organisational structures to deal with future challenges:

> *"it is my duty to recognize issues and to develop instruments. I am convinced that in 5-10 years' time, when the percentage of elderly people is even higher, we will be confronted with phenomena like confusion etc. to a much larger extent."* (IV11)

However, divisional directors and directors of nursing emphasised that close communication links with clinical staff provided valuable insight into the situational aspects of PVA management.

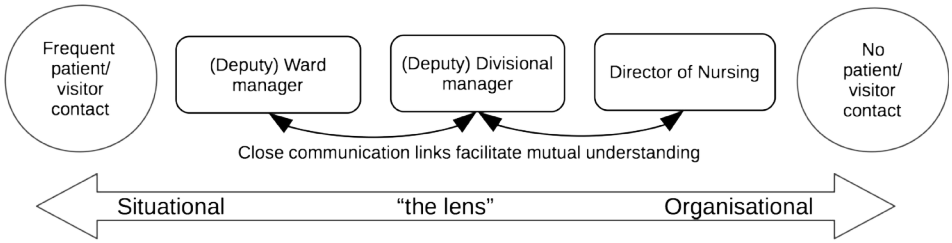

Figure 2 'PVA is perceived through different lenses'

Organisational factors

The level of organisational support against PVA differed between hospitals. Security services were generally available on site in the larger hospitals. Aftercare, such as peer counselling or expert support for staff was accessible if needed. Furthermore, staff training courses to improve skills and knowledge in relation to PVA were available in all hospitals. However, due to scant resources, often only staff working in emergency departments and other high-risk areas received this training routinely. Some participants reported that their hospitals had official policies, such as protocols for the prevention and management of delirium that had been fully implemented and had effectively reduced PVA. However, several ward managers described how insufficient implementation or knowledge about the protocols among physicians resulted in preventable incidents of PVA. Some, but not all organisations had an official PVA reporting system, yet particularly some ward managers questioned the effectiveness of such a reporting system, because

> *"I motivate my colleagues to fill out a reporting form [after PVA incidents] and forward it. […] I don't know in which drawer it gets lost (all participants laughing)."* (FG3)

The ward managers suspected that incident forms were used for statistical purposes only, because reporting evoked neither feedback nor visible actions from senior management.

10.2 Theme 2: Determinants and intentions: 'Positive intent competing against harsh organisational reality'

The data analysis revealed that managers showed a number of attitudes and beliefs that related to particular behaviours. All participants showed a positive attitude towards engaging in behaviours to prevent PVA and to manage aggressive incidents as and when they occurred. In contrast, their intent to take action to effect change at the organisational level was weak due to limited perceived behavioural control. Table 4 shows how the competing determinants (compare RAA, Figure 1) affected the participants' intentions.

Table 4 Determinants and intentions

Determinants	*Managers' intention to act: Positive (+) or negative/low (–)*
Managers' attitude (good-bad)	
1. It is important to ensure staff safety and wellbeing (duty of care) 2. It is important to talk about PVA and to report incidents 3. It is important to learn from PVA incidents	+ To take measures that ensure staff safety + To disseminate information about (severe) incidents throughout the organisation + To reflect on incidents, to design and implement protocols and procedures for the prevention and management of PVA
Managers' normative beliefs (positive-negative)	
1. Staff expect manager's support 2. It is important that staff only involve superiors if they are unable to manage PVA within the team	+ To prioritize PVA as a topic, to be present on wards and approachable for staff + To provide adequate staff support despite competing job demands and high work load in management
Managers' perceived behavioural control beliefs (high-low)	
1. Standards/protocols/support, e.g. sitters, staff training not always implemented or accessible 2. Financial and human resources for the prevention of PVA are lacking or not allocated 3. Change is possible within the nursing team but challenging and time-consuming within the organisation	– Taking action to effect change at the organisational level

The managers' perceived social norm was that staff expected their support. Maintaining close communication links between managers and ward nurses as well as managers' frequent presence on the wards were important for delivering this support if needed. Yet this was also a balancing act. The managers pointed out that due to their heavy workload they had to carefully consider the extent of involvement in the management of PVA. Managers were less optimistic about their perceived behavioural control. Introducing organisational measures to improve the management or prevention of PVA was regarded as a particular challenge, mainly due to financial constraints. While ward managers described their direct supervisors as benevolent and open to discussing initiatives to address PVA, suggestions were generally not considered if they incurred financial or other costs. Furthermore, managers across all management levels believed that PVA was generally not a prioritized topic within their organisation. In particular, divisional managers and directors of nursing described initiatives to achieve organisation-wide change, such as the introduction of protocols or securing funds to increase the safety of the physical environment, as challenging and time consuming, because

> *"[...] up there [in higher management] there is little insight [into the problem of PVA], [...] most certainly amongst those people who ultimately decide about resource allocation."* (IV4)

Due to the low perceived behavioural control, the intention to get involved in addressing PVA at the organisational level appeared to be weak in most managers. Nevertheless, some participants were strongly internally motivated to address PVA. These managers perceived the issue to be most relevant and had thus firm intentions and strategic plans to address PVA at an organisational level.

10.3 Theme 3: Behaviours: 'Preventing and managing aggressive behaviour and relentlessly striving to create a safer work environment'

Managers' engagement in behaviours aimed at preventing and managing PVA varied. Several managers primarily engaged in behaviours associated with the prevention of PVA in individual cases or in the situational management of PVA. Others, typically higher-level managers with strong intentions to address PVA at situational and organisational level, were more proactive. They visited and observed wards at busy times to identify potential issues in workflow or patient-staff interaction, or approached ward staff to discuss PVA. These managers stressed that addressing PVA at an organisational level required a lot of perseverance and determination, because

> "*[…] you really have to keep at it, you have to have really good arguments, not let go, because it is obviously all about the money […]*

and it is not like they [hospital management] see why this [PVA] is so important." (IV 4)

Six basic behaviours in the prevention and management of PVA emerged from the analysis.
(A) Providing resources for staff
(B) Communicating with patients and visitors
(C) Individualizing patient care
(D) Analysis and reflection
(E) Networking with stakeholders outside of the care team
(F) Developing work environment and processes

Behaviours A-C correspond with a view of PVA through the situational lens, behaviours D-F with an organisational view (see Figure 3). An analysis of relative frequencies of codes showed that the ward managers and divisional managers primarily described behaviours related to the provision of support for staff, while directors of nursing appear to prioritize the development of work environment and care processes (Figure 4).

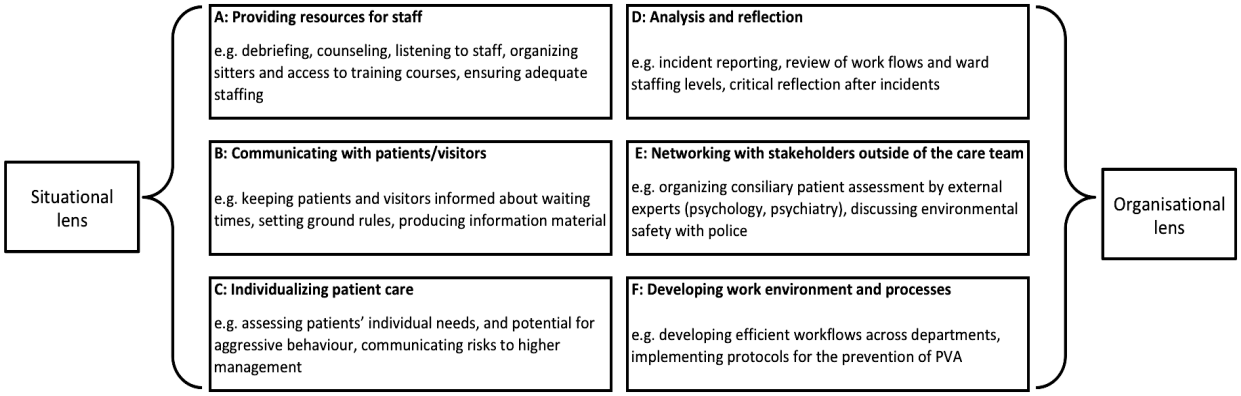

Figure 3 Behaviours: management and prevention of PVA

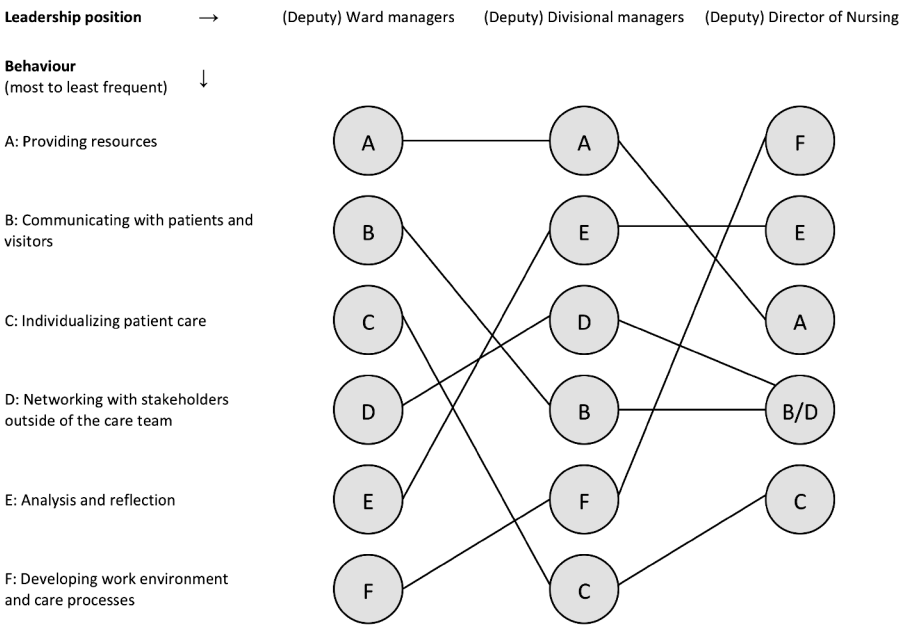

Figure 4 Behaviours and leadership position

11 Discussion

This paper reports an interview and focus group study with general hospital nurse managers on background factors, determinants, intentions and behaviours in the prevention and management of PVA. The study was theoretically underpinned by the RAA.[19] Three themes emerged from the content analysis. (1) Background factors: PVA is perceived through different lenses; (2) Determinants and intentions: 'Good intentions competing with harsh organisational reality'; (3) Behaviours: 'Preventing and managing aggressive behaviour and relentlessly striving to create safer work environments'. The analysis showed that managers perceive, prevent and manage PVA from a situational and/or organisational perspective, with each perspective engendering different behaviours.

The nurse managers considered PVA an unavoidable, but nevertheless unacceptable part of nursing. They exhibited a positive attitude towards engaging in behaviours to prevent and manage PVA as and when it occurs, at the situational level. They also showed a caring attitude towards their staff and

stressed the importance of providing personal, organisational and, if required, external support, such as counsellors after PVA incidents or sitters to ensure close supervision of patients. These findings are in contrast to international evidence reporting that staff nurses lack support from their managers when dealing with PVA. Specifically staff nurses perceived managers to take the patient's side and favour customer friendliness over staff protection.[15,18] They may even be non-respondent or tolerant of PVA.[29,30] However, since staff nurses were not included in our study sample, it is not possible to determine whether Swiss managers support their staff to a greater extent than nurse managers in other countries do. Yet our findings may well point towards a gap in the communication of support needs and provision between staff nurses, lower and higher level nurse managers. Currently, verbal communication about PVA between different management levels appears to focus on situational aspects of PVA. Opening a dialogue between nurse managers of all levels and staff to share and discuss mutual expectations, support needs, and available resources may facilitate the implementation of more effective measures against PVA. In addition, there is scope to develop PVA incident reporting. The study participants reported that only severe incidents were documented in writing via reporting systems in the organisation. Furthermore, the ward managers reported a lack of feedback or action from senior management in response to any written reports. Underreporting of PVA incidents is a well-known issue that results in an underestimation of the problem and hampers effective action against PVA.[31,32] A recent study found that 88% of victims did not officially report the incident, and 45% reported informally to their supervisor.[32] In order to improve reporting of PVA, it appears to be important not just to make reporting procedures easy,[15] but also to introduce feedback loops to reporting ward managers or staff.

Our analysis showed local differences in the prevalence and implementation of policy and protocols to prevent and manage PVA. While this finding is in line with other international research evidence,[33] it is also reflective of the Swiss healthcare context. Swiss employers are legally obliged to provide employee protection against mobbing and discrimination, yet Switzerland has no legislation explicitly pertaining to aggression in healthcare. Furthermore, within the federal laws and constitution, Swiss hospitals have entrepreneurial freedom and thus organize themselves independently within a competitive, consumer-driven market.[34] Therefore, hospital providers have the freedom, as well as the obligation, to maximize financial profits. Hospitals thus operate with an emphasis on consumer-driven service provision, on saving financial resources and on optimizing care delivery. Nurse managers who want to address PVA at an organisational level therefore find themselves in fierce competition for financial resources. This situation was reflected in our study. Nurse managers perceived their behavioural control to be low due to lack of interest in PVA across the organisation and the scarcity of financial resources.

This finding is in line with international evidence from nurses and nurse managers reporting organisational management's lack of interest and failure to take action against PVA other than in connection with serious incidents.[15] However, PVA causes delays in care delivery and compromises both staff and patient safety.[35-37] PVA should therefore be recognized as a threat to the delivery of high quality patient care. Yet the impact of PVA on quality of care and its economical consequences were barely discussed amongst our study participants. This finding might point towards a training need that is at present insufficiently addressed. With a view to the aforementioned competitive, consumer-driven business environment in healthcare, efforts to raise awareness for PVA at the board level of the organisation might be more successful if action against PVA was presented as a business case for improving the quality of care delivery.[38] Undeniably, this is a major challenge to nurse managers, as the economical aspects of PVA are to date only insufficiently understood.[39,11] Furthermore, nurse managers might require training to develop business acumen, as they have been found to rate their financial and budgeting skills lowest amongst their managerial competencies.[40] Yet nurse managers included in our study were the key people to communicate linked staff nurses and organisational management. They were thus in the position to compile the necessary evidence such as the number of PVA incidents, cost incurred, potential savings and benefits[41] to put forward action against PVA as a relevant quality improvement initiative and business case at organisational level.

The findings regarding managers' intentions need careful consideration. While attitudes and perceived social norms translated into positive intentions, the perceived behavioural control negatively affected the managers' intentions to address PVA at organisational level. Yet successful PVA prevention and management requires action at both the situational and organisational level, as well as an all-organisational commitment.[11,42] Although managers generally expressed a positive intention to address PVA at a situational level, their intentions may not consistently manifest themselves in the described behaviours. Fishbein and Ajzen[19] highlight that intentions expressed about hypothetical situations, for example in interviews or focus groups, do not necessarily translate into a real-life practice.[19] However, this cautious interpretation further underscores the urgent need for support and training. Being able to make a convincing case for addressing PVA within an organisation could positively affect and strengthen nurse managers' intentions to take action against PVA.

Limitations

Our study has some limitations. The sampling strategy we chose incurs the risk of volunteer bias, as nurse managers who take a particular interest in the topic of aggression will likely be overrepresented. However, we anticipate that

working with a sample with this bias will not affect the value of our conclusions: nurse managers who are interested in PVA will provide novel information about the current challenges, opportunities and strategies in the management and prevention of PVA in clinical practice. Another limitation is the potential bias towards socially acceptable answers, as we collected self-reported data. However, we included managers from different managerial levels, and this approach produced valuable insights–for example, it highlighted the discrepancy in perceived support between lower and higher management. Some of our data were also analysed quantitatively to identify and compare frequency of codes between different management levels. While this method does not provide information about the statistical significance of our results, the quantitative analysis served to illustrate and describe our qualitative findings. Furthermore, qualitative studies are often perceived to hold limited transferability to wider contexts. However, the nurse managers in this study worked in diverse organisations that were primarily driven by consumer demand and financial considerations. The Swiss situation may therefore serve as a good exemplar for other countries where healthcare is also driven by economic concerns.

12 Conclusion

This article presents a content analysis of focus groups and interviews with nurse managers on the prevention and management of PVA in acute hospitals in Switzerland. Nurse managers address PVA at a situational and/or organisational level. The interviews showed that managers feel a strong duty of care towards their staff and a positive attitude and intentions towards behaviours aimed at managing and preventing PVA incidents, i.e. situational management. However, there may be a gap between perceived support provision and actual staff needs. An exploration and exchange of expectations, needs and resources across the nursing team should optimize the collaboration to combat PVA across management levels.

Nurse managers described creating low-aggression environments at the organisational level as a major challenge due to competition for financial resources and lack of organisational support. To increase organisational awareness and support, nurse managers should therefore develop the ability to frame and present patient and visitor aggression as a business case.

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Conflict of interest

No conflict of interest has been declared by the author(s).

Author contributions

All authors have agreed on the final version and meet at least one of the following criteria [recommended by the ICMJE (http://www.icmje.org/recommendations/)]: substantial contributions to conception and design, acquisition of data, or analysis and interpretation of data,drafting the article or revising it critically for important intellectual content.

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Supplement 1: Initial coding template

Category	*Definition*	*Example*	*Code*	*Definition*	*Example*
Background factors/distal predictors	Those factors that may influence behavioural, normative or control beliefs, but there is not necessarily a connection between the background factors and beliefs				
Behaviours	Actions that managers take to manage and prevent aggression in the workplace	A manager describes the actions she took during a recent incident.			
			Behavioural beliefs	Beliefs about positive or negative consequences that follow a particular behaviour	A manager's belief that supporting their staff in managing PVA will be appreciated within their organisation.

Category	*Definition*	*Example*	*Code*	*Definition*	*Example*
Attitude toward a behaviour	The positive or negative evaluation of performing specific behaviours	Manager thinks it is a good, positive action to personally get involved when staff are assaulted			
Perceived norm	The perceived social pressure to perform particular behaviours	Perception of what senior or more powerful people would do			
			Normative beliefs	Beliefs about which behaviours important or influential groups in a person's live perform, approve or disapprove of	A manager's belief that a colleague they admire actively supports all involved staff when aggressive incidents happen

Category	*Definition*	*Example*	*Code*	*Definition*	*Example*
Perceived behavioural control	The perceived self-efficacy to perform certain behaviours	High or low self-efficacy with regards to preventing and manage PVA in the workplace, identification of barriers and facilitators to prevent and manage aggression	**Control beliefs**	Beliefs about personal or and environmental factors that act as barriers or facilitators	Belief whether the organisational culture supports measures to prevent aggression.
Intention	Intentions are an expression of the readiness to perform a specific behaviour.	A manager mentions that she is planning to work on a guideline on reporting aggressive incidents in her department			

Supplement 2: Final coding scheme

Category	*Code*
Background factors	
	PVA as human experience
	Organisation and network/ perceived support
	External/ staff resilience and ability to deal with PVA
	Organisation/perceived social norms
	Level of relevance of PVA in clinical setting
Behaviour/within area of responsibility	
	Communicating with patients and visitors
	Individualising patient care
	Behaviour/Networking with stakeholders outside of team
	Behaviour/Developing work environment and processes
	Analysis and reflection/work environment & staff
	Providing resources for staff
Attitude towards a behaviour	
	Importance of assertiveness
	Necessity of interdisciplinary working
	Acceptability of involving police
	Importance of considered involvement
	Importance of analysis and reflection
	Acceptability of aggressive patient/visitor behaviour
	Positive effects of prevention
	Importance of ensuring staff safety and wellbeing
Perceived behavioural control	
	Dealing with organisation/structures
	Interdisciplinary teamwork
	Lack of resources
Intention	
	Wishes and ideas
	Intention to address PVA

Chapter 5

Patient/visitor aggression and team efficacy. A cross-sectional survey exploring the role of team and managerial factors

This chapter was submitted to the Journal of Nursing Scholarship as: Heckemann, Halfens R.J.G., Schols, J.M.G.A. & Hahn S. Patient/visitor aggression and team efficacy. A cross-sectional survey exploring the role of team and managerial factors.

Abstract

Purpose: This international study explores the relationship between perceived team efficacy, nurse manager characteristics and team factors in dealing with patient and visitor aggression.

Design: A cross-sectional open online survey including 646 nurse managers from Switzerland, Germany and Austria. Data were collected between November 2016 and February 2017.

Methods: The analysis of 398 complete cases out of 646 included descriptive statistics of socio-demographic data and team factors. The association between team efficacy, nurse manager characteristics and team factors was explored in a binary logistic regression.

Findings: Nurse managers perceive team efficacy in managing patient and visitor aggression as high, yet our data challenge the accuracy of this assessment. Nurse managers appear to lack appropriate knowledge, training, and communication with nursing staff to adequately assess team efficacy.

Conclusion(s): Nurse managers' require more awareness for PVA and training to support nursing teams in dealing with aggression in healthcare.

Clinical relevance: To enable competent assessment of team efficacy and identification of team needs, nurse managers require training.

1 Introduction

Despite the high human and financial costs associated with patient and visitor aggression (PVA) in healthcare,[1,2] the problem has not received adequate or sufficient attention in research and the public discourse outside of the mental health setting.[3] The successful reduction of PVA requires initiatives, commitment and collaboration between the macro (state/community), the meso (i.e. organisational) and the micro (i.e. team) levels.[4,5] Despite an abundance of guidance on how to address PVA,[6,7] aggression remains a major problem in healthcare, independent of clinical area or setting.[8,9] The apparent failure to address aggression effectively has been linked to a lack of availability and/or implementation of organisational policies,[10-12] the underreporting of PVA,[10,13] and an organisational culture that is accepting of PVA as part of a job in healthcare.[14]

Nurses face an increased risk of exposure to threatening verbal, non-verbal or physical behaviours from patients or visitors.[15,16] The supportive role of the nursing team in managing PVA has been recognized in mental health as well as general hospital nursing.[3,17-19] Team efficacy, a team's shared belief of being able to successfully manage a task[20,21] thus appears to be important. In the context of PVA, high team efficacy can be defined as a shared belief that the team can efficiently and effectively de-escalate violent or threatening situations and debrief after incidents, whereas low team efficacy would be characterized by the lack of this ability.

Supportive leadership is important for enhancing team efficacy, workplace safety, job satisfaction and quality of care.[21-25] A nurse manager's ability, motivation and knowledge to appropriately assess a team's needs and capabilities are necessary to ensure the adequate allocation of resources that foster team efficacy.[18,26] Yet neither team efficacy nor leadership feature in current research or explanatory models on PVA[4-6, 27] We thus tentatively added the factors leadership/management, communication and team efficacy to the 'Strategies for Addressing Violence in Healthcare' (SAVEinH) model. [4,5] The SAVEinH model comprehensively describes key factors and interventions for preventing and responding to aggression in healthcare settings at the micro-, meso- and macro-levels (see Figure 1).

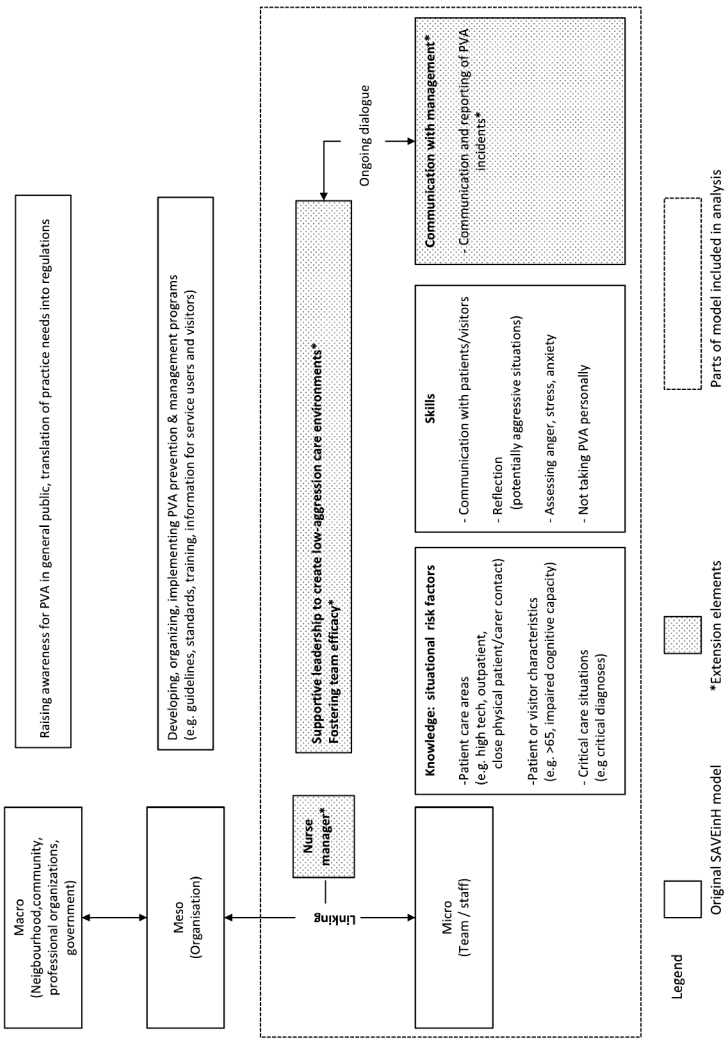

Figure 1 The SAVEinH model adapted and extended Hahn[4,5]

2 Aims

The aim of this international study in German-speaking countries is to investigate the relationship between team efficacy, nurse manager characteristics and team factors (communication of incidents, knowledge, skills and training availability) in the management and prevention of PVA. Based on the factors described at micro (team/situational) level and manager level in the extended SAVEinH model[4,5] (Figure 1), we investigated team factors to answer two research questions. (I) Are there differences in nurse manager characteristics, team factors and perceived team efficacy between the participating countries? (II) Is perceived team efficacy related to nurse manager characteristics and/or team factors?

3 Methods

3.1 Design

This international, cross sectional web-based open survey[28] was conducted as part of the PERoPA project, an international research collaboration examining patient and visitor aggression in healthcare organisations from the nurse managers' perspective.[29]

3.2 Sample

The population consisted of all nurse managers, either at higher (e.g. Director of Nursing), middle (e.g. divisional manager) or lower level (e.g. ward manager), who were employed in German, Swiss, or Austrian general or psychiatric hospitals. Our sample included managers who met the inclusion criteria and who volunteered to complete the survey.

3.3 Instrument

The survey with its 86 items covered 13 domains and comprised psychometrically evaluated tools,[30-33] as well as questions generated through a preparatory interview study.[18] Both face validity and ease of use were established by three review rounds including experts in PVA, nurse managers and researchers from Austria, Switzerland and Germany. A final review was undertaken by BH and SH.

The survey tool and supplementary, detailed information on the validity and reliability of the survey tool is available from the project website (https://www.gesundheit.bfh.ch/?id=4091). The present report includes an analysis of 28 of those survey items that were pertinent to the research questions. Table 1 shows the operationalization of the concepts team efficacy, nurse manager and team factors.

3.4 Data collection

The web-based survey was accessible for voluntary participants between November 2016 and February 2017. No incentives were offered. In two recruitment waves, the study was publicized through newsletters, webpages and Facebook sites of professional networks and associations in Switzerland, Germany and Austria. The invitation letter and study information included a weblink to the survey. While completing the survey, participants were able to review and change their answers by using browser navigation. To reduce the length and complexity of the survey, adaptive questioning was used.

Table 1 Operalization of variables

Concept	*Domain*	*Variable (survey)*	*Corresponding survey items*	*Measurement*
Nurse manager factors	Individual characteristics	Age	29 or younger, 30-39, 40-49, 50-59, 60 or older	Single answer
		Gender	Female/ male	
		Education	Vocational training, university education (BSC, MSc), Doctorate	
		Current leadership position	Lower, middle, higher management	
		Years in management	<1, 1-2, 3-5, 6-10 years	
		Country	Austria, Germany, Switzerland	
		Setting	Mental health, General hospital	
		Area of responsibility	Emergency, inpatient treatment, day care, pre hospital treatment, follow-up treatment, outpatient treatment rehabilitation	Multiple choice
		Exposure to PVA	Contact with patients in current position	Yes/ no
			Ever experienced PVA	
		Knowledge and skills	Participation in training to manage and prevent PVA, to recognised PTSD, to coach staff	
			Knowledge about PVA risk factors	
		Attitude towards PVA	Positive or negative evaluation of PVA (POAS-S) (Hahn et al., 2011)	5 point Likert scale

Concept	*Domain*	*Variable (survey)*	*Corresponding survey items*	*Measurement*
Team factors	Communication and reporting	Extent of reporting (sufficiency and adequacy	Are you of the opinion that affected staff report sufficiently on PVA? Do you feel adequately informed after aggressive incidents? Do reports of aggressive incidents reach the hospital administration?	Yes/ No/ Don't know
	Training	Availability	Is staff training available?	
	Importance of staff knowledge and skills	Importance of skills and knowledge in the prevention and management of PVA	Recognising and assessing and managing potentially aggressive patients, recognising fear, stress, confusion or disorientation and environmental factors that promote PVA. Setting boundaries, giving information, team intervention, safe physical detention and defence techniques, self-perception in the interaction with patients or visitors, theory of aggression, fear and stress, dementia. Medication as intervention against aggressive behaviour, systematic evaluation and debriefing after incidents	Important/ Moderately important Not important
Perceived team efficacy	Team efficacy	Safety (perceived) De-escalation Recognizing limitations Debriefing Recognizing limitations	Most staff feel safe in the workplace. Staff are able to de-escalate PVA within the team. Staff contact the police if needed in an aggressive incident Staff are able to independently debrief within the team. Staff contact their respective superiors if they require additional help in debriefing after an incident.	Yes No/don't know

3.5 Data analysis

Leadership characteristics (age, gender, country, education, management position, area of responsibility, experience with, knowledge about and perception of aggression) were analysed descriptively (percentages). Chi-square analyses were conducted to explore differences between countries. In order to determine which predictor variables were relevant influences on the outcome variable 'team efficacy', a binary logistic regression analysis was conducted to estimate odds ratios (OR) with 95% confidence intervals. Variables were entered via the backward LR method. The outcome variable was 'team efficacy high/low'. Predictor variables (Table 2) were chosen based on the extended SAVEinH model.[4,5] All data were analysed using IBM SPSS Version24 (IBM Corporation, Released 2016).

Table 2 Predictor and outcome variables

Concept	*Type of variable*	*Variable*
	Outcome	Team efficacy†
Nurse manager characteristics	Predictor	Age
		Education
		Current leadership position
		Country
		Setting (mental health/general hospital
		Patient care area ‡
		Exposure to PVA
		Knowledge and skills
		Attitude towards aggressive behaviour†
Team factors	Predictor	Communication, reporting of PVA†
		Aggression prevention and management training (availability)
		Importance of staff knowledge and skills (prevention and management of PVA)†

† Composite variables generated from survey tool indicators. Internal consistency was tested and composite scores were computed if Cronbach's alpha was ≥ .6.

4 Ethical considerations

The survey was conducted according to Swiss national legal and regulatory requirements. The local Swiss ethical board confirmed that the study protocol

did not require a full ethical application as it did not fall under the Swiss Federal Act of Research Involving Human Beings. The participants ticked an obligatory box to give their consent prior to proceeding to the survey questions.

5 Results

5.1 Completion rate

A total of 646 participants consented to complete the survey, 410 completed the entire survey. The respective completion rate was thus 63%. Participation rates decreased monotonic throughout the survey, most probably due to its length. After elimination of missing cases, a total of 398 responses were included in this analysis.

5.2 Participants' socio-demographic characteristics

Sixty-eight percent of all participants were female, more than half were between 30 and 49 years old (see Table 3). Seventy-two percent had completed vocational training and taken further courses (university or non-university). The majority of participants (57%) occupied lower management positions and worked in acute hospital nursing (61%). Most managers had patient contact in their current position and almost all had personally experienced PVA at some point during their career. Three quarters of all participants had knowledge about PVA risk factors and participated in PVA prevention and management training. More than half of all participants had received training to coach staff and to recognize stress disorder in staff. Overall, 71% of managers perceived team efficacy in PVA management as high.

5.3 Team factors

Nearly all managers regarded knowledge and skills in the prevention and management of PVA as very important (Table 4). However, there were significant differences in the perception of communication and incident reporting. While more than half of all managers in Switzerland felt that staff communicated and reported sufficiently on incidents, only 37% of German and 41% of Austrian managers agreed. Furthermore, more than three quarters of Swiss and Austrian managers reported that aggression prevention and management staff training was available in their organisations, while

significantly fewer German managers (58%) confirmed the availability of staff training in their organisations.

5.4 Logistic regression

After removal of 10 outliers, 388 cases were included in the backward LR binary logistic regression. The final model included five predictor variables. The regression results showed that the manager characteristics 'mental health setting, 'management level' and 'knowledge about PVA risk factors' were significant predictors of high team efficacy (see Table 5). Significant team factor predictors were 'communication and incident reporting' and 'staff training'.

Managers' perception of 'high team efficacy' was significantly positively associated with the mental health setting (p<001, OR 3.3), 'knowledge about PVA risk factors' (p=.041, OR 1.8) and 'availability of staff training (p=.39, OR 1.8). Low team efficacy was significantly associated with 'higher management level' (p=.005, OR .442), as well as insufficient communication and reporting (sig<.001, OR .17).

The goodness of fit tests confirmed suitability of the model with an acceptable Cox&Snell R2 at .24 and Nagelkerke-R^2 at .34. The classification table showed that predicted values were correct in 57% for group membership to low team efficacy, 79% for group membership to high team efficacy and an overall value of 72 %.

Table 3: Nurse manager characteristics

Variable		*Switzerland (n=201)*	*Germany (n=90)*	*Austria (n= 107)*	*Total (n=398)*	*Chi-Square (df)*	*p-value*
		n (%)	n (%)	n (%)	n (%)		
Gender	Female	133 (66.2)	57(63.3)	80 (74.8)	270 (67.8)	3.45 (2)	.18
	Male	68 (33.8)	33 (36.7)	27 (25.2)	128 (32.2)		
Age	29 or younger	14 (7.0)	3 (3.3)	5 (4.7)	22 (5.5)	12.94 (8)	.11
	30-39	50 (24.9)	22 (24.4)	20 (18.7)	92 (23.1)		
	40-49	70 (34.8)	27 (30.0)	31 (29.0)	128 (32.2)		
	50-59	63 (31.3)	33 (36.7)	50 (46.7)	146 (36.7)		
	60 or older	4 (2.0)	5 (5.6)	1 (0.9)	10 (2.5)		
Years of experience nursing management	<1	6 (3.0)	4 (4.4)	3 (2.8)	13 (3.3)	13.48 (8)	.09
	1–2	20 (10.0)	4 (4.4)	5 (4.7)	29 (7.3)		
	3–5	41 (20.4)	20 (22.2)	16 (15.0)	77 (19.3)		
	6–10	48 (23.9)	12 (13.3)	21 (19.6)	81 (20.4)		
	>10	86 (42.8)	50 (55.6)	62 (57.9)	198 (49.7)		
Education	Vocational training and further education (university or non-university)	142 (70.6)	65 (72.2)	79 (73.8)	286 (71.9)	6.04 (6)	.41
	Bachelor's degree	19 (9.5)	13 (14.4)	6 (5.6)	38 (9.5)		
	Master's degree	38 (18.9)	11 (12.2)	21 (19.6)	70 (17.6)		
	PhD/Doctorate	2 (1.0)	1 (1.1)	1 (0.9)	4 (1.0)		
Management level	Higher	70 (34.8)	25 (27.8)	27 (25.2)	122 (30.7)	13.01 (4)	.01*
	Middle	15 (7.5)	19 (21.1)	16 (15.0)	50 (12.6)		
	Lower	116 (57.7)	46 (51.1)	64 (59.8)	226 (56.8)		
Setting	Mental health	102 (50.7)	23 (25.6)	31 (29.0)	156 (39.2)	22.97 (2)	.00**
	General hospital	99 (49.3)	67 (74.4)	76 (71.0)	242 (60.8)		

Variable		*Switzerland (n=201)*	*Germany (n=90)*	*Austria (n= 107)*	*Total (n=398)*	*Chi-Square (df)*	*p-value*
		n (%)	n (%)	n (%)	n (%)		
Type of patient care	Acute-emergency, intensive care	3 (1.5)	1 (1.1)	1 (0.9)	5 (1.3)	2.84 (6)	.83
	Non-acute (in/outpatient, day care short stay)	52 (26.4)	29 (32.2)	31 (29.0)	113 (28.4)		
	Long term/rehabilitation	4 (2.0)	0.0%	2 (1.9)	6 (1.5)		
	More than one area of responsibility	141 (70.1)	60 (66.7)	73 (68.2)	274 (68.8)		
Direct patient contact in current position	Yes	177 (88.1)	81 (90.0)	91 (85.0)	349 (87.7)	1.16 (2)	.56
	No	24 (11.9)	9 (10.0)	16 (15.0)	49 (12.3)		
Ever experienced PVA	Yes	199 (99.0)	90 (100.0)	105 (98.1)	394 (99.0)	1.72 (2)	.42
	No	2 (1.0)	0 (0)	2 (1.9)	4 (1.0)		
Knowledge about PVA risk factors	Yes	173 (86.1)	53 (58.9)	78 (72.9)	304 (76.4)	26.44(2)	.00**
	No	28 (13.9)	37 (41.1)	29 (27.1)	94 (23.6)		
Training prevention and management of PVA	Yes	176 (83.1)	52 (57.8)	76 (71.0)	295 (74.1)	21.49 (2)	.00**
	No	34 (16.9)	38 (42.2)	31 (29.0)	103 (25.9)		
Training to coach staff	Yes	163 (67.7)	59 (65.6)	61 (57.0)	256 (64.3)	3.53 (2)	.17
	No	65 (32.3)	31 (34.4)	46 (43.0)	142 (35.7)		
Training to recognise staff stress disorder	Yes	107 (53.2)	47 (52.2)	68 (63.6)	222 (55.8)	3.61 (2)	.16
	No	94 (46.8)	43 (47.8)	39 (36.4)	176 (44.2)		
Perception/ evaluation of aggression	Aggression negative force	17 (8.5)	6 (6.7)	10 (9.3)	33 (8.3)	4.66 (4)	.32
	Neutral	132 (65.7)	58 (64.4)	58 (54.2)	248 (62.3)		
	Aggression positive force	52 (25.9)	26 (28.9)	39 (36.4)	117 (29.4)		
Perceived team efficacy	Low	55 (27.4)	37 (41.1)	36 (33.6)	128 (32.2)	5.53 (2)	.06
	High	146 (72.6)	53 (58.9)	71 (66.4)	270 (67.8)		

**P < 0.01, *P < .05

Table 4 Team factors

Team factor	*Country*	*Switzerland (n=201)*	*Germany (n=90)*	*Austria (n=107)*	*Total (n=398)*	*Chi-Square (df)*	*p-value*
		n (%)	n (%)	n (%)	n (%)		
Importance of staff skills and knowledge	Very important	198 (98.5)	90 (100.0)	107 (100.0)	395 (99.2)	2.9 (4)	.56
	Moderately important	2 (1.0)	0.0%	0.0%	2 (0.5)		
	Not important	1 (0.5)	0.0%	0.0%	1 (0.3)		
Availability of staff training for the prevention and management of PVA	Yes	156 (77.6)	52 (57.8)	88 (82.2)	296 (74.4)	17.6 (2)	< .01**
	No/don't know	45 (22.4)	38 (42.2)	19 (17.8)	102 (25.6)		
Sufficient communication and incident reporting	Yes	105 (52.7)	33 (36.7)	44 (41.1)	183 (46.0)	7.9 (2)	.02*
	No/don't know	95 (47.3)	57 (63.3)	63 (58.9)	215 (54.0)		

Table 5 Binary logistic regression, final model

	B	*S.E.*	*Wald*	*df*	*Sig.*	*Exp(B)*	*95% C.I.for EXP(B)*	
							Lower	*Upper*
Team factor								
Sufficient communication and incident reporting (No/don't know)	-1.76	.30	33.68	1	< 0.01**	.17	.095	.31
Staff training for the prevention and management of PVA offered (No/don't know)	-.58	.28	4.27	1	.039*	1.79	1.03	3.10
Nurse manager characteristics								
Setting (Mental health)	1.18	.33	12.65	1	< 0.01**	3.261	1.70	6.26
Management level			8.33	2	.015*			
Management level (higher)	-.82	.29	7.84	1	.005*	.44	.25	.78
Management level (middle)	-.01	.39	.000	1	.985	.99	.46	2.13
Knowledge about PVA risk factors (Yes)	.59	.29	4.16	1	.041*	1.80	1.02	3.16

**P < 0.01, *P < .05

6 Discussion

Overall, and despite the differing healthcare systems and cultures, the descriptive analysis of data from three German-speaking countries showed few significant differences in nurse managers' characteristics. Almost all managers agreed that staff knowledge and skills in dealing with PVA are very important and the majority of managers perceived their teams' efficacy in dealing with aggression as high. However, the accuracy and adequacy of this assessment needs to be questioned in conjunction with the further findings of this study. First, the participants may not possess the adequate knowledge and skills in aggression prevention and management training to assess team efficacy in dealing with PVA appropriately. Almost one quarter of the participants reported neither having knowledge about PVA risk factors, nor ever having participated in training related to the management of aggression. This finding is in line with those of other studies in German-speaking countries that also report a lack of training availability.[3,34] Furthermore, more than one third of managers had never participated in training courses to learn staff coaching or recognition of stress disorders. Yet the logistic regression confirmed that knowledge about risk factors is positively associated with a perception of high team efficacy. Thus our findings highlight the need for targeted PVA manager training. While specialized courses for managers have been developed and evaluated,[35,36] little research on adequate curriculum content is available.

Second, insufficient reporting of PVA incidents emerged as a factor significantly negatively associated with perceived high team efficacy. This finding further challenges nurse managers' overall perception of team efficacy as being high, because it highlights that managers themselves may well be ignorant about the extent of the problem in clinical practice. Insufficient reporting has been identified as a serious barrier to effective risk management and to the implementation of strategies against PVA.[37-39] Underreporting is promoted in organisational cultures that are accepting of aggression, where nurses feel that their reports are neither being taken seriously nor encouraged, or fail to lead to satisfactory responses.[14,15,40] Moreover, nurses may perceive managers as unwilling to support them, or may fear stigmatization.[15,41] The management position emerged as a further significant factor in the analysis. Specifically, a higher management position was significantly negatively associated with perceived high team efficacy. This finding is remarkable in that it shows that perceived team efficacy differs across management levels. However, further interpretation of this finding is difficult as perceived team efficacy itself is a new concept that was adopted for the purposes of this study in the absence of other valid measures. Additional research is needed to further explore the criteria that nurse managers apply to assess team capability in dealing with PVA.

Our findings further indicate that perceived high team efficacy is also associated with the mental health setting, as managers in mental health were significantly more likely to perceive team efficacy as high compared to managers in general hospital nursing. This finding may point towards a gap between general hospital nursing and mental health nursing in terms of awareness of PVA. The mental health setting has long been known for its high risk of PVA. Antecedents and influencing factors are well-researched[42,43] and efforts to address PVA strategically have been made.[6]

The availability of staff training for the prevention and management of PVA was a team factor positively associated with perceived high team efficacy. Indeed, staff training is promoted as a cornerstone in an overall strategy to address PVA.[7] However, teams' training needs might not be met to a sufficient degree: just over half of German managers reported that aggression management training for nursing staff was available, compared to more than three quarters of Austrian and Swiss managers. This finding confirms a general lack of awareness for and availability of resources at the organisational level to tackle PVA in Germany compared with Switzerland and Austria.[3,34]

The extended SAVEinH model served as theoretical underpinning for this study. Our assumption that nurse managers' personal characteristics influence perception of team efficacy was not confirmed in this analysis.

This study has some limitations associated with our sample characteristics and completion rates. First, the managers who participated entirely voluntarily can be assumed to be nursing leaders who take an interest in PVA. Therefore knowledge, skills and training regarding PVA within our sample may exceed the average. Second, the majority of participants had undergone vocational training, with only 10% qualified at bachelor's degree level. This finding mirrors the results of an international study,[44] which reported that only 10% of nurses in Switzerland held a bachelor's degree, in contrast to 100% of nurses from Norway or Spain. This may limit the transferability of our findings, as our sample may not be representative for nurse managers in countries with higher rates of university education. Furthermore, we conducted a complete case analysis, meaning that the exclusion of incomplete cases may have introduced bias. To counteract this source of bias, we assumed that data were not missing randomly, as the monotonic drop out rate could be attributed to the length of the survey. We therefore fitted the data in a regression model which provides unbiased results as long as the probability of being a complete case is independent of either outcome and predictor variable.[45] Finally, this study examined factors related to team efficacy at team (micro) level. To obtain a more comprehensive overview of factors related to team efficacy, an analysis of organisational factors should be conducted.

7 Conclusions

This study highlights the necessity to raise nurse managers' awareness for PVA, as well as a need for specific education and training tailored towards nurse managers' needs. Although some training programmes aimed at nurse managers exist, further research is required to develop curricula that equip nurse managers with the skills and knowledge to address PVA more effectively.

Implications for nursing

Nurse managers do not receive appropriate training to provide adequate support to nursing teams in dealing with patient and visitor aggression.

Clinical resources

- PERoPA–the nurse managers' perspective: An international research collaboration examining patient and visitor aggression in healthcare organisations from the nurse managers' perspective. https://www.gesundheit.bfh.ch/de/forschung/pflege/projekte/aggression_im_gesundheitswesen/peropa_the_nurse_managers_perspective_englisch.html
- Safewards: Resources for Safewards implementation http://www.safewards.net/

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Chapter 6

Organisational factors and nurse managers' perception of team efficacy in dealing with patient and visitor aggression: A cross-sectional international survey

This chapter was submitted to the International Journal of Nursing Studies as: Heckemann B., Hahn S, Halfens R.J.G. & Schols J.M.G.A. Organisational factors and nurse managers' perception of team efficacy in dealing with patient and visitor aggression: A cross-sectional international survey

Abstract

Background: Patient and visitor aggression is a serious problem affecting all areas of healthcare. Nurse managers are responsible for creating safe, low-aggression working environments, and their support is essential for teams to deal with this problem effectively. However, little is known about how nurse managers themselves perceive their organisations' support and how this affects their perception of team efficacy (i.e. staff feeling safe; ability to de-escalate; to debrief and to recognize own limitations).

Objectives: (1) To describe organisational factors (overall attitude, guidelines and official definition, resources and incident reporting) supporting managers to addressing patient and visitor aggression. (2) To investigate the relationship between organisational factors and nurse managers' perception of team efficacy in dealing with patient and visitor aggression.

Design: A cross-sectional, electronic open survey

Setting: Mental health and general hospitals in Switzerland, Germany and Austria.

Participants: Nurse managers at higher, middle or lower management level.

Methods: Participants were recruited via chain referral to participate in an 'open' survey accessible via an online platform between November 2016 and February 2017. The purpose-designed instrument comprised 86 questionnaire items. Twenty-two items, which were pertinent to the research questions were studied in a statistical descriptive analysis and a binary logistic regression.

Results: 646 participants started the survey, 410/646 completed all questions and 446/646 replies were included in this analysis. Organisational factors differed between the mental health and general hospital settings, with relevant support more widely available in the mental health sector. Logistic regression showed that managers were less likely to perceive team efficacy as high in the general hospital setting. Managers were more likely to perceive team efficacy as high when financial resources were allocated to the cause, if post incident support was available for staff and when the organisational attitude was supportive.

Discussion: This study is the first study to investigate the nurse managers' role in addressing aggression in healthcare. Its results highlight the crucial importance of organisational support (allocation of financial resources, staff and manager training and post incident support) to prevent and manage aggressive behaviour from patients and visitors. The findings pertain to a particular cultural context and require corroboration to ensure transferability.

Conclusions: Organisational support is essential to enable nurse managers to support teams and to enhance team efficacy in dealing with patient and visitor aggression.

Contribution statement

What is already known about the topic?

- Patient and visitor aggression in healthcare is an eminent global problem, with nurses being a particularly at risk.
- Despite efforts to address the problem, incidence rates remain high.
- Successful reduction of patient and visitor aggression in healthcare requires collaborative and multidisciplinary action at the staff/team (micro), the organisational (meso) and the community/societal (macro) levels.
- Nurse managers are key persons to support nursing staff in addressing patient and visitor aggression, yet their view of the problem has to date received little attention in research.
- Nurse managers should be able to organize support tailored to the teams' needs.

What this paper adds

- Compared with the mental health setting, organisational support in the management and prevention of patient and visitor aggression in general hospitals is lacking, with fewer financial resources and training opportunities available.
- Nurse managers, particularly those working in a general hospital setting, lack risk factor knowledge and organisational endorsement that is needed to foster team efficacy in the prevention and management of patient and visitor aggression.
- Nurse managers require training and organisational support to address patient and visitor aggression more effectively.

1 Introduction

Patient and visitor aggression in healthcare has been extensively researched. The main focus has been on the experience and effects of patient and visitor aggression on frontline staff in high-risk areas such as mental health settings or emergency departments. The staff experience in other clinical areas of general hospital nursing has been explored more recently.[1] All research evidence underscores the damaging effects of exposure to patient and visitor aggression: not only does it cause human suffering, including depression, burnout or posttraumatic stress disorder,[2] but it may also give nurses an impetus to change their employers or to leave the nursing profession altogether.[3,4] Amongst other staff groups, nurses are most directly exposed and have the highest risk of experiencing patient and visitor aggression.[5,6] Patient and visitor aggression also entails a substantial financial burden because of the loss of expertise and human resources and due to sickness leave taken in the aftermath of patient and visitor aggression incidents.[7,8] Successful reduction of patient and visitor aggression in healthcare requires collaborative and multidisciplinary action and strategies at staff/team (micro), organisational (meso) and community/societal (macro) levels.[9-12] Recommended strategies include an official organisational definition of patient and visitor aggression, as well as guidelines and policies for the prevention and management of patient and visitor aggression. Every hospital should convene an inter-professional committee for establishing and updating policies on health and safety. Furthermore, experts to provide support to victims of patient and visitor aggression in case of need should be appointed offically.[12] The allocation of financial resources facilitates the provision of appropriate, safe and tidy work environments. Ward routines and provision of training should be tailored to the needs of staff members. Importantly, healthcare organisations have to adopt an overall supportive attitude towards preventing and managing patient and visitor aggression.[9,11-15]

Despite growing knowledge and availability of recommendations on how to create low-aggression environments, patient and visitor aggression incidence remains high even in countries that have adopted extensive policies against patient and visitor aggression.[16] One explanation that has been put forward is that organisational cultures are often accepting patient and visitor aggression as part of a job in healthcare.[17] Such cultures foster the underreporting of patient and visitor aggression,[18,19] which hides the true extent of the problem. Moreover, even if organisational policies and procedures exist, they often lack implementation into clinical practice.[18,20,21] Nurse managers are the link between staff nurse level and hospital administration. This makes nurse managers key persons for establishing and sustaining safe and healthy work environments.[22-24] Nurse managers are also responsible for supporting nursing staff in dealing with patient and visitor aggression. Adequately supported and trained nursing teams should be capable and confident in their ability to deal with patient and visitor

aggression, i.e. they should display high team efficacy.[25,26] A highly efficient team would share the belief that violent or threatening situations can be adequately assessed, de-escalated, solved, and debriefed within the team, whereas teams with low team efficacy would not share this belief.[25,26]

A recent study[27] exploring the role of the nurse manager found that ward managers attempt to provide resources and support that directly aid staff in dealing with individual aggressive incidents. In contrast, higher-level (e.g. divisional) managers have a tendency to develop work environments and care processes.[27] The study also revealed that the nurse managers' efforts to address patient and visitor aggression were often hampered, and some were indeed discouraged, by a lack of financial resources and lack of interest in patient and visitor aggression at the administrative and board of directors' level.[27] However, nurse managers' commitment to reducing patient and visitor aggression is crucial, as is the commitment of all stakeholders to the cause.[28,29] Therefore, knowledge about team capability, needs and availability of resources is essential for nurse managers. Moreover, nurse managers themselves need to feel supported by their organisations to address workplace problems effectively, to stay motivated and to reciprocate by supporting their staff.[30,31]

The current study was conducted within the PERoPA (Perceptions of Patient and Visitor Aggression) project,[*], a collaborative research project that examines patient and visitor aggression in healthcare from the managers' perspective. The international cross-sectional study reported in this paper examines how nurse managers perceive their teams' efficacy in dealing with patient and visitor aggression in relation to organisational factors. This study aims to describe (I) the availability of organisational measures to address patient and visitor aggression and to explore (II) the relationship between organisational factors and perceived team efficacy from the viewpoint of nurse managers from Switzerland, Germany and Austria.

2 Methods

2.1 Design

This study was set up as a cross-sectional investigation built on a web-based survey with open access.[32,33] This format was chosen because aggression can be a sensitive or contentious issue in healthcare organisations, which therefore may refuse to support a survey on patient and visitor aggression. The open access format enabled any nurse manager to participate in the survey

[*] https://www.gesundheit.bfh.ch/de/forschung/pflege/projekte/aggression_im_gesundheitswesen/peropa_the_nurse_managers_perspective_englisch/

independently of their employer's approval. The survey was conducted between November 2016 and February 2017.

2.2 Instrument

The 86-item survey comprised psychometrically evaluated tools.[14,34-36] In addition items generated through a preparatory interview study[27] were added to the questionnaire. The items pertained to the following areas:

- Overall organisational attitude (seven questions) (e.g. the hospital administration is taking patient and visitor aggression seriously, aims to provide safe working conditions, deals with patient and visitor aggression according to statutory requirements, etc.). Respondent were asked to record their sentiment regarding each statement on a 5-point Likert scale from 'strongly disagree' to 'strongly agree'. Post-hoc analysis of Cronbach's alpha showed a strong correlation between the individual questions at 0.91.
- Team efficacy (five questions): (1) staff feeling of safety in the workplace, (2) staff ability to de-escalate, (3) readiness to involve police forces if needed, (4) staff ability to debrief within the team and (5) readiness to contact supervisor for additional help with debriefing if required. Answers were recorded as either 'yes', 'no' or 'don't know'. Post hoc analysis showed moderate correlation with a Cronbach's alpha of 0.6. A Bartlett test was highly significant at <.001 indicating the suitability of a factor analysis. The factor analysis confirmed one factor and an acceptable Kaiser Meyer Olkin (0.6) confirmed the adequacy of the sample size.

Detailed information on the validity and reliability of the tools included in the survey is available as on the PERoPA project website.[†] This study reports on three domains: demographics, team efficacy and organisational support. Table 1 shows the operalization of the variables included in this analysis

[†] https://www.gesundheit.bfh.ch/de/forschung/pflege/projekte/aggression_im_gesundheitswesen/peropa_the_nurse_managers_perspective_englisch/tabs/instrument.html

Table 1 Operalization of variables

Concept	*Domain*	*Variables (survey)*	*Corresponding survey items*	*Measurement*
Demographics	Individual characteristics	Gender	Female/male	Single answer
		Age	29 or younger, 30-39, 40-49, 50-59, 60 or older	
		Country	Austria, Germany, Switzerland	
		Education	Vocational training and further training courses; BSc; MSc; PhD/ Doctorate	
		Leadership position	Lower; middle; higher management	
		Years in management	≤1, 1-5, ≥6	
		Risk factors	Knowledge about risk factors for patient and visitor aggression in area of responsibility	
Organisational factors	Setting	Type of hospital	Mental health, general hospital	
	Attitude	Official definition	Is there an official definition of aggression incl. verbal aggression	Yes/ No/Don't know
		Overall attitude	Endangerment of staff by others not accepted	
			Administration taking patient and visitor aggression seriously, aiming to provide safe working conditions, supporting the involvement of police forces, allocating financial resources towards the prevention and management of patient and visitor aggression	
	Guidelines and policies	Availability of guidelines and policies	Are there guidelines for the prevention and management of aggressive behaviour?	
	Resources	Staff support	Which types of staff support are available? E.g. psychological support	Multiple choice
		Financial resources	Are financial resources allocated towards the prevention and management of patient and visitor aggression?	
		Security	Security personnel on site?	

Concept	*Domain*	*Variables (survey)*	*Corresponding survey items*	*Measurement*
		personnel	Intervention team available?	
		Staff training	Is staff training available?	
	Incident reporting	Official reporting system	Official reporting system available?	
	Physical environment	Structural features	E.g. sufficient lighting in all areas Spatial planning: elimination of isolated areas/ blind spots Designated areas to separate aggressive patients are available, entrance/exit areas monitored/only accessible for personnel evening/at night	
Team efficacy	Perceived Team efficacy	Safety (perceived)	Most staff feel safe in the workplace.	
		De-escalation	Staff are able to de-escalate patient and visitor aggression within the team.	
		Recognizing limitations	Staff contact the police if they feel an aggressive incident requires police support.	
		Debriefing	Staff are able to independently debrief within the team.	
		Recognizing limitations (Aftercare)	Staff contact their respective superiors if they require additional help in debriefing after an incident.	

Table 2 Outcome and predictor variables

Variable type	*Domain*	*Variable*
Outcome		Team efficacy[†]
Predictor	Attitude	Overall attitude mostly positive/ mostly negative[†]
		Has an aggressive person ever been banned from entering the hospital
		Official definition of patient and visitor aggression
	Guidelines and policies	Guidelines for the prevention and management of patient and visitor aggression available
	Resources	Financial resources allocated to prevent and manage patient and visitor aggression
		Security Personnel is present on site
		Intervention team on site
		Availability of support after patient and visitor aggression incidents
		Availability of staff training
	Incident reporting	Is there an official reporting system for patient and visitor aggression incidents
	Physical environment	Consideration of physical environment
	Setting	Mental health/general hospital
	Country	Germany, Austria, Switzerland

[†]Composite variables generated from indicators from the survey tool. Internal consistency was tested and composite scores were computed if Cronbach's alpha was ≥ .6.

2.3 Sample and setting

The sample consisted of all managers in the countries of Switzerland (German-speaking part), Austria and Germany who volunteered to take part in the survey. The inclusion criteria were (1) nurse managers or deputy managers at lower, middle or higher managerial level (e.g. ward manager, divisional manager, director of nursing); (2) employed in German, Swiss or Austrian mental health or general hospitals.

2.4 Data collection

The survey study was publicized through newsletters, webpages and social media (Facebook) sites of professional networks and associations in Switzerland, Germany and Austria. The invitation letter and study information included a weblink to the survey, which was available via the online platform SurveyMonkey.[37] Participants were able to review and change their answers by using a 'back button' while completing the survey. Adaptive questioning was used to reduce the length and complexity of the survey, which took between 30 and 45 minutes to complete.

2.5 Data analysis

Participants' socio-demographic characteristics and organisational factors regarding the prevention and management of patient and visitor aggression were analysed descriptively. Differences between countries were explored through chi-square analyses. Results of statistical tests were considered significant if the p-value was below 0.05.

The outcome variable team efficacy was conceptualized as a binary variable with 'yes' answers (value: 1, high team efficacy) and 'no/don't know' answers (value: 2, low perceived team efficacy) by combining the answer scores of the five questions pertaining to team efficacy (see section 2.2. Instrument). An exploratory factor analysis extracted one factor in support of the concept. A Kaiser-Meyer-Olkin test result of 0.7 confirmed the adequacy of the sample size. Total scores for team efficacy ranged from 5 (all 'yes' answers) to 10 (all no/don't know answers). Answers scoring were 5-7 registered as 'high team efficacy', answers scoring 8-10 as 'low team efficacy'.

Furthermore, the seven questions pertaining to the overall attitude were combined into a composite score. The answers to the seven questions on a five-point Likert scale were first reduced into three categories: positive ('agree/strongly agree', value 1), neutral (value 2) and negative ('disagree,

strongly disagree', value 3) and subsequently further combined into a dichotomous score. Scores between 7 and 28 registered as 'mostly positive', scores between 28 and 39 as 'mostly negative attitude'.

The relationship between the predictor variables (organisational factors, see Table 2) and the outcome variable 'high team efficacy' (see Table 2) was explored in a binary logistic regression analysis to estimate odds ratios (OR) with 95% confidence interval. Variables were entered via the backward LR method. All data were analysed using IBM SPSS Version24.[38]

3 Ethical considerations

The project protocol was submitted to the responsible Swiss ethics review board, which decided that no full ethical application was required, as the project did not fall under the Swiss Federal Act of Research Involving Human Beings. The study was conducted in accordance with Swiss national and legal regulatory requirements.Participants' ticked an obligatory consent box prior to proceeding to the survey questions. No incentives were offered.

4 Results

4.1 Completion rate

Six hundred and forty-six nurse managers consented to take part, of whom 410 (63%) completed the entire survey. The variable 'team efficacy' was applied as a filter variable, matching 446 responses, which were included in this analysis.

4.2 Participant characteristics

More than half of all participants were aged between 30 and 49, 68% of all participants were female (Table 3). Almost three quarters (72%) had completed vocational training and taken further courses (university or non-university). One third (30%) were higher-level managers, 13% occupied middle and 57% lower management positions. Seventy percent of participants had more than 6 years of experience as nurse managers. The majority of managers worked in acute hospital nursing. However, significantly more Swiss managers from the mental health setting took part in the survey, compared with Germany or Austria. There was a significant difference in perception of team efficacy. Just over half (56%) of the German managers rated team efficacy as high, compared to 65% of

Austrian and 72% of Swiss managers. More than three quarters of managers working in mental health, but only just over half of the managers in general hospital nursing perceived team efficacy to be high. Significantly more managers in mental health (92%) had knowledge about risk factors for patient and visitor aggression compared with managers in general hospitals (64%). Within the group of general hospital managers, significantly fewer German managers (47%) had knowledge about risk factors compared to Swiss (79%) and Austrian (63%) managers.

4.3 Organisational support

Attitude

Overall, fewer managers in general hospitals (45%) perceived the overall attitude to be mostly positive compared to managers in mental health (72%) (Table 4). Managers in Switzerland perceived the overall attitude towards PATIENT AND VISITOR AGGRESSION to be significantly more positive compared to Austria and Germany. One third of Swiss nurse managers in general hospitals (33%) confirmed that their organisation had an official definition of patient and visitor aggression, compared to German (21%) or Austrian managers (8.3%). However, in the mental health setting, significantly more German managers (71%) confirmed that an official definition of patient and visitor aggression was available compared to Swiss (47%) and Austrian managers (25%). Overall, less than a quarter of general hospitals (22%) had an official definition of patient and visitor aggression compared to 50% of mental health hospitals. Guidelines for the management of patient and visitor aggression were more widely available in the mental health setting (80%) than in general hospitals (34%).

Resources

Significantly more managers from Switzerland from both general (69%) and mental health settings (95%) confirmed availability of support for staff after patient and visitor aggression incidents compared to their counterparts in Austria and Germany (Table 4). Overall, staff support was available in the majority of mental health organisations (89%) and in more than half of the general hospitals (60%).

Security personnel was more widely available in general hospitals (68%) than in mental health hospitals (50%), the opposite was true for intervention teams, which were available in 34% of general and 62% of mental health organisations. Staff training was available in almost all mental health institutions (95%), but overall only in about two thirds of general hospitals (61%), with significantly less training availability in Germany (48%) compared to Switzerland (58%) and Austria (61%). Three quarters of managers in general

hospital nursing and 40% of managers in mental health nursing reported 'not knowing' or 'no' financial resources being allocated to addressing PATIENT AND VISITOR AGGRESSION.

Incident reporting
Official reporting systems were in place in the majority of mental health hospitals (88%), but just in under half of general hospitals (45%). There were significant differences however, between countries. Significantly fewer managers in German general hospitals (31%) confirmed official reporting systems compared to managers in Austria (49%) and Switzerland (51%). Significantly fewer managers in Austrian mental health setting reported availability of reporting systems (75%) compared to Swiss (92%) and German managers (89%).

Environmental factors
There was no significant difference in the consideration of the physical care environment like e.g. sufficient lighting in all areas, elimination of isolated areas and blind spots, monitored entrance/exit areas or designated areas to separate aggressive patients. The majority of managers reported that environmental factors were considered in general (84%) and mental health organisations (92%).

4.4 Logistic regression

The initial logistic regression included 264 out of 446 cases (missing cases n=182) and twelve predictor variables (see Table 2). The goodness of fit tests where acceptable with Cox & Snell R2 at 0.19 and Nagelkerke R2 at 0.27. However, to improve the fit of the model, outliers were removed and 249 cases (missing cases n=176) were included in the final backward LR binary logistic regression with 'team efficacy' as the outcome variable. Over the nine-step logistic regression, seven variables were eliminated. The final model included five predictor variables, four of which were significant. The results show that the following variables were positively related to a perceived high team efficacy: 'Allocation of financial resources' (sig 0.003, OR 5.9), 'availability of support after patient and visitor aggression incidents' (sig 0.002, OR 3.6), a positive overall attitude (sig 0.003, OR 0.3) and the mental health setting (sig 0.00, OR 0.21).

The goodness of fit tests confirmed suitability of this model with an acceptable Cox & Snell R2 at 0.31 and a good Nagelkerke-R2 at 0.26. A Hosmer-Lemeshow test was not significant at 0.26. Predicted values as per classification table were correct in 33.3% for group membership to low team efficacy, 94.1% for group membership to high team efficacy.

Table 3 Participant characteristics

	Country	*Switzerland n=218*	*Germany n=109*	*Austria n=119*	*Total n=446*	*Chi2 (df)*	*p-value*
		n (%)	n (%)	n (%)	n (%)		
Gender	Female	144 (66.1)	72 (66.1)	89 (74.8)	305 (68.4)	3.08 (2)	0.21
	Male	74 (33.9)	37 (33.9)	30 (25.2)	141 (31.6)		
Age	29 or younger	15 (6.9)	4 (3.7)	6 (5.0)	25 (5.6)	6.85 (4)	0.14
	30-49	125 (57.3)	54 (49.5)	56 (47.1)	235 (52.7)		
	50 or older	78 (35.8)	51 (46.8)	57 (47.9)	186 (41.7)		
Management level	Higher	42 (49.9)	24 (28.2)	19 (22.4)	85 (19.1)	1.674(4)	0.795
	Middle	50 (22.9)	27 (24.8)	30 (25.2)	107 (24.0)		
	Lower	126 (57.8)	58 (53.2)	70 (58.8)	254 (57.0)		
Education	Vocational training & further education	153 (70.2)	80 (73.4)	88 (73.9)	321 (72.0)	7.082(6)	0.31
	Bachelor's degree	19 (8.7)	15 (13.8)	7(5.9)	41 (9.2)		
	Master's degree	44 (20.2)	13 (11.9)	23 (19.3)	80 (17.9)		
	PhD/Doctorate	2 (0.9)	1 (0.9)	1 (0.8)	4 (0.9)		
Years in nursing management	< 1	6 (2.8)	4 (4.6)	3 (2.5)	14 (3.1)	4.806 (4)	0.31
	1-5	65 (29.8)	29 (26.6)	24 (20.2)	118 (26.5)		
	> 6	147 (67.4)	75 (68.8)	92 (77.3)	314 (70.4)		
Setting	General hospital	105 (48.2)	81 (74.3)	83 (69.7)	269 (60.3)	26.79(2)	<.001**
	Mental health	113 (51.8)	28 (25.7)	36 (30.3)	177 (39.7)		
Knowledge about risk factors for patient and visitor aggression	Yes	189 (86.7)	63 57.8)	84 (70.6)	336 (75.3)	34.63 (2)	<.001*
	No	29 (13.3)	46 (42.2)	35 (29.4)	110 (24.7)		
Mental health (n=177)	Yes	106 (93.8)	25 (89.3)	32 (88.9)	163 (92.1)	1.265(2)	0.53
	No	7 (6.2)	3 (10.7)	4 (11.1)	14 (7.9)		
General hospital (n=269	Yes	83 (79.0)	38 (46.9)	52 (62.7)	173 (64.3)	20.71(2)	<.00*
	No	22 (21.0)	43 (53.1)	31 (37.3)	96 (35.7)		
Team efficacy	High	159 (72.9)	61 (56.0)	78 (65.5)	298 (66.8)		
Mental health	Low	12 (10.6)	7(25.0)	8 (22.2)	27 (15.3)		
(n=177)	High	101 (89.4)	21 (75.0)	28 (77.8)	150 (84.7)	5.287 (2)	0.71
General hospital (n=269	Low	47 (44.8)	41 (50.6)	33 (39.8)	121 (45.0)	1.956 (2)	0.38
	High	58 (55.2)	40 (49.4)	50 (60.2)	148 (55.0)		

**P<.001, *P<.05

Table 4 Organisational factors patient and visitor aggression prevention and management

		Setting	*General hospital*						*Mental Health*					
Domain	*Country*		*CH n= 105*	*G n= 81*	*A n= 83*	*Total n= 269*	*Chi2 (df)*	*sig*	*CH n= 113*	*G n= 28*	*A n=83*	*Total n= 177*	*Chi2 (df)*	*p-value*
			n (%)	n (%)	n (%)	n (%)			n (%)	n (%)	n (%)	n (%)		
Organisational attitude	Overall attitude	Mostly positive	55 (54.5)	24 (32.0)	36 (43.9)	115 (44.6)	8.806 (2)	.01*	86 (77.5)	18 (69.2)	19 (54.3)	123 (71.5)	7.10 (2)	.03*
		Mostly negative	46 (45.5)	51 (68.0)	46 (56.1)	143 (55.4)			25 (22.5)	8 (30.8)	16 (45.7)	49 (28.5)		
		Missing data				11						5		
	Official definition of patient and visitor aggression	Yes	32 (32.7)	14 (20.6)	6 (8.3)	52 (21.8)	14.465 (2)	.00**	60 (53.1)	20 (71.4)	9 (25.0)	89 (50.3)	14.57 (2)	.01**
		No/don't know	66 (67.3)	54 (79.4)	66 (91.7)	186 (78.2)			53 (46.9)	8 (28.6)	27 (75.0)	88 (49.7)		
		Missing data				31						0		
	Ban of aggressive person from hospital premises	Yes	46 (43.8)	45 (55.6)	35 (42.2)	126 (46.8)	3.586 (2)	.17	90 (79.6)	24 (85.7)	25 (69.4)	139 (78.5)	2.70 (2)	.26
		No/don't know	59 (56.2)	36 (44.4)	48 (57.8)	143 (53.2)			23 (20.4)	4 (14.3)	11 (30.6)	38 (21.5)		
	Guideline availability	Yes	39 (37.1)	26 (32.1)	26 (31.3)	91 (33.8)	0.66 (2)	.65	90 (79.6)	23 (82.1)	27 (75.0)	140 (79.1)	.54 (2)	.76
		No/ don't know	66 (62.9)	55 (67.9)	57 (68.7)	178 (66.2)			23 (20.4)	5 (17.9)	9 (25.0)	37 (30.5)		
		Missing data				43						0		

		Setting	*General hospital*	*Mental Health*										
Domain	*Country*		*CH n= 105*	*G n= 81*	*A n= 83*	*Total n= 269*	*Chi2 (df)*	*sig*	*CH n= 113*	*G n= 28*	*A n=83*	*Total n= 177*	*Chi2 (df)*	*p-value*
			n (%)	n (%)	n (%)	n (%)			n (%)	n (%)	n (%)	n (%)		
Resources	Financial resources allocated	Yes	19 (20.7)	16 (29.1)	19 (26.8)	54 (24.8)	1.539 (2)	.46	68 (60.7)	17 (65.4)	19 (52.8)	104 (59.8)	1.11 (2)	.57
		No/ don't know	73 (79.3)	39 (70.9)	52 (73.2)	164 (75.2)			44 (39.3)	9 (34.6)	17 (47.2)	70 (40.2)		
		Missing data				51						3		
	Availability of support after patient and visitor aggression incidents	Yes	72 (68.6)	37 (45.7)	52 (62.7)	161 (59.9)	10.364 (2)	.01*	107 (94.7)	25 (89.3)	26 (72.2)	158 (89.3)	14.38 (2)	.00**
		No/don't know	33 (31.4)	44 (54.3)	31 (37.3)	108 (40.1)			6 (5.3)	3 (10.7)	10 (27.8)	19 (10.7)		
	Security personnel on site	Yes	62 (67.4)	41 (74.5)	46 (64.8)	149 (68.3)	1.431 (2)	.49	47 (42.0)	13 (50.0)	28 (77.8)	88 (50.6)	13.98 (2)	.00**
		No/don't know	30 (32.6)	14 (25.5)	25 (35.2)	69 (31.7)			65 (58.0)	13 (50.0)	8 (22.2)	86 (49.4)		
		Missing data				51						3		
	Intervention team on site	Yes	43 (41.0)	18 (22.2)	31 (37.3)	92 (34.2)	7.657 (2)	.02*	69 (61.1)	19 (67.9)	22 (61.1)	110 (62.1)	0.46 (2)	.79
		No/don't know	62 (59.0)	63 (77.8)	52 (62.7)	177 (65.8)			44 (38.9)	9 (32.1)	14 (38.9)	67 (37.9)		
		Missing data				0						19		
	Staff training availability	Yes	61 (57.7)	38 (48.1)	64 (76.2)	163 (60.6)	14.133 (2)	.00**	110 (97.3)	23 (82.1)	35 (97.2)	168 (94.9)	11.24	.00*
		No/don't know	45 (42.5)	41 (51.9)	20 (23.8)	106 (39.4)			3 (2.7)	5 (17.9)	1 (2.8)	9 (5.1)		
		Missing data												

Domain	Country	Setting	General hospital	Mental Health									
			CH n= 105	*G n= 81*	*A n= 83*	*Total n= 269*	*Chi2 (df)*	*sig*	*CH n= 113*	*G n= 28*	*A n=83*	*Total n= 177*	*Chi2 (df)*	*p-value*
Incident reporting	Official reporting system for patient and visitor aggression incidents	Yes	54 (51.4)	25 (30.9)	41 (49.4)	120 (44.6)	8.93 9 (2)	.01*	104 (92.0)	25 (89.3)	27 (75.0)	156 (88.1)	7.62 (2)	.02*
		No/ don't know	51 (48.6)	56 (69.1)	42 (50.6)	149 (55.4)			9 (8.0)	3 (10.7)	9 (25.0)	21 (11.9)		
Environment	Consideration of physical environment	Yes	90 (85.7)	66 (81.5)	70 (84.3)	226 (84.0)	.619 (2)	.73	103 (92.0)	27 (96.4)	41 (86.1)	161 (91.5)	2.24 (2)	.33
		No/don't know	15 (14.3)	15 (18.5)	13 (15.7)	43 (16.0)			9 (8.0)	1 (3.6)	5 (13.9)	15 (8.5)		

**P<.001, *P<.05

Table 5 Results logistic regression

Variable		*B*	*S.E.*	*Wald*	*df*	*Sig.*	*Exp (B)*	*95% C.I. for EXP(B)*	
								Lower	Upper
Financial resources allocated to prevent and manage patient and visitor aggression	Yes	1.77	.60	8.80	1	.003*	5.88	1.83	18.93
Availability of support after patient and visitor aggression incidents	Yes	1.27	.41	9.55	1	.002*	3.56	1.59	7.95
Overall attitude	Mostly positive	1.17	.39	9.06	1	.003*	.31	.15	.67
Setting	Mental hospital	1.50	.45	11.27	1	.001*	.22	.09	.54

**P<.001, *P<.05

5 Discussion

This study described and investigated the relationship between organisational factors (overall attitude, guidelines and official definition, resources and incident reporting) and nurse managers' perception of team efficacy in dealing with patient and visitor aggression. The analysis shows that significantly more organisational factors supporting the prevention and management of patient and visitor aggression were present in mental health organisations compared to the general hospital setting.

The data analysis particularly underscored the differences between the general hospital and mental health setting in nurse managers' perception of team efficacy and organisational support. Significantly more managers in mental health organisations perceived team efficacy to be high compared with managers in general hospitals. In this study, the concept of 'team efficacy' served as a proxy to gauge how nurse managers perceive their teams' ability to deal with patient and visitor aggression. Team efficacy is influenced by the social context, the beliefs and motivation and performance of co-workers.[39] A focus on team efficacy rather than individual staff member ability to deal with patient and visitor aggression was considered important, because there is a proven link between well-functioning team work, a clear ward structure and patient and visitor aggression incidence rates.[40] To date, however, especially in the general hospital sector, little attention has been given to enhancing the teams' ability to deal with patient and visitor aggression. It therefore appeared to be important to investigate how nurse managers perceive their teams' ability to deal with patient and visitor aggression. The rating of team efficacy by general hospital nurse managers, significantly lower than by managers in mental health, may not be surprising considering that only 64% of general hospital managers reported having knowledge about risk factors compared with 92% of managers in mental health organisations. A general lack of knowledge about patient and visitor aggression and its risk factors will hamper the ability to adequately assess team efficacy. Furthermore, this finding highlights an overall need for training about patient and visitor aggression and its risk factors for managers in the general hospital setting. While a lack of attention to patient and visitor aggression in the general hospital setting in German-speaking countries has been found in previous studies,[41,42] the current analysis is the first to demonstrate the differences within healthcare settings and between German-speaking countries. General hospitals in Germany offered significantly less support in terms of staff training availability, support for staff after incidents, and official reporting system availability compared to Swiss and Austrian general hospitals. Correspondingly, significantly fewer German nurse managers reported having knowledge about patient and visitor aggression risk factors and more an overall negative attitude towards patient and visitor aggression within the organisation. The findings thus point towards two important aspects. First,

they highlight the need to address patient and visitor aggression more extensively in the general hospital setting. Second, patient and visitor aggression receives more attention in Switzerland and Austria than in Germany, indicating that the former two have taken a lead in prioritizing the problem.

The logistic regression further strengthens this interpretation, as managers are more likely to rate team efficacy as high if staff support is available and financial resources are allocated to reducing aggression. In the general hospital setting, the attitude towards patient and visitor aggression is more negative in Germany and Austria, compared with Switzerland, yet compared with the mental health setting, the attitude in the general health setting is generally more negative. This result is not surprising considering the greater prevalence and availability of training and support in the mental health setting. The greater availability of training and support in mental health settings is reflected in the higher likelihood of a high team efficacy rating in this setting.

Organisational support of managers at all levels is an antecedent for supportive behaviour towards staff.[30,31] Concurring, Hahn, et al.[41] found that nursing staff working in organisations that provide insufficient support tend to experience more patient and visitor aggression than staff in more supportive organisations. Most managers in the mental health setting reported a mostly positive overall attitude. Nurse managers in general hospital nursing, on the other hand do not necessarily feel well supported by their organisations to when trying to address patient and visitor aggression.[27,41] This finding may challenge research reporting that nursing staff in general hospital and emergency rooms are unsupported due to lack of interest on behalf of their managers.[17,41] Rather than being disinterested, managers, particularly those in general hospital nursing, may in fact lack the knowledge, awareness and organisational endorsement needed to provided optimal support for their staff. In the light of high incidences of patient and visitor aggression in general hospital settings,[1] it appears that nurse managers are currently insufficiently prepared for current staff needs in dealing with patient and visitor aggression. Current trends indicate that the situation will only deteriorate: old age, chronic complex health conditions, chronic pain are known risk factors for patient and visitor aggression that are all set to become more prevalent as populations age.[43,44]

The descriptive analysis further showed that measures to address patient and visitor aggression are taken in both mental health and general hospital setting. Guidelines for dealing with patient and visitor aggression were available in the majority organisations and consideration being given to the physical care environment. Providing a calm, tidy and safe physical environment, staff education and team intervention are known to play a role in reducing patient and visitor aggression.[13,45,46] Published research findings from the mental health setting point towards the effectiveness of these measures, particularly the importance of patient assessment in the prevention of

aggression, which has been shown to reduce the use of restraint and seclusion in mental health wards. [33,47]

Our findings thus stress the importance of organisational commitment to reducing patient and visitor aggression. Concrete measures include proactively ensuring safety in all activities and an organisational response in case of incidents. This necessitates a view of patient and visitor aggression risk as being directly related to work environment, team and tasks, more than to individual staff.[9,10,21]

In this work we investigated organisational support factors related to patient and visitor aggression, relying on current models and guidance on patient and visitor aggression prevention and management.[9-13,15] We propose that future research should focus on specific support measures that enable nurse managers better to support their staff. Future studies should also investigate the impact of strategies at the macro level, such as a national policy on the overall attitude, knowledge and behaviours towards patient and visitor aggression in healthcare. The countries included in this study did not have national policies against patient and visitor aggression. A comparison between countries with and without such national policies could lead the way.

Limitations

This study has some limitations pertaining to the recruitment method and the conceptualization of the problem. Potential participants were invited to take part in the survey through an open recruitment strategy.[48] While this approach has the potential to reach a large population through chain referral, it is not impossible to calculate response rates, because the dissemination of the invitation beyond the initial distributors cannot be tracked. However, the completion rate was calculated.[49] A fraction of the respondents who started filling in the questionnaire dropped out before finishing. The dropout rate was approximately linear, i.e. there was no point in the questionnaire where a disproportionate amount of participants dropped out. This indicates that the questionnaire was somewhat taxing for the participants due to its length, but also that there were no “trigger questions” that made participants drop out at a higher than expected rate.

Due to our open recruitment strategy, the self-selected sample may not be representative of the overall population of nursing managers. A 'volunteer effect' or other type of selection bias may have led to exclusion of some points of view. We still consider our conclusions justified because they rely on a coarse exploratory interpretation of the overall sentiments expressed by the respondents, rather than detailed analysis of the exact numeric results. We therefore expect these conclusions to be robust against plausible variations of the sample. In addition, there has to date been little focus on nursing managers in relation to patient and visitor aggression. On this background, our findings provide valuable, albeit preliminary, first insights, which should motivate, guide,

and inform further international studies that lead to a more thorough understanding of how to address the problem of patient and visitor aggression through the involvement of nursing managers.

In the absence of suitable, evidence-based models on the role of nurse managers in patient and visitor aggression management, we used the expedient concept of perceived team efficacy to explore the relationship between organisational factors and nurse manager assessment of team capability in dealing with patient and visitor aggression. We expect that the concepts of team efficacy and team support will be developed and refined through in future research.

6 Conclusion

This study highlights current challenges and gaps in dealing with patient and visitor aggression in healthcare organisations. Insights into nurse managers' current perspectives on the problem are provided. The findings for the countries studied show that nurse managers in general hospitals do not receive the same amount of organisational support as their colleagues in mental health nursing. Specifically, nurse managers in general hospitals in Germany are short of organisational support, compared with their Austrian and Swiss counterparts. Furthermore, nurse managers in general hospital nursing often lack knowledge of patient and visitor aggression risk factors, report less positive organisational attitudes and tend to perceive their teams' efficacy in dealing with patient and visitor aggression as lower. The logistic regression confirmed that specific organisational support factors such as allocation of financial support, staff support as well as consideration of the physical care environment is positively associated with perceived high team efficacy and a negative overall attitude towards patient and visitor aggression is negatively associated with perceived high team efficacy. The findings point to the urgent need to address the issue through adequate organisational support and training for nurse managers.

Author contributions

Contributors BH and SH conducted the research. BH, SH, RJH were involved in the data analysis. BH, SH, R.J.G.H and JS wrote the manuscript. BH had primary responsibility for the final content. All the authors read and approved the final manuscript.

Competing interests

None declared.

Ethical approval

The study protocol was submitted to the local ethics committee Switzerland, which decided that this study does not fall under the responsibility of the Swiss Federal Act of Research Involving Human Beings.

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Disclaimer

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Chapter 7

General Discussion

General Discussion

Extensive guidance on strategies[1-3] to address patient and visitor aggression (PVA) in healthcare organisations is available, but PVA incidence still remains high.[4] In an attempt to explore this apparent 'recommendation to practice gap', we conducted an analysis of the availability, implementation and influence of strategies against PVA in general hospitals in Germany, Austria and Switzerland, from the nursing perspective. In addition, the role and behaviours of nurse managers in the prevention and management of PVA were explored. Finally, all findings were integrated and interpreted so as to provide a comprehensive overview of the particular barriers, but also the potential resources for a more effective prevention and management of PVA in clinical practice.

With a focus on the nursing perspective, this thesis addressed three overall questions

- To what extent are recommended strategies against PVA available and implemented at the micro- and meso-level in the general hospital setting? (Chapters 3, 4, 5, 6)
- How do these strategies influence the ability of nursing staff and teams to prevent and manage PVA? (Chapters 2, 3, 4, 5, 6)
- What are nurse managers' (I) roles, (II) the influencing background factors and determinants affecting their intentions and behaviours in relation to the prevention and management of PVA? (Chapters 4, 5, 6)

The research questions were investigated in a sequential, exploratory mixed methods design comprising four studies.[5] The following paragraphs present the integration and interpretation of the main findings and methodological considerations. To conclude this chapter, implications for future research and clinical practice will be derived.

1 Main findings

1.1 Availability, implementation and influence of recommended strategies against PVA at the micro- and meso-level in the general hospital setting

A number of strategies to address PVA at the micro- and meso-level are recommended in the literature. These include

- Education and training for staff on the prevention and management of patient and visitor aggression
- Provision of staff support after aggressive incidents
- Preparation, education, and empowerment of managers to support staff
- Systematic risk assessments and management of workplace hazards
- Organisational security responses (public engagement, interagency liaison, e.g. police forces, inclusion of all stakeholders)
- Organisational policies to support and guide staff and security services on the prevention, management and reporting of patient and visitor aggression
- An organisational position statement regarding patient and visitor aggression [1-3,6]

In addition to exploring the strategies employed, we investigated perceived organisational attitudes towards PVA. To assess the overall-organisational attitude towards PVA, we asked nurse managers questions such as whether PVA was taken seriously by the hospital administration and whether safe working conditions were provided. Furthermore, we examined perceived team efficacy. In the context of PVA, high team efficacy can be defined as a shared belief that the team can efficiently and effectively de-escalate violent or threatening situations and debrief after incidents, whereas low team efficacy would be characterized by the lack of this ability and shared belief. We assumed team efficacy to be an indicator of a team's ability to deal with all aspects related to PVA. We hypothesized that the overall-organisational attitude and the availability of strategies against PVA would influence team efficacy.

The micro-level: availability and influence of staff training

In the literature, the main recommended strategy against PVA at the micro-level is staff training aimed at improving skills and knowledge in preventing and managing PVA.[2,6] Chapters 5 and 6 showed that training was available in most hospitals. However, training courses were often only available to staff working in emergency departments and other high-risk areas due to scant resources. Specifically, general hospitals in Germany provided less training (48%) for their staff compared with Swiss (57%) and Austrian (76%) general hospitals. Staff training was also far more widely available in the mental health setting (Switzerland 97%, Austria 97%, Germany 82%) than in the general hospital setting.

Chapter 3 showed that aggression management training improved participants' theoretical knowledge about PVA, their ability to identify risk factors, and confidence in dealing with PVA. Training enhanced practical de-escalation skills as well as nurses' environmental and situational awareness for early signs of PVA. In addition, nurses reported that the training reactivated

existing knowledge of prevention, intervention and de-escalation techniques. Although nurses acquired some strategies for emotional self-management, coping emotionally with PVA remained a challenge even after attending the course. Nursing staff highlighted that the team and colleagues were important resources for dealing with emotions triggered by PVA. The acquired knowledge influenced nurses' individual practice in preventing and managing PVA in clinical practice, but was not disseminated within teams.

Strategies at the meso-level

Multiple strategies against PVA are recommended at the meso-level.[1-3,6] A number of these, specifically, official position statement and policies, provision of staff support after aggressive incidents, organisational security responses and incident reporting, were analysed in the studies included in this project. In addition we assessed the availability of financial resources towards the prevention and management of PVA. We did not, however, explore issues related to patient restraint, although this is undeniably an important issue related to patient safety, autonomy and quality of care in the general hospital context.[7]

Recommended strategies against PVA were not always available or, if available, often not fully implemented in general hospitals in Germany, Austria and Switzerland. An official definition and guidelines were available in approximately one third of Swiss, one fifth of German but only in eight percent of Austrian general hospitals. One third of all hospitals had guidelines for dealing with patient and visitor aggression. Protocols for the prevention and management of PVA were available in some, but not all hospitals. Due to poor interdisciplinary teamwork, these protocols were not always fully implemented or adhered to. Official definitions and PVA prevention and management guidelines did not emerge as important factors associated with high team efficacy in managing PVA. This does not indicate, however, that these measures do not have an effect in clinical practice. On the contrary, if PVA prevention and management guidelines and protocols were implemented, they led to an effective reduction of PVA. Staff support after incidents was significantly more often available in Switzerland and Austria compared with Germany. Team efficacy was more likely to be rated as high if post incident staff support was available.

Chapters 4 and 6 showed that there was a lack of availability of financial resources towards the prevention and management of PVA. Financial resources are important in dealing with PVA. Financial resources include means to change a ward environment, but also direct support to prevent PVA, for example by hiring a sitter to care for an agitated patient. Indeed, nurse managers are more likely to perceive team efficacy as high if financial resources are allocated to the prevention and management of PVA.

Formal incident reporting procedures were often available, but underutilized as a tool to document and communicate about aggressive incidents within the organisation. Sufficient incident reporting is an important indicator of high team efficacy in dealing with PVA, yet it was underutilized. Some potential explanations emerged from this PhD project: the lack of feedback loops discouraged nurses from officially reporting incidents. Moreover, informal communication about incidents with senior managers seemed to be lacking, yet a number of nurse managers felt that their staff would contact them in case they needed additional support.

While nurse managers' knowledge about PVA risk factors is associated with perceived high team efficacy, nurse managers in clinical practice may not have the ability to recognize a support need in staff: thirty-six percent of all nurse managers had never undergone training to coach staff, 44% had not received training to recognize stress disorder in staff. There were no significant differences between countries.

Finally, more than half of the nurse managers in general hospital nursing felt that the overall attitude towards PVA within the organisation was not supportive or rather negative. This was particularly true for Germany, where almost 70% of nurse managers in general hospitals reported an unsupportive/negative attitude, compared with 45 % of Swiss managers. Moreover, nurse managers in general hospitals across all three German-speaking countries found their administrations' attitude to be less supportive than their counterparts in mental health organisations. Nurse managers in general hospitals were also more likely to rate their teams' efficacy in dealing with PVA as low. The lack of interest acted as a strong barrier for nurse managers to engage in activities against PVA.

1.2 Nurse managers: (I) their role; and (II) the determinants, intentions and behaviours in relation to the prevention and management of PVA

Nurse managers stressed the importance of providing personal and, if required, external support, such as sitters to watch over agitated patients or psychological help after incidents to their teams. However, only a few nurse managers took decisive action to address PVA at an organisational level.

The analysis of determinants, intentions and behaviours illustrated how difficult it is to manage PVA in a real-life context, as positive intentions were conflicting with organisational reality. Nurse managers considered PVA an unavoidable, but nevertheless unacceptable part of nursing. They expressed feeling a strong duty of care towards their staff. Nurse managers generally expressed their intention and motivation to take action against PVA, but were often discouraged due to an overall-organisational lack of awareness, interest

and commitment to addressing PVA. Particularly managers in general hospitals found their administration's attitude to be less supportive than their counterparts in mental health. Only those managers with a very strong internal motivation engage actively in actions against PVA despite a lack of organisational interest in the problem.

Nurse managers described behaviours that can be labelled as supportive leadership in relation to a situational or organisational management of PVA. This included securing resources such as sitters, supporting staff with advice, learning from incidents, etc.. Yet further findings pointed towards a potential gap between the behaviours described and the actual support provision. A number of nurse managers may lack knowledge about PVA risk factors and training on staff coaching or recognition of stress disorder.

2 Interpretation

2.1 Availability, implementation and influence of recommended strategies against PVA at the micro- and meso-level in the general hospital setting

Strategies at the micro-level

With the exception of high-risk areas, staff training for the prevention and management of PVA is generally not available to all nursing staff. A comparison of data from Germany, Austria and Switzerland revealed that training is generally more widely available in Switzerland and Austria than in Germany. On the one hand, our findings suggest that Switzerland and Austria have taken a lead in prioritizing staff training, whereas more initiatives may be required in Germany. On the other hand, training is not comprehensively available to all staff in any of the three countries. Our findings are therefore in line with research studies that report limited availability of PVA training across all clinical areas in Germany or Switzerland.[8,9] No studies reporting training provision in Austria were available. Our findings suggest that in all three countries, but particularly in Germany, progress on addressing PVA has generally been slow and PVA has not received the necessary attention.

This lack of progress may be due to a lack of action at the macro-level. Internationally, for example the state of Victoria (Australia), the Republic of Ireland, and the United Kingdom launched official campaigns to raise awareness of the problem a long time ago, in the case of the United Kingdom as early as 2002.[3,10,11] To date, no comparable governmental efforts have been made in the countries included in this research. However, the importance of national initiatives must not be underestimated: overall values and principles of

healthcare are developed and defined at this level.[12] Macro-, meso- and micro-levels influence each other through dynamic interaction (see also Figure 1).[12] Future research should therefore examine the effect of action against PVA on, for example, the availability of training provision.

Moreover, our findings underscore the gap between recommended best practice and clinical reality. According to current international guidance, all staff whose roles entail contact with patients or visitors should receive staff training against PVA.[13] The provision of training for all staff is clearly not a given among the countries that participated in our research leaving room for further development.

Staff training should be tailored to specific needs and should also cater to personnel in specialized areas which may require additional PVA management skills and knowledge e.g. obstetrics and care of adolescents.[3,13] Our studies did not investigate whether official assessments regarding PVA risk and staff training needs had been conducted in the organisations included in this research. Yet, with a view to the often limited knowledge about PVA risk factors in nurse managers and the lack of commitment to address PVA in many organisations, it is highly doubtful whether structured organisational risk assessments of systems and procedures, as well as appraisal of staff training needs[1,3] take place in clinical practice.

We also found that, where available, training is delivered to individual members of staff, rather than to entire teams. On the one hand, research shows that training strengthens staff ability to manage and prevent PVA situations.[14] On the other hand, it also places the responsibility for dealing with PVA with the individual staff member, even though this may be neither appropriate nor effective in enabling nurses to respond to PVA effectively. While the importance of a team approach to dealing with aggression has long been recognized in the mental health setting,[15] the principle of dealing with PVA as a team was not applied in the general hospitals participating in our research. A more team-focussed approach to dealing with PVA, such as the Code Grey approach practiced in Victoria, Australia[16] would be desirable. The Code Grey approach provides standards that ensure a coordinated, organisational course of action to manage PVA. The Code Grey Standards facilitate the strategic assessment of whether teams can manage PVA risks or whether additional specialist support is required to deal with a conflict situation. In the light of our findings, a clear structure to coordinate procedures for managing PVA is undoubtedly the most important route to improvement of PVA management.[3]

Our research also highlights the importance of colleagues in the management of PVA and its emotional impact. This finding led to the development of the concept of team efficacy. Team efficacy was employed in Chapter 5 and 6 to explore the relationship between organisational factors and the nurse managers' assessment of team capability in dealing with patient and visitor aggression. Concurring, research shows that team processes such as

team support, interdependence, knowledge sharing and collaboration are influential factors that affect staff job satisfaction.[17] Although the team is known to be important for taking care of the practical care aspects and the emotional impact of the PVA,[18] its role in dealing with PVA has not previously been investigated. The nursing team appears to be an untapped resource for dealing with those less severe PVA incidents such as verbal abuse that do not require a response at Code Grey level,[16] but will nevertheless have an impact on nurses' emotional wellbeing.[19] Training focussing on entire teams rather than individual members of staff might enhance team efficacy with regards to preventing and managing PVA.

Strategies at the meso-level

Official definitions of PVA, guidelines, staff support, and financial resources were not always readily available or fully implemented. Communication and official incident reporting were often lacking. The patchy availability and often insufficient implementation are not unique to the countries participating in this research, but commonplace in other countries according to the international research literature.[20] The same is true for our results on official incident reporting, which was found to be insufficient in our studies. Insufficient incident reporting is a well-known problem as documented in international literature.[21-23] Amongst other reasons, underreporting has been found to be linked to a lack of confidence in management action following reporting.[23] This aspect was also reflected in our studies. Ward managers suspected that incident reports were used for statistical purposes only, as official reporting was often not followed up by a management response or management. The lack of feedback on official reporting not only discourages staff from reporting, but also prevents the systematic exploration of the causes and consequences of PVA.[24] Insufficient reporting of PVA masks the true extent of the problem and hampers the development of effective and efficient strategies to address the problem.[25,26]

In line with international evidence,[26] our studies showed that financial resources allocated towards the prevention and management of PVA were scarce, because issues other than PVA were prioritized in hospital administrations' budget planning. In order to raise awareness for PVA as a drain on resources and a threat to patient safety and satisfaction, as well as staff retention,[27,28] its actual financial impact has to be assessed and communicated within hospitals. The current insufficient incident reporting renders gauging of incidence and impact of PVA impossible and precludes appropriate financial and other resource allocation to the prevention and management of PVA.

In sum, our findings suggest that the emphasis in general hospitals is often on preventing and managing PVA as individual cases, rather than on approaching the problem within an all-organisational approach. This should include the systematic diagnosis of PVA risks, strategies to address and

manage risks,[2,6] but also measures to ensure the implementation of strategies in clinical practice. Furthermore, the overall inconsistent approach to incident reporting, implementation of guidelines, and allocation of financial resources indicates a lack of organisational commitment towards the strategic management of PVA within many general hospitals included in this research. The nurse managers' negative evaluation of the organisational attitude towards addressing PVA was also reflective of an overall lack of commitment, a finding that is consistent with research literature.[20,26] However, there was some variance within our sample. Swiss nurse managers perceived a more positive attitude towards addressing PVA compared with Germany and Austria. This may indicate that Switzerland as a country takes a more proactive approach towards addressing PVA in healthcare than Germany and Austria. This interpretation is nevertheless speculative, as the approaches to addressing PVA in Germany, Austria and Switzerland and potential differences are related to macro-level strategies.[2,6] Macro-level strategies were not part of this inquiry, but should be investigated in future studies to gain more insight into the influence of strategies at this level.

2.2 Nurse managers: (1) their role; and (2) the determinants, intentions and behaviours in relation to the prevention and management of PVA

International research highlights that a culture of acceptance of aggression is a barrier to successfully addressing PVA.[29] Indeed, healthcare managers have been reported to be unsupportive of their staff, thus reinforcing cultures that are accepting of aggression.[18] Our studies, however, provided a different perspective. The nurse managers taking part in the interviews were motivated to support their staff, but many were discouraged by a lack of organisational support. Furthermore, we identified gaps in informal communication about PVA as a general topic of concern, as well as a lack of official reporting. The lack of informal communication about PVA suggests that nurse managers may not necessarily be aware of the extent of the problem. Informal communication between staff and nurse managers is generally merely useful for the prevention and management of and reflection on individual incidents, but not for official reporting of incidence rates and appropriate risk assessment. Tools should be developed to facilitate the communication and reflection on PVA between nursing staff and their managers. These should also include structured assessments of, for example, environmental factors and staff needs.[1]

A number of nurse managers felt that their staff would communicate / contact their supervisor in case they need additional support after PVA incidents. However, research shows that this is often not the case. In actual fact, staff often seem to discuss incidents with their partner, families or friends.[8]

Such a 'wait and see' attitude in nurse managers is not conducive to adequate PVA management.[29,30] On the contrary, we found that nurse managers themselves often lack theoretical knowledge about PVA as well as training on staff coaching and recognition of stress disorders in staff. This finding raises the concern that nurse managers may not possess the appropriate skills to support their staff adequately.[20]

Overall, nurse managers appear to be in a weak position to address PVA within the organisation: The lack of reporting and communication makes it difficult to demonstrate the acuity of the problem PVA to hospital administrations. Tools and processes to document the impact of PVA on quality of care and patient/staff safety are not available. Yet in a climate of fierce competition for financial resources, nurse managers must be able to present PVA as an issue that can negatively impact patient safety and satisfaction, profitability, and staff retention.[27,28] Our findings therefore stress two pertinent issues regarding the role of nurse managers in the prevention and management of PVA, which have to date not been discussed in the research literature.

First, they raise the question whether nurse managers are equipped to deal with PVA adequately so as to fulfil the role of supportive leader for their team. Specific training addressing areas such as staff coaching and PVA risk factor recognition should be available for nurse managers,[13] but appear to be lacking. Second, nurse managers are often in a weak position to address PVA at the organisational level and therefore their motivation to do so is often low. To promote action against PVA, it is essential that nurse managers become proactive leaders. Proactive leaders take an active approach to problem solving, take self-initiated initiatives to tackle PVA and overcome barriers through perseverance.[31,32] Proactive leadership was displayed only by a few individual participants included in this project. It seems, however, that proactive leadership is important to effect 'a change from within'[26] in the often negative/unsupportive organisational attitude. Nurse managers can extend their influence and promote their agenda on PVA within the organisation by engaging in relevant organisational committees and decision-making groups.[26] As competition for financial resources is fierce, part and parcel of influencing the organisational budgeting priorities is to make a convincing 'business case' of managing PVA. This would include presenting the financial impact of PVA, as well as demonstrating the impact on patient safety and staff well-being. To date, however, the appropriate tools to make these assessments are lacking.[25] While future research needs to focus on the development of such tools, proactive nurse managers will have to find ways of collecting relevant and meaningful data within their clinical areas or responsibility.

3 From SAVEinH to SAVEinH-x model

This research was guided by the SAVEinH model,[2,6] a model which emerged based on a review of literature[33] and research into aggression within the general hospital setting.[8,34,35] It also comprises established general and healthcare-specific models on aggression.[36-39] The SAVEinH model[2,6] was conceived to assist diagnosis of PVA risks, reflection on PVA causes and incidents, and to provide a toolbox of appropriate prevention and intervention strategies.[2] With a view to high incident rates of aggression in healthcare,[4] and a range of barriers to reducing PVA in clinical practice,[26,29] an inventory of diagnosis tools and strategies will not suffice to address PVA effectively. Instead, a model that also provides guidance on *how* to overcome organisational barriers may be more relevant to clinical practice. Based on the evidence generated in this PhD project, we updated and extended the SAVEinH model[2,6] to the SAVEinH-x model (Strategies Addressing Violence in Healthcare Extended) with pointers on *how* to address these organisational barriers. (See Figure 1, additions to SAVEinH[2,6] highlighted grey)

Our findings showed that nurse managers mostly describe the supportive aspect of leadership when dealing with PVA. However, there is also a need for nurse leaders to develop proactive leadership skills in order to raise awareness for PVA within their organisations. Guidance on how to address PVA stresses the importance of an all-organisational commitment to PVA.[1,3] However, this project demonstrated clearly that organisational commitment cannot be presumed in a real-life context.[26,29]

At staff level, we demonstrated that team efficacy in the prevention and management of PVA is a concept that is not much applied in general hospital nursing. A focus on fostering team efficacy may improve the management of PVA, as well as mitigate the emotional impact of PVA on individual members of staff.

Both the nurse manager's role as a proactive and supportive leader as well as team efficacy were included in the model because they emerged as potentially important concepts from our study: Particularly with a view to the often unsupportive organisational attitude demonstrated with this project, as well as in international research,[26,29] concepts on how to change this attitude 'from within' are important.[26] The micro- and meso-levels are closely linked within organisations,[12] nurses are the largest staff group in healthcare and most frequently affected by PVA.[40] Nurse managers are responsible for this group and should therefore have a particular motivation to take action against PVA to ensure the safety and wellbeing of their staff. By adding both supportive and proactive leadership as well as team efficacy and respective key skills, the SAVEinH-x model gains practical relevance for application to healthcare organisations and specifically general hospitals.

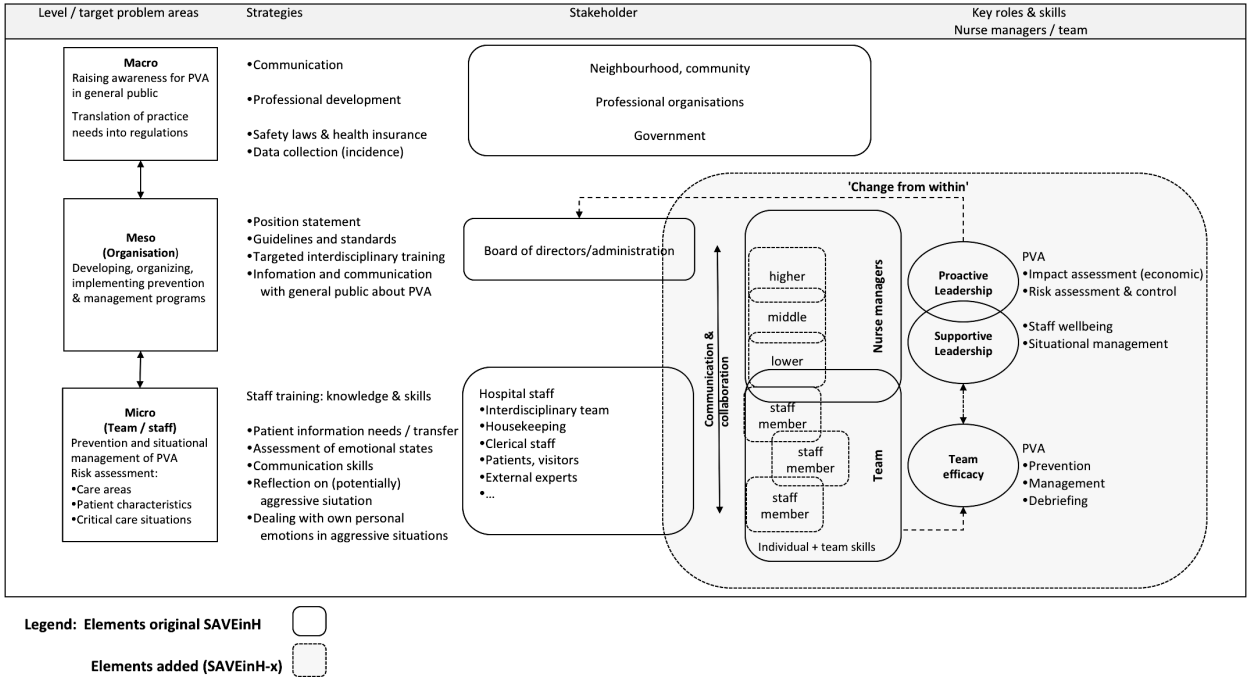

Figure 1 The SAVEinH-x model

4 Methodological considerations, strengths, and limitations

The specific methodological concerns pertaining to each individual study included in this thesis were discussed in the respective chapters. The focus in this chapter is on the overarching methodological choices made, and the resulting strengths and limitations.

Methodological considerations

The overall design of this project was an adaptation of a mixed methods exploratory sequential design.[41] The exploratory sequential design typically comprises a qualitative data collection, which builds up to a quantitative data collection and concludes with an interpretation.[41] Our project did not follow this prototypical design. Instead, we initially investigated the topic 'aggression management training' from the staff nurse perspective in a literature review, which was followed by a qualitative study. Subsequently, we followed the prototypical exploratory sequential design to investigate PVA strategies and nurse manager roles, backgrounds, determinants and behaviours. Finally, all results were interpreted (see Section 2 of this chapter). The exploratory sequential research design applied to investigate nurse managers' roles and behaviours, as well as the availability and implementation of PVA strategies was fitting to our research topic, which is to date under-explored. In contrast, a number of research studies on aggression management training was available and our interview study served to explore this topic in more depth.

To our best knowledge, this project is novel in its approach as it includes a micro- and meso-level investigation. Our dual level investigation provides a comprehensive overview of the organisational challenges of PVA management from a nursing perspective. Despite the potential to incorporate multiple perspectives into a broad understanding of a problem,[5] mixed methods designs have not been used extensively in research on aggression in general hospital settings. The studies with an explicit multi method design known to us focused on investigating incidents of aggression in hematology[44] or the emergency setting[45] and were conducted from the staff nurse perspective.

Considering the potential of the method, the complexity of PVA, and the learning that can be derived, we encourage further mixed method research into the topic PVA.

Strengths and limitations

This PhD project has some particular characteristics that we consider strengths. First, the project was based on two theoretical background theories,

the Reasoned Action Approach (RAA)[42] and the SAVEinH model.[2,6] The RAA,[42] which is a well-established theory in healthcare and social research, systematically guided our investigation of influential decision-making factors in relation to PVA. The SAVEinH model[2,6] was conceived based on a review of literature[33] and research into aggression within the general hospital setting.[8,34,35] To date, the SAVEinH model[2,6] has not been tested in clinical practice. However, given its evidence-based grounding, the model was suitable to guide this research project.

Second, we conducted a mixed methods project.[41] The mixed methods approach was suitable for investigating our research questions, because it provided new perspectives from multiple vantage points. These led to a more complete understanding of the mechanisms and barriers that limit the effect of PVA strategies in clinical practice. However, the samples in Chapters 3, 4, 5 and 6 comprised convenience samples of volunteers. This type of sample can impart a certain 'volunteer effect' or other type of selection bias. It is therefore possible that some points of view have not been captured. However we can assume the effect of these biases to be minimal, as we included staff and managers from various managerial levels, clinical areas and geographical regions. Moreover, it is likely that individuals with a specific interest in PVA took part in the studies.

Importantly, the integration of qualitative and quantitative research findings enabled validation of our results. We integrated findings from the individual studies to ascertain whether there was convergence, and whether the findings were complementary or contradictory.[43] Therefore, every conclusion presented in this thesis is derived from findings that are based on at least two sources of qualitative/quantitative data. Our mixed methods approach thus enabled us to extend the SAVEinH model[2,6] with recommendations on how to address PVA in a clinical context. We propose a potential solution for bridging the 'recommendation to practice gap' in relation to the prevention and management of PVA. Pending the application of our findings to practice, our contribution to the current body of knowledge in nursing science may indeed prove to be substantial and lay the foundations for future research.

At the same time, we are aware of some limitations that apply to this project. First, we cannot be certain that all relevant background factors and determinants were included in this investigation. Although the RAA[42] helped to identify a number of background factors and determinants relevant to nursing, the inclusion of other stakeholders may possibly have led to the detection of further salient factors and determinants.

Second, our investigation did not comprise all dimensions of the SAVEinH model.[2,6] The SAVEinH model[2,6] covers a complex problem, a large number of stakeholders and PVA strategies at different levels. Due to the complexity of the model, the available resources and scope of this PhD project, we excluded the macro-level and focused on the micro- and meso-levels only.

Furthermore, we chose to investigate the strategies that are included in the SAVEinH model.[2,6] In contrast to other available guidance,[1] the SAVEinH model[2,6] does not explicitly include minimizing patient restraint as a PVA strategy. Patient restraint is undeniably an important issue in PVA management with implications for patient safety, autonomy, and quality of care in the general hospital context.[7] However, we excluded the topic from this study, as we were doubtful about its contribution to answering our research questions. Patient restraint is a legally and ethically highly sensitive topic. The decision-making process about the use of restraint in patient care is complex and linked to the context and nurse factors, such as beliefs and attitudes.[44] As such, patient restraint is more directly relevant to patient care delivery than to our topic of availability and implementation of PVA strategies in a clinical context.

Third, this research investigated the viewpoint of nurses, who are the staff group that is most affected by PVA.[40] However, we acknowledge that PVA should ideally be managed within inter-professional teams.[1,3] An investigation into the roles of other stakeholders, such as inter-professional teams, families or patients was not part of this research. Therefore, we cannot claim that our findings will represent the views and perspectives of patients/families or other professional staff groups in healthcare.

Finally, we conducted this study in the particular cultural context of the German-speaking countries Austria, Germany and Switzerland. It is possible that the perception of aggressive behaviour in these countries will differ from the perception in other countries and cultural contexts.[45] Accordingly, our findings may not be applicable to other cultural contexts and countries.

5 Implications

5.1 For research

The results of this PhD project were generated within a specific cultural context. As the perception of aggression is dependent on the cultural context, it will be important to confirm our findings in different cultural contexts and countries to ascertain the applicability and transferability of our results.

Furthermore, this research included an analysis at the micro- and meso-level. We did not investigate the strategies at the macro-level as outlined in the SAVEinH.[2,6] To date it is unknown if initiatives at the macro-level yield noticeable and quantifiable changes in organisational attitude and resource provision against PVA in healthcare. This question will be explored in future

research within the PERoPA project.[*] The SAVEinH-x will have to be reviewed and potentially adapted or extended with further dimensions once the results of these studies are available.

The concept of proactive and supportive leadership has been developed from our findings and was integrated to extend the SAVEinH model.[2,6] At present, the concepts of proactive and supportive leadership with regards to PVA hold theoretical value, as they are evidence-based. However, the current definitions are rudimentary (see Figure 1). Future research should further explore and define these leadership dimensions, particularly with a view to the key skills and responsibilities that are required at the different management levels. In the context of proactive leadership, evidence based training programmes aimed at nurse managers will be developed as a consequence of this research.

Team efficacy emerged as the second concept from the evidence generated in this project. Just like the aforementioned leadership dimensions, team efficacy needs to be further defined and its various potential dimensions in the prevention, management and debriefing of PVA incidents explored scientifically. Furthermore, its applicability in a practical clinical context needs to be ascertained and training programmes based on enhancing team efficacy need to be developed in future research projects.

This research was carried out from a nurse/nurse manager perspective. We consider it important to capture the perspective of the professional group mostly affected by PVA.[40] However, PVA is highly contextual and should ideally be managed within inter-professional and interdisciplinary teams and via an all-organisational approach.[1,3] The interplay of different stakeholders, inter-professional teams, patients, as well as hospital administration in the management of PVA in general hospitals was not a main topic of this work. Therefore, since we conducted this project from a nurse perspective, we cannot claim that the SAVEinH-x will be applicable to all professional staff groups in healthcare. While 'achieving changes from within' and team efficacy are relevant to nurses, other factors in PVA prevention and management may be more relevant to staff groups such as clerical staff, housekeeping, or other professional groups within the multiprofessional team. Further research into how PVA can be addressed in clinical settings is therefore needed. A multi-method research project similar to this PhD project, but including all relevant stakeholders–professional groups as well as patients and visitors–may lead to additional insights.

Finally, we employed the RAA[42] to guide the investigation in this thesis. Due to the complexity of PVA, we cannot be certain that all relevant background factors and determinants were included in this investigation. An investigation

[*] https://www.gesundheit.bfh.ch/de/forschung/pflege/projekte/aggression_im_gesundheitswesen/peropa_the_nurse_managers_perspective_englisch/tabs/overview.html

into the perspectives of stakeholders other than nurses would most probably provide relevant additional insight.

5.2 For practice

This PhD project demonstrated clearly that there is a large gap between recommended strategies against PVA and their implementation in a clinical context. Successfully addressing PVA requires all-organisational commitment, which in a real-life setting cannot be taken for granted.[26,29] The overall often unsupportive organisational attitude leads to a predominantly 'situational' approach towards the prevention and management of individual incidents of PVA in the general hospitals included in this research. A more proactive, all-organisational approach is more promising to successfully reduce PVA.[1,3] Recommendations for clinical practice pertaining to nurse managers and staff /teams can be derived from this project.

Nurse managers

Our results highlight the two crucial leadership roles of nurse managers in addressing PVA, the supportive and proactive leadership roles. In order to address unsupportive/negative organisational attitudes, nurse managers need to demonstrate proactive leadership. This is a role that only few managers included in our research assumed, but our findings support the proposition that a 'change from within'[26] by means of proactive leadership may overcome the often unsupportive/negative organisational attitudes towards PVA in the general hospital setting. A 'change from within' can be characterized as an endogenous change, driven by people from within the organisation. Achieving 'change from within' requires particular skills and empowerment to promote and enable the development and implementation of more effective PVA prevention and management in general hospitals. Yet, as this research also shows, gaps in skills and knowledge currently prevent many nurse managers from becoming proactive leaders against PVA. The main recommendation to be derived from this project for nurse managers is therefore that nurse managers should be trained, encouraged and empowered to acquire and practice proactive leadership skills. Our study also underscores the importance and urgent need for organisational support, which sadly often appears to be lacking. Training should include input on the assessment of the economic consequences of PVA, as well as its impact on staff health and wellbeing. Furthermore, environmental and patient-related PVA risk factor identification and risk management should be incorporated.

Our participants assumed the second leadership role, supportive leadership, more readily than the proactive leadership role. The supportive leadership role comprises the provision of support for staff in the prevention and

management of PVA and debriefing after incidents. However, few nurse managers included in this project were trained in staff coaching, recognition of stress disorder and, importantly, the recognition of PVA risk factors. These are all essential skills for the provision of supportive leadership towards staff. Training to foster supportive leadership skills should be made available to nurse managers.

Staff/teams

While this project identified a number of barriers to addressing PVA in general hospitals, we also identified valuable resources within nursing teams. At staff level, these include mutual support of colleagues in dealing with PVA. Team processes such as team support, interdependence, knowledge sharing and collaboration are influential factors that affect staff job satisfaction.[17] Corroborating other research findings, study participants described the importance of the team in dealing with practical care aspects and the emotional demands of PVA.[18] Yet, according to our findings, team efficacy in dealing with PVA does not appear to be promoted systematically in training courses aimed at nursing staff. Dealing with PVA as team, in particular the debriefing of incidents, should be part of the curriculum. Furthermore, training of entire teams rather than individual staff members potentially maximizes the resource provided by team and colleagues for dealing with those less severe PVA incidents in an optimal way – and to learn to be prepared for more severe PVA incidents. To date, coaching and supporting colleagues does not appear as part of the curriculum of staff training.[1] Teaching these skills appears promising to empower teams to deal with PVA more constructively.

Concluding remark

This thesis started with a quote by Robert Sapolsky,[45] a researcher whose profound insights and sophisticated knowledge about aggression in all types of beast, animal and human, I much admire. After five years of research (and unsure about being much wiser), I want Sapolsky[1] to have the last word on dealing with aggression:

" 'It's complicated'. […] Eventually it can seem hopeless that you can actually fix something, can make things better. But we have no choice but to try. […] So try."[45] (p.674/675)

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Summary

Summary

Patient and visitor aggression is a serious, worldwide problem affecting all areas of mental and general healthcare. Nurses are the staff group most frequently affected by patient and visitor aggression. A number of strategies to reduce patient and visitor aggression at the staff/team and organisational levels are outlined in the SAVEinH (Strategies Addressing Violence in Healthcare) model.[1,2] The SAVEinH model was conceived to assist the diagnosis of risk factors for patient and visitor aggression, to support reflection on causes and incidents, and to offer a toolbox of prevention and intervention strategies. These include:

- Education on the prevention and management of patient and visitor aggression
- Provision of staff support after aggressive incidents
- Preparation, education, and empowerment of managers to support staff
- Systematic risk assessments and management of workplace hazards
- Organisational security responses (public engagement, interagency liaison, e.g. police forces, inclusion of all stakeholders)
- Organisational policies to support and guide staff and security services on the prevention, management and reporting of patient and visitor aggression
- An organisational position statement regarding patient and visitor aggression

However, an inventory of diagnostic tools and strategies will not suffice to address patient and visitor aggression effectively. Although ample guidance on how to address patient and visitor aggression in healthcare is available in many countries, incident rates remain high. A number of barriers that impede the successful reduction of patient and visitor aggression in clinical practice have been identified. These include for example a lack of managerial support and organisational commitment to addressing the problem. Research shows that nurse managers play a crucial role in creating and maintaining safe work environments. Yet to date, their role has not been thoroughly explored.

The overall aim of this project was to investigate strategies against patient and visitor aggression with a specific focus on the general hospital setting. To this end, we analysed the implementation and influence of recommended strategies to counter patient and visitor aggression at the staff/team and organisational levels in this setting. In addition, we examined the roles, attitudes and behaviours of nurse managers in the prevention and management of patient and visitor aggression. The objective of this thesis was to extend the SAVEinH[1,2] model to specifically consider the role of nurse managers in the creation of safer workplaces for nurses and other healthcare workers.

This research project was conducted using a mixed methods design including four studies to examine strategies against patient and visitor aggression from a team/staff nurse (Chapters 1 and 2) and a nurse manager perspective (Chapters 4, 5, and 6).

First, a narrative review of the literature was conducted to examine the effects of aggression management training courses on nurses (Chapter 2). Second, a before- and after-training interview study including seven staff nurses was carried out. The aim was to obtain in-depth knowledge about the effects of the training (Chapter 3). Third, we conducted a study with nurse managers at the lower (e.g. ward manager), middle (e.g. division manager), and higher (e.g. director of nursing) management levels. Through interviews and focus groups we explored the factors that affect their behaviours in relation to patient and visitor aggression (Chapter 4). Fourth, a cross-sectional survey was performed to investigate the associations of team efficacy in dealing with patient and visitor aggression with strategies at staff and organisational level (Chapters 5 and 6). The studies in Chapter 4, 5, and 6 were theoretically underpinned and guided by the 'Reasoned Action Approach'.[3] This means that we worked from the assumption that nurse managers' behaviours regarding patient and visitor aggression were determined by positive or negative beliefs associated with these behaviours. Beliefs spring from a number of background sources, such as the organisational attitudes and interactions with colleagues.[3] Finally, all findings were integrated and interpreted as to provide a comprehensive overview of the particular barriers, but also the potential resources for better prevention and management of patient and visitor aggression in clinical practice (Chapter 7). The current chapter summarizes the studies included in this dissertation.

Chapter 1 provides a general introduction to this dissertation and the topic of aggression in general hospital nursing. The introduction starts with a definition of patient and visitor aggression, background information on aggression in general, and on aggression in healthcare. The effects of aggression on individual members of staff and entire organisations are discussed, and recommended strategies against patient and visitor aggression in the hospital setting are outlined. Chapter 1 concludes with a conceptual model, the project's aim, the main research questions, and an outline of this dissertation.

Chapter 2 examines the effect of aggression management training courses for nurses in a narrative review of the available literature. The review of nine studies showed that aggression management training improved participants' theoretical knowledge about patient and visitor aggression, risk factor identification, and confidence in dealing with patient and visitor aggression. Furthermore, the training enhanced practical de-escalation skills and nurses' environmental and situational awareness for early signs of patient and visitor aggression. However, such trainings did not result in a significant change in the incidence of patient and visitor aggression.

Chapter 3 comprises a study exploring and describing the learning gained from an aggression management training course for nurses. The study was designed as a before-and-after training course interview study and it included seven staff nurses. The results of this qualitative inquiry enabled us to compare and add to the findings derived from the narrative review (Chapter 2). Concurring with the findings in Chapter 2, the interview study showed that aggression management training improved participants' theoretical knowledge about patient and visitor aggression, risk factor identification and confidence in dealing with patient and visitor aggression. Furthermore, training enhanced practical de-escalation skills and nurses' environmental and situational awareness for early signs of patient and visitor aggression. New insights were that the training in general served as a refresher to activate existing knowledge of prevention, intervention and de-escalation techniques, rather than teaching new aggression management skills. Above all, the study highlighted the importance of emotional coping skills. While the participants acquired some strategies for emotional self-management, coping emotionally with patient and visitor aggression remained a challenge even after attending the course. The participants stressed that their team was important for dealing with emotions triggered by patient and visitor aggression, yet the knowledge acquired was not disseminated within the team, meaning that some potential for dealing with aggression remained untapped. The training courses influenced individual practice in preventing and managing patient and visitor aggression in clinical practice. We concluded that future research should explore ways to strengthen nurses' ability to cope emotionally with patient and visitor aggression. Furthermore, the team is essential to managing aggression, but little is known about how knowledge obtained through training may be disseminated more effectively within teams.

Chapter 4 is an account of nurse managers' attitudes and behaviours towards patient and visitor aggression in an interview and focus group study including 40 Swiss nurse managers at lower, middle and higher management levels. Based on the Reasoned Action Approach,[3] background factors and determinants that influence nurse managers' behaviours were explored. Nurse managers also described their role and behaviours regarding the prevention and management of patient and visitor aggression. The five focus groups and 13 individual interviews revealed that patient and visitor aggression was perceived from different perspectives. Nurse managers took either a more organisational view, focussing on addressing the issue within the organisation, or a situational view, focussing on the prevention and management of individual incidents. Nurse managers also expressed their motivation to address patient and visitor aggression, but lack of support and awareness for the topic in the organisation weakened the positive intention in most managers. Only those with very strong internal motivation engaged actively against patient and visitor aggression at an organisational level. The nurse managers described various behaviours that prevent and manage aggression. These behaviours included supporting nursing staff, communicating with all stakeholders (including patients and visitors), and individualizing patient care. Analysis, reflection and learning

from incidents were also considered important. Further activities included networking with stakeholders and developing the work environment and work processes. However, the study also showed that addressing patient and visitor aggression is impeded by inadequate communication, weak organisational feedback loops, and a lack of protocols and procedures that connect the situational and organisational management of aggressive incidents. Furthermore, tackling aggression at an organisational level is a major challenge due to scant financial resources and lack of interest within the organisation. We concluded that presenting patient and visitor aggression as a business case may increase organisational awareness and interest in times austerity. Furthermore, clear communication of expectations, needs, and resources could optimize support provision for staff.

Chapters 5 and 6 report on the relationship between the availability of strategies and measures and nursing team efficacy in dealing with patient and visitor aggression as perceived by Swiss, Austrian and German nurse managers. Chapter 5 focuses on nurse manager and staff/team factors, and Chapter 6 on organisational factors. The analysis showed that lower level nurse managers were more likely to perceive team efficacy as high, compared with middle and higher level managers. Furthermore, staff knowledge about risk factors, availability of staff training and adequate reporting of incidents were associated with perceived high team efficacy (Chapter 5). The analysis of organisational factors showed that nurse managers were more likely to perceive team efficacy as high when financial resources were allocated to the cause, if post incident support was available for staff, and when the organisational attitude was supportive (Chapter 6). However the study also showed that nurse managers in the general hospital setting often lacked knowledge about patient and visitor aggression, as well as coaching and counselling skills. This raised the question whether nurse managers are adequately skilled and trained to support their teams in this particular respect. We concluded that nurse managers require more organisational support and training regarding patient and visitor aggression.

Chapter 7 provides a summary, integration, and interpretation of the main findings of the studies included in this dissertation. Moreover, implications for research and recommendation for clinical practice are derived and the strengths and limitations of the studies were discussed.

In sum, the findings showed a number of barriers (financial: unsupportive attitudes) to the effective prevention and management of patient and visitor aggression. This underscores that an all-organisational commitment, a prerequisite for reducing patient and visitor aggression successfully, is often deficient in real-life settings. Second, the interpretation elucidated aspects of leadership regarding patient and visitor aggression: supportive and proactive leadership. Some nurse managers appear to be more comfortable providing supportive leadership directly to staff. However, nurse managers are in a key

position to overcome unsupportive organisational attitudes towards patient and visitor aggression by aiming for achieving change from within the organisation. Achieving 'change from within' requires proactive leadership, yet nurse managers were often not adequately trained to provide both proactive and supportive leadership. Third, teams are important for dealing with patient and visitor aggression, yet team efficacy is not being promoted systematically within general hospitals. Training entire teams rather than individuals, and teaching skills that enable nurses to better deal with the emotional impact of aggressive incidents, appear promising to empower teams to deal with patient and visitor aggression more effectively.

This thesis contributes to the field by providing a framework for other researchers to build upon, as well as results and observations that managers and other practitioners can use to address a pervasive but underestimated problem: patient and visitor aggression in healthcare.

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Samenvatting

Samenvatting

Agressiviteit van patiënten en bezoekers is een serieus, wereldwijd probleem in de geestelijke en algemene gezondheidszorg. Verpleegkundigen vormen de groep die het vaakst wordt getroffen door agressie van patiënten en bezoekers. Voor de aanpak van agressiviteit in de zorg zijn uitgebreide richtlijnen beschikbaar. In het SAVEinH-model (Strategies Addressing Violence in healthcare)[1,2] worden verschillende strategieën om agressie door patiënt en bezoeker te reduceren op het niveau van personeel en team of organisatie geschetst Het SAVEinH-model[1,2] werd ontwikkeld om te helpen bij de identificatie van risicofactoren voor agressiviteit van patiënten en bezoekers, om de analyse van oorzaken en voorvallen te ondersteunen en om instrumenten voor preventie- en interventiestrategieën te bieden. Deze strategieën houden in:

- Scholing van personeel op het voorkomen en beheersen van agressiviteit van patiënten en bezoekers
- Ondersteuning van personeel na incidenten van agressie
- Voorbereiding, scholing en in staat stellen van managers ter ondersteuning van het personeel
- Systematische risicobeoordelingen en beheersing van gevaren op de werkplek.
- Reactie vanuit de organisatie op het gebied van veiligheid (publieke betrokkenheid, contact tussen verschillende instanties zoals de politie, inclusie van alle belanghebbenden)
- Organisatorisch beleid ter ondersteuning van personeel en beveiligingsdiensten op het gebied van het voorkomen van, het omgaan met en het rapporteren van agressiviteit door patiënten en bezoekers
- Organisatorisch standpunt over agressiviteit van patiënten en bezoekers

De aanwezigheid van analyserende methoden en strategieën alleen is echter niet voldoende om agressiviteit van patiënten en bezoekers efficiënt aan te pakken. Hoewel er in veel landen richtlijnen zijn over het omgaan met agressiviteit van patiënten en bezoekers, blijft de incidentie hoog. Hindernissen die een succesvolle afname van agressieve incidenten door patiënten en bezoekers in de weg staan, zijn bijvoorbeeld: een gebrek aan ondersteuning door het management en een gebrek aan organisatorische betrokkenheid bij de aanpak van het probleem. Onderzoek toont aan dat verpleegkundig managers een cruciale rol spelen bij het creëren en onderhouden van een veilige werkomgeving. Desondanks is tot op heden hun rol niet grondig onderzocht.

Het doel van dit project was om strategieën tegen agressie door patiënten en bezoekers te onderzoeken, met een specifieke focus op

ziekenhuizen. Hiervoor hebben wij de invoering en de invloed van geadviseerde strategieën tegen agressiviteit van patiënten en bezoekers bestudeerd op het niveau van personeel, team en organisatie binnen ziekenhuizen. Daarnaast bekeken wij de rol, houding, en gedrag van verpleegkundig managers in het voorkomen van en omgaan met agressiviteit van patiënten en bezoekers. Het doel van dit proefschrift was om het SAVEinH-model uit te breiden met de rol van verpleegkundig managers, om een veilige werkomgeving voor medewerkers in de zorg te creëren.

Dit onderzoek werd uitgevoerd met behulp van een mixed methods design, waaronder vier studies om strategieën tegen agressie door patiënten en bezoekers te onderzoeken vanuit het oogpunt van verpleegkundigen en het verpleegkundig team (hoofdstuk 1 en 2) en ook de verpleegkundig managers (hoofdstuk 4, 5 en 6).

Eerst is een literatuurstudie gedaan om de effecten van een training 'omgaan met agressie' voor verpleegkundigen te onderzoeken (hoofdstuk 2). Ten tweede zijn zeven verpleegkundigen voor en na een dergelijke training geïnterviewd. Het doel was om diepgaande kennis te vergaren over de effecten van zo'n training (hoofdstuk 3). Ten derde hebben wij een studie gedaan onder verpleegkundig managers op lager (bijvoorbeeld afdelingsmanager), midden (bijvoorbeeld divisiemanager) en hoger (bijvoorbeeld directeur) niveau. Door middel van interviews en focusgroepen hebben we de factoren onderzocht die van invloed zijn op hun gedrag in relatie tot agressiviteit van patiënten en bezoekers (hoofdstuk 4). Ten vierde werd een cross-sectionele enquête uitgevoerd om de associatie tussen de efficiëntie van een team en het omgaan met agressiviteit van patiënten en bezoekers te onderzoeken aan de hand van strategieën op personeels- en organisatieniveau (hoofdstuk 5 en 6). De onderzoeken uit hoofdstuk 4, 5 en 6 werden theoretisch ondersteund door de Reasoned Action Approach (= beredeneerde actie benadering).[3] Wij veronderstelden dat het gedrag van verpleegkundig managers met betrekking tot agressiviteit van patiënten en bezoekers wordt bepaald door positieve of negatieve opvattingen over dit gedrag. Deze overtuigingen hebben verschillende achtergronden, zoals de opstelling van de organisatie en interactie met collega's.[3]

Tot slot zijn alle bevindingen samengevoegd en geïnterpreteerd om een uitgebreid overzicht van de specifieke barrières te geven, en om potentiële middelen voor een betere preventie van en omgang met agressiviteit van patiënten en bezoekers in de klinische praktijk te geven (hoofdstuk 7). Het huidige hoofdstuk geeft een samenvatting van de studies die worden beschreven in dit proefschrift.

Hoofstuk 1 is een algemene introductie van dit proefschrift en het onderwerp van agressie in de klinische praktijk. De introductie begint met de definitie van agressie door patiënten en bezoekers en geeft daarna achtergrondinformatie over agressie in het algemeen en over agressie in de gezondheidszorg. Ook worden de effecten van agressie op individuele personeelsleden, leden van de medische staf en gehele organisatie besproken. Verder worden de aanbevolen strategieën tegen agressie door patiënten en

bezoekers in ziekenhuizen beschreven. Hoofstuk 1 sluit af met een conceptueel model, het doel van het project, de belangrijkste onderzoeksvragen en een overzicht van dit proefschrift.

Hoofdstuk 2 beschrijft de beschikbare literatuur over de effecten van trainingen voor verpleegkundigen in het omgaan met agressie. Een beoordeling van negen studies toont aan dat trainingen in het omgaan met agressie de theoretische kennis van deelnemers over agressie door patiënten en bezoekers, de identificatie van risicofactoren en het vertrouwen in het omgaan met agressiviteit van patiënten en bezoekers verbeterden. Bovendien versterkten de trainingen bij verpleegkundigen de praktische de-escalatie vaardigheden en verhoogden ze het bewustzijn van de omgeving en de situatie bij vroege tekenen van agressiviteit van patiënten en bezoekers. Dergelijke trainingen bleken echter niet te leiden tot een significante verandering in de incidentie van agressie door patiënten en bezoekers. De opgedane kennis werd niet binnen het team verspreid, waardoor potentiële kennis over omgaan met agressiviteit onbenut bleef. De trainingen hadden vooral invloed op de individuele situatie bij preventie en beheersing van agressie door patiënten en bezoekers in het ziekenhuis. Wij concluderen dat toekomstig onderzoek zich moet richten op manieren voor verpleegkundig personeel om meer emotioneel bestand te zijn tegen agressiviteit van patiënten en bezoekers. Het team is essentieel voor het omgaan met agressie, maar er is weinig bekend over hoe de in trainingen opgedane kennis effectiever binnen een team kan worden gedeeld en benut.

In hoofdstuk 3 wordt een studie beschreven over de kennis die wordt opgedaan tijdens trainingen voor verpleegkundigen in het omgaan met agressiviteit van patiënten en bezoekers. In deze studie werden zeven verpleegkundigen voor en na een degelijke training geïnterviewd. De resultaten van dit kwalitatief onderzoek stelden ons in staat om bevindingen te vergelijken en toe te voegen aan de beschouwing uit hoofdstuk 2. In overeenkomst met hoofdstuk 2 liet de studie zien dat trainingen in het omgaan met agressie de theoretische kennis van deelnemers over agressie door patiënten en bezoekers, de identificatie van risicofactoren en het vertrouwen in het omgaan met agressie door patiënten en bezoekers verbeterden. Bovendien versterkten de trainingen bij verpleegkundigen de praktische de-escalatie vaardigheden en verhoogden ze het bewustzijn van de omgeving en situatie bij vroege tekenen van agressiviteit van patiënten en bezoekers. Nieuwe inzichten die werden verkregen zijn dat de trainingen in het algemeen meer dienden als een opfrisser voor bestaande kennis over preventie, interventie, en de-escalatie technieken, dan voor het leren van nieuwe vaardigheden in het omgaan met agressie. De studie benadrukte vooral hoe belangrijk vaardigheden voor de emotionele verwerking zijn. Hoewel de deelnemers strategieën voor het omgaan met eigen emoties leerden, bleef het emotioneel verwerken van agressie door patiënten en bezoekers een uitdaging, zelfs na het volgen van een training. De deelnemers benadrukten dat hun team belangrijk was voor het omgaan met de emotionele gevolgen van agressie van patiënten en bezoekers.

Hoofdstuk 4 beschrijft een interview- en focusgroepstudie met 40 Zwitserse verpleegkundig managers op lager, midden en hoger managementniveau over de houding en gedragingen van verpleegkundig managers ten aanzien van agressie door patiënten en bezoekers . Op basis van de Reasoned Action Approach[3] werden drie achtergronden en factoren onderzocht, die het gedrag van verpleegkundig managers beïnvloeden. De verpleegkundig managers beschreven ook hun rol en gedrag in het voorkomen en het omgaan met agressiviteit van patiënten en bezoekers. De vijf focusgroepen en 13 individuele interviews toonden aan dat agressie door patiënten en bezoekers vanuit verschillende perspectieven werd beleefd. Verpleegkundig managers kozen een meer organisatorische houding, ze concentreerden zich op het aanpakken van het probleem binnen de organisatie, of op een meer incidentele houding, gericht op de preventie en het beheersen van individuele incidenten. De verpleegkundig managers waren gemotiveerd om agressie door patiënten en bezoekers aan te pakken, maar door een gebrek aan steun en bewustzijn binnen de organisatie zwakte de goede intentie bij de meeste managers af. Alleen de managers met een sterke overtuiging pakten agressiviteit van patiënten en bezoekers op een organisatorisch niveau op. De verpleegkundig managers beschreven verschillende houdingen die agressie kunnen voorkomen en aanpakken. Deze houdingen bevatten de ondersteuning van verpleegkundigen, communicatie met alle belanghebbenden (inclusief patiënten en bezoekers) en het individualiseren van de patiëntenzorg. Analyse van, reflectie op en het bestuderen van praktijkgevallen werden ook belangrijk gevonden. Verdere activiteiten zijn het opzetten van netwerken met belanghebbenden en de ontwikkeling van de werkomgeving en werkprocessen. De studie toonde echter ook aan dat het aanpakken van agressie door patiënten en bezoekers wordt belemmerd door ontoereikende communicatie, zwakke terugkoppeling binnen de organisatie en het gebrek aan protocollen en procedures, die de individuele en organisatorische beheersing van incidenten van agressie verbinden. Bovendien blijkt het aanpakken van agressie op het niveau van een organisatie een grote uitdaging vanwege gebrek aan financiële middelen en interesse binnen de organisatie. Wij concluderen dat door agressiviteit van patiënten en bezoekers als businesscase te presenteren, het bewustzijn en de interesse van de organisatie kunnen worden vergroot. Tenslotte kan een duidelijke communicatie van verwachtingen, behoeften en middelen zorgen voor een optimale ondersteuning van het personeel.

Hoofdstuk 5 en 6 beschrijven de relatie tussen de beschikbaarheid van strategieën en middelen enerzijds en de effectiviteit van het verpleegkundig team in het omgaan met agressie door patiënten en bezoekers anderzijds, door de ogen van Zwitserse, Oostenrijkse en Duitse verpleegkundig managers. Hoofdstuk 5 richt zich op factoren van verpleegkundig managers, personeel en team, hoofdstuk 6 op organisatorische factoren. De analyse toont aan dat

management op lager niveau de effectiviteit van het team als hoger beschouwd dan management op midden- en hoger niveau. Bovendien werd kennis van het personeel over risicofactoren, beschikbaarheid van trainingen en adequate verslaglegging van incidenten geassocieerd met een hogere effectiviteit van het team (hoofdstuk 5). De analyse van organisatorische factoren liet zien dat verpleegkundig managers de effectiviteit van een team als hoog beoordeelden wanneer financiële middelen voor het onderwerp beschikbaar waren gesteld, als er ondersteuning voor personeel beschikbaar was na een voorval en wanneer de organisatie een ondersteunende houding had (hoofdstuk 6). Uit het onderzoek bleek echter ook dat verpleegkundig managers in ziekenhuizen vaak niet over voldoende kennis beschikten over agressiviteit van patiënten en bezoekers en evenmin over coachende en therapeutische vaardigheden. Hierdoor rees de vraag of verpleegkundig managers voldoende bekwaam en onderlegd zijn om hun teams in dit specifieke opzicht te ondersteunen. Wij concluderen dat verpleegkundig managers meer ondersteuning vanuit de organisatie en training nodig hebben over agressiviteit van patiënten en bezoekers.

Hoofdstuk 7 bevat een samenvatting, vergelijking en discussie van de belangrijkste resultaten van de studies in dit proefschrift. Ook worden mogelijke vervolgonderzoeken en aanbevelingen voor de klinische praktijk beschreven ende sterke punten en beperkingen van de verrichte onderzoeken besproken.

Samenvattend tonen de resultaten een aantal belemmeringen voor effectieve preventie en aanpak van agressiviteit van patiënten en bezoekers aan. Commitment binnen de hele organisatie is vaak afwezig, hoewel dit een vereiste is voor een succesvolle afname van agressiviteit door patiënten en bezoekers,. Ook laten de resultaten zien dat twee leiderschap stijlen van belang zijn, namelijk ondersteunend en proactief leiderschap. Sommige verpleegkundig managers lijken beter te zijn in het bieden van directe ondersteuning aan het personeel. Echter, verpleegkundig managers hebben ook een belangrijke rol om een niet-ondersteunende houding binnen de organisatie ten opzichte van agressiviteit van patiënten en bezoekers te voorkomen door te streven naar verandering vanuit de organisatie zelf. Zo'n verandering 'van binnenuit' vereist proactief leiderschap, maar verpleegkundig managers waren vaak nog niet voldoende onderlegd om zowel proactief als ondersteunend leiderschap te bieden. Tot slot zijn teams belangrijk voor het omgaan met agressiviteit van patiënten en bezoekers, maar effectiviteit van het team wordt niet systematisch aangemoedigd binnen het ziekenhuis. Het trainen van hele teams in plaats van individuen en het onderwijzen van vaardigheden die verpleegkundigen in staat stellen beter om te gaan met de emotionele gevolgen van agressieve incidenten, lijken veelbelovend om teams effectiever te maken in het omgaan met agressie door patiënten en bezoekers.

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Valorisation

Valorisation

In this chapter, the potential value of the findings for stakeholders and society are discussed. The chapter concludes with a description of activities for the utilization and translation of this dissertation's findings into clinical practice and research.

Introductory remarks / relevance of thesis

Patient and visitor aggression is an unfortunate phenomenon that has many adverse effects. It reduces patient safety and quality of care and jeopardises the physical and psychological health of individual staff members, particularly nurses. Negative effects on organisations include staff leaving their jobs and increased absence due to sick leave.[1,2] Numerous studies have examined the staff experience, prevalence, and incidence of patient and visitor aggression in various healthcare settings. In particular, causes and triggers for patient and visitor aggression have been investigated.[3,4] A plethora of guidance on how to reduce aggression at the organisational level is available.[5-8] However, the proposed strategies to address patient and visitor aggression in healthcare often fail, and patient and visitor aggression remains a problem in most areas of healthcare.[9] This PhD research examined *why* current strategies against patient and visitor aggression fail, seeking to identify relevant factors at the team/staff (micro-) level as well as at the organisational (meso-) level. The focus was specifically on general hospitals, where the problem has to date been addressed insufficiently.

Target groups

Nurses and nurse managers were the prime target group of the research. Nurses are not only the largest staff group in healthcare but also the group with most exposure to patient and visitor aggression. Nurse managers are responsible for the wellbeing of staff nurses in the workplace. Nurse managers also interact with all areas and levels of service delivery within a healthcare organisation and are thus key persons to address patient and visitor aggression. A further stakeholder group were patients and visitors, although their point of view was not explicitly included in this research. Patient and visitor aggression has been shown to negatively impact on patient safety and quality of care. Addressing patient and visitor aggression effectively therefore contributes to ensuring the safety and quality of healthcare service delivery.

Main findings

First, this project identified a number of barriers (e.g. financial, unsupportive attitude) to the effective prevention and management of patient and visitor aggression. The findings underscore that an all-organisational commitment, which is necessary to reduce patient and visitor aggression successfully is often

lacking in a real-life setting. Second, we elucidated two important leadership roles for addressing patient and visitor aggression: supportive and proactive leadership. Nurse managers provide support for their staff by exercising supportive leadership. Nurse managers are also in a key position to address unsupportive organisational attitudes towards patient and visitor aggression. This requires proactive leadership, yet this project demonstrated that nurse managers often lack the adequate skills and competencies to provide both proactive and supportive leadership. Furthermore, this project showed that collaborative teams are important for dealing with patient and visitor aggression. However, team efficacy in dealing with patient and visitor aggression is not consistently and systematically fostered in general hospitals. Training entire teams rather than individuals and teaching nurses the necessary skills to better deal with the emotional impact of patient and visitor aggression appears promising to empower teams to deal with aggression more effectively.

Value for stakeholders and society, further research directions

The societal value of this project lies in its potential to address patient and visitor aggression in healthcare organisations more openly, systematically and therefore successfully. This research project identified barriers and opportunities to the successful prevention and management of patient and visitor aggression at staff/team and organisational level. The findings were integrated into a theoretical model, the Strategies Addressing Violence in Healthcare Extended (SAVEinH-x) model (Chapter 7). SAVEinH-x is an extension of the original SAVEinH model.[5,10] The SAVEinH model[5,10] was conceived to assist the diagnosis of risks, the reflection on causes and incidents of patient and visitor aggression, and to provide a toolbox of appropriate prevention and intervention strategies. However, the original SAVEinH[5,10] did not provide pointers on *how* to overcome organisational barriers to addressing patient and visitor aggression in clinical practice. The SAVEinH-x model addresses this shortcoming. The SAVEinH-x outlines how proactive and supportive leadership behaviours can help to overcome organisational barriers to addressing patient and visitor aggression. In addition, the SAVEinH-x model facilitates the identification of specific learning or educational needs to foster staff/team efficacy and the management skills required to dealing with patient and visitor aggression more effectively.

The findings will also contribute to the development of products and services, i.e. a training programme for nurse managers. This programme will initially be designed for the German-speaking part of Switzerland, but potentially be made available in other countries, such as Austria and Germany. Preliminary discussions to design a tailor-made program will take place in April 2018. The actual development of a dedicated program for nurse managers will

commence in the summer of 2018. The program will be developed in collaboration between one of the main Swiss sponsors of this study and the University of Applied Sciences Bern, Switzerland. While the program will initially be available in German, the development of further international programs in English language is planned. It is expected that the focus on specifically educating nurse managers and, indeed healthcare managers at large, on how to address aggression, will contribute to the successful creation of low-aggression care environments. Low-aggression care environments will be beneficial for patient safety, as well as staff wellbeing and increased quality of care.

The research reported in Chapters 5 to 7 of this thesis was conducted in the German-speaking countries Germany, Austria and Switzerland. This research is embedded in an ongoing international research project, the Perception of Patient and Visitor Aggression (PERoPA).[*] PERoPA explores patient and visitor aggression from a nurse manager point of view. The project is scheduled to be completed by the end of 2018, when data have been collected from Australia, Canada, United States of America and the United Kingdom. The data collection in the English-speaking countries is currently being prepared. With its international perspective, PERoPA will enable a comparison on how patient and visitor aggression is managed in various countries and foster learning from the diverse experiences and approaches on how to deal with the problem. Furthermore, PERoPA will establish a unique body of knowledge in the international field of aggression in health care. The format of data collection, an open electronic survey using chain referral,[11] is a relatively rarely employed approach to data collection in nursing research. The experiences gathered from conducting the study in the participating German-speaking countries is therefore valuable to the preparation of the international study, but also to inform methodology of future nursing research on other topics.

[*] PERoPA website: https://www.gesundheit.bfh.ch/?id=4091

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About the author

About the author

Birgit Heckemann was born in February 1969 in Warstein, Germany. After completing her training in adult nursing in 1990, she worked as a registered nurse on a neurosurgical and maxillofacial ward at the University Hospital in Münster, Germany until 1992. After taking a career-break from nursing, she worked in the United Kingdom (UK) as a registered nurse first in short stay surgery and later in a nurse-led surgical pre-assessment clinic at the Heatherwood and Wexham Park Hospitals NHS Foundation Trust from 2002-2009. She managed the nurse-led surgical pre-assessment clinic as a 'sister' from 2006-2009. Concurrently, Birgit obtained a bachelor's degree in Professional Practice (2003-2007), and a master's degree in Research Methods (2007-2010). Her masters' thesis focused on emotional intelligence and nurse leadership. Both degrees were awarded by Thames Valley University (now University of West London), London, UK.

Studying towards her master's degree made Birgit want to delve deeper into research. In 2012, she was fortunate to be accepted on the *European Doctoral Program in Nursing Science*, which is organized by the University of Maastricht, the Netherlands; the University of Graz, Austria; and Bern University of Applied Sciences, Bern, Switzerland. She has since worked towards her PhD on a part-time basis under the supervision of Prof. Dr. Jos MGA Schols, A/prof. Ruud JG Halfens, (both Maastricht University) and Prof. Dr. Sabine Hahn (Bern University of Applied Sciences).

During her time as a PhD student, Birgit completed the three-year programme of the European Academy of Nursing Science (EANS) summer school for doctoral studies in 2015. She also served as a member of the organizing committee of the 16th European Doctoral Conference in Nursing Science (EDCNS), which was held in Bern, Switzerland in 2016. Birgit won a Sigma Theta Tau International Small Grant towards her PhD project in 2015-2016. She was recently awarded the Chris Abderhalden Award for Young Researchers in the Field of Aggression in Healthcare 2017 at the 10th European Congress on Violence in Clinical Psychiatry Dublin, Ireland.

Since 2012, Birgit has worked as a research associate in several countries and with various employers: at REGISTRAT MAPI, Lyon, France (2012), at the Center for Person-Centred Care, Gothenburg University, Gothenburg, Sweden (2013-15), and at Bern University of Applied Sciences, Bern, Switzerland (2012-2013, 2016-date).

As a member of the Sigma Theta Tau International Honor Society of Nursing (STTI) (Tau Omega Chapter, Gothenburg, Sweden) since 2015, Birgit serves as a board member (public relations and vice secretary) in her local chapter. She is also active in the STTI 'Research Task Force Europe' group, an international group of academic researchers who collaborate remotely and

communicate through regular teleconferences. The group's research focus is on migrant health.

During the phases of her life when she was not working professionally, Birgit prioritized taking care of her two children, since the family relocated frequently within the UK and Europe due to her husband's career. During those years, Birgit acquired a certificate for *Teaching English to Speakers of Other Languages* (TESOL) and taught English to refugees and asylum seekers in London, UK (1999). She also volunteered in a number of organisations, such as *The National Childbirth Trust*, Ascot branch, UK; *Shotokai College* (karate club), Ascot, UK and was involved in the parent associations of her children's respective nurseries and schools in England and France. She is currently involved as a 'team parent' for the U 18 girls' team and as an alternate board member at *Spartacus Rugby Club*, Partille, Sweden to support her daughter in reaching her ambitious goals in the sport.

Publications

International refereed journals

- **Heckemann B**, Peter K, Halfens R, et al. Nurse managers: determinants and behaviours in relation to patient and visitor aggression in general hospitals. A qualitative study. *Journal of Advanced Nursing* 2017;73(12):3050-60. doi: 10.1111/jan.13366
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Conference contributions

- Luiking ML, **Heckemann B,** Watson R, Kydd A, Ali P, Dekker van Doorn C, Ghosh S & Patel H. Migrants' healthcare experience: a meta-ethnography review of the literature. STTI 4th European conference, Cambridge, United Kingdom, 4-6 June 2018. (Accepted for oral presentation)
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- **Heckemann B**, Hahn, S. Aggression von PatientInnen und BesucherInnen. Wie denken PflegemanagerInnen darüber? Wie handeln sie? [*Patient and visitor aggression. What do nurse managers think? What do they do?*] Oral presentation. High Noon? Gewalt und Deeskalation in Sozial und Gesundheitseinrichtungen, Vienna, Austria 6-7 December 2017.
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- **Heckemann B**, Duxbury J, Gerdtz M, Hamilton B, Riahi S, De Santo Iennaco J & Hahn S. Perception of Patient and Visitor Aggression (PERoPA). First results of an international project investigating the nurse managers' perspective on the management of aggression in healthcare". Oral presentation. The 10thEuropean Congress on Violence in Clinical Psychiatry, Dublin, Ireland 26-28 October 2017.
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