

Self-Harm in Children under 14: A Comparison of Inpatients Who Self-Harm with Those Who Do Not

Bonnie Palmer and Graham Martin*

Department of Mental Health, School of Medicine, University of Queensland, RBWH Herston, Queensland 4006, Australia

***Corresponding author:** Graham Martin, Department of Mental Health, School of Medicine, University of Queensland, RBWH Herston, Queensland 4006, Australia, Tel: 617-34088475; E-mail: g.martin@uq.edu.au

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Abstract

This study investigated characteristics and variables associated with self-harm in patients in a psychiatric unit which accepted children aged 7-13 years. It sought specifically to determine the role of emotion regulation as a motivation for self-harm in children. The study involved hypothesis driven examination of case files from 80 inpatients.

The first aim of the present study was to investigate characteristics and variables associated with self-harm in child inpatients. Given the paucity of prior studies looking at self-harm in children specifically, hypotheses were informed by research on self-harm in adolescents.

Adolescents engage in a range of self-harming methods which include drug and alcohol overdose [17,18]. However, the most common forms of self-injury found among adolescents include hitting, cutting, scratching and burning [19].

The most commonly reported precipitants for self-harm involve problems with family members. Sourander et al. [13] observed that parent-reported aggression in 12 year olds predicted self-harm in adolescence, and that not living with two biological parents at the age

For each question, answers were determined based entirely on information from case files. In cases where an answer was uncertain, for example if the occurrence of sexual abuse was likely but not certain, this was recorded accordingly. Case record data pertaining to frequency of self-harm was only available for six cases, and could not be analysed in detail.

Construct validity of the questionnaire was determined by comparing participants' scores on questionnaire items to their scores on HoNOSCA items measuring similar constructs. As examples, scores obtained on aggression from case-note enquiry were compared to scores on HoNOSCA Item 1: Disruptive, antisocial or aggressive behaviour. Scores on drug and alcohol use were compared to HoNOSCA Item 4: Alcohol, substance or solvent misuse. Scores on language problems were compared to HoNOSCA Item 5: Problems with scholastic or language skills. Chi-square and Fisher's exact analyses revealed no significant differences ($p = 0.05$) for all mentioned variables except alcohol use, suggesting differences between participants observed on the questionnaire items corresponded well to those observed on relevant items of the HoNOSCA.

Demographic and background characteristics: Age, gender, living situation, and number and length of admissions to CFTU were obtained from CESA. Age was calculated from the birth date recorded at most recent admission. Living situation was coded in terms of whether children lived with two biological parents or not.

Primary diagnosis: Primary diagnoses were based on the International Classification of Disease tool for Community-based Mental Health Services [28]. Where a child's diagnosis for mental and behavioural disorders had changed over time, the most recent diagnosis was recorded.

HoNOSCA: A 15-item clinician-rated measure providing an indication of a child's level of functioning in several areas, HoNOSCA is derived from the adult HoNOS [29]. Items 1-13 of HoNOSCA concern the child's mental health, whilst items 14, 15 address problems with caregiver access to information and services. Each item is rated on a five-point scale from 0 (no problem) to 4 (very severe problem). Scores of 0-1 indicate problems are not clinically significant; scores from 2-4 indicate clinical significance. 'Total clinical severity' is the score calculated by summing items 1-13 [30]. HoNOSCA shows evidence of face validity, good inter-rater reliability, and sensitivity to change [27].

The strengths and difficulties questionnaire [31]: A behavioural screening tool assessing psychological attributes in 4-17 year olds, the SDQ contains 25 items measuring five constructs: Emotional symptoms, Conduct problems, Hyperactivity/inattention, Peer relationship problems and Pro-social behaviour. Each item is rated by the parent, and/or child, on a three-point scale 0 (Not true) to 2 (Certainly true). A Pro-social example item from the self-rated version of the SDQ for 11-17 year olds is: "I try to be nice to other people. I care about their feelings". The SDQ demonstrates concurrent validity [31], internal and external validity and moderate to strong internal reliability ($\alpha = 0.59-0.80$) [32]. Scores were taken from either the parent- or child-reported measures, depending on availability for each case. If a child had scores on child- and parent-reported measures, an average of the two measures was recorded.

The Children's Global Assessment Scale [33] is a clinician-rated measure of a child's overall level of functioning ranging from 1-100,

with 1 representing a most severe level of functional impairment, and 100 representing full health. The CGAS demonstrates strong inter-rater reliability ($\alpha = 0.84$), test-retest reliability, and discriminant and concurrent validity [33].

Results

Data were analysed using PASW Statistics 17. All tests were two-tailed with alpha level 0.05. Differences between groups on categorical

Kicking something	0 (0)	8 (1)	3 (1)
Burning self	5 (1)	0 (0)	3 (1)
Vomiting/laxative use	5 (1)	0 (0)	3 (1)
Attempting to drown	5 (1)	0 (0)	3 (1)
Attempting to jump off roof	5 (1)	0 (0)	3 (1)
Note. Participants for whom no method was identified are not included in the calculation. Percentages total more than 100% as many participants used multiple methods.			

The self-harming group had positive scores on HoNOSCA Item 9 'Problems with emotional and related symptoms' (3% scored 1, 15% scored more than 9).

There was no difference between the self-harming and comparison groups on any of the other HoNOSCA items.

Table 3 Methods of Self-harm

Variables associated with self-harm

There were two major positive findings: Self-harmers were significantly more likely to live in other than two-biological-parent families compared to the comparison group ($\chi^2(1, N=79)=5.64, p=0.018$). Similarly, self-harmers were significantly more likely to have been sexually abused, or suspected to have been sexually abused, compared to the comparison group ($\chi^2(1, N=80)=10.32, p=0.001$).

The groups did not differ in terms of: alcohol use ($p=0.201$), drug use ($p=0.057$), aggression ($\chi^2(1, N=80)=1.29, p=0.256$), suspected or confirmed physical abuse ($\chi^2(1, N=80)=0.67, p=0.412$), or family mental health problems ($\chi^2(1, N=80)=0.91, p=0.340$). Percentages for the categorical variables predicted to be associated with self-harm are displayed in Table 4.

	Self-harmers%	Comparison%	Total%
Children living in other than two biological-parent families	67	40	42
Sexual abuse	38	7	22
Physical abuse	25	17	17
Alcohol use	12	2	6
Drug use	17	2	8
Aggression	65	52	47
Family mental health problems	72	62	67

Note. Percentages represent proportion of children for whom the variable is present. For example, 47% of all participants are reported to show aggression.

Table 4 Categorical Variables Associated with Self-harm

Self-harmers scored higher on the SDQ (total) ($M=23.46 \pm 4.74$ versus $M=20.38 \pm 4.16, t(59)=2.71, p=0.009, r=0.33$). Similarly, HoNOSCA total scores for the self-harming children (mean rank 45.50) were significantly higher than for non-self-harmers (mean rank 27.75), $U=313.5, z=-3.62, p<0.001, r=-0.43$. There was no difference between self-harmers and the comparison group on CGAS scores (mean ranks=39.96 and 41.01, respectively), $U=778.50, z=-0.208, p=0.835, r=-0.02$.

In 42% of self-harmers and 37% of non-self-harmers, clear evidence of language impairment had been diagnosed (no significant difference, $p=0.946$). Similarly, impulsivity was present in 50% of self-harmers and 35% of non-self-harmers (no significant difference, $\chi^2(1, N=80)=1.84, p=0.175$).

The literature on young community adolescents suggests self-harm in children will be associated with parental mental health problems, living situation, alcohol and drug use, aggression, psychological functioning and sexual and physical abuse. Our results show self-harmers were less likely to live in families with two biological parents, had poorer psychological functioning (as measured by the SDQ and HoNOSCA total scores), and were more likely to have been sexually abused, compared to non-self-harmers. Cases of sexual abuse, reported in the notes, were often perpetrated by a member of the child's immediate or extended family.

Hypotheses regarding parental mental health, aggression, and physical abuse were not supported. This lack of difference between self-harmers and others may relate to the fact that both self-harmers and the comparison group had clinically significant psychopathology. This, in itself, has been shown to relate to clinically significant parental psychopathology [38,39]. Our two clinical groups also had similar levels of general functioning and competencies, reflected in similar CGAS scores [40].

Previous studies have found alcohol and drug use associated with self-harm, predominantly in adult or adolescent populations [9,20,35]. Our self-harming sample did demonstrate higher rates of alcohol and drug use compared to the comparison sample, but differences were not significant, and age may be a factor in this result.

Given the literature on adolescents and adults, we predicted children would also engage in self-harm primarily to regulate emotion. Contrary to predictions, while results based on Item 9 of HoNOSCA ("Problems with emotional and related symptoms", and the emotion symptoms subscale of the SDQ, were in the expected direction, the self-harming group did not differ significantly from the comparison group on either variable. It may be that children do not primarily engage in self-harm as a way of regulating emotion. However, previous community studies have observed a positive relationship between scores on the emotional symptoms subscale of the SDQ and self-harming behaviours in children and adolescents [20,25]. Levels of emotional problems in non-self-harmers in our inpatient sample were

