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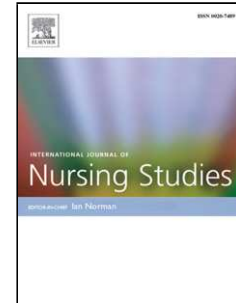
Title

The support-control continuum: an investigation of staff perspectives on factors influencing the success or failure of de-escalation techniques for the management of violence and aggression in mental health settings

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ABSTRACT

Background: De-escalation techniques are recommended to manage violence and aggression in mental health settings yet restrictive practices continue to be frequently used. Barriers and enablers to the implementation and effectiveness of de-escalation techniques in practice are not well understood.

Objectives: To obtain staff descriptions of de-escalation techniques currently used in mental health settings and explore factors perceived to influence their implementation and effectiveness.

Design: Qualitative, semi-structured interviews and Framework Analysis.

Settings: Five in-patient wards including three male psychiatric intensive care units, one female acute ward and one male acute ward in three UK Mental Health NHS Trusts.

Participants: 20 ward-based clinical staff.

Methods: Individual semi-structured interviews were digitally recorded, transcribed verbatim and analysed using a qualitative data analysis software package.

Results: Participants described 14 techniques used in response to escalated aggression applied on a continuum between support and control. Techniques along the support-control continuum could be classified in three groups: 'support' (e.g. problem-solving, distraction, reassurance) 'non-physical control' (e.g. reprimands, deterrents, instruction) and 'physical control' (e.g. physical restraint and seclusion). Charting the reasoning staff provided for technique selection against the described behavioural outcome enabled a preliminary understanding of staff, patient and environmental influences on de-escalation success or failure. Importantly, the more coercive 'non-physical control' techniques are currently conceptualised by staff as a feature of de-escalation techniques, yet, there was evidence of a link between these and increased aggression / use of restrictive practices. Risk was not a consistent factor in decisions to adopt more controlling techniques. Moral judgements regarding the function of the aggression; trial-and-error; ingrained local custom (especially around instruction to low stimulus areas); knowledge of the patient; time-efficiency and staff anxiety had a key role in escalating intervention.

Conclusion: This paper provides a new model for understanding staff intervention in response to escalated aggression, a continuum between support and control. It further provides a preliminary explanatory framework for understanding the relationship between patient behaviour, staff response and environmental influences on de-escalation success and failure. This framework reveals potentially important behaviour change targets for interventions seeking to reduce violence and use of restrictive practices through enhanced de-escalation techniques.

WHAT IS ALREADY KNOWN ABOUT THIS TOPIC

- Violence, aggression and use of restrictive practices in mental health settings are associated with significant harms to patients, staff and health services
- De-escalation techniques are recommended but restrictive practices continue to be frequently used
- There is a need for systematic investigation of factors related to patients, staff and staff teams, healthcare environments and organisations that may influence the implementation and effectiveness of de-escalation techniques in routine practice.

WHAT THIS PAPER ADDS

- A preliminary framework for understanding the relationship between patient behaviour, staff response and environmental influences on de-escalation success or failure.
- A new model for understanding staff intervention in response to escalating aggression: a continuum between techniques classified as 'supportive' and 'controlling'
- Key implications for the reduction of restrictive practices.

INTRODUCTION

Violent and aggressive events occur commonly in mental health settings internationally (1, 2), result in serious psychological and physical harm (1) and costs to health services (3). Restrictive practices, measures to prevent violence through restricting patient autonomy (4) (e.g. physical restraint, seclusion, and coerced medicines) are also associated with serious harms. These include post-traumatic stress (5), serious injury (6) and patient deaths (7). Restrictive practices are expensive (8, 9), may delay patient recovery (10) and therefore over-use has serious implications for patients, health services and public finance. Over the last decade and in response to these concerns, there has been an international policy shift toward non-physical management of aggression and the reduction of restrictive practices (4). Central to this, has been the promotion of 'de-escalation techniques' which are a range of verbal and non-verbal skills and strategies designed to reduce aggression without the need for restrictive practices (9).

Despite de-escalation techniques being recommended as the first-line intervention for aggression across international guidelines (9, 11), recent evidence has shown that restrictive practices continue to be used routinely to manage emotional escalations in mental health settings (12). This suggests there is a gap between recommended and routine practice and indicates either: a) de-escalation techniques are not used at optimum frequency or b) there are important factors that may impede their effects. Given this ambiguity, there is a need for further examination of the implementation and effectiveness of these important techniques in routine practice.

Qualitative studies describing best practice in relation to de-escalation techniques are available and have been synthesised (13) and have informed an evidence-based model (14). This evidence indicates

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recommended techniques involve: creating safe conditions for intervention and optimal conditions for communication by removing objects with utility as weapons (15), ensuring exit routes are available (15) and that unrequired staff and service users are removed (16). Attempts should be made to clarify (15, 17) and resolve (17, 18) the problem giving rise to the patient's aggression. Throughout, empathy and respect should be conveyed (19, 20) and unhelpful emotional responses such as anger, offence and anxiety inhibited (21, 22). Latter studies have revealed important new findings on the psychological and relational dynamics underpinning effective de-escalation (23, 24).

Quantitative analyses of nursing notes indicate de-escalation techniques are effective in disrupting the trajectory of verbal aggression to violence/use of restrictive practices in approximately 80% of incidents (25, 26). However, owing to study designs, these findings are limited to binary outcomes i.e. de-escalation success or failure and they are unable to reveal the broad range of factors that may contribute to either outcome. Studies have identified the need for greater understanding of these factors (13, 26) and qualitative research has intuitive application to this objective. No existing qualitative study, to our knowledge, has yet systematically explored a broad range of a priori issues related to staff and staff teams, patients, healthcare environments and organisations that may influence staff ability to use de-escalation techniques effectively (27). This study adopted a theoretically-informed approach to address this evidence-gap.

Theoretical framework

Patient factors (e.g. motive for aggression, extent mental health problems are impairing communication) (28); staff factors (e.g. moral commitments, capacity for emotional self-regulation) (29) and environmental factors (e.g. available facilitates and staffing) (29, 30) represent the key situational variables determining outcomes of aggressive incidents in mental health settings (31). Indeed, an extensive evidence-base indicates aggression rates in these settings are subject to: staff modifiers (characteristics of individual staff and staff teams that influence the nature and quality of their interactions with patients) (31, 32); patient modifiers (nature of patient mental health problems and demographics) (27, 31) and environmental modifiers (quality and safety of physical environments and whether organisations provide justice and protection of patient rights) (27, 31). When conceptualised as an intervention to manage aggression, it follows that the implementation and effectiveness of de-escalation techniques is likely to be influenced by these three categories of factors (staff, patient, environment).

We adopted the a priori assumption that staff, patient and environmental factors represent the critical contextual dimensions of escalating incidents and are therefore likely to influence the implementation (decisions as to the nature and appropriateness of techniques applied) and effectiveness (capacity to reduce aggression without the use of restrictive practices) of de-escalation techniques. This assumption informed data collection and analysis in the current study.

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Aims

To obtain staff descriptions of de-escalation techniques currently used in mental health settings and explore factors perceived to influence their implementation and effectiveness.

METHOD

A qualitative methodology using semi-structured interviews and Framework Analysis (23) was adopted. Framework analysis was selected on the basis that it allows for both deductive and inductive analytic techniques and is therefore consistent with a theoretically-informed design (33).

Reflexivity

Interviews took place in private rooms within the clinical settings participants worked and participants' colleagues were often aware they were taking place and their purpose. All participants were made aware the interviewer (OP) was a registered mental health nurse and the limits of confidentiality this imposed. These factors may have reduced the truthfulness of participant accounts. The lead author has an existing research interest in de-escalation techniques, so there was a risk that preconceptions could influence data collection and analysis. This risk was managed through self-reflection and team-working with co-authors.

Participant selection

A purposive sampling approach (25) was used to recruit participants with diverse characteristics representative of the in-patient mental health workforce. The sample identified staff from a range of settings and with a range of personal characteristics thought to influence de-escalation performance e.g. age, gender, clinical role and experience (26). Only ward-based staff (nursing assistants, staff nurses, team leaders, ward managers) were interviewed because they are subject to sustained aggression exposure and are also responsible for implementing restrictive practices when de-escalation has failed/ is perceived unfeasible (and are, thereby, privy to the mechanisms that result in success or failure). Including only staff with a minimum six months clinical experience was felt sufficient to ensure necessary experience of using de-escalation techniques.

Of 10 wards approached, 5 agreed to participate including three male psychiatric intensive care units, one female acute ward and one male acute ward in 3 UK Mental Health Trusts. 20 staff interviews were conducted ranging between 25m and 1h:27m. The sample consisted of: ages between 24 and 60, 50% female, 10 nursing assistants, 6 staff nurses, 3 team leaders and 1 ward manager, and clinical experience between 6 months and 14 years (full sample description see table 1).

Table 1   Sample description

Ages	Genders	Clinical role	Clinical experience

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18-30: n=6	Female: n=10	Ward manager: n=1	<2 years: n=4
31-43: n=9	Male: n=10	Team leader: n=3	2-5 years: n=8
44-60: n=4		Staff nurse: n=6	>5-15 years: n=8
Missing: n=1(declined to disclose)		Nursing assistant: n=10	

Recruitment and ethical procedures

Participants were recruited via nurses in each participating ward who agreed to distribute packs to all eligible staff members. Participants were asked to consent to participate in the study, be recorded and to have direct quotes used in reporting of results. All study procedures were approved by NHS ethics (NRES ref: 14/NW/0033).

Data collection

Interviews were guided by an interview schedule developed from the study's theoretical framework. First participants were asked about the de-escalation techniques they used, the techniques they found helpful and unhelpful and how and why they selected different techniques. Next, they were asked to describe any staff and staff team factors that helped or hindered the effective use of de-escalation techniques. They were then asked whether there were any patient factors that made de-escalation particularly difficult or easy. Finally, they were asked whether there were any environmental factors relating to the ward, hospital or healthcare organisation that influenced their ability to use de-escalation techniques effectively. Beyond these broad categories, no further theory was imposed on data collection to ensure the findings were grounded in participant experience.

We used an approximation of the National Institute for health and Care Excellence (NICE) guidelines' definition of de-escalation techniques (9) in study information literature and when clarification was sought by participants as follows: 'verbal and nonverbal communication skills aimed at reducing aggression without the use of restrictive practices.' Data collection continued until data saturation point (34). A stopping criterion of three interviews past the initial point saturation was felt to be reached was used, as suggested by Francis et al. 2010 (34). A questionnaire was used to collect data on demographics and role.

Data analysis

Analysis was conducted in the three stages of Framework Analysis: indexing, summarising and mapping and interpretation (35). Analysis was conducted primarily by OP but was discussed and reflected on regularly with co-authors.

Indexing involved listening to audio recordings and coding of transcripts to identify: a) the techniques used in response to escalating aggression described by participants and b) the staff, patient and

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environmental factors influencing use and effects. The techniques described were grouped according to differences and similarities described in participant accounts (for example, whether the technique was deemed supportive or controlling, active or passive). The product of this process was an index of techniques, technique groups and contextual factors (staff, patient, environment) influencing their use and effects.

Summarising involved generating frameworks from the index using the Framework function of QSR NVivo10 ©, with columns representing themes and sub-themes and rows representing cases. Each transcript was then subject to line-by-line analysis, in which verbatim data were summarised and relevant cells populated with the summarised data. The 'create summary link' function was used to link data summaries with verbatim data enabling recall at later stages of analysis. This process involved greater immersion in the data and therefore allowed for greater refinement or modification of the themes and sub-themes generated in the indexing phase.

Mapping and interpretation involved re-analysing the Framework to develop an integrative model explaining the relationship between the techniques described and the contextual factors influencing use and effects. Data related to contextual factors were all related to the core phenomenon (i.e. de-escalation technique success or failure) so could be successfully linked with the techniques/technique groups without omission or extending beyond what the data supported. The final framework consisted of three categories of techniques with linked contextual factors influencing use and effects. Framework cases were ordered by sample characteristic (for example, age, gender, role, setting) to examine the influence, if any, these variables had in modifying perspectives. Data related to each technique category were finally synthesised according to a) technique description and b) contextual factors influencing use and effects.

RESULTS

Participants described 14 distinct techniques used in response to escalating aggression. These could be classified in three groups distinguished by the level of control they imposed to contain the patient's behaviour: Support, Non-physical control and Physical control. The first two of these groups were considered part of the process of de-escalation, the latter was not. Within each technique group, components were distinguished by how active or passive the staff contribution required to facilitate the aggressive patient's emotional self-regulation was (see figure 1).

Participant reasoning for technique-selection indicated that the technique groups and components are applied on a continuum between support and control, with decisions to impose greater control informed by a complex range of staff, patient and environmental factors. Charting these decision-making influences by technique group and components along the support-control continuum (Table 2) provides a preliminary framework for understanding the perceived relationship between patient behaviour, staff response and environmental and organisational influences on whether techniques

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move up or down the continuum to more or less controlling intervention. The following three themes will present findings related to each technique group, each describing their description and purpose, and contextual factors influencing use and effects.

Figure 1   **The support-control continuum**

CONTROL	COMPONENTS		
	Medicate (I/M)	**ACTIVE**	
	Restrain		**Physical control techniques**
	Seclude		
	Medicate (PRN)	**PASSIVE**	
	Instruction	**ACTIVE**	
	Deterrent		**Non-physical control techniques**
	Reprimand		
	Manipulate environment	**PASSIVE**	
	Re-framing	**ACTIVE**	
	Resolving		
	Problem identification		**Support techniques**
	Distraction		
	Reassurance		
	Passive intervention	**PASSIVE**	
SUPPORT			

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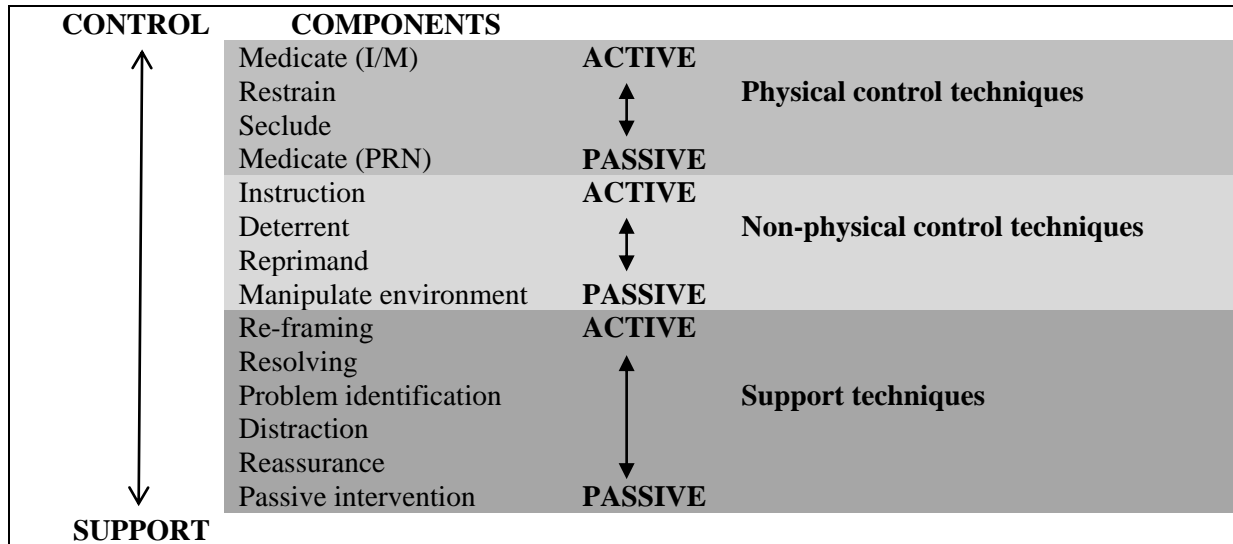
Table 2   Factors indicating escalation/de-escalation of aggression and intervention

		Maintaining factors	
	Patient context technique applied	Staff	Environment/organisation
	PHYSICAL CONTROL TECHNIQUES (DE-ESCALATION FAILURE)		
	Routine use of PRN, restraint, IM medicines in response to escalations	- Lack of non-pharmacological skill in aggression management - Fear of aggression contagion / assault - Variation in acceptable thresholds for use	Inadequate resourcing leads to restrictive practices use for time-efficiency
	NON-PHYSICAL CONTROL TECHNIQUES		
ESCALATING CONTEXTS	Instructions, deterrents, reprimands applied to patients with personality disorder	- Moral judgements of aggression function - Difficulty empathising	
	Instructions, deterrents, reprimands applied on basis of trial-and-error	- Staff age may reduce capacity to sustain supportive techniques	
	Deterrents/reprimands applied during acute psychosis/mania	- Failure to identify lack of capacity - Inexperience	Rule-bound nursing cultures demand negative reinforcement of aggression
	Routine instruction to low stimulus areas	- Belief in need to protect privacy and dignity - Belief in need to reduce environmental stimulation - Concern over aggression contagion	- Instruction to low stimulus feature of local nursing customs/rituals - Assembly/crowding/night-time
DE-ESCALATING CONTEXTS	Instructions/deterrents used in response to 'no-choice' interventions (e.g. transfer to PICU/prescribed medicines)		
	Instruction applied where patient lacks capacity to engage with problem-solving techniques		
	Knowledge of the patient informs likely effects	Effective nurse-patient relations	- Planning systems identify patient de-escalation preferences/ individualised de-escalation strategies - Resourcing and bureaucratic demands do not restrict staff knowledge of patients
	Passive environmental manipulation (asking others to leave, limiting noise) used routinely and in response to refusals to attend low stimulus areas		Physical environment includes partitioning doors to separate patients
	SUPPORT TECHNIQUES		
ESCALATING CONTEXTS	Problem-solving techniques (problem identification, resolving, reframing) applied when patient lacks capacity		
DE-ESCALATING CONTEXTS	Reframing applied when problem not immediately resolvable		
	Problem solving techniques applied when patient has capacity		
	Distraction/reassurance applied when patient lacks capacity to engage in problem-solving		
	Passive intervention applied when input from others aggravating/ knowledge of the patient informs likely effects		Planning systems identify patient de-escalation preferences/ individualised de-escalation strategies

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THEME 1:   SUPPORT TECHNIQUES

1.1   Description and purpose

The Purpose of Support techniques was to enable the patient to draw on their own resources to self-regulate aggression. Often this involved reducing the perceived need for violence through facilitating the patient's reappraisal of the situation. Six techniques of this type were described: Passive intervention (taking no action except to facilitate the release of anger in a controlled manner); Reassurance (use of reassuring, stock phrases to promote feelings of safety) Distraction (diversion of patient attention from aggravating stimuli), Problem identification (exploring the cause of the aggression to inform resolution), Resolving (addressing practically resolvable concerns) and Reframing (more intensive reframing of negative situational perspectives) (for an in-depth description of the 'Support' components with examples see table 3).

1.2   Contextual factors influencing use and effects

Decisions to use supportive techniques and their perceived effectiveness were most influenced by patient factors, e.g. the perceived motive for the aggression and the nature of the aggressive patient's mental health problems. For example, the routine approach to resolving a patient's need to be aggressive was commonly described as following a logical problem-solving sequence, where the problem would be identified, clarified and attempts made to practically resolve it. However, much of the aggression described within the data appeared to originate from more general frustration with the patient's current life circumstances. As such, practical resolutions were often unavailable. In these circumstances, staff advocated reframing the patient's perspective of their admission, detention or life situation, dependent on which appeared the source of the concern.

'You will get out of here… I've been here a lot longer than you have, you've been in and out …a few times and I'm still here…Everybody who comes in here has left… you're only here for a period of time…look at it as a… a little blip in your life… in…a year's time you might even forget about this….' (Participant A 0009 Nursing Assistant)

However, participants also recognised these problem-solving techniques required a level of self-regulation in the patient and reciprocity with the staff before they could be safely engaged. In these circumstances, distraction or reassurance were used, either to bring the patient to a level they could engage in problem-solving or as an end by themselves. As a lone strategy, distraction was considered ineffective when applied to patients with the capacity to engage in problem-solving (as it clearly failed to address root cause). A minority also described limited effectiveness where psychosis was an aggression feature (due to reduced capacity to attend to distracting activity). Distraction was considered most effective as a lone strategy when applied to patients with intellectual disability for whom, more reasoning approaches were considered liable to increase frustration. This effectiveness

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was attributed to increased suggestibility and a tendency toward obsessive habits that easily informed distracting activity, for example:

'I do find that when you've got somebody with learning difficulties, you'll… find that they're passionate about certain things, and I've found… talking about those things, and really…continuing to talk… even when they start calming down…'Go on, carry on telling me what you were telling me.' And keep going back to it… until…not that they forget about the situation, but it goes to the back of their mind.' (0018 Nursing Assistant, Male PICU A)

There was broad agreement that Passive Intervention was adopted when input from others was aggravating the aggression (especially where active psychosis was a feature) and knowledge of the patient informed its likely effectiveness:

'Hearing voices… that is a challenge… if somebody is that fixed and… preoccupied with what they're experiencing. We've got a lady… she gets so aggressive… really… distressed. And nothing you say… will help calm her down… The more you talk… the more she wants to hit you… And as long as we make sure the area's safe, we leave her… it's the best form of de-escalation we've found… whatever she's experiencing in her thoughts, is obviously that disturbing… No amount of our voices help.' (0015 Staff Nurse, Male PICU B)

Table 3   Technique descriptions with examples

TECHNIQUE	DESCRIPTION	EXAMPLES
Physical control techniques		
MEDICATE (I/M)	Forced intramuscular psychotropic medicines administered to eliminate the risk of violence through sedation. Its usage was discussed by a minority of participants.	*'You can either take it now or as the nurse in charge has already tried to say, there is another option, which is I/M medication.'* Participant A 0009 Nursing Assistant
RESTRAIN	Physically holding the patient to incapacitate assault capability. Its usage was discussed by the majority of staff interviewed.	*'Do we have x number of staff in here de-escalating… or do we resolve the situation quickly by restraining and IM'ing'* 0018 Nursing Assistant, Male PICU A
SECLUDE	Isolation in a locked room, with observing staff in attendance outside. Its usage was discussed by a minority of participants.	*'That's why we tend to use a… quick approach, seclusion route, medication route, rather than communication, talking down.'* 0024 Staff Nurse, Male PICU C
MEDICATE (PRN)	Aimed to reduce aggression and risk of violence through offers of as required psychotropic medicines. Its usage was reported by the majority of staff interviewed.	*'The first port of call generally from nurses is to give PRN… there are things other than medication…'* 0017 Team Leader, Male PICU A
Non-physical control techniques		
INSTRUCTION	Providing instruction to the patient commonly to a low stimulus area for engagement with staff or time alone or to stop harmful behaviour. The majority of staff interviewed reported using this intervention type.	*'You need to stand back… he lifted his fist up to punch me, and I went.. don't even attempt to do that, you need to stand back'* Participant A 0009 Nursing Assistant
DETERRENTS	Negative reinforcement of aggression through deterrents including: prospect of unwanted restrictive interventions; police involvement; disruption to progress; staff disengagement. The majority of staff interviewed reported using this intervention type.	*'I do say, look, if you keep carrying on like this, the longer you're going to stay in hospital.'* Participant F 0016 Nursing Assistant
REPRIMANDS	Clear and firm expression of disapproval of patient conduct (often through informing the patient the behaviour was *'inappropriate'*), demarcation of the boundaries of acceptable behaviour and, often, reminders or affirmation of ward rules. Almost all staff interviewed reported using this intervention type.	*'It's inappropriate; I'm here to look after you. I don't appreciate being spoken to like that.'* Participant F 0016 Nursing Assistant
ENVIRONMENTAL MANIPULATION	Manipulation of environmental conditions to reduce adverse stimulation, maximise safety and limit aggression contagion. Involved moving uninvolved patients, unrequired staff, unsafe objects, limiting noise and ensuring the right level of support. Half of the staff interviewed reported using this intervention type.	*'I try and manipulate…environmental factors… I… get… rid of any audience… send... extra staff away…. the TV's switched off…so I'm not competing with… external noise…other patients… they're moved away.'* Participant H 0049 Ward Manager
Support techniques		
REFRAMING	Involved reframing views of: incidental causes; others involved; reasonableness of patient response; current life circumstances and the admission and detention. Almost all staff interviewed reported using this intervention type.	*Explaining what's happened, the situation that's started to escalate them, taking them back to that situation and…giving them alternatives to actually deal with that, I suppose that…reassures that they're…although they've reacted like that… it's not a ba*d thing, but they could have dealt with it *differently.'* Participant B 0039 Nursing Assistant
RESOLVING	Practical resolution of concern through meeting immediate needs, providing information, suggesting means of resolving and coping strategies. Almost all staff interviewed reported using this intervention type.	*'He doesn't like the TV…TV distresses him… you can easily resolve that… switch the TV off… about medication and wanting to see doctors… we say, we can have a meeting with the doctor… try* and resolve *whatever it is, if it is resolvable.'* Participant C 0012 Staff Nurse
PROBLEM IDENTIFICATION	Identification and clarification of problem causing the aggression to inform means of resolving. The majority of staff reported using this intervention type.	*'People don't shout for no reason…so you're trying to get to the reason why they have shouted… So you try and find out what it is that's upset them at that time.'* Participant C 0012 Staff Nurse
DISTRACTION	Diversion of patient attention from aggravating stimulus to topics of conversation or activities that stimulate more positive emotions. Included offers of 1:1 engagement and more rarely recreational activity. All staff reported using this intervention type.	*'Just talking about something that they enjoy… And you'll completely distract him from what he's focusing the aggression…That can just calm the situation really easily without it going any further.'* Participant G 0048 Staff Nurse
REASSURANCE	Use of stock phrases to promote feelings of safety and orienting to the staff the patients and the hospital. Half of the staff reported using this intervention type.	*'Use some stock phrases like you're safe, you're in hospital, we're nurses, we're not going to do you any harm'* Participant H 0049 Ward Manager
PASSIVE INTERVENTION	Facilitate self-regulation through passive intervention. Included: facilitate expression of anger and/or time alone (including staff withdrawal rather than imposed). Almost all staff reported using this intervention type.	*'Sometimes it's easier just to let them have their rant and rave and shout, then they…come down.'* Participant F 0016 Nursing Assistant

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THEME 2: NON-PHYSICAL CONTROL TECHNIQUES

2.1 Description and purpose

Non-physical control techniques were more authoritative interventions that explicitly asserted staff control in containing harmful behaviour. Often this involved alerting the patient to the seriousness of their behaviour and giving the option of de-escalating before unwanted containment methods were used. There were four distinct techniques of this type: Environmental manipulation (control of environmental conditions to reduce stimulation, maximise safety and limit contagion of aggression), Reprimands (expression of disapproval of patient conduct often accompanied by reminders of ward rules/expected standards of conduct), Deterrents (deterring further aggression through highlighting potential consequences) and Instruction (providing instruction to the patient) (for an in-depth description of the non-physical control components see table 3).

2.2 Contextual factors influencing use and effects

Decisions to adopt non-physical control techniques were influenced by: the perceived function of the aggression; trial-and-error; local rituals and routines surrounding aggression management; risk; knowledge of the patient, and aggression related to 'no-choice' interventions such as involuntary medicines or transfer to PICU. There was a tendency for younger participants (aged <30 years) to advocate use of reprimands, deterrents and instructions to a greater extent than older participants (aged >30 years). The following sub-themes provide in-depth examination of these contextual influences on the use and effects of non-physical control techniques.

Aggression function: 'illness' versus 'non-illness-related aggression'

Non-physical control techniques were commonly advocated when the aggression was perceived by staff as 'non-illness related.' This referred to patient aggression deemed volitional, with malicious or disruptive intent and where distress was perceived absent, presentations widely referred to as 'just behaviours' or 'behavioural presentations.' More supportive techniques applied in this context were widely perceived vulnerable to interpretation as weakness, thereby reinforcing aggression seeking to intimidate and gain strategic advantage over others. Application of non-physical control techniques on this basis was most readily recommended for patients with personality disorder, but there was evidence of moral judgments of aggression function influencing decision-making irrespective of diagnosis, for example:

'We…while we're talking to them, do our own… mini assessments in our head, trying to figure out…is this illness-driven, is it not illness-*driven… If it's illness-driven, then we'd at least think… we can try… something to manage these symptoms... maybe PRN...reassurance or distraction… if it's not*

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illness-*driven and this is them behaving…this is how they present, then we'd… be firm and tell them that it's not appropriate to behave in that manner on the ward.'* (0007 Team Leader, Female acute ward A)

Uniform application of non-physical control techniques to aggression in patients with personality disorder was widely reported despite staff acknowledging limited effectiveness. Participants linked this with difficulty empathising with aggression arising without clear emotional precipitants and alongside incongruent emotional affect such as amusement. Many participants described feelings of helplessness in response and a sense of having no alternative to admonishing, rule-based techniques that had little impact on patient behaviour:

'I really struggle with people… with personality disorder, because you can find that they don't show any anger or agitation. They can just be sat there and they'll just think, I'll smash that TV screen… then they'll do it. And there's nothing to bring down because they're not angry. They've just done it because they're bored. I… say… 'you can't go about smashing the TV'… 'I'll do what I want'…I… say ' look, if you keep carrying on like this, the longer you're going to stay in hospital'… In most cases I'll just get F off.' (0016 Nursing Assistant, Male PICU A)

Non-physical control techniques, with the exception of instructions, were generally not recommended during acute stages of illness. Participants felt that approaches based on negative reinforcement could escalate aggression because the patient lacked the ability to anticipate the benefits and dis-benefits of future actions. Poor practice in this respect was linked with nursing cultures in which dogmatic consistency in rule enforcement was regarded the preeminent means of maintaining safety. Potentially safer, autonomy-confirming techniques therefore risked unpopularity with colleagues. Less experienced nurses, more susceptible to pressure from others, were regarded more prone to misapplication of non-physical control techniques for this reason.

*'When somebody's that unwell… the behavioural stuff doesn't… work because they're not in a position to learn that if they act like this they get X… an example… a patient, he'd got himself into the manager's office and was smashing it up. Then staff wanted to call the police so the*y could go in and, *I don't know, use riot shields to get all the stuff that he was breaking up… I said, 'What are you doing in here?' He said, 'Oh, I need a cigarette'… he was really manic…I said, 'Right, I'll take you for a cigarette, but you've got to put that stuff down and get out of here.' And he did. I took him outside…* Staff were furious with me because they saw me as rewarding his bad behaviour. But I took the *impression that he was that ill he didn't know what he was doing.'* (0049 Ward Manager, Male acute ward A)

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Instruction alone was regarded as beneficial during acute stages of illness. Where more overtly supportive, reasoning approaches were perceived as potentially increasing confusion and exacerbating aggression, clear, firm and instructive approaches were perceived to aid information absorption and retention and better enable patients to regain behavioural control:

'They're psychotic… becoming more agitated… starting to lose control… they don't recognise other peoples' communication… then you have to be authoritative and say, this is what's going to happen *now, we're going to do this, and this is what you're going to do.'* (0038, Staff Nurse, Male PICU B)

Trial-and-error

Non-physical control techniques were often advocated on the basis of trial-and-error. Therefore they were often applied when aggression had failed to reduce, rather than in response to an increased risk of violence. There was a tendency for younger participants to advocate technique selection on this basis.

*'The more a patient's not listening…you have to try and raise your voice a bit m*ore. So, you try it *quietly in this sort of approach and then… if somebody's kicking up a fuss…. if somebody's not listening you've just got to be quite firm and… say… stop, it's not acceptable.'* (0028 Nursing Assistant, Male PICU A)

Risk versus routine

More passively controlling techniques such as removing uninvolved patients from the location of the escalation and limiting environmental noise were commonly identified as occurring routinely. However, somewhat counterintuitively, instruction of the patient to low stimulus areas was also often reported as occurring routinely. This was especially problematic because patient refusals to comply were often reported as resulting in use of physical restraint. Risk was not a consistent factor informing this practice. Frequently reported non-risk factors included: the perceived need to protect the patient's privacy and dignity and ingrained local rituals where removal to low stimulus was considered a bottom-line staff demand in response to all escalations of aggression, for example:

'If you can get them back to their room without holds, then do so…If not, then you will have to use holds, because that's still part of dignity…It's quite routine… taking people back to their rooms… because that's a way of de-escalating people.' (0025 Staff Nurse, Male PICU C)

Staff manipulating the environmental conditions where the patient was initially situated in response to refusals to move were reported, albeit more rarely. Risk-related explanations for intolerance of instruction-refusals included: the need to eliminate adverse environmental stimulation and fear of contagion of aggression to other patients. The location and timing of the incident, and whether

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psychosis was a feature of the aggression (perceived at increased vulnerability to adverse environmental stimulation) also seemed to reduce tolerance of instruction-refusals. Greater urgency in the need to move patients to low stimulus areas was evident when incidents occurred in the dining area at mealtimes (due to increased presence of environmental hazards i.e. concentration of patients, presence of cutlery and hot food) and when incidents occurred at night when other patients were sleeping.

'Say… a patient is really shouting in the night area, and you want them to go… to the bedroom… you have to be very clear in what you… say, and what you want to happen. So, you… say, well I'm not talking to you now, we'll move into your bedroom. And you have to give the patient a chance… and if he doesn't, then you say, well we're going to have to move you. And that's when you… might use a team to move a patient.' (0012 Staff Nurse, Male PICU A)

Of the non-physical control techniques, increased risk of violence appeared most influential in providing instruction to stop behaviours and in terms of summoning extra staff support (a feature of environmental manipulation). There were varying views as to when staff support alarms should be activated, ranging from non-responsiveness to initial de-escalation attempts, to increases in perceived violence risk, but doing so was identified as a potential escalator of aggression both because it communicated a lack of trust in the patient not to be violent and increased adverse environmental stimulation.

'If it's (an assault) *going to come, you can pull your…pinpoint straight away, so it's the least impact* that could happen. On the other side of the coin, they might see you go for your pinpoint and think, *why are they doing that? And it's, kind of, the trust factor again.'* (0039, Nursing Assistant, Male PICU C)

Knowledge of the patient

Participants acknowledged that these more authoritative techniques could be interpreted as threatening. Because of this, the importance of utilising knowledge of the patient in decisions to use was emphasised. Where the patient was unknown to staff, decisions were perceived to guided by instinct/intuition. Because of the importance of knowing the patient to the probable acceptance of these techniques, multiple participants recommended more effective planning systems to inform individualised interventions. Poor staffing levels and paperwork demands were reported as negative organisational influences on the development of patient knowledge through relationships.

'I'll use a more abrupt tone when I think… the situation can be stopped with that approach… if I know the patient well… an example… A patient had some sort of weapon… and the staff were… about to go in and restrain her. I knew the patient well. She's not psychotic. She's got a personality

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disorder. That approach was jus*t upping the ante…. I just walked in and said, pack it in, get down, what's all this about. In a sort of firm manner. So less empathetic… but still ready to listen. Then she said the staff are doing this, this and this. I said right, well, this isn't going to work, come on, let's go. And she just put the thing down and came out with me and we went somewhere…. I wasn't taking that, what's the matter. I wasn't talking down. I was quite firm… but I knew the response would be taken, okay, yeah…'* (0049 Ward Manager, Male acute ward A)

Situation-*specific: aggression associated with 'no-choice' interventions*

The final key factor influencing use of non-physical control techniques, with the exception of reprimands, was when the aggression appeared in response to a 'no-choice' intervention such as transfer to PICU or the administration of involuntary regular medicines. Here, more supportive, reasoning approaches were felt prejudicial to the patient because they prolonged periods of uncertainty and could create a false sense of choice where none existed, for example:

 'He's unwell, he needs meds, you need to be firm... So…I…had a chat with him and he was shouting at me… I said look, you're going to have to take this. He refused to take it. So… I had to… take it a further level and say look, I'm afraid if you don't take this you've got a couple of options. You can either take it now or as the nurse in charge has already tried to say, there is another option, which is *I/M medication.'* (0009 Nursing Assistant, Male PICU B)

THEME 3:   PHYSICAL CONTROL TECHNIQUES

3.1   Description and purpose

The purpose of physical control techniques was to eliminate further aggression through the application of restrictive practices. Four of these were referred to during the interviews: PRN (as required) psychotropic medicines, seclusion, restraint and forced intramuscular psychotropic medicines (for a complete description of these techniques please see table 3).

3.2   Contextual factors influencing use and effects

Decisions to use physically controlling techniques instead of de-escalation were most commonly linked with organisational factors (e.g. resourcing) and with individual staff factors (e.g. skills-deficits or high anxiety levels). An important staff factor influencing use of restrictive practices instead of de-escalation, was the wide variation in thresholds for use of restrictive practices between staff. Although physical restraint was commonly advocated in response to increased risk, there was evidence of wide variation in the level of risk tolerated, varying between: failure to comply with instructions to attend low stimulus, failure to reduce aggression; increased aggression and threats, to absolute *'last resort'* usage and not until the patient was attempting or actually attacking others.

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As with non-physical control techniques, a tension between risk-related and routine use was again evident in respect of restrictive practices. Offers of PRN, and, to a lesser extent, use of restraint, I/M medicines and seclusion, in place of de-escalation were described as 'routine' in response to escalations of aggression by a significant number of staff. Immediate offers of PRN were identified as a particularly common escalating practice, because they created a sense of the patient's concerns being disregarded or medicalised. Participants observed that frustrations with prescribed medicines were a common cause of escalations and that offers of further medicines were therefore counterproductive to de-escalation.

'A lot of frustrations from patients come from medication… then the first port of call generally from nurses is to give PRN… there are things other than medication…PRN isn't always the answer to everything.' (0017 Team Leader, Male PICU A)

Explanations for lower thresholds for use of restrictive practices were evident at the level of both individual staff and organisations. Common factors at staff level included: lack of non-pharmacological skill in managing aggressive behaviour; fear of contagion of aggression to other patients, and an inability to tolerate lengthy periods of aggression and uncertainty through inadequate regulation of fear responses.

'We tend to… go the medical route… seclusion route… all the time, rather than listen to them… understand… their situation…then make a decision… Sometimes you feel…at the back of my mind… if I don't get this one settled… you unsettle other patients… the others will join in… that's why we tend to use a… quick approach, seclusion route, medication route, rather than communication, talking down. And even talking down…you always think about the medication route as well, say, oh, does he need PRN to come down *rather than… understand the basic, what caused… the tensions.'* (0024 Staff Nurse, Male PICU C)

Less common factors included: role perception prioritising operational and bureaucratic efficiency over relationship development (that might avoid aggression and facilitate early intervention with de-escalation) and lengthy periods of verbal de-escalation; anger intolerance; excitement and enjoyment of restraint; lack of knowledge of the potentially physically and psychologically traumatising effects of these interventions and, finally, a *'them and us mentality'* which failed to conceptualise patients as equal human beings with a right to humane treatment.

'I will happily cancel a meeting to de-escalate… a patient... If nurses see their job as getting things done, *care plans… then you're just a secretary… you're not taking care of patients… you're taking care of paperwork. It's about the person, not the patient. The person themselves… They're people out*

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there with families…it all boils back to us and them. If you can break down the barrier of us and *them, I think you've crossed a massive milestone.'* (0011 Nursing Assistant, Male PICU A)

The most common explanatory factor at organisational level was a perception that nurses on acute wards viewed containment measures as a more time-efficient intervention in extremely poorly resourced environments. For a number of staff, fear of aggression contagion to other patients and not having the staffing to cope with multiple, simultaneous escalations seemed central to this assessment.

'More often than not, de-escalation doesn't happen on the bigger wards, because they just don't have the staff… they're… looking at it, from their point of view, is do we have x number of staff in here de-escalating… or do we resolve the situation quickly by restraining and IM'ing, and then we've got the staff back again to… spread out across… the other patients… I just don't think that they have the numbers on the acute wards.' (0018 Nursing Assistant, Male PICU A)

DISCUSSION

Our analysis revealed 10 distinct techniques, conceptualised as de-escalation, that participants reported using. These could be classified in technique groups 'support' and 'non-physical control,' distinguished by how assertive staff action was in attempts to reinstate the patient's self-control. Exploring how and why participants select techniques in response to escalating aggression generated new understanding of the process of implementing de-escalation techniques in practice. Our data indicate techniques are applied on an escalation continuum that extends from 'support' to 'non-physical control' up to physically controlling intervention. A similar continuum ranging between 'respectful and autonomy-confirming' to 'boundary-imposing and limit-setting' has been previously identified (36). Our study extends this understanding by classifying techniques and technique groups along this continuum.

Investigating participant perspectives on factors influencing the effectiveness of de-escalation techniques, identified important factors at staff, patient and environment level, indicating the theoretically-informed design represented an appropriate conceptual model. The important implication at staff level is that the more authoritative 'non-physical control' techniques, such as instructions, deterrents and reprimands may lead to escalations of aggression and use of restrictive practices when applied in certain contexts. Similarly assertive techniques have previously been identified as an important aspect of the de-escalation process (13) but should be applied on the basis of increased risk (16, 22). This study found that increased risk was often not a key factor informing use. Rather, moral judgements regarding the function of the aggression, trial-and-error and ingrained local customs surrounding the management of aggression were common explanations for use.

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Selection on the basis of morality appeared to be underpinned by a potentially unhelpful dichotomy drawn by staff between what they referred to colloquially as 'behaviour' (meaning aggression that is perceived non-illness-related and that the patient exercises control over) and aggression perceived to be 'illness-related.' This distinction may be redundant in a population of whom up to 91% have significant trauma histories including physical or sexual abuse in childhood (37, 38), known to result in abnormalities in both brain structure and function that dysregulate the arousal system (39). This problem linked with the key patient factor contributing to de-escalation failure, which was the reported ineffectiveness of techniques applied to patients with personality disorder. More authoritative techniques applied to this group appeared especially problematic, potentially because they a) increase the perceived need to secure dominance or respect through further aggression (40) and / or b) engender a sense of caregiver rejection or re-enactment of past abusive relationships provoking fight or flight responses (41, 42). Individually-tailored interventions based on functional analysis of aggression may help to enhance de-escalation in patients with personality disorder.

Knowledge of the patient was identified as of central importance to effective technique-selection and likely success of de-escalation. This has previously been identified as of central importance to accurately understanding the meaning and dangerousness of escalated behaviour and to individualising de-escalation interventions to the needs of each patient (13, 16). Better harnessing patient knowledge through prior planning may therefore be useful in improving de-escalation-effectiveness. Systems of prior planning identifying triggers, early warning signs and effective calming strategies have been found effective in reducing incidence of seclusion and restraint (43).

Our findings indicate that environmental factors are highly influential to the success and failure of de-escalation techniques. Concerns over privacy and dignity and contagion of aggression to other patients, and local aggression management customs all contributed to a perceived need to instruct the escalating patient to low stimulus areas (bedrooms, side-rooms or dedicated de-escalation rooms). This practice may be problematic because it demands the patient acquiesces to the will of staff when they may be asserting dominance or independence (44). Our data indicate that patient refusals to move to side-rooms can result in power-struggles and potentially avoidable use of restraint. Current NICE guidance may inadvertently reinforce this practice through recommending that de-escalation occurs in a side room (9). Existing de-escalation evidence indicates suggestions to move to side rooms should be on the patient's terms (13), unless there is an immediate risk of violence (16, 22). Current guidance does not provide this important qualification (9). It is possible this practice can be avoided whilst preserving staff need to protect privacy and limit contagion. For example, through more passive environmental manipulation i.e. asking other patients to leave the area and making use of partitioning doors.

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A further key environmental influence on de-escalation failure was a lack of adequate resourcing. Staff felt this led to restrictive practices being used instead of de-escalation because they were considered the more time-efficient option in poorly staffed wards. This finding presents a possible relationship between recent findings of widespread, routine use of physical restraint in mental health settings (12) and inadequate resourcing. However, rates of use of restrictive practices are known to vary dramatically between environments serving similar patient populations and subject to the same resource constraints (27) indicating that variables extraneous to resourcing also have an important role. Staff anxiety was identified as a factor in use of restrictive practice instead of de-escalation in this study. That younger participants seemed to advocate more controlling techniques on the basis of trial-and-error, might also suggest that the impact of aggression exposure on capacity for self-regulation has an important role in sustaining more supportive techniques. Current de-escalation training has demonstrated limited impact on staff capacity for anxiety regulation (45) and enhancing this skill may be a key factor in promoting more sustained use of supportive interventions.

Limitations

This continuum and framework were generated from synthesis of participant views and experiences and therefore do not provide definitive evidence of links between techniques and outcomes. Our findings should be understood in this context but nevertheless provide a starting point for the generation of potentially testable hypotheses and validation/falsification in future studies. Because of the desire to obtain a sample that would provide a representative sample of accounts of the techniques in routine practice, we excluded participants above ward manager level. We also did not recruit participants on the basis they were known as skilled de-escalators. Both these decisions may have excluded potentially important perspectives and/or influenced the richness of the data. However, studies recruiting with this approach are, arguably, reasonably well represented within the existing literature (13). Due to resource-constraints, repeat interviews and member-checking was not conducted.

A further limitation relates to the conceptualisation of de-escalation techniques. Participants in our study viewed the more coercive 'non-physical control' techniques as an important part of the de-escalation process. Although this finding has been reported elsewhere (13, 16) these techniques are absent from other scholarly descriptions of de-escalation techniques (14, 46). It is possible that participants, at least, partially, inaccurately conceptualised de-escalation techniques as a coercive rather than psychosocial therapeutic intervention. In our study, generally this did not extend to conceptualising use of restrictive practices as de-escalation as found by Hallett et al. (2015) (47) although we cannot determine whether this was owing to participant knowledge or the definition used in our study information literature. It is possible that greater guidance provided to participants in defining de-escalation would have obtained richer data on the more supportive components of their

interventions. However, this may have prevented important insights into the clinical realities in which de-escalation techniques are used. For example, how and why different techniques are selected by staff and the relationship between the two levels of intervention (support and non-physical control) and successful resolution or violence/use of restrictive practices. Moreover, understanding when and why more supportive techniques cease to be used reveals potentially important evidence to reduce violence and avoidable use of restrictive practices.

CONFLICT OF INTEREST

FUNDING

WHAT IS ALREADY KNOWN ABOUT THIS TOPIC

- Violence, aggression and use of restrictive practices in mental health settings are associated with significant harms to patients, staff and health services
- De-escalation techniques are recommended but restrictive practices continue to be frequently used
- There is a need for systematic investigation of factors related to patients, staff and staff teams, healthcare environments and organisations that may influence the implementation and effectiveness of de-escalation techniques in routine practice.

WHAT THIS PAPER ADDS

- A preliminary framework for understanding the relationship between patient behaviour, staff response and environmental influences on de-escalation success or failure.
- A new model for understanding staff intervention in response to escalating aggression: a continuum between techniques classified as 'supportive' and 'controlling'
- Key implications for the reduction of restrictive practices.

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