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Voice Movement Therapy: Evaluation of a Group-Based Expressive Arts Therapy for Nonsuicidal Self-Injury in Young Adults

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Abstract

Effective and proven approaches for engaging and assisting young people who self-injure are yet to be established. The current study presents findings from 4 pilot trials of voice movement therapy (VMT) in addition to “treatment as usual.” Nineteen young women (mean age 20 years 3 months, range 16-25 years) completed 10 weekly group therapy sessions and a follow-up booster session. At posttreatment, there were statistically significant improvements in emotion regulation, alexithymia, self-esteem, anxiety, somatic symptoms and social dysfunction, and a nonsignificant trend for reduced depression and self-injury. All improvements were maintained at 8 to 10 weeks of follow-up. Results suggest VMT is an acceptable and promising adjunctive therapy for young adults who self-injure.

Keywords

nonsuicidal self-injury (NSSI), expressive arts therapy, voice movement therapy, music therapy, adolescents, young adults

Nonsuicidal self-injury (NSSI), “deliberately damaging body tissue without suicidal intent,”¹ has lifetime prevalence rates highest in the 20 to 24 years age group.² Despite being considered for defined diagnostic status under *Diagnostic and Statistical Manual of Mental Disorders (DSM-5)*,³ which would accentuate the nonsuicidality, NSSI has been associated with increased risk of accidental death⁴ and both attempted and completed suicide.⁴⁻⁶ Emotion-regulation difficulties feature prominently in theory and research regarding etiology and maintenance of NSSI,⁷⁻¹⁴ including self-reported emotional reactivity⁸ and more frequent and intense negative emotional states.¹⁵ Self-injurers report significantly higher rates of alexithymia and difficulty expressing emotions,^{9,16-18} with reduced mindfulness and poor acceptance of their emotional responses compared with non-self-injurers.¹⁹⁻²¹ They demonstrate increased use of emotion and thought suppression as well as dissociation to manage overwhelming negative affect.^{19,22,23}

Despite an Australian national prevalence of 8.1% (ages 10-90 years) having ever self-injured,² evidence regarding effective interventions for NSSI is scarce, and promising studies are preliminary at best, often characterized by small sample size and lacking a standardized approach to defining and assessing NSSI.²⁴ Nonsuicidal self-injury has been a diagnostic feature of borderline personality disorder (BPD), but even when the literature for this is considered, evidence for available therapies is said to be “experimental”²⁵ and “inconclusive.”²⁶

The intervention with greatest support to date is dialectical behavior therapy (DBT), originally developed to address emotion-regulation difficulties contributing to NSSI and other maladaptive behaviors in adults with BPD.²⁷ Pilot studies have found some support for its effectiveness in reducing NSSI among adolescents and young adults in inpatient^{28,29} and community settings,^{30,31} although evidence is mixed regarding durability of treatment gains at 1-year follow-up.^{28,32} Unmodified DBT for self-injuring adolescents may be problematic because of the time commitment, most adult studies’ treatment duration being 12 months, and too many missed sessions leading to exclusion. Shorter protocols have been piloted³³⁻³⁵; their effectiveness for NSSI is yet to be established. Although promising, DBT is not yet recognized as an empirically supported treatment.³⁶

Evidence regarding effectiveness of individual cognitive-behavior therapy (CBT) for NSSI and self-harm in adolescents

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has been mixed.^{21,37,38} Positive findings from manualized group therapy³⁹ were not replicated by 2 follow-up randomized controlled trials.^{40,41} Generalizability of treatment studies, for self-injuring young people, is also compromised by low recruitment rates and high dropout.^{21,30,38}

Rather than further adapting older therapies to be more acceptable to self-injuring young people, perhaps we should look elsewhere. Integration of expressive and experiential approaches may offer promise for improving client engagement and outcomes. While studies vary in scientific rigor, there is preliminary support for music therapy as a component of intervention for a range of mental health problems across the life span.⁴²⁻⁴⁵ Music is integral to youth culture; its therapeutic use improves engagement of young people⁴⁶ and may be important for individuals who find verbal expression of emotion difficult or anxiety-provoking.⁴⁴ A recent small study integrating music techniques with DBT strategies showed reduced depressive symptoms and NSSI.⁴⁷ The therapeutic value of music is evidenced by neurophysiological and emotion-regulating effects of listening to music⁴⁸⁻⁵⁰ and creating music, as in group singing.⁵¹⁻⁵⁴

Other expressive therapy approaches also offer opportunities for improving emotion regulation. Expressive writing facilitates cognitive and emotional processing of stressful or traumatic experiences,^{55,56} with positive effects on psychological functioning and emotion regulation.^{55,57-60} A trial of group art therapy reported improved responses to standard care for inpatient adolescents with posttraumatic stress.⁶¹ Pilot studies also support group therapies incorporating a focus on body and movement, for reducing depression in adults⁶² and posttraumatic stress in war-exposed high school students.⁶³ Incorporating expressive approaches may be particularly appropriate for young people with difficulty verbalizing experience and emotions.^{61,64} Given the high rates of alexithymia in young self-injurers^{9,18} and difficulties with engagement, group therapies incorporating nonverbal expressive and experiential components may be more socially acceptable, and an effective treatment adjunct for this clinical population.

Voice movement therapy (VMT) is an integrated expressive arts therapy developed by Paul Newham,⁶⁵ a vocal researcher and prolific author, regarding the use of voice in healing therapies. The therapy is based on the voice work of Alfred Wolfsohn, drawing on psychological theories of Sigmund Freud, Margaret Mahler, Carl Jung, Wilhelm Reich, and Alexander Lowen. Central to VMT is the role of vocal expression in emotion regulation and psychopathology, assisting participants to develop awareness of components of physical voice, and psychological correlates of various vocal qualities, while assisting them to develop verbal expressiveness.⁶⁵ The therapy process incorporates sound making, singing, expressive writing tasks, massage, movement, and drama to improve self-awareness.⁶⁵ Each session of 2.5 hours begins and ends with group singing, explores the range and subtlety of the human voice and the way the body reacts to vocal sound, and addresses individual experience of homework tasks based on visual or experiential probes. A therapeutic

voice work session is mainly a subjective interaction, the language focusing on ideokinetic, emotive, and acoustic images rather than the emotion itself. A focus on emotion may feel endless, whereas focus on the image is specific and can lead to new experiences and a new story. A registered professional practitioner of VMT has a relevant university degree and completes intensive postgraduate training, with an extended supervision program approved by the International Association of Voice Movement Therapy.

Despite a lack of formal research studies on the effectiveness of VMT, it may be a promising adjunctive treatment for young self-injurers, improving emotion acceptance, expression, and regulation which, based on affect regulation models of NSSI,^{10,12,14,21} may lead to reduction in self-injurious behaviors.

The current study aimed to complete a formal research exploration of the effectiveness of VMT as an adjunct to routine care for adolescent and young adult females who self-injure. We hypothesized VMT participants would reduce the frequency of NSSI following intervention, accompanied by improvements in emotion regulation, alexithymia, general mental health, and self-esteem and that changes would persist at 10-week follow-up.

Methods

Recruitment

With Ethics approval from the Medical Research Ethics Committee, University of Queensland, we provided study information via e-mail and fax to greater Brisbane psychiatrists, psychologists, mental health services, and general practitioners and posted flyers at university campuses. Study inclusion criteria were at least 1 episode of NSSI in the preceding 6 weeks, female gender, aged 16 to 25 years, with ongoing regular support from a mental health practitioner.

Design

We designed a pretest, posttest, follow-up study with a wait-list comparison group. While some information is available from wait-list, a formal wait-list was ultimately not possible, given the small overall referral numbers to the 4 groups over 2 years.

Outcome Measures

Difficulties in emotion regulation scale. The difficulties in emotion regulation scale (DERS)⁶⁶ is a 36-item self-report measure of emotion regulation, giving a total score with 6 subscale scores; “nonacceptance of emotional responses,” “difficulties engaging in goal directed behavior,” “impulse control difficulties,” “lack of emotional awareness,” “limited access to emotion regulation strategies,” and “lack of emotional clarity.” The DERS has strong psychometric properties, with overall α s of .93 to .94 and the subscale α s between .80 and .89 in adolescents and young adults.^{32,66,67}

Toronto alexithymia scale. The most widely used self-report measure to assess the construct of alexithymia or “no words for feelings,” the Toronto alexithymia scale (TAS)⁶⁸ has 20 items rated on a 5-point Likert-type scale (1 = *strongly disagree* to 5 = *strongly agree*), providing a total alexithymia score and 3 subscale scores; “difficulty identifying feelings,” “difficulty describing feelings,” and “externally oriented thinking.” Higher scores indicate greater levels of alexithymia, with a score of ≥ 61 as the cutoff score for alexithymic individuals, and a score of ≤ 51 the cutoff for nonalexithymic individuals.⁶⁸ Internal consistency for the total TAS score is between .82 to .87 in samples of older adolescents and young adults.^{69,70}

Rosenberg self-esteem scale. The Rosenberg self-esteem scale (RSES)⁷¹ is a 10-item measure of global self-esteem, with positively and negatively worded items scored on a 4-point Likert-type scale from *strongly disagree* to *strongly agree*. Scores range from 10 to 40, higher scores reflecting higher self-esteem. The RSES has acceptable psychometric properties,⁷²⁻⁷⁴ with α s of .88 in adolescents and young adults, and .91 in adults in the United States.⁷²⁻⁷⁴

General Health Questionnaire. The General Health Questionnaire (GHQ) is a 28-item self-report measure designed as a screen for psychiatric disorder in general practice settings.⁷⁵ The GHQ provides an overall score and 4 subscale scores; “somatic complaints,” “anxiety,” “social dysfunction,” and “depression” and has acceptable psychometric properties with an α of .92 in Australian adolescents and young adults.⁷⁵

Self-injury questionnaire. Participants responded to self-injury questions developed for the Australian National Epidemiology Study of Self Injury² and an epidemiological study with young adults.⁷⁶ These assessed the frequency of NSSI in the previous 4 weeks, method, body location, perceived function, treatment required (including hospital attendance or admission), whether they discussed NSSI with a helping professional, and their opinion regarding what might help to reduce or cease NSSI.

Procedure

Initial contact was made by telephone, either by the participant or by their mental health practitioner. A preliminary meeting with a researcher at the Royal Brisbane Hospital enabled provision of information about the study, and completion of written consent. With participants younger than 18 years, parental written consent was obtained. Wait-list data were collected as participants made contact with the project, with the mean time between wait-list and pretreatment questionnaires being 60 days (range 13-111). Follow-up data were collected, immediately prior to a booster session, a mean 72 days after group completion (range 47-85). After the booster session, the participants were reimbursed \$10 for each hour of participation (questionnaire completion plus sessions attended).

Intervention

Groups were designed and provided by a registered voice movement therapist supported by a clinical psychologist within the session. Additional psychologist and/or psychiatrist support was available on-site, especially during early sessions. Therapy sessions were held in community halls, with 1 booster session held in hospital campus, as the original venue was unavailable.

Intervention involved 10 weekly group therapy sessions of 2.5 hours' duration, with a 15- to 20-minute break for refreshment. The VMT sessions involve a consistent structure: (1) greetings and discussion of previous session, (2) warm-up group activities, (3) focused therapy activities, (4) break, (5) discussion of homework from previous week, and (6) group singing to finish. However, VMT is a client-led therapy with exercises evolving from personal experience and shaped using the VMT framework and therapist knowledge and experience.

Voice movement therapy does not use pieces of published music to directly evoke discussion around feelings. Rather, much of the music evolves from within the groups. It begins as expressed vocal sound to accompany a feeling and then is linked to body feeling and movement and exaggerated using the group to expand, but also join in, the experience. During each 10-week group, live music is used *a capella*, with the exception of session 7, where percussive instruments are used to express emotion without words and also as a rhythmic exercise. Songs are always used as a therapeutic “container,” a way to open and close each session, but also as a container for participant emotion and expression during sessions. A warm-up song always opens the session as a way to connect to body and sound and bring everyone into the present. Led by the therapist, this often consists of humming or repeated sound with stretching and moving. Closing songs are chosen by the therapist, with the exception of sessions 8, 9, and 10, where the participants can request repeats of earlier songs they have sung. These *a capella* songs are always easy to learn, repeating songs such as rounds or short gospel songs. They are often chosen to reflect the mood of a session—such as the traditional gospel song “One day I’ll be free” or “Noyana” (a traditional zulu song)—or are a way to shift or lighten the end of a session and allow the participants time to prepare to leave the therapeutic space. Some songs used during the 10 weeks are original songs written by the participants on topics suggested by the therapist, such as “home” or “heart,” performed during the session, and often supported by the group using a drone or adding a harmony. Other music used throughout the 4 ten-week groups included “Tom Di tak a jo nu” (traditional spoken word from India), “I’m gonna lift my brother up” (traditional gospel song), and “Round and round” (traditional English folk song).

Statistical Analyses

A small number of missing questionnaire items (<20) were distributed randomly throughout data and were replaced using individual's mean for that particular scale or subscale. Wilcoxon signed ranks test was used for comparisons due to

Table 1. Voice Movement Therapy Results.

	Pre-VMT	Post-VMT	Wilcoxon (z)	Pre to Post Sig	10-Week Follow-Up	Wilcoxon (z)	Post to F/U Sig
DERS							
Lack of emotional clarity	17.82	15.36	-2.22	$P = .03$	14.31	-1.79	$P = .07$ NS
Lack of emotional awareness	21.36	18.83	-1.40	$P = .16$ NS	16.38	-1.29	$P = .20$ NS
Impulsiveness	22.47	18.84	-2.41	$P = .02$	17.77	-1.44	$P = .15$ NS
Nonacceptance of emotional responses	22.75	18.94	-2.80	$P < .01$	20.38	-0.77	$P = .44$ NS
Difficulty engaging in goal directed behavior	20.19	17.00	-2.94	$P < .01$	17.38	-0.80	$P = .42$ NS
Limited access to emotion regulation strategies	30.24	26.16	-2.36	$P = .02$	26.62	-0.71	$P = .35$ NS
DERS total score	134.83	115.13	-3.09	$P < .01$	112.84	-0.94	$P = .35$ NS
TAS							
Difficulty identifying feelings	28.29	25.21	2.55	$P = .01$	26.08	-0.12	$P = .91$ NS
Difficulty describing feelings	19.65	17.88	-2.11	$P = .04$	18.00	-0.36	$P = .72$ NS
Externally oriented thinking	20.06	19.47	-0.53	$P = .60$ NS	20.32	-0.06	$P = .95$ NS
TAS total score	68.00	62.56	-2.41	$P = .02$	64.40	-0.56	$P = .57$ NS
RSES							
RSES total score self-esteem	19.07	21.04	-2.54	$P = .01$	19.21	-1.73	$P = .08$ NS
GHQ							
Somatic symptoms	11.74	9.44	-2.26	$P = .02$	10.46	-0.53	$P = .60$ NS
Anxiety	14.70	12.00	-2.71	$P < .01$	11.38	-0.28	$P = .78$ NS
Social dysfunction	12.88	9.88	-2.95	$P < .01$	11.00	-0.36	$P = .72$ NS
Depression	13.94	11.25	-1.82	$P = .07$ NS	11.54	-0.24	$P = .81$ NS
GHQ total score	53.26	42.57	-2.79	$P < .01$	44.38	-0.42	$P = .68$ NS

Abbreviations: DERS, difficulties in emotion regulation scale; TAS, the Toronto alexithymia scale; RSES, Rosenberg self-esteem scale; GHQ, General Health Questionnaire.

small sample size and presence of outliers on some variables. An α level of .05 was used for all tests.

Results

Feasibility

Of the 27 referrals to the study, 4 participants dropped out after completing the wait-list questionnaires and/or prior to commencing the sessions, the single male participant dropping out after session 1, and another young woman after session 2. Two participants did not complete the follow-up data, one due to work commitments and the other not being contactable. A total of 19 young women aged 16 to 25 years (mean 20.3 years) completed the research study, with 4 groups—each including 3 to 6 participants with mean attendance of 8.84 sessions. Eighteen participants (95%) attended 7 or more sessions, and 47% of the sample attended all 10 sessions.

Nonsuicidal Self-Injury

At pretreatment, the participants had self-injured for a mean of more than 2 years, but several participants had self-injured for up to 8 years. In addition, 89.5% ($n = 17$) of the participants endorsed having self-injured in the preceding 4 weeks (mean 6.5 times, median 3, SD 10.8). Data regarding NSSI methods were available for 16 participants, with 12 (75%) endorsing cutting, 3 (18.8%) burning, 3 (18.8%) overdosing, 2 (12.5%) scratching, and 1 each (6.3%) for swallowing an object, picking

open a wound, and hitting self. Multiple methods were reported by 43.8% of participants ($n = 7$). Eight (50%) denied any medical treatment, but 1 needed first aid, 1 received sutures, and 2 needed surgery.

During VMT, 2 participants had brief inpatient psychiatric admission after minor suicide attempts, 1 was accompanied to the emergency with acute distress, dissociation, and suicidal ideation following a session but later discharged home. Between-session risk management follow-up was occasionally provided by phone, although support was generally handed over to the participant's primary mental health care provider.

There was no statistically significant difference in the NSSI frequency from the beginning of wait-list up to the first session (pretreatment; $z = -1.08$, $P = .28$). However, a nonsignificant trend for NSSI to reduce over the course of VMT ($z = -1.55$, $P = .12$) did occur, with 6 (31.6%) participants reporting no self-injury "within the last month" by the end of treatment. Gains were sustained, with no significant group change between posttreatment and follow-up ($z = -0.91$, $P = .36$).

Secondary Outcome Measures

Wilcoxon signed ranks showed no statistically significant change on any secondary outcome measures between wait-list and pretreatment (all P s $> .05$).

Emotion regulation. Significant improvement in DERS total emotion regulation ($z = -3.09$, $P < .01$) was found after 10 weeks of VMT (see Table 1). Impulsiveness ($z = -2.41$,

$P = .02$), nonacceptance of emotional responses ($z = -2.80$, $P < .01$), difficulty engaging in goal-directed behavior ($z = -2.94$, $P < .01$), lack of emotional clarity ($z = -2.22$, $P = .03$), and limited access to emotion regulation strategies ($z = -2.36$, $P = .02$), all showed significant improvement. There was a nonsignificant decrease in scores on the DERS lack of emotional awareness scale ($z = -1.40$, $P = .16$). Gains were maintained at follow-up on DERS total score ($z = -0.94$, $P = .35$), impulsiveness ($z = -1.44$, $P = .15$), nonacceptance of emotional responses ($z = -0.77$, $P = .44$), difficulty engaging in goal-directed behavior ($z = -0.80$, $P = .42$), lack of emotional clarity ($z = -1.79$, $P = .07$), lack of emotional awareness ($z = -1.29$, $P = .20$), and limited access to emotion regulation strategies ($z = -0.71$, $P = .35$).

Alexithymia. A statistically significant improvement in scores was found following VMT on TAS total score ($z = -2.41$, $P = .02$), TAS difficulty identifying feelings ($z = 2.55$, $P = .01$), and TAS difficulty describing feelings ($z = -2.11$, $P = .04$). Little change was noted on externally oriented thinking ($z = -0.53$, $P = .60$). Improvements remained at 10-week follow-up on TAS total score ($z = -0.56$, $P = .57$), difficulty identifying feelings ($z = -0.12$, $P = .91$), difficulty describing feelings ($z = -0.36$, $P = .72$), and externally oriented thinking ($z = -0.06$, $P = .95$).

Self-esteem. Participant's scores on the RSES demonstrated statistically significant improvement in self-esteem following VMT ($z = -2.54$, $P = .01$), with gains somewhat reduced at follow-up ($z = -1.73$, $P = .08$).

General mental health. Wilcoxon signed rank tests found no significant change between wait-list and pretreatment, but there was statistically significant improvement between pretreatment and posttreatment on GHQ total score ($z = -2.79$, $P < .01$), somatic symptoms ($z = -2.26$, $P = .02$), anxiety ($z = -2.71$, $P < .01$), and social dysfunction ($z = -2.95$, $P < .01$). Gains were maintained between posttreatment and follow-up on total score ($z = -0.42$, $P = .68$), somatic symptoms ($z = -0.53$, $P = .60$), anxiety ($z = -0.28$, $P = .78$), and social dysfunction ($z = -0.36$, $P = .72$). General Health Questionnaire depression decreased from pre- to posttreatment but did not reach statistical significance ($z = -1.82$, $P = .07$) but gains were maintained at follow-up ($z = -0.24$, $P = .81$).

Discussion

The current pilot study found preliminary support for VMT as having therapeutic impact on risk and maintenance factors associated with NSSI, namely emotion regulation, alexithymia, and self-esteem. Voice movement therapy participants also experienced significant improvements in overall mental health, anxiety, somatic symptoms, and social dysfunction, all maintained at follow-up. From the available data, the lack of change from wait-list to pretreatment suggests these improvements are unlikely to be the result of maturation effects or the

impact of concomitant "treatment as usual." While there was a trend of NSSI frequency to decrease, this did not achieve statistical significance, possibly due to the small sample size, missing data, heterogeneity of presentation of participants (resulting in a broad range of NSSI frequency) or, perhaps, the relatively short duration of therapy (10 weeks). It is important to stress that we required participants to have self-injured in the preceding 6 weeks, in contrast with the previous studies requiring participants to have self-harmed only within the previous year. The current study sample may have had greater acuity and/or mean recent frequency of NSSI than the previous studies, suggesting a high level of current seriousness for their problems.

We encountered considerable difficulties with recruitment, consistent with the previous treatment trials with young people who self-injure. This may reflect help-seeking preferences and challenges of this population⁵ but maybe also the unknown nature of our therapeutic approach. Once the participants were recruited, however, the attendance rates were high, with only 2 terminating very early in the course of VMT. Anecdotal feedback from participants suggested they found the therapy engaging and enjoyable, 2 crediting VMT for their ceasing self-injury altogether. These findings suggest VMT may be a promising approach for young self-injuring people and may improve engagement and retention rates reported in other therapies.

The issue of retention in therapy is important. Given self-injury remains a hidden problem in society, and self-injurers seem loath to seek therapy, it may be difficult to engage them in the first place. Once they accept therapy, they may be oversensitive to possibly negative attitudes from professionals and are easily alienated, judging by reported dropout rates from other therapies. We need to better understand what may help self-injurers commit to, and complete, therapy programs. What may be different about VMT, compared to, for instance, DBT, is that it does not focus directly on the self-injury—leaving that to the discretion of the young person. It focuses on the whole person, gaining access to emotions through exercises that are fun and easily understandable and through vocal expression that encourages alternative self-expression. It rediscovers the vitality of the voice, and movement, and builds strengths to manage negative emotion. It builds mindfulness about the self through all the exercises but never names this, nor does it provide didactic teaching about the concept. Against this backdrop of expressive exploration, the measurable and sustained improvements in emotion regulation, alexithymia, self-esteem, and general mental health seem remarkable.

A number of limitations are acknowledged in this pilot study, including absence of an active control condition, lack of data regarding participant psychiatric diagnosis, medication, and exactly what constituted their treatment as usual. In addition, our completed sample was all young women, and we have no knowledge of whether VMT is suitable for young men who self-injure, especially given the 1 referred young male who dropped out after session 1. The female

preponderance was no surprise because we advertised for young women. However, other therapies report similar gender imbalance, with young men loath to seek help for psychological difficulties. In contrast, our national survey findings show males self-injure just as frequently as young women but use different methods that do not bring them to medical attention. Further studies using VMT may need to adapt process to specifically engage, and meet the particular needs of, young men. This study involved only 1 VMT therapist; hence, we cannot rule out that the results may be as much from the persona of the therapist as from the components of VMT. Further research utilizing a randomized controlled design is recommended, both incorporating an active comparison condition, results from a range of trained VMT therapists, and obtaining data regarding treatment as usual to better control for effects of concurrent therapies. Given many tasks involved journaling on topics promoting processing of previous trauma, there may be a dose-dependent relationship between homework completion and overall therapy response. A formal record of homework compliance would assist exploration of this. Larger scale randomized controlled trials may enable exploration of the impact of participant age, diagnosis, severity of NSSI, and previous treatment experience, on response to VMT. This will inform treatment planning and improve matching of participants to this novel expressive arts therapy. Ultimately, it will be necessary to directly compare engagement, retention, and outcomes of VMT for NSSI with other therapies recommended for this hard to treat problem.

Declaration of Conflicting Interests

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