

“Stop Cutting—Rock!”: A Pilot Study of a Music Therapeutic Program for Self-Injuring Adolescents

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Abstract

Nonsuicidal self-injury (NSSI) is a common phenomenon in adolescence. This pilot study blended elements of dialectical behavior therapy for adolescents (DBT-A) with music therapy to reduce NSSI in a project for self-injuring female adolescents ($N = 5$; mean age: 14 years 8 months; age range: 14-16 years). Four out of the 5 female adolescents had stopped self-injuring at the end of the program, and the depression score declined. The program proved to be a feasible alternative in an outpatient setting, although severe suicidal ideation presented as a problem. Blending different therapeutic approaches might be an interesting way to tailor effective treatments for specific patient groups.

Keywords

nonsuicidal self-injury (NSSI), self-harm, music therapy, dialectical behavior therapy for adolescents (DBT-A), adolescents

Nonsuicidal self-injury (NSSI), defined as deliberate, direct destruction of body tissue, without conscious suicidal intent, that is socially unacceptable and repetitive and leads to minor or moderate harm (Lloyd-Richardson, Perrine, Dierker, & Kelley, 2007) is a common phenomenon in adolescents. In the United States, recent studies have found rates of 23.2% lifetime prevalence (Muehlenkamp & Gutierrez, 2007) and 37.2% 12-month prevalence (Yates, Tracy, & Luthar, 2008).

In Germany, rates of 14.9% 12-month prevalence (Brunner et al., 2007) and 25.6% lifetime prevalence (Plener, Libal, Keller, Fegert, & Muehlenkamp, 2009) have been reported. The relationship between music and NSSI is part of an ongoing discussion. A link between the “gothic” youth subculture and deliberate self-harm (including NSSI) has been described by Young, Sweeting, and West (2006). Findings about associations between certain kinds of music and suicidal risk are still contradictory. Martin, Clarke, and Pearce (1993) found an association between rock or metal music and suicidality. Another study could not find a correlation between metal music and suicide risk (Lacourse, Claes, & Villeneuve, 2001). Baker and Bor (2008) suggested that listening to metal music in girls is suggestive of a vulnerability to suicidality or self-harm, but they rejected the notion that music preference is a causal factor of such behaviors. They pointed out the importance of music for adolescents as a means to resist authority, develop peer relationships, and learn about issues that are not dealt with by their parents (Baker & Bor, 2008). Schulze et al. (2009) emphasized the importance of music for adolescents as a way to build their identity.

Dialectical Behavior Therapy for Adolescents

Despite high prevalence rates, effective treatment methods for adolescent NSSI are rare. There is—to this point—good evidence that dialectic behavior therapy for adolescents (DBT-A; Miller, Rathus, & Linehan, 2007) is effective in treating self-injury (Katz, Cox, Gunasekara, & Miller, 2004; Rathus & Miller, 2002). In a German pilot study ($N = 12$), the DBT-A program was effective in reducing self-injury in adolescents (Fleischhaker, Munz, Böhme, Sixt, & Schulz, 2006). DBT-A combines both individual therapy and group skills training. There are several specific DBT-A modules, which are worked through with adolescents (Miller et al., 2007). In addition to individual and group therapies, family members are also integrated by including them in skills-training groups, offering them telephone consultation, and integrating them into individual sessions if needed.

Music Therapy

Music therapy can be defined as “the clinical and evidence-based use of music interventions to accomplish individualized

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Table 1. Therapeutic Aspects Covered by Band Projects

Interpersonal objectives
<ul style="list-style-type: none"> ● Improvement of soft skills ● Improvement of cohesiveness ● Improvement of therapeutic relationship
Intrapersonal objectives
<ul style="list-style-type: none"> ● Activation, expression, and apperception of emotions ● Improvement of adolescent development ● Stabilization of self-confidence and self-perception ● Motivation for therapy ● Concentration, discipline, and stamina ● Attain structure
General improvement of resources
<ul style="list-style-type: none"> ● Improvement of creative urges ● Improvement of other resources and healthful dues ● Improvement of musical skills

From Keil (2005).

goals within a therapeutic relationship by a credentialed professional . . . [and] to address physical, emotional, cognitive, and social needs of individuals” (American Music Therapy Association, 2009). Music interventions can include free and structured improvisation, other types of active music making by patients and therapists (in this case, rock music), and listening to music. Music therapists help patients to explore the potential meaning of everything that occurs during a music therapy session within the client-therapist relationship or within a music therapy group (Bunt & Hoskyns, 2004). There is a growing body of evidence for the efficacy of music therapy, as documented by several systematic reviews and meta-analyses (e.g., Argstatter, Hilleke, Bradt, & Dileo, 2007; Pesek, 2007) that revealed a large effect size of $d = 0.8$ (Argstatter et al., 2007). Gold, Solli, Krueger, and Lie (2009) found a dose dependency—measured as the number of therapy sessions—in music therapy for people with serious mental disorders (i.e., psychotic disorders as well as some nonpsychotic disorders such as borderline personality disorder, depression, bipolar disorder, and suicidal patients). As shown by Gold et al., music therapy has strong and significant effects on global state, level of general symptoms, negative symptoms, depression, anxiety, and functioning. It has also been shown recently that music therapy can improve engagement in a cognitive behavior therapy group (Dingle, Gleadhill, & Baker, 2008).

A band project offers a good opportunity to work with adolescents who are mentally disturbed. As pointed out by Keil (2005), several important therapeutic objectives can be followed throughout a band project (see Table 1).

Music therapy in combination with DBT has been described by Kupski (2007). The author illustrated in several case studies the function of music in the treatment of adult patients with borderline personality disorder and pointed out that listening to music and playing musical instruments can both be effective skills but can, on the other hand, cause emotional disturbances by triggering traumatic memories. To our knowledge, there are no quantitative studies available that investigate the effects of a treatment based on elements derived from both music therapy

and DBT. Nor are there published data on the function of music (therapy) in context with NSSI. Results from our own questionnaire study on music and autoaggression in adolescents (Stegemann et al., 2009) indicate that music may fulfill similar functions as NSSI in this age group, such as affect regulation and antidissociation, through the interpersonal aspects of music and lyrics.

Barriers to Treatment

Only 14.8% of adolescents with occasional deliberate self-harm and only 27.1% with repetitive deliberate self-harm receive therapy (Brunner et al., 2007). This may be due to a high threshold to enter therapy. From a study of adolescents’ views about how to prevent self-harm, it was reported that confidentiality and issues of stigma represent the highest barriers to help seeking (Fortune, Sinclair, & Hawton, 2008). Mental health professionals were barely mentioned by the participants as a way to aid adolescents who injure themselves (Fortune et al., 2008). This seems to point to the problem that quite a large number of adolescents who are in need of treatment do not receive adequate care.

Method

Recruitment Procedure

To lower the threshold for entering therapy, we announced the program in a press conference for regional media and provided information via newspaper and regional radio and television stations. Flyers were handed out to counseling services, a regional child and adolescent psychiatry private practice, and the outpatient clinic of our department. Patients or parents could contact the providing therapist either via phone or e-mail to arrange for a meeting for further information. The program was open to all adolescents with NSSI who were motivated to change their behavior, regardless of whether they already had been in treatment. Cooperation with the regional municipal youth culture section allowed the production of a CD, which was planned as incentive for adherence to therapy.

Participants

Despite the media campaign, only two adolescents who had never been in contact with a therapist or counseling services were interested. As one of them could not fit her schedule to our sessions, only 1 group member (Patient 3) came directly from the community. Another group member (Patient 4) was referred from a community child and adolescent psychiatrist and had already stopped injuring herself after a history of daily cutting and several suicide attempts. As this participant felt the urge to start to self-injure again, we decided to take her into the program although she did not self-injure at the beginning of the sessions. The 3 other participants were recruited through our outpatient clinic. All of them had been treated in an inpatient setting before, due to suicidal behavior, but were

Table 2. Patient Characteristics With Regard to Self-Injuring and Suicidal Behavior

Patient	Age	Diagnoses ^a	Age at onset of NSSI	Number of methods of NSSI (past 12 months) ^b	Suicidal ideation (lifetime) ^c	Number of suicide attempts (lifetime)
1	16	PTSD, histrionic personality disorder	15	7	Yes	2
2	15	Adjustment disorder	13	5	Yes	0
3	14	Moderate DD	12	4	Yes	1
4	14	Moderate DD, ADHD	7	10	Yes	> 3
5	15	Major DD	13	3	Yes	> 3

NSSI, nonsuicidal self-injury; PTSD, posttraumatic stress disorder; DD, depressive disorder; ADHD, attention deficit/hyperactivity disorder.

^a Diagnoses according to ICD-10.

^b Number of methods determined with the Functional Assessment of Self-Mutilation.

^c Suicidal ideation and number of suicide attempts determined with the Self-Harm Behavior Questionnaire.

stable at the beginning of the program with regard to suicidality. Not surprisingly, given the gender ratio in NSSI, all participants were female. All patients were interviewed, and diagnoses were established based on consensus of at least two child and adolescent psychiatrists or clinical psychologists. Details about the participants can be found in Table 2.

Program

The program consisted of 12 sessions of group music therapy (2 hours each) that were provided by a licensed music therapist (Sukale). Sessions took part in a specialized music therapy facility in the Department of Child and Adolescent Psychiatry and Psychotherapy at the University of Ulm. Within the 12 sessions, every participant had a 20-minute single therapy session with a child and adolescent psychiatrist with DBT-A training (Plener). Thus, the group was only complete in the very beginning and at the end of the sessions. In addition to the sessions with the adolescents, we provided three parent group sessions, one each at the beginning, middle, and end of the program. We restricted the number of participants to 5 to be able to combine group and individual sessions.

Music Therapy Group. The music therapy group session started with a short relaxation technique in which participants learned to relax by using music. During this relaxation session, participants were instructed to use a progressive muscle relaxation technique (Jacobson, 1938). In the relaxation phase, recorded instrumental music was played to allow for deeper and longer relaxation periods. In the first two sessions, elements of perceptive music therapy were in the focus of the group sessions. Participants had to tell others their autobiographies and present a “soundtrack of my life” by playing music that is linked to certain emotional states. The participants also discussed their music preferences. After that, the group changed to active music therapy by deciding on tracks that they would like to perform as a group and rehearsing with changing instruments and vocalists. The track list (see the appendix) was based on a group decision. As all of the participants favored rock music, they first discussed songs that they liked and went through songbooks available in the music therapy room.

Without further guidance from the therapist, participants showed a rather realistic approach toward their capability to master certain songs and decided on music that they felt they were able to play. For performing the chosen songs, participants used electric guitar, keyboards, percussion, bass guitar, and drums. Two participants who were experienced in playing the transverse flute brought their own instruments.

As no musical experience was necessary to take part in this project, instrumental parts were simplified and handed out as tablatures, as not every participant was able to read music. Emphasize was put on the rotation so that each adolescent had the opportunity both to play several different instruments and to sing. At first most of the girls were reluctant to sing, but given the principle that each participant (including the therapists) has to try each role, all the group members managed this task successfully. At one meeting, a local professional jazz singer was invited to both give further vocal training and serve as a model, an experience that was very well received by all participants.

In this phase, the focus was on interpersonal communication and learning to work together as a group, as well as reflecting on one’s own role and position in a group. NSSI was not discussed during the group sessions; whenever this topic was brought up, participants were reminded to bring up this point during their individual sessions. After the 12th session and a 2-month break, the project ended with a day in a recording studio that was used to produce a recording of the band.

Individual Sessions. The first session focused on psychoeducation about emotions and their relationship to actions and thoughts. The participants were handed out diary cards for the next week from the DBT-A manual (Miller et al., 2007) to assess NSSI, suicidality, and self-injuring behavior and their relationship to emotions, and all sessions started with a discussion of the former week’s diary card and NSSI.

In the 2nd and 3rd sessions, these relationships were discussed as were triggers for the individual’s NSSI. In the 4th and 5th sessions, emotion regulation skills were addressed. The 6th session focused on interpersonal communication with family members and family conflicts, which conformed to the parental session midway through the program. The 7th to 11th sessions

were used to identify problematic situations in the adolescents' lives when they felt the urge to self-injure and to establish alternative behaviors. The 12th session was used to look back at situations they had successfully managed.

Parent Sessions. Three 2-hour sessions were provided for the parents of the group members. In the first session, psychoeducation and basic information about NSSI, music therapy, and psychotherapy was provided, and the parents had the chance to experience a short mindfulness exercise and a music therapeutic rhythm session. The second session aimed at identifying functions of NSSI in their children, by first giving a short informational input and then starting a group discussion. Furthermore, we presented a model of how to deal with NSSI in the family context. In the third session, additional information on stress regulation skills was provided, and parents were asked to present to the group positive changes they had noticed in their children.

Measures

We chose to assess characteristics of adolescents' NSSI based on internationally used instruments to be able to allow comparison with other therapy studies in this field.

Functional Assessment of Self-Mutilation (FASM). The FASM (Lloyd, Kelley, & Hoppe, 1997) is a questionnaire to assess details about self-injury. Methods of self-injury and different functions of NSSI are assessed. This questionnaire had been used in different adolescent samples (Nock & Prinstein, 2004, 2005; Yates, Tracy, & Luthar, 2008). We used a German translation, which had not yet been validated.

Self-Harm Behavior Questionnaire (SHBQ). The SHBQ (Gutierrez, Osman, Barrios, & Kopper, 2001) is a screening questionnaire that assesses self-injury and suicidal behavior. A German version was validated by Fliege et al. (2006), and this version had already been used in a large community sample of German adolescents (Plener et al., 2009).

Becks Depression Inventory, second edition (BDI-II). The BDI-II (Beck, Steer, & Brown, 1996) is a self-administered screening questionnaire for depression. The second version has been validated in German for use with adolescents (Besier, Goldbeck, & Keller, 2008; Hautzinger, Keller, & Kühner, 2006). The German version has 21 items, with a maximum of 63 points. This questionnaire was handed out at the beginning and at the follow-up session 2 months after the project had ended.

Diary card. We used the diary card provided in the DBT-A manual by Miller et al. (2007) to assess for self-injuring acts and urges and for other self-harming or suicidal behaviors each week. The participants had to fill out the cards at home and bring them to their weekly individual sessions to be able to discuss the previous week.

Feedback form. A self-designed feedback form was handed out to the participants and to the parents, asking which elements were experienced as useful, which were not, and what sort of changes had been noticed. Participants and parents were asked to rate their experiences during the program on a 5-point Likert-type scale (1 = *very bad* to 5 = *very good*). Additional open questions were asked: "What did you like best about the program?" "What was missing in the program?" "Which parts did not work out in the program?"

In this pilot project we wanted to assess the following:

1. If a combination of music group and individual DBT-A therapy is a feasible approach to be implemented in outpatient care.
2. If a combination of music therapy and DBT-A elements is effective in reducing adolescents' NSSI.
3. If it is possible to lower the threshold for treatment initiation by providing a project in cooperation with the community.

Results

Feasibility

We found the project to work well in an outpatient setting. As it turned out, the participants did adhere to the treatment program. The average number of missed group sessions was 1.1. At the parents' group sessions, parents were missing only twice.

However, it needs to be pointed out that in this highly vulnerable group at high risk for suicidal behavior we had to deal with suicidal crises (namely, acute suicidal ideation) in 3 of the 5 participants, which resulted in 3-day stays at the inpatient ward for 2 of the participants (Patient 1 and Patient 2). One patient (Patient 5) entered inpatient treatment for a longer period at Time 10 due to a major depressive disorder and suicidal thoughts. However, no suicide attempt occurred during the treatment project and the follow-up period. Patient 1 received additional treatment in our daycare unit during Times 1 to 3, where she had been treated also 3 weeks before.

NSSI and Depression Score

Four out of 5 participants did not injure themselves at the end of the program, which remained stable at the 2-month follow-up. The adolescent female (Patient 4) who after a long history of NSSI again felt the urge to self-injure could be prevented from again initiating self-injuring behavior. As it is depicted in Figure 1, the rate of NSSI could be constantly reduced within the first sessions and was rather stable for the last sessions. However, it seemed that 1 participant (Patient 1) could not sufficiently profit from the program with regard to her rate of NSSI.

Rates of depression, as assessed with the BDI-II, declined in the program from a mean sum score of 35.4 at the beginning to a mean sum score of 28.4 at the end of the program.

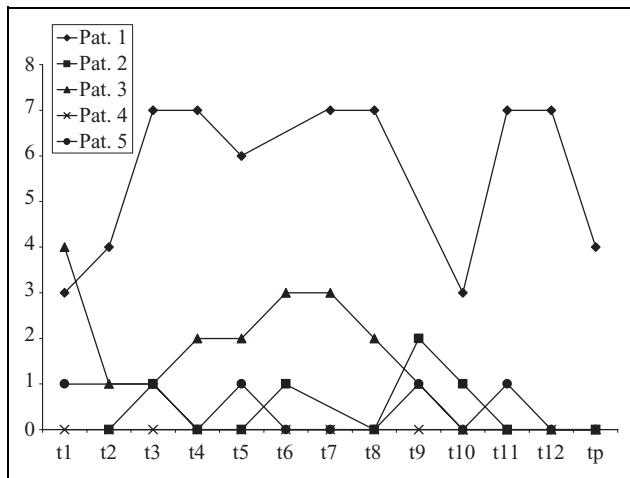


Figure 1. Number of days nonsuicidal self-injury occurred in the last week during the 12 weeks of the program (t1-t12) and at follow-up (tp) in the 5 participating patients (Pat.1-Pat.5). Patient 4 did not injure herself during the entire program.

Feedback Forms

Parents responded positively to the parent sessions. On average, the program was rated positive ($M = 4.25$). Relaxation techniques were rated as most interesting ($M = 4.25$), followed by the introduction to music therapy ($M = 4.00$) and psychoeducation about NSSI ($M = 3.75$). Parents responded to the open question that they liked that they were able to meet other parents affected by NSSI in their families and talk to them, as well as the fact that they were allowed to gain some experiences (mindfulness exercise, rhythm session) themselves.

Adolescents responded positively as well (average mean score for the whole program: 3.8). Band work was rated as the favorite part of the program ($M = 4.8$), followed by the “soundtrack of my life” session ($M = 3.6$) and the individual sessions ($M = 3.2$). Participants responded least positively to the relaxation techniques ($M = 2.2$). The adolescents pointed out in the open questions the fact that they liked the program because they were able to perform music and did not need to be able to play an instrument.

Discussion

A blended treatment program of music therapy and elements of DBT-A for adolescent NSSI seems to be feasible in an outpatient setting. Our aim was to provide an interesting and attractive approach for teenagers with this combination, with the goal to utilize music as an emotion regulation skill and give the incentive of playing in a band and recording music in a studio to foster treatment adherence. The interpretation of our findings is very limited due to our small number of participants ($N = 5$), but the program might be effective in helping adolescents to stop self-injuring.

NSSI was reduced in most of these highly vulnerable adolescent females, and this effect was stable after 2 months without treatment. Our results were achieved in a treatment-experienced

group, in which 4 out of the 5 adolescents already had been hospitalized in an inpatient child and adolescent psychiatric setting for NSSI, suicidality, and comorbid psychiatric disorders. Thus, it was not surprising that suicidal ideation was present in 3 of the participants during the program and that short hospitalization was necessary. This underlines the necessity of good cooperation with inpatient treatment facilities when working with self-injuring adolescents.

It is critical that we point out that we were not able to fulfill our aim and provide a treatment option for adolescents who so far had not been in treatment. Although we provided a media campaign in the community using regional newspapers and radio and television stations, we were only able to reach two adolescents, out of which only one entered the program, despite the high prevalence rate for NSSI that was assessed in this region (Plener et al., 2009). This could be due to a failure to reach adolescents via newspaper and local radio and television stations. Given the latest data about media usage in adolescence in Germany, computers are now more frequently found in adolescents’ rooms than television sets (Feierabend & Rathgeb, 2008). It could be worthwhile to inform adolescents about upcoming projects by using local message boards or forums focusing on NSSI on the Internet. It is also possible that the program was not attractive to adolescents, leading to this low response rate from the community. As the program took place in the facilities of a child and adolescent psychiatric and psychotherapeutic department, this may have deterred adolescents from participation. This could explain the observation that the program was well received by former patients who had already established contact with child and adolescent psychiatry. This leaves the question for treatment approaches with a lower entry threshold still unanswered. It seems worthwhile to focus future actions at the school level, as it was pointed out in the study by Fortune et al. (2008) that adolescents thought that family, peers, and school could be more helpful in preventing NSSI than external agencies. With this in mind, another approach could be to revert to concepts as described in community music therapy (Pavlicevic & Ansdell, 2004). Given that the aim of community music therapy was defined as using music as an “engaged social and cultural practice, and as a natural agent of health promotion” (Ansdell, 2002), adolescents especially could benefit from spin-offs of such projects that are implemented in the community. As it was demonstrated in our project, cooperation with a child and adolescent psychiatric inpatient ward is crucial in handling suicidal crises. This should be kept in mind when thinking about further implementation of such concepts at the community level.

Another limitation of our pilot study is the extreme heterogeneous sample. Our participants were highly diverse with regard to psychiatric history, diagnosis, and level of NSSI. Although it also can be seen as a strength of this project to be able to show reductions in NSSI even in patients with histories of psychiatric inpatient treatment, we also feel that we could not provide sufficient help to one adolescent who was severely disturbed and had a high level of suicidal ideation and an underlying personality disorder. It seems that this program is

a feasible approach to provide help for adolescents with NSSI who are mild to moderately depressed and can even help to maintain a stable state after NSSI has ceased, but future studies will clearly have to address the issue of which adolescents profit best from such an approach.

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Declaration of Conflicting Interests

The authors declared no potential conflicts of interests with respect to the authorship and/or publication of this article.

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Appendix

Songs That Were Chosen, Rehearsed, and Recorded

- “Boulevard of Broken Dreams,” Green Day
- “Behind Blue Eyes,” The Who/Limp Bizkit
- “Zombie,” The Cranberries
- “Wind of Change,” The Scorpions

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