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ORIGINAL RESEARCH

The scope for replacing seclusion with time out in acute inpatient psychiatry in England

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Abstract

Background. The use of seclusion is unpalatable to nurses and frequently unpleasant for patients. Time out is rated by nurses and patients as more acceptable. Several countries have initiated exercises to reduce the use of seclusion, but England has not.

Methods. In this study, data were collected on the sequence of conflict (aggression, rule breaking, absconding etc.) and containment (coerced medication, restraint, special observation etc., including time out and seclusion) for the first 2 weeks of 522 acute admissions on 84 wards in 31 English hospitals between June 2009 and March 2010. Data were analysed to describe what preceded and followed time out and seclusion episodes in a nursing shift.

Results. Seclusion was used with 7·5% of patients, and time out with 15·5%. Both containment methods were used with similar patients in similar circumstances, and both brought disturbed behaviour to a close in half of the cases. Some seclusion appeared to follow less serious disturbed behaviour. There was an important variation in rates of seclusion between hospitals. Seclusion and time out had equally good outcomes in the management of physical violence to others.

Conclusions. There is good evidence that seclusion rates can be reduced safely, and time out can sometimes be used as a substitute. A national registration and reporting system should be introduced in England, and serious efforts made to reduce seclusion use in hospitals where rates are high.

Keywords: disturbed behaviour, inpatients, psychiatric nursing, psychiatry wards, safety, seclusion

Background

Seclusion means the isolation of a patient in a locked room. As such it is an unpleasant intervention, generally disliked by patients and nurses who use it. Reasons why seclusion is used include: violence towards property (Ahmed & Lepnurm 2001); verbal aggression or threats (Sullivan *et al.* 2004); threats of self-harm or actual self-harm (O'Brien & Cole

2003); physical aggression to others (El-Badri & Mellsop 2002); and severe psychiatric symptoms or disturbed behaviour (O'Brien & Cole 2004). Patients report that being secluded makes them feel, angry (Meehan *et al.* 2004), abandoned (Hoekstra *et al.* 2004), depressed (Tooke & Brown 1992) and punished (Holmes *et al.* 2004). Nurses report conflicted feelings about seclusion use, considering it to be beneficial, but feeling guilty and disappointed that situations were not resolved in a more benign fashion (Exworthy *et al.* 2001).

Partly due to these mixed feelings, coupled with a wish to make psychiatry less coercive and to improve partnership with service users, a number of countries have been working to reduce its use, namely the United States of America (USA; American Psychiatric association 2003), Australia (Australian Government 2008) and the Netherlands (Abma *et al.* 2005, Janssen *et al.* 2008). These initiatives have for the most part not influenced practice in the United Kingdom (UK), perhaps partly because seclusion reduction is coupled with reduction in the use of mechanical restraint (which is not used in the UK); and partly because seclusion appears to be used at a low rate in the UK, and in some hospitals not at all (Bowers *et al.* 2010). The only UK policy and practice guidelines on the use of seclusion specify the nature of the room to be used (Department of Health 2002) or that staff who use seclusion should be trained in basic life support skills, have resuscitation equipment available, only use seclusion as a 'last resort' and that patients should be treated with respect, be reviewed every 2 hours whilst in seclusion, be kept under observation, their care plan reviewed following an incident of seclusion and that usage of seclusion should be monitored locally (National Institute for Clinical Excellence 2005; Department of Health 2008).

Most previous studies of seclusion have relied on the analysis of official incident reports, and there have been no recent studies in the UK on the circumstances in which it is used. It has therefore not been possible to say with any certainty whether the UK could or should also reduce the use of seclusion, in line with other international efforts. We have suggested elsewhere, based on outcomes from the City-128 study, that it may be possible to substitute some use of seclusion with the less coercive and more acceptable practice of 'time out' (Bowers *et al.* 2010). Time out means asking a patient to stay in a room, usually their bedroom, alone and on a consensual basis, until they have become calm. In this paper we analyse data collected from 31 English hospitals on the order of conflict and containment events for individual patients, with particular attention to time out and seclusion, conducting a comparative evaluation of their circumstances of use and outcomes.

Methods

Design

Retrospective case notes review.

Sample

A random sample was obtained of adult (18–65 years old) patients in acute psychiatric wards and psychiatric intensive care units in London and surrounding areas, excluding patients hospitalized for <2 weeks. A minimum of three patients per ward were recruited. Over half of the sample (54%) were men, white (68%) and voluntary (60%) admissions. The mean age was 41·1 years (SD = 13·04).

Instrument

For each selected patient: involvement in incidents of conflict (e.g. self-harm, absconding, violence, medication refusal) and containment (e.g. intermittent special observation, constant special observation, manual restraint etc.) during the first 2 weeks of the current admission using the Patient-staff Conflict Checklist (PCC) case notes version. This scale is accompanied by strict definitions and has shown an inter rater reliability of 0·69 (Bowers *et al.* 2005). The definition of seclusion in this scale is 'isolated in a locked room' that of time out is 'patient asked to stay in room or area for period of time, without the door being locked'. For seclusion episodes, the starts and ends of seclusion were collected as separate events, for time out only the commencement of time out was collected, and the cessation of time out was not well documented in the notes. For this study the PCC was expanded and a computerized version created, so that the order of events within shifts and days could be collected, and counts of events recorded. In addition demographic data were collected (e.g. age, gender, place of birth); ethnicity (using the 16 categories used in the 2001 UK population census and the recent national inpatient census); diagnosis; living group; previous admissions; history of substance use; history of aggression towards self or others, height, weight and Mental Health Act status.

Procedure

The study was approved by Kings College Hospital Research Ethics Committee, received local R&D approval in each NHS Trust, and was adopted by the Mental Health Research Network. Patients were eligible to participate if they were inpatients of the selected acute wards, met the study criteria,

were present on the ward when the survey was conducted, were well enough and safe enough to be approached as judged by the ward staff, and gave written informed consent to take part in the study.

When visiting a ward, the researchers liaised with nursing staff to identify eligible patients, of whom six were randomly selected to participate (judged to be the maximum that could be recruited per researcher day). The researcher approached selected patients and provided them with information about the study. Those patients who agreed to discuss the study were given an information sheet and had the opportunity to raise any concerns with the researcher, before being asked to consent. Nine hundred and seventy-three selected patients were thought by nursing staff to be too ill to safely approach or were off the ward at the time of the researcher's visit (e.g. on leave). A further 407 selected patients refused to participate, with the most frequent concern being the confidentiality of information in the case notes. Demographic characteristics had a good match to a previously collect sample of over 11,000 admissions to acute psychiatric wards in England (Bowers *et al.* 2008b): proportion male, this sample 53% vs. reference sample 49%; proportion white British 68% vs. 73%; although this sample was older, proportion 35 years and under 37% vs. 55%. The proportion of the sample detained under the mental health act on admission was 40%, as compared to 47% across all psychiatric services reported by a recent census (Care Quality Commission 2010). After informed consent was obtained the researcher accessed the patient's medical and nursing records for approximately 60 minutes to complete the PCC. Data were entered directly on to a laptop computer. In addition to two City University researchers, 18 Mental Health Research Network Clinical Studies Officers were also trained to collect data from the participating wards.

Analysis

Data were collected on 522 patients on 84 wards in 31 hospital locations between June 2009 and March 2010. Following compilation of the dataset, data were organized so that each row represented the sequence of events in one 'patient-shift', i.e. each patient in the study had 42 rows in the dataset, each representing one nursing shift during the first 2 weeks of their admission, with the rest of the row detailing the order and nature of conflict and containment events (if any) during that nursing shift. The majority of 'patient-shifts' had no events at all (17,596, 80%), the remaining 4328 patient-shifts had a total of 9691 events of either conflict or containment.

For this analysis, sequences including time out or seclusion (starting or ending) were selected and subject to descriptive analysis of sequence starts, all events before, all events after and sequence ends. Further descriptive analysis took place to ascertain the order of key events, and to describe the pattern of absence/presence of others. Confidence intervals for proportions were calculated using the method of Wilson (1927).

Patients' demographic and other information were matched to the sequences so that the number of patients subject to time out or seclusion, and the number of times they were subject to it were identified. Spearman's correlation was used to test the relationship of seclusion and time out within patients. Those patients subjected to time out or seclusion in the first 2 weeks were compared with those who were not, using chi-square and *t*-tests. Using the same statistical tests, those who experienced more than one time out or seclusion were compared with those experiencing only one episode. In both cases all variables with important ($P < 0{\cdot}05$) univariate associations were entered into a multivariate logistic regression models to identify those which remained significantly associated with either seclusion or time out.

Results

Frequency of use

A total of 39 participants (7·47%, 95% CI: 5·15–9·65%) were secluded once or more, during the first 2 weeks of their admission. Ten of these participants were secluded more than once, and a total of 59 seclusion episodes were recorded. The duration of 28 (53%) of these episodes was less than one shift, 20 (38%) episodes continued from one shift to a second, and the remainder (5, 9%) were longer (a few seclusions had no end point recorded in the nursing notes). A larger number of participants ($n = 81$, 15·52%, 95% CI: 12·41–18·63%) were subject to time out once or more. Time out was also more likely to be used repeatedly with the same patient, as 37 participants were subject to it more than once, and a total of 162 episodes were recorded. Figure 1 displays the rates of seclusion and time out by hospital, ordered by the rate of seclusion. About a third of hospitals either did not use seclusion at all with this patient group, or used it so rarely that they exhibited a zero seclusion rate in the sample. A further third of hospitals secluded approximately one in 20 patients, and the remaining third secluded between one in ten and one in four patients. The use of time out was more frequent, but there were still some hospitals that recorded no instances of either. Although there is a positive correlation between the proportion of patients subject to seclusion and

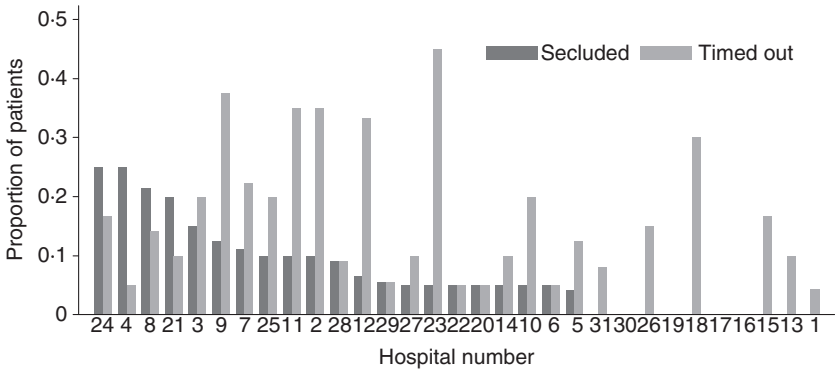

Figure 1 The proportions of patients secluded and timed out by hospital, ordered by the proportion secluded.

time out (Spearman $r = 0{\cdot}443$, $P = 0{\cdot}014$), it can be seen from the chart that the top third of secluding wards used time out less frequently, whereas the remaining wards used time out as much if not more frequently than seclusion.

Seclusion event sequences

Table 1 displays the relative frequency of different event types before, during and after seclusion. To aid clarity, events occurring five or less times have been excluded. The columns display the frequency of sequence starts (what the first event was during the shift when a patient's seclusion occurred), all before (the total number of events preceding the start of seclusion, including the sequences starts), within (those events occurring during the seclusion, i.e. whilst they were in the seclusion room by themselves, being brought in, or being attended to whilst there), all after (all the events occurring after the patient was released from the seclusion room and still during the shift of the release, including the final event of the sequence), and sequence ends (the last event occurring prior to the end of the shift).

The most common start to a sequence of events leading to seclusion was aggressive behaviour by the patient, followed by a change of status under the mental health act (legal detention of a previously voluntary patient) or transfer to a locked psychiatric intensive care unit. On just over 10% of occasions, seclusion was the first event, and this was generally during the first shift of the admission. The primacy of aggression is underlined by the fact that aggression formed 35% of all precursor events to seclusion. Attempts at de-escalation were also prominent prior to the seclusion commencing. On a small number of occasions successful or

Table 1 Seclusion event sequences

	Starts		All before		Within		All after		Ends	
	n	%	*n*	%	*n*	%	*n*	%	*n*	%
Start seclusion	7	12	7	3	0	0	0	0	0	0
Aggression/violence	22	39	72	35	42	38	10	11	4	7
Self harm/suicide attempt	2	4	4	2	5	4	0	0	0	0
Rule breaking	3	5	6	3	1	1	6	6	3	5
Absconding/attempts	3	5	12	6	0	0	0	0	0	0
Refused medication	1	2	9	4	2	2	3	3	1	2
De-escalation	4	7	27	13	6	5	1	1	0	0
Given PRN medication	3	5	13	6	18	16	14	15	6	11
MHA status change/PICU start	11	19	15	7		0	2	2	1	2
Manual restraint	0	0	19	9	4	4	0	0	0	0
Coerced IM medication	0	0	7	3	2	2	0	0	0	0
Time out	0	0	8	4	1	1	7	7	2	4
Start constant observation	0	0	1	0	1	1	10	11	4	7
End constant observation	0	0	2	1		0	2	2	1	2
Start intermittent observation	0	0	1	0	3	3	8	8	4	7
End intermittent observation	0	0	0	0	0	0	2	2	0	0
Nothing	0	0	0	0	27	24	0	0	0	0
End seclusion	1	2	2	1	0	0	30	32	30	54

Table 2 Behaviour preceding seclusion

n	%	Behaviour preceding seclusion
17	30	Physical violence to others
11	19	Violence to objects
7	12	Only verbal violence
		4/7 Secluded immediately on admission
		1/7 Verbal aggression coupled with medication refusal
		1/7 Verbal aggression in a patient with many previous verbally aggressive episodes
		1/7 Drug and alcohol consumption, coupled with a suicide attempt and enforced transfer (using restraint) to PICU
22	39	No violence preseclusion
		6/22 All events by one patient, with a history earlier in the admission of masturbating publicly (2), exposing himself (1), and non-consensual sexual touching (1). No history during the admission of any violence prior to the first few seclusions, but later on he was violent several times, having a prior history of harm to others.
		5/22 Secluded immediately on admission
		4/22 Related to absconding attempts, two involving physical struggles to detain the patient, and two returns following a successful abscond (? intoxicated)
		2/22 Same patient on two consecutive shifts directly after admission, the first after attempting to abscond, and the second after self-harming
		1/22 Aggression to objects in the immediately preceding shift and prior to transfer to PICU
		1/22 Physically violent in the immediately preceding shift
		1/22 Verbal aggression immediately preceding the shift, and history of repeated confrontations with staff over medication, several restraints and coerced IM injections prior to this seclusion
		1/22 Patient refused to get up and refused to wash
		1/22 Exposing self in public areas

unsuccessful absconding attempts preceded seclusion. Violence and aggression did not immediately cease during the seclusion, and the giving of pro re nata (PRN) medication during seclusion was common. Aggression was much less common after seclusion, and the events change to further forms of less severe containment, such as special observation, time out and further PRN medication. However, the largest proportion of sequences end completely with the cessation of seclusion, with no other events taking place afterwards.

Table 2 summarizes the behaviour of patients prior to seclusion, giving more detail about those people who were secluded after only having been verbally aggressive, or who had apparently not been aggressive at all. A few of these might be explained by incomplete information in the nursing notes, from which the data were derived. In addition, a small but important number of seclusions occur just following admission, and may relate to violent resistance exhibited prior to the patient's arrival on the ward. However, in most other cases the seclusion appears difficult to justify, with less severe forms of containment appearing to be possible, unless the nurses on duty at the time had further information about the risks posed by the patients' concerned, information that was not available to the researchers.

Time out sequences

Table 3 shows the relative proportions of sequence starts, precursors, after events and sequence ends for time out. Aggression was more prominent as a precursor of time out than for seclusion, accounting for more than 50% of sequence starts and more than 40% of precursors overall. Apart from the sequences that commence with time out, no other event type was noticeably common, apart from perhaps de-escalation. Most time outs concluded the sequences, with no further conflict or containment occurring during the shift. Aggression did continue in 17% of cases, de-escalation continued and PRN medication was also widely used with time out. Small numbers of almost the whole range of containment measures occurred following time out, and there was a small amount of movement from time out to seclusion.

Seclusion and time out compared

Both seclusion and time out seem to bring sequences of disturbed behaviour to a conclusion. However, a breakdown of the aggression figures shows that time out was disproportionately used for verbal aggression (56% of aggression leading to time out was verbal, 20% verbal for seclusion), whilst seclusion was used for physical aggression (49% of aggression leading to seclusion was physical, vs. 19% for time out), and this difference was statistically significant ($\chi^2 = 18{\cdot}44$, $P < 0{\cdot}001$).

There were 17 shifts for which seclusion was initiated after physical violence to others. After the seclusion was initiated, there were three instances of physical aggression to others during the shift concerned, 3/17 yielding a rate of 18%. There were 33 shifts where there was physical violence to others before time out was initiated, and after time out was started there were two instances, 2/33 yielding a rate of 6%. This difference was not statistically significant.

Patient characteristics

Participants subjected to seclusion, compared to those who were not, were significantly younger (mean age 37 years vs. 41 years, $t = 2{\cdot}21$, d.f. = 520, $P = 0{\cdot}03$), more likely to have a history of drug use ($\chi^2 = 4{\cdot}56$, d.f. = 1, $P = 0{\cdot}03$), and more

Table 3 Time out event sequences

	Start		All before		All after initiation		End	
	n	%	*n*	%	*n*	%	*n*	%
First event time out	21	13	21	7		0		0
Aggression/violence	90	57	145	45	46	17	10	6
Sexual aggression	0	0	4	1	2	1	0	0
Rule breaking	7	4	10	3	16	6	8	5
Drug/alcohol	1	1	2	1	0	0	0	0
Absconding/attempts	4	3	8	2	4	1	1	1
Medication refusal	9	6	17	5	11	4	2	1
Self-harm/suicide attempt	2	1	4	1	0	0		0
De-escalation	7	4	38	12	26	10	9	6
PRN medication	6	4	25	8	44	16	30	19
MHA status change/PICU start	5	3	5	2	2	1	1	1
Show of force		0	8	2	4	1	1	1
Manual restraint	1	1	17	5	7	3	2	1
Coerced IM medication	0	0	3	1	4	1	2	1
Start constant observation	0	0	6	2	5	2	1	1
End constant observation	0	0	0	0	5	2	3	2
Start intermittent observation	2	1	2	1	5	2	5	3
End intermittent observation	1	1	1	0	1	0	0	0
Start seclusion	0	0	1	0	8	3	3	2
End seclusion	2	1	5	2	4	1	2	1
Last event time out		0		0	78	29	78	49

likely to have a history of harm to others ($\chi^2 = 15{\cdot}43$, d.f. = 1, $P < 0{\cdot}001$). When these three variables were combined in a logistic regression equation (controlling for clustering by hospital), a past history of drug use [Odds Ratio (OR) = 1·24, $P = 0{\cdot}533$] and age (OR = 0·98, $P = 0{\cdot}184$) became insignificant, and a history of harm to others remained important (OR = 4·84, $P = 0{\cdot}002$). The only difference between those secluded once and those secluded on multiple occasions was that the latter were heavier (mean weight 91 kg vs. 75 kg, $t = -2{\cdot}14$, d.f. = 18, $P = 0{\cdot}046$). There were no differences in the characteristics of those secluded on admission ($n = 15$) compared to those secluded later in their stay ($n = 24$).

Participants subjected to time out, compared to those who were not, were significantly younger (mean age 36 years vs. 42 years, $t = 4{\cdot}16$, d.f. = 520, $P < 0{\cdot}001$), more likely to have a history of drug use ($\chi^2 = 8{\cdot}57$, d.f. = 1, $P = 0{\cdot}003$), and more likely to have a history of harm to others ($\chi^2 = 15{\cdot}43$, d.f. = 1, $P < 0{\cdot}001$). In addition, patients from an ethnic minority were more likely to be subject to time out than those from the majority ($\chi^2 = 14{\cdot}71$, d.f. = 1, $P < 0{\cdot}001$). When these four variables were combined in a logistic regression equation (controlling for clustering by hospital), a past history of drug use became insignificant (OR = 1·10, $P = 0{\cdot}734$), with age (OR = 0·97, $P = 0{\cdot}01$), ethnicity (OR = 1·88, $P = 0{\cdot}031$) and history of harm to others (OR = 4·44, $P < 0{\cdot}001$) remaining important. The only difference between those timed out once and those timed out on multiple occasions was that the latter were heavier (mean weight: 92 kg vs. 73 kg, $t = -2{\cdot}97$, d.f. = 41, $P = 0{\cdot}005$).

Neither those secluded or those timed out differed from others on gender, diagnosis, marital status, history of alcohol use, history of self-harm, height or weight.

Discussion

Of this sample of 522 patients from acute wards and psychiatric intensive care units in 31 hospitals, 7·5% were secluded once or more in the first 2 weeks of their admission, and 15·5% were subject to a least one time out. Wide variance in rates were visible across hospitals, and whilst there was a positive correlation between the use of the two measures, the highest third of seclusion using hospitals had lower rates of time out use. Seclusion and time out were preceded in the main by aggressive patient behaviour, with time out being used more frequently following verbal aggression, and seclusion following physical violence to others. However, both containment methods were used with patients with a similar risk profile and other characteristics, and when used following physical violence had similarly benign outcomes. An important proportion of seclusions was not preceded by violence.

What is already known about this topic

- Seclusion and time out are used in the management of risky and disturbed behaviour on psychiatric wards.
- Several countries have embarked upon large scale initiatives to reduce seclusion use, but not in the United Kingdom where use has been thought to be low.
- Little has been published about the use of time out.

What this paper adds

- Rates of usage for newly admitted patients during the first two weeks of their stay for benchmarking purposes.
- Usage varies very widely by hospital, with an important minority not using seclusion at all, whilst others use seclusion at high rates.
- Outcome for the use of seclusion and time out appears to be equally good.

Implications for practice and/or policy

- A national registration and reporting system for use of seclusion should be introduced in psychiatry in the United Kingdom.
- Hospitals with high usage rates of seclusion should commence programmes of practice development in order to reduce these.
- Some seclusion can be replaced with time out, which is more acceptable to patients.

For seclusion, this is higher than the 3% of patients reported in a recent national census (Care Quality Commission 2010), and higher than that suggested by data from a study of 136 English acute psychiatric wards (Bowers *et al.* 2010). There are no comparable figures for time out available, although our previous study reported that it was used three times as often as seclusion (Bowers *et al.* 2010), a proportion which is compatible with the results of this study. Varying figures are likely to be due to the different methodologies, samples and timing of the studies. No reasonable approximation of the extent and usage of seclusion in the UK are likely to be obtained unless a national reporting and registration system is introduced, as is the case in Norway, Australia and more recently in the Netherlands (Steinert *et al.* 2010). The introduction of such a system has been an important part of efforts to reduce seclusion in the USA (Smith *et al.* 2005) and may itself exercise a constraint on the use of seclusion and contribute to its reduction (Stewart *et al.* 2010).

The profiles of patients subject to seclusion and time out were very similar, both being more likely to be younger, have a history of drug use and harm to others. The association between seclusion and younger age has been reported by many previous studies in several countries, for example (Stolker *et al.* 2005). The only study that has reported on previous drug use history also found an important link with seclusion (LeGris *et al.* 1999). Apart from the many studies reporting that violence is an antecedent to seclusion, none specifically report on patients' history of harm to others, although both findings reflect the fact that previous violence is a strong predictor of future violence (Lanza 1988).

Those subject to repeated time out and seclusion where heavier than those only once so contained. This difference was not visible when those subject to seclusion/time out were compared to those who were not. No similar differences for height were found. These findings are difficult to interpret. They may indicate that nurses respond more forcibly to heavier and therefore more threatening patients. Or the heavier weight might simply indicate that there is a smaller subset of patients with impulse control problems related to violence and diet, or that they have more severe symptoms and on higher dosages of medication with a side effect of weight gain.

Seclusion and time out were used mainly for the control of aggressive behaviour by patients. Aggressive behaviour by inpatients is a major concern, and violent incidents can lead to patient and staff injuries (Carmel & Hunter 1989), and important psychological trauma (Needham *et al.* 2005). Whilst seclusion more likely to be used for physical aggression to others and time out for verbal aggression, when outcomes are compared for physical aggression sequences only, repetition of the aggression is no more common following the use of time out than it is for seclusion. The profiles of patients subjected to seclusion and time out are strikingly similar. A number of seclusions are preceded by no or minimal aggression, and time out receives much higher acceptability ratings from patients and nurses than seclusion (Whittington *et al.* 2009). Both types of containment bring sequences of disturbed behaviour to an end (during the shift) on half of all occasions of their use.

It is therefore hard to resist the conclusion that some seclusion can be avoided or substituted with the use of time out. As there are some hospitals where high usage of seclusion and low use of time out seem to be local custom and practice, changes in the UK could most usefully be targeted there. Our other research has shown that use of seclusion is strongly associated with the provision of a seclusion room (Bowers *et al.* 2010), and that older hospitals were more likely to provide such a room (Bowers *et al.* 2008a). This provides a

further reason why a national registration system should be introduced: for hospitals to be identified, not least to the nurses working in them, who may not be aware how their practice compares to others.

Whether or not seclusion can be completely eliminated from acute psychiatry remains an open question. These results and others demonstrate that some UK hospitals operate virtually or totally without the use of seclusion on acute psychiatric wards and psychiatric intensive care units (PICUs), and the rates of aggressive behaviour at those hospitals is no greater, even when patient and environmental characteristics are controlled for (Bowers *et al.* 2010). However, tracking of symptom severity on one PICU has shown a link between reduced stimulation and reduced symptoms, albeit by the use of an extra care area rather than via seclusion (Bowers *et al.* 2011), and use of time out may equally reduce the levels of social and sensory stimulation experienced by patients. More caution is probably required in the consideration of seclusion use in forensic psychiatric hospitals, where patient behaviour may be both more extreme and more violent. The scope for reduction in this care setting may not be the same (Martin & Daffern 2006).

Limitations and conclusions

All information about the sequence of events was drawn from nursing notes. Although these were comprehensive and detailed, varying quality and accuracy may have led to an unknown number of errors. Prospective observational data might be more accurate, but impractical to collect on such a large scale. A relatively high number of patients (44%) refused consent for participation, being reluctant to allow their notes to be accessed. This may have biased the sample in unknown ways, although the main expressed concern was the sensitivity of confidential information in the case record. Short-term patients (with stays < 2 weeks) were excluded, limiting the generalizability of findings. Important to be noted is that in this subgroup there might be highly aggressive substance using and intoxicated people who are rapidly discharged following swift resolution of the crisis and disappearance of all psychiatric symptoms.

Seclusion is used at moderately high levels in some hospitals in England, coupled with a low use of time out. Some uses of seclusion are not a response to violence, and some are a response to low level violence (verbal abuse or damage to property). In acute psychiatry time out is as effective in the management of violence as seclusion, as judged by repetition of violence in the nursing shift concerned. There is capacity to reduce the use of seclusion in England, as proved by hospitals that do not use it in the acute psychiatric care sector at all. A national registration and reporting system should be introduced, and serious efforts made to reduce seclusion use in hospitals where rates are high.

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Conflict of interest

No conflict of interest has been declared by the authors.

Author contributions

LB, HN and EMC were responsible for the study conception and design. DS and JR performed the data collection. LB, DS and JR performed the data analysis. LB was responsible for the drafting of the manuscript. LB, DS, JR, HN, EMC and EN made critical revisions to the paper for important intellectual content. LB, DS and HN provided statistical expertise. LB, HN and EMC obtained funding. DS and JR provided administrative, technical or material support. LB and DS supervised the study.

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