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Acceptability and use of coercive methods across differing service configurations with and without seclusion and/or psychiatric intensive care units

Running head: Seclusion, Manual restraint, Psychiatric care, Containment

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ABSTRACT

Aims

To compare across different service configurations the acceptability of containment methods to acute ward staff and the speed of initiation of manual restraint.

Background

One of the primary remits of acute inpatient psychiatric care is the reduction of risks. Where risks are higher than normal, patients can be transferred to a psychiatric intensive care unit or placed in seclusion. The abolition or reduction of these two containment methods in some hospitals may trigger compensatory increases in other forms of containment which have potential risks. How staff manage risk without access to these facilities has not been systematically studied.

Design

The study applied a cross-sectional design.

Methods

Data were collected from 207 staff at eight hospital sites in England between 2013 - 2014. Participants completed two measures; the first assessing the acceptability of different forms of containment for disturbed behaviour and the second assessing decision making in relation to the need for manual restraint of an aggressive patient.

Results

In service configurations with access to seclusion, staff rated seclusion as more acceptable and reported greater use of it. Psychiatric intensive care unit acceptability and use were not associated with its provision. Where there was no access to seclusion, staff were slower to initiate restraint. There was no relationship between acceptability of manual restraint and its initiation.

Conclusion

Tolerance of higher risk before initiating restraint was evident in wards without seclusion units. Ease of access to psychiatric intensive care units makes little difference to restraint thresholds or judgements of containment acceptability.

Key words: Nursing, Mental health nursing, Seclusion, Manual restraint, Psychiatric care, Containment

Summary statement

Why is this research or review needed?

- There is variation in the management of patients in acute psychiatric wards.
- This study considers the association between service configuration and the acceptability and use of different containment methods in response to an aggressive incidence.
- Previous studies have not considered the association with access to seclusion and/or psychiatric intensive care units.

What are the key findings?

- In service configurations with access to seclusion, staff rated seclusion as more acceptable.
- For those without direct access to seclusion, staff members are more likely to approve of and use open area seclusion (seclusion in a side-room).
- Tolerance of higher risk before initiating restraint was evidence in wards without seclusion units.

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

- It is possible seclusion units are being overused at sites with direct access to one.
- Without seclusion, staff members tolerated higher levels of aggression before initiating restraint, perhaps because staff without access to seclusion rate their methods of containment as less effective in resolving emergencies.
- This study raises important questions about the links between the availability, approval of and use of seclusion, coupled with the faster use of manual restraint.

INTRODUCTION

Aggressive behaviour is a major concern in acute psychiatric wards and patients requiring admission often display disturbed behaviour which can put at risk the health and safety of the patient concerned and that of the staff supporting them. Concerns for patient and staff safety in acute settings have been expressed worldwide (Abderhalden *et al.* 2008, Whittington *et al.* 2005). One study investigating containment methods for aggressive behaviour in acute psychiatric wards in the Netherlands reported almost one aggressive incidence per day for every twenty patients (Nijman *et al.* 1997). Another study investigating exposure to threats and violent behaviour in Swedish care settings described prevalence of being assaulted approaching 100% for mental health staff (Menckel & Viitasara 2002). Acute psychiatric wards manage patients whose actions may threaten safety to themselves and hospital staff by coercive measures such as seclusion or restraint (Bowers *et al.* 2015). To aid in management, wards may be fitted with a seclusion room and/or have direct or indirect access to a Psychiatric Intensive Care Unit (PICU). The purpose of this study was to examine the use and acceptability to staff of a range of containment methods currently utilised in acute psychiatric wards, as well as exploration of speed of initiation of manual restraint, across service configuration dependant on access to PICUs and seclusion.

Background

As defined in the revised Mental Health Act (MHA) for the United Kingdom (UK), seclusion refers to the supervised confinement and isolation of a patient in a room that has been specifically designed for the purpose of seclusion and, importantly, which serves no other function on the ward (Department of Health 2015). In this study, we use the term 'seclusion available' to refer to a defined seclusion room directly available to acute wards on the same ward site. Where risks are higher than the norm for an acute psychiatric ward, patients can be transferred to a PICU. PICUs are services which provide psychiatric intensive care for patients who are in an acutely disturbed phase

of a serious mental disorder and may have a loss of capacity for self-control, with corresponding increase in risk which prevents safe treatment in a general acute ward (Department of Health 2002). These units have higher ratios of nursing and other staff and are often built on an open plan design to ease observation and containment (Bowers 2006). Acute wards may have direct access to an on-site PICU or indirect access to a PICU which may be available to the ward but is located on a different site and/or provided by a different organisation. In this study, by restricted PICU access we mean indirect access to a PICU. The process of transferring a patient to PICU may involve an initial referral, an assessment of the patient by PICU staff and transfer to the unit. Where PICUs are on-site, transfer will often involve calling the rapid response team to aid in physical transfer of the patient. Where PICUs are not on site, transfer will involve a team accompanying the patient to the unit via transportation, such as a mini-bus or van. The process of patient transfer to a PICU can take from hours to several days and may be further complicated when the unit is not on site.

The management of acutely disturbed patients during periods of crisis presents the challenge of maintaining the safety of the patient and others whilst providing a safe environment (Muralidharan & Fenton 2006). Staff act to prevent or minimise harm through the use of a variety of containment methods designed to keep patients and staff safe (Bowers 2006). These include the use of tranquillising medications, increased levels of observation, manual restraint and time out (Bowers *et al.* 2015).

Comparisons of the use of seclusion and restraint in psychiatric hospitals between countries can help to improve clinical practice however data on the use of seclusion and restraint are barely available. Never-the-less, this limited data suggests huge variation in practice of coercive methods between countries (Steinert *et al.* 2008). One study investigating differences in attitudes to containment methods between the UK, the Netherlands, Finland and Australia showed staff in Finland to express the highest level of approval for containment methods, with staff in the UK expressing the least (Bowers *et al.* 2007). Attitudes towards coercive methods may in part drive the terms of their use

and all though methods such as seclusion and manual restraint have generated controversial debates regarding their use in many countries (LeBel & Goldstein 2005, Needham *et al.* 2002), research suggests that it would not be possible to completely abolish the use of such methods (Steinert *et al.* 2008).

Several studies have reported that staff experience adverse and conflicting feelings when using containment methods (Olofsson *et al.* 1998, Bowers *et al*. 2004) and it has been suggested that this may lead to a preference of not having to use them (Dack *et al.* 2012). Surveys have shown variation in the acceptability of different containment methods, with patients and staff having rated seclusion as one of the least acceptable interventions and PICU care is rated as more acceptable than seclusion, but is still not the most acceptable of interventions (Whittington *et al.* 2009). Despite the negative connotations associated with seclusion, one study suggested that staff with access to seclusion rated this method of containment as more effective in resolving an emergency than staff from the same hospital (but without access to seclusion) rated alternative methods of containment used in resolving the same emergency (Cashin 1996). The study suggests seclusion is regarded as more effective in aiding with emergency situations than other methods of containment, however these alternative methods were not described and it is not yet clear what seclusion may be substituted with, when a seclusion unit is not directly available to the ward. Even less is known about the attitudes towards PICUs and how this may determine their use.

A literature review conducted by Stewart *et al.* (2009) suggests that, on average, manual restraint is used up to five times per month on psychiatric wards, with each episode lasting approximately 10 minutes. Some forms of manual restraint involve face down restraint, which has been associated with sudden death (Parks & Carson 2008). The struggle of the patient to gain control from restraint can itself lead to staff and patient injury (Paterson *et al.* 2003). Information about the use of manual restraint as a management method in psychiatric hospitals is sparse and little is known about instances where manual restraint might be used and the point at which it will be instigated when

risk behaviour is displayed (Stewart *et al*. 2009). Understanding at what point this method of management might be instigated is important to improve patient and staff safety. This may be associated with a range of factors, including staff perceptions of, or exposure to, differing levels of risk (Moylan & Cullinan 2011) and the availability of facilities at each ward, such as access to seclusion and the acceptability to staff and use of other containment methods (Lemonidou *et al*. 2002).

THE STUDY

Aims

There is variation in the management of patients in acute psychiatric wards and it is not clear how staff members' perception of the acceptability of these containment methods may be related to their use. Even less clear are the methods of containment being used as a possible substitute when onsite PICU and seclusion are not available. This is the first study to consider the association between service configuration (access to seclusion and PICUs) and: (i) the acceptability of different containment methods typically used in acute psychiatric wards across Europe; (ii) the use of different containment methods typically used in acute psychiatric wards across Europe; and (iii) time to restrain in response to an aggressive incident.

Design

The study applied a cross-sectional design.

Participants

Eight hospitals providing inpatient acute psychiatric care took part in the current study and data was collected between August 2013 - October 2014. The hospitals were identified in a purposeful sample to include two of each of the following: (i) no seclusion and restricted PICU access; (ii) no seclusion

and full PICU access; (iii) seclusion available and restricted PICU access; and (iv) seclusion available and full PICU access. To ensure greater national representativeness, half of the sample was drawn from hospitals in the North West of England and half from hospitals in Greater London. Study participants were acute ward staff members (qualified nurses, n = 130; Health Care Assistants, HCAs, n = 69; others = 7) who were drawn from the eight hospitals included in the study. Study researchers made frequent visits to the study wards and invited all eligible members of staff on duty to participate, of whom 206 staff from 18 wards took part.

Data collection

Demographic Questionnaire

The demographic questionnaire was a self-administered instrument designed to ascertain information on the participant's age, gender, ethnicity, relationship status, presence of co-habiting dependents and details of work experience. Participants also completed questions to ascertain the number of years in their current post, years working in psychiatry, occupation, exposure to mild physical violence during the past year, exposure to severe physical violence during the past year, grade of pay (as an indication of experience) and any prevention and management of aggression training (of at least 3 days). For each question, participants selected a response from a choice of pre-determined items.

Attitude to Containment Measures Questionnaire version two (ACMQv2)

The ACMQv2 is a self-administered instrument assessing views on the acceptability of 11 different methods of containment for disturbed behaviour to include: Pro Re Nata (PRN) medication, seclusion, manual restraint, time out, intermittent observation, compulsory intramuscular sedation,

psychiatric intensive care, mechanical restraint, constant observation, net bed and open area seclusion (Bowers *et al.* 2004). By open area seclusion we mean seclusion in a side room that has been emptied to be used for the purpose of seclusion and may be locked. By net bed we refer to a net cage that can be secured on top of a patient bed; a method of containment sometimes used in Eastern Europe (Bowers *et al.* 2007). Each listed coercive measure is accompanied by a short description and a visual illustration. The participant is asked to rate the acceptability of each method by selecting one response from a five-point Likert scale (ranging from strongly agree to strongly disagree) and to indicate whether he or she has ever used the method of containment (yes or no).

The Moylan Progression of Aggression Tool (MAPAT, Moylan 2009)

The MAPAT was designed to identify differences in nurses' decision making in relation to the need for manual restraint of an aggressive patient (Moylan 2009). The MAPAT consists of a 300 second video showing interactions between a nurse and a patient who is becoming increasingly agitated and aggressive, culminating in a serious physical attack on the nurse (strangulation at 280 seconds). The participant watching the video is told that he or she is a nurse standing by with a team of other nurses available to assist, should the situation escalate. The participant is asked to push a button when he or she considers that, were this a real situation occurring in the service context where they work, restraint should be initiated.

Procedure

Testing took part in a quiet room; participants were asked to complete paper versions of both the demographic questionnaire and ACMQv2 and the MAPAT was administered on a laptop computer. Participants were debriefed and thanked for their time.

Ethical considerations

Ethical approval was granted by a University Ethics Committee, with National Health Service (NHS) research and development approval obtained at each participating trust. After a complete description of the study, written informed consent was obtained. Staff members completed the study at their hospital site, on the ward on which they worked. After completion, participants were asked not to discuss the tasks to other staff members to prevent contamination.

Data analysis

Spearman's rank-order correlations were calculated to determine the relationship between service configuration and the items from the demographic questionnaire. Chi-squared tests were performed to explore the relationships between service configuration and gender, as well as service configuration and prevention/management training. Significant associations between service configuration and demographic variables were further examined using logistic regression modelling with seclusion provision and PICU provision as predictors.

Spearman's rank-order correlations were calculated to determine the relationship between service configuration and individual items of the ACMQv2 with significant associations further tested using logistic regression. A chi-square test of independence was performed to examine the relationship between use of each containment method and service configuration.

Reactions during the MAPAT had a bimodal distribution and scores were categorised to match their distribution as follows: (i) <=224 seconds, (ii) 225-250 seconds, (iii) >=251 seconds. In time frame one, a patient displays signs of agitation by pacing, fidgeting and becoming agitated when a nurse attempts to verbally de-escalate. In time frame two, the patient displays similar agitation and is verbally abusive and threatening to the nurse. In time frame three, the patient hits a piece of furniture, shoves a chair out of the way whilst approaching the nurse, finally attempting

strangulation. Spearman's rank-order correlations were run to determine the relationship between MAPAT time-to-restraint and other questionnaires. Chi-square tests were performed to explore the relationships between MAPAT score and use of containment method. Using ordinal regression, MAPAT score was modelled using seclusion provision and PICU provision as predictors.

Validity, reliability and rigour

The ACMQ has good Face validity and is acceptable to users (Bowers *et al.* 2007a). It has been used in four countries to measure the acceptability of different containment methods (Bowers *et al.* 2007).

The MAPAT exhibits high test-retest validity (r = 0.89, Moylan 2009) and has shown associations with past experience of violent assault by a patient causing injury (Moylan & Cullinan 2011).

RESULTS

Table one summarises the demographic features of the sample (count and percent).

When tested in a logistic regression model with seclusion as the dependent variable and controlling for PICU access, seclusion was not associated with any of the demographic information. When tested in a logistic regression controlling for seclusion availability, the absence of an onsite PICU was associated with greater numbers of female staff (p = 0.034).

ACMQv2

The means and standard deviations of each item from the ACMQv2 are illustrated in Table two. Containment methods have been ranked in order of acceptability, starting from most acceptable to least acceptable.

PICU, intermittent observations and PRN medication received the highest approval ratings, while mechanical restraint and net beds received the lowest. Open area seclusion, mechanical restraint and seclusion showed the greatest variability in approval scores. Access to a seclusion room was associated with greater acceptability of seclusion as a method of containment (r_s = 0.25, n = 198, p < 0.001) and lower acceptability of open area seclusion (r_s = -0.23, n = 199, p = 0.001). When tested in a logistic regression controlling for PICU access, seclusion acceptability remained significantly associated with seclusion availability (p < 0.001), however, open area seclusion acceptability was no longer significant.

Participants were asked to identify whether they had ever used any of the 11 methods of containment indicated by a response of 'Yes' or 'No'. Frequency (and percent) of total responses can be seen in Table two. Intermittent observations, constant observations and manual restraint were used by most members of staff, while mechanical restraint and net beds were used the least. It is likely that the use of net beds is limited to Eastern Europe where this method of containment is still used (Bowers *et al.* 2007). It is also likely that the use of mechanical restraints is limited to forensic settings in acute admission wards.

The availability of a seclusion room was associated with a greater reported use of seclusion (r_s = 0.548, n = 196, p < 0.001) and time out (r_s = 0.152, n = 200, p = 0.032) and a lesser use of open area seclusion (r_s = - 0.181, n = 201, p = 0.010). When entered into a logistic regression controlling for PICU access, greater reported use of seclusion (p < 0.001) and less open area seclusion use (p = 0.001) remained significant, whereas reported time out use did not (p = 0.715).

The availability of an onsite PICU was not statistically associated with any containment method acceptability score. The availability of an onsite PICU was associated with less reported use of open area seclusion (r_s = -0.154, n = 201, p =0.029). This association remained significant (p = 0.048) when tested in a logistic regression equation controlling for seclusion availability.

MAPAT

Using Spearman's rank-order correlation, MAPAT time-to-restraint was not associated with demographic information or details of current post. Table three shows the frequency (and percent) of responses for each of the three time frames during the MAPAT across seclusion and PICU provision.

MAPAT timings were inversely associated with seclusion availability (r_s = - 0.258, n = 186, $p < 0.001$) but were not associated with PICU availability. Using logistic regression with seclusion availability as the dependent variable, controlling for PICU availability, MAPAT times remained highly significant ($p < 0.001$). Where there was no seclusion room available, staff took longer and allowed a greater degree of escalation before initiating restraint, as indicated by higher MAPAT scores.

MAPAT scores were also explored in relation to ACMQv2 scores. The MAPAT timings were positive associated with participants judgements of mechanical restraint acceptability (r_s = 0.190, n = 179, p = 0.011) and net bed acceptability (r_s = 0.168, n = 177, p = 0.025). A longer time before restraint was initiated was associated with greater acceptability of these containment methods. MAPAT scores were not associated with the reported use of any of the containment methods on the ACMQv2.

DISCUSSION

Acute psychiatric wards such as those taking part in the current study manage patients whose actions may threaten safety to themselves and hospital staff. Previous studies evaluating the acceptability and/or use of different containment methods in mental health services (Muir-Cochrane *et al.* 2009, Whittington *et al.* 2009, Bowers *et al.* 2010, Dack *et al.* 2012) have not considered the association between access to seclusion and/or PICUs and acceptability/use of different containment methods. Those that have considered ratings of acceptability have shown that staff rate seclusion as less acceptable than nearly every other form of containment and PICU care as one

of the most acceptable forms of containment (Whittington *et al.* 2009). Staff taking part in the current study did indeed rate seclusion as less acceptable then PICU, intermittent observations, constraint observation, PRN, time out and manual restraint. PICU was rated as the most acceptable form of containment.

Service configuration is associated with acceptability and use of seclusion, open area seclusion and time out

Acceptability and use of seclusion is related to its access. No such associations were found between PICU access and its acceptability and use. Seclusion use has been shown to increase when a seclusion room is directly available to the ward (consistent with Bowers *et al.* 2012), suggesting that with first-hand experience of seclusion room use, staff members are more likely to approve of it as a method of containment. Seclusion is regarded as more effective in aiding with emergency situations than other methods of containment (Cashin 1996) and those with access to a seclusion room reported that without use of this room, the unit could not operate effectively (Alty 1997). It is therefore likely that with first-hand experience, staff members do consider seclusion to be an acceptable and suitable method of containment in particular situations and this is reflected in its use. Another possibility may be that some form of cognitive dissonance (Festinger 1957) process might underlie this association, with nurses exposed to and therefore involved in seclusion use shifting their beliefs to fall in line with their behaviour.

One study suggested that the availability of a seclusion room made staff believe they were providing more effective care, with the use allowing staff to become more accustomed to it, leading them to rate seclusion as less intrusive to patients than staff who had never secluded a patient on the same site (Harris *et al.* 1989). Alternatively, it is possible that members of staff with strong feelings against seclusion room use perhaps avoid working at wards with direct access to one. All things considered,

it is possible seclusion units are being overused at sites with direct access to one, with evidence that some staff members conform to the use of seclusion rooms when seclusion rooms are available, feeling discriminated against if they suggested alternative methods (Fisher 1995). The concern that seclusion could be abused, for example, by being over used when available, or used as a substitute when staffing levels are decreased has been expressed by some authors (Alty 1997, Wynaden *et al*. 2002). This has important implications since patient's rate seclusion as unacceptable compared with other methods of containment (Whittington *et al.* 2009).

For those without direct access to seclusion, staff members are more likely to approve of open area seclusion and this method of containment was more commonly used by staff on wards without onsite seclusion and PICU. Open area seclusion is more often referred to as 'nursing in a side room' or as the use of an 'extra care area'. The ACMQv2 defines seclusion as 'a patient being isolated in a locked room' and open area seclusion as 'a member of staff stays in the locked room with the patient'. Both seclusion and open area seclusion fit under the umbrella term of seclusion in recent UK guidance (Department of Health 2015) and it is possible that wards without defined seclusion rooms are simply substituting this for a different type of seclusion.

Seclusion provision and not PICU provision, is associated with time-to-restraint in response to aggressive behaviour during the MAPAT

Time-to-restraint in response to aggressive behaviour during the MAPAT was strongly and significantly associated with seclusion provision but not PICU provision and, in places without seclusion, there was a longer time lapse before staff initiated restraint. In units without seclusion, staff members tolerated higher levels of aggression before choosing to restrain during the MAPAT. Previous studies have suggested that staff without access to seclusion rate their methods of containment as less effective in resolving emergency situations (Cahin 1996). This lack of confidence

could explain delayed time-to-restraint during the MAPAT. There was no association between PICU access and MAPAT score, despite the fact that onsite PICU availability leads to increased use (Bowers *et al.* 2012[a]). Possibly this is because, unlike seclusion which can be utilised immediately, a transfer to PICU care takes some time to organise and occurs after the immediate crisis is over.

Other findings

There was no association between MAPAT time-to-restraint and manual restraint acceptability or between MAPAT time-to-restraint and use of manual restraint. Thus, it was not the acceptability of restraint which was driving the difference in MAPAT scores, but perhaps more likely a rational calculation about managing outcomes, to which seclusion availability seems to be of influence.

Whilst mechanical restraint and net beds remain the two containment methods with lowest acceptability ratings, greater acceptability was associated with longer time-to-restraint during the MAPAT. Although the reasons for this are unclear, it is possible that staff members who are less judgemental of these methods of containment tolerate more extreme patient behaviours and thus react more slowly.

The current study found that initiation of restraint was not associated with exposure to either mild or severe physical violence. This conflicts with previous research by Moylan and Cullinan (2011) using the MAPAT where staff members who had suffered from injury at work took longer to initiate restraint than those with no history of injury. The authors suggested it was fear itself that delayed the restraint process. Moylan and Cullinan's (2011) study considered associations between injury and serious injury, where type of injury was clearly defined (evidence of fracture, for example). Our study did not ask participants to be so detailed with their exposure to physical violence and was more subjective in comparison. In addition, the majority of staff included in our study had not experienced severe physical violence over the past year (66%) and only occasional mild violence

(42.3%). Thus, the different methods of investigation between these studies and different levels of exposure to violence between participants taking part in these studies may account for the differences in findings.

Limitations

The sample was representative of two urban regions in England (London and the North-West). Not all staff participated in the study, with 9.71% of staff not completing the MAPAT. Some degree of response bias may be a possibility. Participants may have previously worked at hospitals with or without seclusion/PICU availability and this may have had an impact on the results. ACMQv2 scores are valid and have previously been confirmed to be related to usage, however generic acceptability ratings ignore potential variation by specific types of behaviour such as aggression, self-harm or mania. Different scenarios may influence judgments of acceptability. Whilst the MAPAT has been rigorously developed, the extent to which MAPAT scores correlate with actual restraint use in practice is not known; nor is there any criterion for judging what score represents the optimum, or best for a safe outcome. As such, the validity of the MAPAT is unclear.

Conclusion

Data on the use of seclusion and restraint worldwide are barely available (Steinert *et al*. 2008) and this study offers some insight into the use of seclusion and restraint and the acceptability of these methods, which have generated controversial debates regarding their use (LeBel & Goldstein 2005, Needham *et al*. 2002). Current developments in small observational and theoretical based research cast doubt on the safety of both seclusion and restraint as containment methods on patients and staff (Bowers *et al.* 2003, Parks & Carson 2008, Bowers *et al.* 2012) however research suggests that it would not be possible to completely abolish the use of seclusion and

restraint (Steinert *et al*. 2008). In this study, availability of seclusion appears to drive both approval of it and its use. With first-hand experience, staff members are more likely to consider seclusion as an acceptable method of managing aggressive incidents. Seclusion being a suitable method for managing aggressive incidents is also reflected in the increased use of open-area seclusion in the absence of a seclusion room. It should be considered however that seclusion may be over used where it is available.

While this study raises important questions about clinical practice, particularly the links between the availability, approval of and use of seclusion, coupled with the faster use of manual restraint as judged by the MAPAT, none of these findings constitute evidence that seclusion can be safely abandoned. Faster restraint may in fact be safer for staff and patients. Secluding a patient might be safer than not doing so. It is therefore difficult to make any clinical recommendation based on this study alone.

PICU is a more acceptable form of containment to acute ward staff than several other methods, yet staff members in some hospitals do not have easy and speedy access to it when they are managing disturbed high risk patients. Improvements in service configuration might include easier access to a PICU. Absence of seclusion was associated with delayed time-to-restraint during the MAPAT task, yet the nature of this link is somewhat obscure as judgments of the acceptability of seclusion were not related to restraint thresholds. Nor was the acceptability of manual restraint itself linked to that threshold. More research into the underlying staff psychology of containment evaluations, cognitions, emotions, morality and usage is clearly needed.

Author Contributions:

All authors have agreed on the final version and meet at least one of the following criteria (recommended by the ICMJE*):

1) substantial contributions to conception and design, acquisition of data, or analysis and interpretation of data;

2) drafting the article or revising it critically for important intellectual content.

* http://www.icmje.org/recommendations/

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Table 1: Demographic features of the sample.

		n	%
Service configuration			
	Yes Seclusion & PICU[1]	49	23.2
	Yes Seclusion & no PICU[1]	48	22.7
	No Seclusion & yes PICU[1]	51	24.2
	No Seclusion or PICU[1]	63	29.9
Demographics			
Age (years)			
	20 – 29	44	21.6
	30 – 39	44	21.6
	40 – 49	53	25.9
	50 – 59	54	26.5
	> 60	9	4.4
Gender			
	Male	86	42.2
	Female	118	57.8
Ethnicity			
	White	118	58.1

[1] Psychiatric Intensive Care Unit

	Caribbean	9	4.4
	African	57	28.1
	South Asian	4	19.7
	Other	15	7.4
Relationship status			
	Single	64	31.4
	Separated	15	7.4
	Widowed	4	1.9
	Married/cohabiting	121	59.3
Dependants			
	<12 years	39	19.3
	12 – 21 years	46	22.8
	Other	3	1.5
	None	114	56.4
Details of current post			
Years at current post			
	<1 year	43	21.2
	1 – 3 years	60	29.6
	3 – 5 years	29	14.3
	>5 years	71	34.9
Experience in psychiatry			
	<1 year	15	7.4
	1 – 3 years	31	15.2
	3 – 5 years	30	14.7
	>5 years	128	62.7
Occupation			
	Nurse	130	63.1
	Health Care Assistant	69	33.5

Therapist	2	0.9
Other	5	2.5
Pay Grade		
2	5	2.7
3	65	34.6
4	7	3.7
5	74	39.4
6	27	14.4
7	8	4.3
8	2	1.1
Violence related training (past year)		
Yes	148	90.2
No	16	9.8
Exposure to mild violence (past year)		
Occasionally	87	42.3
Sometimes	48	23.3
Often	30	14.6
Frequently	31	15.0
Never	10	4.9
Exposure to severe violence (past year)		
Occasionally	43	20.9
Sometimes	16	7.8
Often	6	2.9
Frequently	5	2.4
Never	136	66.0

Table 2: Acceptability score of each containment method, and proportion of staff reporting they had used each method.

Containment method	Mean	Std. Dev	n used	% used
PICU[2]	4.46	0.59	167	84.8
Intermittent observation	4.45	0.77	195	97.0
PRN[3] medication	4.37	0.70	139	73.9
Constant observations	4.28	0.77	194	97.0
Time out	4.24	0.80	173	86.9
Manual restraint	4.06	0.80	179	89.9
Seclusion	3.95	0.96	132	67.3
Intramuscular medication	3.94	0.92	135	68.9
Open area seclusion	3.34	1.02	53	26.4
Mechanical restraint	1.91	0.99	5	2.5
Net bed	1.77	0.89	1	0.5

[2] Psychiatric Intensive Care Unit

[3] Pro re nata

Table 3: Frequency of response (and percent) during the MAPAT[4] across service configuration.

	MAPAT[1] times in seconds		
	<224	225-50	>250
	n(%)	n(%)	n(%)
Seclusion access on site			
Yes	16 (19.5%)	38 (46.3%)	28 (34.1%)
No	6 (5.8%)	39 (37.5%)	59 (56.7%)
PICU[5] access on site			
Yes	12 (12.9%)	33 (35.5%)	48 (51.6%)
No	10 (10.8%)	44 (47.3%)	39 (41.9%)

[4] The Moylan Progression of Aggression Tool

[5] Psychiatric Intensive Care Unit