

Development and Pilot Evaluation of a Manualized Cognitive-Behavioural Treatment Package for Adolescent Self-Harm

Lucy M. W. Taylor

Dialectical Behaviour Therapy (DBT) Service, Maudsley Hospital, UK

Anna Oldershaw

Kings College London, Institute of Psychiatry, UK

Clair Richards

NHS Brighton & Hove Child and Adolescent Mental Health Service, UK

Kate Davidson

University of Glasgow, Gartnavel Royal Hospital, UK

Ulrike Schmidt

King's College London, Institute of Psychiatry, UK

Mima Simic

The Maudsley Hospital, London, UK

Background: Manualized cognitive-behavioural therapy (MCBT) approaches to treating adolescent anxiety and depression have been shown to be effective in recent years, as have MCBT for adult self-harm (SH). **Aims:** This paper describes the rationale for, development and pilot evaluation of the efficacy of a novel manualized CBT package for adolescent self-harm (SH). It also addresses the acceptability of this treatment package to therapists and

Reprint requests to Lucy M. W. Taylor, Dialectical Behaviour Therapy (DBT) Service, Michael Rutter Centre, Maudsley Hospital, De Crespigny Park, London SE5 8AZ, UK. E-mail: lucy.taylor@slam.nhs.uk An extended version is also available online in the table of contents for this issue: http://journals.cambridge.org/jid_BCP

© British Association for Behavioural and Cognitive Psychotherapies 2011

patients. **Method:** Twenty-five adolescents (aged 12–18 years) presenting to a Community Child and Adolescent Mental Health Service (CAMHS) in Greater London with SH behaviour began the “Cutting Down” programme and 16 (64%) completed the treatment. Outcomes were assessed at baseline, at the end of treatment and at 3 month follow up. **Results:** Significant reductions in self-harm behaviour, depression symptoms and trait anxiety were reported. There was no change in state anxiety or in levels of parental expressed emotion as perceived by the adolescent. **Conclusion:** These pilot findings provide preliminary support for the efficacy and acceptability of this time-limited CBT package for adolescents who self-harm.

Keywords: Self harm (SH), manual, CBT, adolescents.

Introduction

Rising rates of self-harm (SH) amongst young people in England have prompted growing concern (Evans, Hawton, Rodham and Deeks, 2005). In the community, the most common methods of SH are cutting and overdose (Hawton, Rodham, Evans and Weatherall, 2002) and account for at least 20% of referrals to Child and Adolescent Mental Health Services (CAMHS) (Audit Commission, 1999).

Cognitive-Behavioural Therapy (CBT) is a time limited therapeutic approach that has been shown to be efficacious for many childhood disorders. A recent systematic review of 28 studies found CBT to be highly effective in adults with SH, but not in adolescents (Tarrier, Taylor and Gooding, 2008). The success of Dialectical Behaviour Therapy with parasuicidal behaviour has led some authors to integrate elements of this therapy in self-harm treatments (Schmidt and Davidson, 2003).

We describe here the development of a novel CBT intervention designed for adolescents who self-harm mainly by self-cutting. The intervention is based on a flexible and formulation driven model. Our aims were to:

1. Develop an intervention based on a CB model of maintenance factors associated with adolescent SH.
2. Test out the acceptability and efficacy of this manual-based CBT intervention in adolescents with SH referred to a CAMHS service.

Method

Participants and procedure

Young people aged 12 to 18 years referred to a Greater London CAMHS by GP, school or Social Services were assessed for study eligibility during their initial assessment. Adolescents with a history of more than one episode of SH prior to assessment were included. Exclusion criteria included: psychosis, global learning disability, Autistic Spectrum Disorder, and patients unwilling to address SH. Self Harm was defined as any self-injurious act purposefully carried out, regardless of underlying intent, and thus included suicidal and non-suicidal acts.

Recruitment began in January 2006 and spanned 18 months. Once written consent to participate was obtained, patients completed the initial outcome measures in a face-to-face meeting with a researcher. Outcome measures were repeated at the end of treatment and then over the phone at 3 months follow-up:

Measures

Primary outcome measure. The SH inventory (revised for adolescents) (Davidson et al., 2006) recorded the number and frequency of acts of suicidal and non-suicidal self-harm within the previous 3 months.

Secondary outcome measures. The Mood and Feelings Questionnaire: Child Report Long Version (MFQ; Costello and Angold, 1988); State-Trait Anxiety Inventory (STAI; Spielberger, Edwards, Lushene, Montuori and Platzek, 1973) and the Level of Expressed Emotion scale for a person's most influential relationships (LEE; Cole and Kazarian, 1988) were completed pre- and post-therapy.

Treatment acceptability was assessed post-treatment using two feedback questionnaires (patients; therapists), designed for the study. Treatment commenced within 2 weeks of initial research assessment. The study was approved by the Joint Institute of Psychiatry and South London and Maudsley NHS Foundation Trust Research Ethics Committee (ethics ref 05/Q0706/26).

Intervention

The intervention consisted of two components:

- (a) Eight to 12 sessions of individual CBT for the young person. The content of this treatment was structured using a CB manual for patients (*The Cutting Down Manual*). Treatment modules were developed from a comprehensive review of the evidence base literature on treatment of SH and associated psychological maintenance factors and comorbidities. Treatment was formulation driven and incorporated motivational strategies and comprehensive CB assessment early in treatment. The interventions were designed to be specific to needs, triggers and problems identified from the assessment module.

The final manual comprised four modules: (1) Getting Started; (2) Feelings, Thoughts and Behaviours; (3) Coping; and (4) On You Go. Manual-development was informed by focus groups with adolescents who had previously completed treatment for SH. Some elements of the manual were considered essential and others optional. Details of manual contents are described in the extended online version and in Figure 1.

An accompanying therapist guide designed to aid the use of the manual provided a "decision tree" that enabled therapists to "move" across different "branches", tailoring treatment to the client's specific needs.

Therapists training and Quality Assurance

Therapists in this pilot study were CAMHS practitioners from various professional backgrounds, working in Croydon at the time of the pilot. All had a basic understanding and experience of using CBT and received fortnightly supervision by a senior CBT practitioner (LT). This also enabled monitoring of clinician fidelity to the treatment manual.

A second optional element of treatment was a brief (3 sessions) psychoeducational group for parents/carers of the young people, conducted by two experienced CAHMS members.

INITIAL ASSESSMENT (Module 1: What's going on?)
 Problems & Goals, psychoeducation, orientation to the manual, introduction to virtual clients

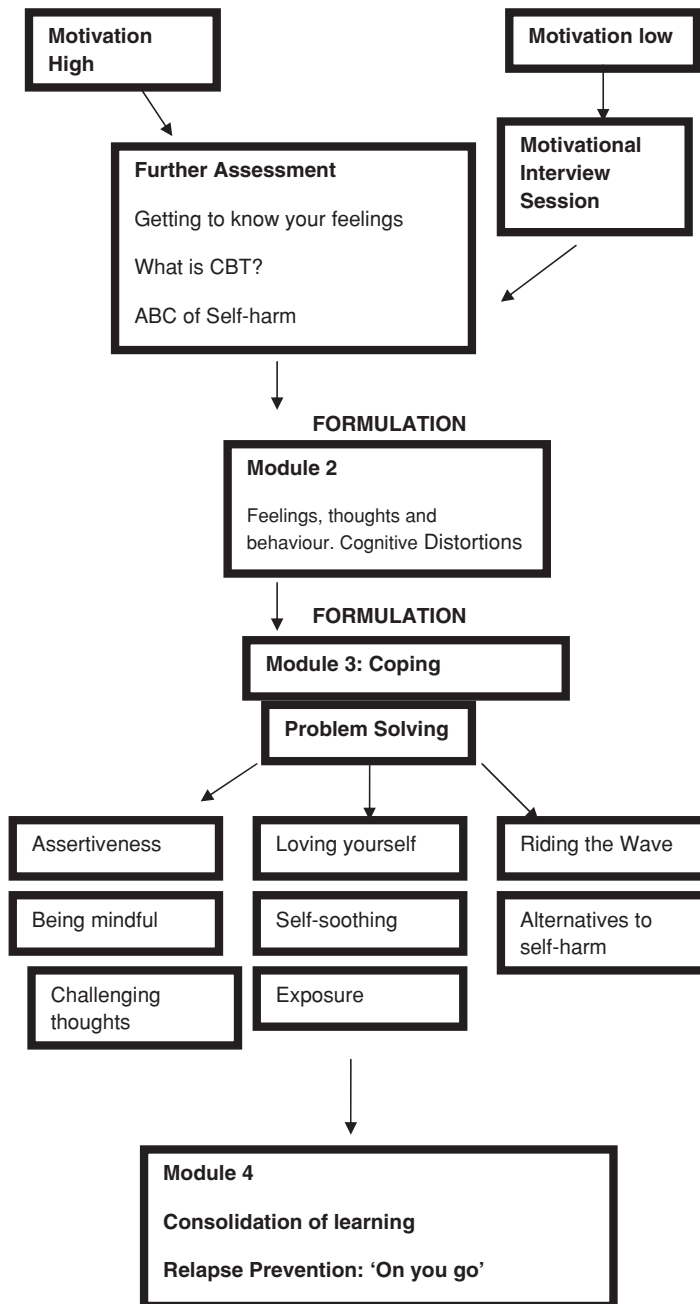


Figure 1. Flow diagram of progress through *The Cutting Down Manual*

Analyses

Efficacy. Analyses were completed using the Statistical Package for Social Sciences V.15.0. Two-tailed tests were employed with significance set at $\alpha = 0.05$.

Baseline data. Completers and non-completers were compared at baseline using independent samples *t*-tests or Mann Whitney *U* tests, as applicable.

Treatment outcomes. As follow-up data were only available for one treatment non-completer, statistical modelling for missing data was not possible and analyses are only reported for treatment completers ($n = 16$). Analysis of change over time used one-way repeated measures ANOVAs or Friedman's test/Wilcoxon signed ranks test were employed, as applicable. Post-hoc comparisons were planned contrasts, comparing baseline scores against subsequent outcomes.

Relationships between variables. Pearson's *r* or non-parametric Spearman's rank correlation coefficients were employed to establish relationships between variables.

Outcome predictors. To identify predictor variables, baseline scores for independent variables were included in regression analyses, with outcome of interest as the dependent variable (DV) and the respective baseline DV scores included as a covariate.

Acceptability

Qualitative feedback from patient and therapist questionnaires was summarized.

Results

Thirty-seven young people were assessed for the study; however, 12 were unwilling or unsuitable for participation, and therefore 25 took part. Nine participants dropped out during the course of treatment, leaving 16 who completed. There were no significant baseline differences between those who completed treatment and those who dropped out in terms of IQ, depression, anxiety, age of SH onset or SH frequency. However, those who dropped out were significantly older (mean = 16.0, $SD = 1.2$) than those who completed treatment (mean = 14.4, $SD = 1.6$) [$t(23) = 2.5$, $p < .05$]. The type of SH in both groups was predominantly cutting: 12 participants reported cutting (75%), one hitting (6%), and one overdose (6%). Thirteen participants reported at least one act of SH with suicidal ideation (completers $n = 7$; 44%; non-completers $n = 6$; 67%).

Only two patients' parents took up the offer of attending the optional parent sessions.

Efficacy

Treatment outcomes. Average duration of treatment was 6.0 months ($SD = 2.1$) with a mean of 8.5 sessions ($SD = 2.5$; median = 8; range 4–12). SH frequency significantly changed over time [$\chi^2 = 13.7$, $p < .001$]. Rates of SH before therapy were significantly higher than those post therapy ($Z = -2.7$, $p < .01$) and at 3-month follow-up ($Z = -3.1$, $p < .000$). Rates of SH post-treatment and at follow-up were similar, indicating that treatment gains were maintained. The types of SH appeared consistent during treatment: at post-treatment 12 participants reported cutting (75%), one hitting (6%), one an overdose (6%); at 3-month follow-up 6 reported cutting (37.5%) and 2 hitting (12.5%). Three participants reported SH

with suicidal ideation during treatment and one reported a suicide attempt during the follow-up period.

There was a significant main effect of time on MFQ scores [$F(2, 30) = 5.0, p < .01$] and trait anxiety [$F(2, 30) = 10.0, p < .000$], but not on state anxiety. Significant reductions on MFQ ($p < .01$) and trait anxiety ($p < .001$) were observed by the end of treatment and maintained at follow-up ($p < .05$ and $p < .001$ respectively). There were no significant changes in LEE scores following treatment.

Relationships between variables. Higher levels of depression were associated with greater trait anxiety at baseline ($r = 0.77, p < .000$) and following treatment ($r = 0.7, p < .05$). Greater perceived emotional responsiveness from parents was linked to more frequent SH before and after treatment ($r_s = 0.42, p < .05$ and $r_s = 0.6, p < .01$ respectively). Negative attitude of parents towards illness was related to lower state anxiety pre-treatment ($r_s = -0.44, p < .05$); however, post-treatment, this negative parental attitude was associated with higher SH frequency ($r_s = 0.52, p < .05$).

Outcome predictor. No baseline variables significantly predicted any clinical outcomes from treatment.

Acceptability. The treatment was highly acceptable to patients and therapists. A more detailed summary of qualitative feedback obtained from the questionnaires can be found in the extended online version.

Discussion

This pilot study provides preliminary evidence that a specialized CBT model for treating adolescent SH may be efficacious in reducing SH behaviour, co-morbid depression and trait anxiety in a group of predominantly cutters. Gains made during treatment were maintained at follow-up. Furthermore, the intervention was acceptable to both therapists and adolescents.

Of note, the average number of treatment sessions was only 8.5 in our study, whereas in Tarrier et al.'s (2008) systematic review of the efficacy of CBT for suicidal behaviour, the average number of treatment sessions was 25.0 ($SD = 30.7$). Another unique factor in our study is the use of individual CBT with an adolescent population. The lack of research studies looking specifically at adolescent populations who self-harm has been highlighted by Tarrier et al. (2008), who identified only 6 out of 28 studies that included adolescents (with widely varying definitions of adolescence).

Uptake of the parental component of the intervention was disappointing, with only two parents participating. No reasons were given for not attending the support groups. Further research would be useful to better understand how to encourage parental involvement in SH treatment, and clarify the impact of including parents/carers in the CBT treatment of the adolescent and specific benefits to parents.

Feedback from adolescents suggested that they particularly valued the exercises on how to manage dysfunctional thoughts and feelings. This suggests that vulnerability to self-harm is linked to specific cognitions and skills deficits. Our treatment's emphasis on building coping skills may have been beneficial in reducing the recurrence of SH.

Feedback from therapists suggests that revisions of the manual should include strategies for anger management, as this was considered highly relevant for this client group. Furthermore, whilst the manual was initially designed to be delivered over 8 sessions, therapists' reported requiring 12 sessions to facilitate engagement, address any crises, and conduct risk assessments.

The only predictor of treatment non-completion was participant's age, with older patients being more likely to drop out. Unfortunately, we were only able to obtain feedback about the intervention from treatment completers. It is possible that, despite our best efforts, the manual/intervention may have been "too young" in appearance and style for some participants.

Limitations

This study is limited by the small sample size and the fact that it did not employ a randomized controlled design with a treatment comparison group. However, considering this was a pilot and acceptability study, the level of power was sufficient. Measures could have assessed a wider range of known maintaining factors, such as hopelessness, preceding life events, suicidal and SH ideation or standardized assessment of personality traits.

Conclusions

Given the number of SH referrals to CAMHS and other settings, a brief, flexible, manualized CBT approach tailored specifically for young people is a time-efficient way of reducing waiting lists. Future research using a randomized controlled design comparing the treatment with other treatment approaches used in CAMHS is needed to confirm its efficacy and generalizability.

References

- Audit Commission** (1999). *Children in Mind: child and adolescent mental health services*. London: HMSO.
- Cole, J. and Kazarian, S.** (1988). The Level of Expressed Emotion Scale: A new measure of expressed emotion. *Journal of Clinical Psychology*, 44, 392–397.
- Costello, E. J. and Angold, A.** (1988). Scales to assess child and adolescent depression: checklists, screens, and nets. *Journal of the American Academy of Child and Adolescent Psychiatry*, 27, 726–737.
- Davidson, K., Norrie, J., Tyrer, P., Gumley, A., Tata, P., Murray, H. and Palmer, S.** (2006). The effectiveness of cognitive behaviour therapy for borderline personality disorder: results from the borderline personality disorder study of cognitive therapy (BOSCOT Trial). *Journal of Personality Disorders*, 20, 450–465.
- Evans, E., Hawton, K., Rodham, K. and Deeks, J.** (2005). The prevalence of suicide phenomena in adolescents: a systematic review of population based studies. *Suicide & Life Threatening Behaviour*, 35, 239–50.
- Hawton, K., Rodham, K., Evans, E. and Weatherall, R.** (2002). Deliberate self-harm in adolescents: self report survey in schools in England. *British Medical Journal*, 325, 1207–1211.
- Schmidt, U. and Davidson, K.** (2003). *When Life is Too Painful: finding options after self-harm*. London: Psychological Press.
- Spielberger, C. D., Edwards, C. D., Lushene, R., Montuori, J. and Platzek, D.** (1973). *State-Trait Anxiety Inventory for Children (manual)*. Palo Alto, CA: Consulting Psychologists Press.
- Tarrier, N., Taylor, K. and Gooding, P.** (2008). Cognitive-behavioral interventions to reduce suicide behavior: a systematic review and meta-analysis. *Behavioral Modification*, 32, 77–108.