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**The use of restrictive measures in an acute inpatient child and adolescent mental  
health service**

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## **Abstract**

There are significant issues associated with the use of restrictive measures, such as seclusion and restraint, in child and adolescent mental health care. Greater understanding of how restrictive measures are used is important for informing strategies to reduce their use. In this brief report we present a 12-month audit (1/1/2010–31/12/2011) of the use of restrictive measures (seclusion, physical restraint) in one child and adolescent acute inpatient mental health unit in Australia. The study highlights the need for continued efforts to reduce the use of restrictive measures in child and adolescent mental health services.

## **Introduction**

Restrictive measures, such as restraint and seclusion, are used in mental health care to manage patients who are aggressive, suicidal or otherwise at risk of harming themselves and/or others. There are complex legal and ethical issues associated with their use (Moylan, 2009), as well as the potential for physical and psychological harm to patients (Martin, Krieg, Esposito, Stubbe, & Cardona, 2008). Consequently, there has been a global effort to reduce the use of restrictive measures in all mental health settings.

Relatively high rates of seclusion and restraint have been reported in child and adolescent mental health services worldwide. In a recent systematic review of international literature, De Hert, Dirix, Demunter, and Correll (2011) report seclusion rates of 26% of patients (67 per 1,000 patient days) and restraint rates of 29% of patients (42.7 per 1,000 patient days). In Australia, the Australian Institute of Health and Welfare (AIHW) (2013) reported that, nationally, child and adolescent units had a higher rate of seclusion (20.9 events per 1,000 bed days) compared with adult units (11.9 per 1,000 bed days) in 2011–2012.

Understanding how restrictive measures are used in mental health care is an important step towards the reduction or elimination of these practices. More information is needed on the use of these measures in mental health services for children and adolescents (Pogge, Pappalardo, Buccolo & Harvey, 2013). In particular, there is insufficient data on the behaviours associated with the use of restrictive measures in this population, and no information on the use of strategies to attempt to calm the patient prior to or during the use of these measures (De Hert et al., 2011; Pogge et al., 2013). In this brief report we present an audit of the use of restrictive

measures (seclusion and/or physical restraint) in a child and adolescent mental health unit in Australia.

### **Design**

The study was undertaken at a 12-bed acute psychiatric ward for children and adolescents aged 3 to 18 years at a metropolitan child and youth hospital. A two-year retrospective audit was conducted of all restrictive measure events from 1/1/2010 to 31/12/2011. The audit met national and institutional ethical criteria for a quality assurance activity, thus approval from the university and hospital ethics committees was not required. Data on all events were provided to the researchers from a database in a non-identifiable form. The database documents all incidents of restrictive measures, based on a form filled out by clinicians at the time of the event. The form records patient ID number, sex and age, date and time of the incident, and checkboxes for: reason for the use of restrictive measure (prevention of harm to self, harm to others, destruction to property, and an 'other' response with an open field); type of measure used (seclusion, physical restraint); and body site (part of the body where restraint was applied).

### **Data analysis**

Data were analysed using IBM SPSS Statistics for Windows Version 20.0. The rate of the use of restrictive measures per 100 occupied bed days was calculated, by dividing the number of events or patients per month, by the number of occupied bed days (i.e. number of beds multiplied by number of days per month multiplied by percentage occupancy, which was 80%) multiplied by 100 (Bowers, 2000). Data were

analysed using descriptive and inferential statistical methods. Significance of inferential tests was set at  $p < .05$ .

## Results

There were 119 events reported over the two-year period involving 41 patients experiencing restrictive measures at least once during that period. There was little difference from 2010 to 2011 in events (1.71 to 1.68 events per 100 occupied bed days), or number of patients experiencing restrictive measures (0.54 to 0.63 patients per 100 occupied bed days). Descriptive data (sex and age) of patients experiencing restrictive measures is presented in Table 1. There were more events involving females (59.66%,  $n = 71$ ) than males (40.34%,  $n = 48$ ). Over 50% ( $n = 23$ ) of patients had one event only ( $Mdn = 1$ ,  $Mean = 2.90$ ,  $SD = 3.43$ ), with 21.95% ( $n = 9$ ) having two to three events and 21.95% ( $n = 9$ ) having between 4 and 15 events. There were no statistically significant sex or age differences between patients with only one event and those with multiple events.

**Table 1: Sex and age of patients restricted at least once**

	<b><i>n (%)</i></b>	<b><i>Mean age yrs (Std. Error)</i></b>
Male	20 (48.78)	14.00 (0.55)
Female	21 (51.22)	14.62 (0.49)
Total	41 (100.00)	

Seclusion was the most common restrictive measure recorded, used in 118/119 of events, with physical restraint recorded for two events (once with seclusion and once alone). A body site was reported for 61 events, all of which were recorded as seclusion-only events suggesting that physical restraint was used prior to the seclusion (e.g. to transfer the patient to the seclusion room). The median duration of the events was 30 minutes ( $Range = 4$  minutes-3.08 hours). Mann-Whitney  $U$  tests were

conducted to explore differences between males and females in duration for both total duration in containment (i.e. patients with multiple events had their duration summed) and for first/only event (to avoid patients with multiple events influencing the results), with no significant difference found on either analysis.

When examining the reasons for the use restrictive measures, the majority of events had one reason reported in the documentation ( $n = 51$ , 43.22%), 28 had two reasons (23.73%) and 39 had three reasons (33.05%). Reported reasons for the use of restrictive measures are summarised Table 2. For the three most frequently documented reasons (harm to self, harm to others, destruction to property), cross tabulation revealed little relationship between sex and containment for a specific reason. Chi-square tests of association could not be conducted due to small expected values for the first two reasons, and a non-significant result was found for the third reason.

**Table 2: Reasons for the use of restrictive measures**

	<i>n</i>	% of events
Prevention of harm to self	89	74.79
Prevention of harm to others	84	70.59
Prevention of destruction to property	59	49.58
Disinhibited	7	5.88
Other reason	6	5.04
Intrusive	2	1.68
<b>Total</b>	<b>247*</b>	

\* Total is greater than the total number of events because multiple reasons were reported

There were 117 events (98.32% of all events) where the use of a strategy to calm the patient prior to or during seclusion was documented. Strategies used prior to or during seclusion are summarised in Table 3. The most common strategy documented was some form of counselling/deescalation ( $n = 114$ ) and the use of PRN medication prior to containment ( $n = 43$ ). When compared with the proportion of

total events involving males and females, no statistically significant sex differences were found (using chi-square goodness of fit tests) in the use of these two strategies.

**Table 3: Strategies used prior to or during the use of restrictive measures**

	<i>n</i>	% of events
Counselling/de-escalation alone	66	55.46
Counselling/de-escalation with PRN* prior to seclusion	40	33.61
<b>Strategies</b> Counselling/de-escalation with PRN during seclusion	4	3.36
Counselling/de-escalation with PRN offered	4	3.36
PRN prior to seclusion alone	3	2.52
<b>Total</b>	117	

\* PRN = pro re nata medication

## Discussion

This study supports previous research reporting relatively high rates of restrictive measures in child and adolescent mental health settings. There was little change over time in number of events or persons experiencing restrictive measures at least once. The figures suggest slightly lower rates of use of restrictive measures to those reported in the most recent Australian report of national seclusion data for child and adolescent units (1.71 events per 100 occupied bed days in 2010 and 1.68 events in 2011 in our study; 2.09 events per 100 bed days, AIHW 2013); the rates are somewhat higher when compared to national data for adult units (1.19 events per 100 bed days in adults units, AIHW 2013). This confirms that the use of restrictive measures remains an issue within child and adolescent psychiatric inpatient units and supports sustained research attention.

Similar numbers of females and males experienced restrictive measures in the unit, however females had more events than males over the two-year period. Most events involved the use of seclusion. However, the documentation of a body site in 91 seclusion events suggests that some form of physical restraint was used, most likely



as an interim measure to move the patient to the seclusion room. The repeated use of restrictive measures (in this case in 18 of 41 patients) is also of concern (Hendryx, Trusevich, Coyle, Short, & Roll, 2010). Greater depth in our understanding of repeat events would be useful; unfortunately we did not have access to qualitative data on these events.

There were a number of reasons reported for the use of restrictive measures. The three most commonly reported reasons (prevention of harm to self, others and destruction to property) are broad and similar to those reported in the literature on adults (Scharko, 2010). Differences between males and females in reasons for the use of restrictive measures have been reported in previous research, with Bernstein *et al.* (2011) reporting child and adolescent females more likely to be contained due to self-harm; no such differences were found in our study.

Strategies were reported prior to or during seclusion for 98.32% of events, with counselling/de-escalation being the most common; again, no sex differences were found. The use of counselling/de-escalation is reflective of the value placed on this method, which is regarded as a core skill of nursing staff in reducing the use of restrictive measures (D'Orio, Purselle, Stevens, & Garlow, 2004). The information on PRN use in the present study is important, given the lack of data in this area and questions regarding its efficacy in managing aggressive and disturbed behaviour (Delaney, 2006).

We were not able to explore the overall effectiveness of these strategies in reducing or avoiding the use of restrictive measures, because data were not available on events on the unit where strategies were used successfully in preventing the need for seclusion or restraint. However, the fact that strategies were used in events that subsequently led to seclusion or restraint suggests the need for additional elements to

reduce or eliminate the use of these measures in the child and adolescent setting. This could include the introduction of collaborative problem solving, a cognitive-behavioural approach that has been demonstrated to reduce rates of seclusion and restraint in child and adolescent inpatient units (Green, Ablon, & Martin, 2006; Martin et al., 2008). Other approaches identified include discussion with the patient regarding potential triggers and preferences for care during these events, and a focus on trauma-informed care (Delaney, 2006). The potential use of other interventions for aggression, such as time-out, has been advocated (Bowers et al., 2012). Intensive review of repeat incidents with patients, focusing on what is driving the acts preceding seclusion and restraint, is also indicated.

The data was retrospective and is therefore prone to underreporting or missing information, an issue common to studies of seclusion and restraint (Bernstein *et al.* 2011). Categories used in reporting reasons for containment were also, at least from a research point of view, general. However, given the negative effects associated with restrictive measures in child and adolescent services (Martin et al., 2008) and the rates of use reported here, this study provides a picture of current practice in one service and highlights the need for continued efforts to reduce the use of these measures.

## References

- Australian Institute of Health & Welfare. (2013). *Mental Health Services in Australia*. Retrieved from <http://mhsa.aihw.gov.au/home/>
- Berntsen, E., Starling, J., Durheim, E., Hainsworth, C., de Kloet, L., Chapman, L., & Hancock, K. (2011). Temporal trends in self harm and aggression on a paediatric mental health ward. *Australasian Psychiatry, 19*(1), 64-69.
- Bowers, L., 2000. The expression and comparison of ward incident rates. *Issues in Mental Health Nursing, 21*(4), 365-374.
- Bowers, L., Ross, J., Nijman, H., Muir-Cochrane, E., Noorthoorn, E., & Stewart, D. (2012). The scope for replacing seclusion with time out in acute inpatient psychiatry in England. *Journal of Advanced Nursing 68*(4), 826–835.
- De Hert, M., Dirix, N., Demunter, H., & Correll, C.U. (2011). Prevalence and correlates of seclusion and restraint use in children and adolescents: A systematic review. *European Child & Adolescent Psychiatry, 20*(5), 221-230.
- Delaney, K. R. (2006). Evidence base for practice: Reduction of restraint and seclusion use during child and adolescent psychiatric inpatient treatment. *Worldviews on Evidence-Based Nursing, 3*(1), 19-30.
- D’Orio, B.M., Purselle, D., Stevens, D., & Garlow, S.J. (2004). Reduction of episodes of seclusion and restraint in a psychiatric emergency service. *Psychiatric Services, 55*(5), 581-583.
- Hendryx, M., Trusevich, Y., Coyle, F., Short, R., & Roll, J. (2010). The distribution and frequency of seclusion and/or restraint among psychiatric inpatients. *The Journal of Behavioral Health Services and Research, 37*(2), 272-281.

- Green, R.W., Ablon, J.S., & Martin, A. (2006). Use of collaborative problem solving to reduce seclusion and restraint in child and adolescent inpatient units. *Psychiatric Services, 57*, 610-612.
- Martin, A., Krieg, H., Esposito, F., Stubbe, D., & Cardona, L. (2008). Reduction of restraint and seclusion through collaborative problem solving: A five-year prospective inpatient study. *Psychiatric Services, 59*(12), 1406-1412.
- Moylan, L. B. (2009). Physical restraint in aged care psychiatry: A humanistic and realistic nursing approach. *Journal of Psychosocial Nursing & Mental Health Services, 47*(3), 41-47.
- Pogge, D.L., Pappalardo, S., Buccolo, M., & Harvey, P.D. (2013). Prevalence and precursors of the use of restraint and seclusion in a private psychiatric hospital: Comparison of child and adolescent patients. *Administration and Policy in Mental Health, 40*(3), 224-231.
- Scharko, A.M. (2010). A description of 200 consecutive admissions to an adolescent male treatment unit. *Wisconsin Medical Journal, 109*(6), 317-321.