

## **Residential Treatment of Self-Injury**

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This chapter focuses on the residential treatment of self-injury. The term “residential” refers here to community-based group homes, special education boarding schools, and psychiatric inpatient settings. This chapter does not discuss treatment of self-injury in forensic or correctional facilities.

It is not an easy task to write about residential treatment because it is among the most under-researched topics in the field of self-injury. While we were able to locate a few studies on the inpatient treatment of self-injury, we found none whatsoever regarding group home or residential school settings. The absence of empirical research from group home/ residential schools is regrettable because since the 1980s, the number of children and adolescents being served in such settings has increased substantially (Connor, Doerfler, Toscano, Volungis & Steingard, 2004). “Analyses suggest that the growth in residential treatment has been accompanied by decreased access to inpatient treatment and that residential treatment centers increasingly serve as an alternative to inpatient psychiatric care ...” (Connor et al., 2004, p. 498). Some of the influences behind this increase have been the emergence of managed care and related efforts to reduce expensive inpatient treatment. The view of managed care professionals is that residential treatment is a cost effective alternative to inpatient care. Whether it is an effective treatment alternative has yet to be established.

### Literature on Residential Treatment of Self-Injury

Many of the earliest citations in the clinical literature regarding self-injury came from inpatient settings (e.g., Offer & Barglow, 1960; Podvoll, 1969; Pao, 1969). Generally, these reports described the forms of the behavior and speculated as to motivations and psychodynamics. They did not discuss treatment at length. The 1970s and 80s brought preliminary efforts to use empirical methods to study self-injury primarily in hospital or group home settings. For example, Ross and McKay (1979) studied the prevalence, clinical correlates, and relationship dynamics of self-injury in a large residential school for girls. They reported that in a sample of 136 an astonishing 86 percent of the girls had self-injured, representing one of the more dramatic social contagion episodes on record. Walsh and Rosen (1988) studied adolescents from both inpatient and group home settings and reported associations between histories of abuse, body alienation, and self-injury. Favazza, DeRosear, and Conterio (1989) also reported strong associations between NSSI (then called “self-mutilation”), eating disorders, and traumatic experiences. While Walsh and Rosen (1988) and Favazza et al. (1987) discussed the treatment of self-injury, they did not provide empirical assessment of treatment efficacy.

Only recently have researchers turned to the evaluation of treatment effectiveness related to self-injury. Muehlenkamp (2006) reviewed the empirically supported treatments of NSSI and concluded that two variants of cognitive-behavioral treatment have been evaluated most extensively in relation to NSSI: Problem-Solving Therapy (PST; D’Zurilla & Goldfried, 1971; D’Zurilla & Nezu, 2001) and Dialectical Behavior Therapy (DBT; Linehan, 1993a, 1993b; Miller, Rathus & Linehan, 2007). Only a few

inpatient applications of PST or DBT have been empirically evaluated; to date, none exist for group home or residential school applications.

Crowe and Bunclark (2000) evaluated a complex version of inpatient PST that included cognitive restructuring, medication, group and family therapy. After treating 58 self-injuring clients over a four year period, they reported that 32 substantially decreased their NSSI, 23 stayed the same, and 3 got worse. Their study did not employ a control group.

As noted in Muehlenkamp (2006), in a meta-analysis of 20 studies involving PST conducted by Hawton and colleagues (1998), the majority failed to produce reductions in NSSI or failed to produce reductions that were superior to controls. Therefore, Muehlekamp concluded that “overall, the research regarding the effectiveness of PST is inconclusive” (2006, p.170).

The findings regarding the residential treatment effectiveness of DBT appear somewhat more promising. DBT was originally presented as an outpatient treatment for suicidal women with borderline personality disorder. In the first randomized clinical trial, DBT was found to significantly reduce psychiatric hospitalizations, parasuicide attempts, medical severity of parasuicide, and treatment dropout in comparison with TAU controls (Linehan, Armstrong, Suarez, Allmon & Heard, 1991). (Note: in this and other DBT studies, the operational definition for “parasuicide” resembled but was not identical to the definition of NSSI used in this volume. Parasuicide included the common forms of NSSI but also such behaviors as non-fatal overdose). Since this first evaluation of DBT, a number of additional RCTs have been conducted (see Miller et al., 2007), but none have involved inpatient or community residential settings.

We located three non-RCT studies that evaluated the effectiveness of DBT in treating NSSI on an inpatient basis. Barley and colleagues (1993) described an effort that transformed a psychodynamic inpatient unit to a inpatient DBT program (Barley, Buie, Peterson, Hollingsworth, Griva, & Hickerson, 1993). Drawing on a sample of 130 patients, they reported a significant decline in parasuicide in comparison to the previous treatment regimen. They also compared the new DBT service to another inpatient unit (without randomization) and found significantly lower rates of parasuicide on the DBT service.

Katz and colleagues (2004) described a 2-week inpatient program for adolescents. They modified Miller and colleagues' (2007) 16-week outpatient DBT protocol and provided individual DBT therapy twice per week, plus daily skills training groups, diary cards, and behavioral and solution analyses. Using standardized measures, they compared 26 adolescents receiving DBT with 27 adolescent receiving TAU on measures of depression, suicidal ideation, hopelessness, parasuicidal behavior, hospitalizations, and other variables. Results were that the DBT group had significantly less behavioral incidents on the ward than the TAU patients. At one year follow up, both the DBT and TAU patients demonstrated significantly reduced parasuicidal behavior, depression, and suicidal ideation. Thus, results were equivocal as to any unique DBT effects.

Bohus and colleagues (2000) applied standard DBT in a 3 month inpatient program for adult women. A sample of 24 yielded significant reductions in NSSI at 1-month post discharge. This study did not employ a control group. Bohus and colleagues (2004) then performed a follow up study comparing the DBT inpatients with a wait list/TAU group. Subjects were again evaluated 1-month post discharge and showed

significantly less NSSI than the controls (31 % vs. 62%). However, 31 percent still represents a substantial portion who were self-injuring.

Based on these findings from inpatient settings, Miller and colleagues concluded, “there are no data to suggesting that inpatient treatments are effective in reducing suicidal behavior and non-suicidal self-injurious behavior” (p. 33). This conclusion seems to be more conservative than warranted. Granted there are no RCTs in support of the effectiveness of inpatient DBT in treating NSSI, but there have been some encouraging findings that at least point in the right direction. This brings us to a discussion of the community residential treatment of NSSI.

#### Community-Based Residential Treatment of NSSI

As noted above, to date there are no empirical studies of the treatment of self-injury in group homes or residential schools. This is unfortunate in that such settings can provide treatment that is both intensive and extensive. Clients are in care many hours per day over extended periods of time. Such duration offers considerable opportunities for teaching and practicing new skills that may assist clients in learning to give up self-injury and other self-harm behaviors. Of course, the intensity of residential settings can also have associated risks. Having multiple people live together who present with emotion dysregulation and dysfunctional behaviors can sometimes exacerbate these difficulties. One example is the social contagion of self-injury which will be discussed later in this chapter.

Connor and colleagues (2004) have argued that, “Residential treatment needs to progress beyond the one size fits all approach and develop more specific and empirically proven treatments for the specific needs of [distinct] populations” (Connor et al. 2004, p.

497). Towards this end, The Bridge of Central Massachusetts, a non-profit human service agency, for which the first author serves as Executive Director, decided in year 1999 to implement evidence-based practices in its group homes and supported housing programs tailored to meet the needs of diverse clientele. One of the groups we serve has been suicidal and self-injuring adolescents. In reviewing the literature on the treatment of self-destructive people, we concluded that DBT was the most promising, empirically validated approach for the adolescents we serve. After being intensively trained in DBT, we took on the project of transforming a generic, “treatment as usual” group home for teens into a comprehensive DBT program. The components of this program will be briefly described, after which some preliminary outcome data will be provided.

In May 2001, The Bridge opened Grove Street, a 9-bed program that serves male and female youth between the ages of 13 and 19 years old. The program is located in a three story, single family-style home in a middle class neighborhood. The adolescents served by Grove Street have had significant difficulties controlling their emotions and have displayed impulsive and self-destructive behaviors. They often are depressed, anxious, and aggressive and have had problems with substance abuse, eating disorders, and attention deficits. Most have had multiple, extended psychiatric hospitalizations (see data below). For an adolescent to be admitted to the residence, the severity of the disturbance must be expected to worsen without intensive clinical intervention; there must be a documented assessment that the adolescent or his or her family would be placed at risk if the adolescent were to live at home; and a less restrictive setting has to be ruled out as inappropriate or unavailable.

The Grove Street program offers the forms of DBT treatment summarized in Table 1. The table indicates how the provision of DBT at the Grove Street differs from Linehan's (1993a) original outpatient DBT formulation. There is a full-time intensively trained, Master's level therapist who provides the individual DBT therapy and skills training in the program.

Table 1 Provision of Standard Outpatient DBT Versus Grove Street DBT

Treatment Modality	Standard Outpatient DBT	Grove Street
Individual therapy	Provided by outpatient clinician	Provided by clinician on site
Group skills training	Led by clinician & co-leader; one 2.5 hour group per week	Led by clinician & several residential counselors; two 1 hour groups per week
Diary cards	Client self-monitors	Residential staff prompt and monitor daily
Coaching in crisis	Clinician (by phone)	Clinician or residential counselors on site
Structuring the environment	Informal, as needed	Formal point and level system based on DBT targets
Family therapy and skills training	Not included except by Miller et al. (2007)	Family therapy on site two times per month; Family DBT skills training monthly
Consultation team	All clinicians on team	Agency DBT director, clinician & all residence staff
Pharmacotherapy; Case management	Outpatient as needed	Provided on site

As the table indicates, a number of modifications have been made to standard outpatient DBT. These changes were made to accommodate the emotional and behavioral challenges and developmental abilities of the adolescent clientele. For example, adolescents with short attention spans tolerate groups of one hour duration much better

than 2.5 hour sessions. Also, teaching skills using activity-based learning is generally more effective than more formal, didactic instruction. A behavior management point and level system based on DBT targets is employed in order to provide more trials for skills practice and generalization. All residential staff are trained in the DBT principles of validation. Their counseling focuses on conveying acceptance, while also fostering the learning of new skills that reduce problem behaviors and enhance quality of life. The residence also offers family therapy and skills training with parents and children participating conjointly. The emphasis is on generalization of DBT skills to the home environment during treatment and post-discharge.

Despite these modifications, the program strives to provide DBT according to protocol. Core DBT skills were maintained in the protocol, but there were differences in the way these skills were developed and the staff's role in promoting the skills' generalization to daily activities. As with standard DBT, individual therapy in the residence focuses on the standard DBT targets and uses chain analyses and diary cards tailored to the needs of each youth. Also, the DBT skills training covers all the skills in the manual within a six month time period, consistent with Linehan's outpatient timeframe.

#### Some Preliminary Outcome Data for the Grove Street Program

Given that there is an absence of empirical research on the treatment of self-injury and related problems in group home settings, we thought it important to present some preliminary data regarding the Grove Street program. These data are from five years of program operation, 2001-2006. During this period, the program has served 42 adolescents. Of these, 31 have been females and 11 males. The age range has been 13 to



19 years with a mean of 17.1 ( $SD = 1.53$ ). The funder for the program, Massachusetts Department of Mental Health, refers all clients and the program has no right of refusal. The majority of these adolescents came to this program from very restrictive treatment settings (locked residential treatment program or psychiatric hospital). All clients referred to the program had received multiple DSM-IV-TR diagnoses, with the following distribution for the 42 clients: Major Depressive Disorder, 42.5%; Bipolar Disorder, 33.3%; Oppositional defiant, 33.3%; PTSD, 30.9%; Substance Abuse, 26.1%; ADHD- 22.1%; Anxiety Disorder, 14.2%; Eating Disorder- 9.5%. Grove Street does not provide its own diagnoses for clients. (Note: none had been diagnosed with borderline personality disorder because technically this diagnosis cannot be employed until age 18). Length of stay for the clients ranged from one month to 26 months, with a mean of 10.75 months ( $SD = 5.11$ ).

Because Grove Street is a single DBT adolescent residence with no sustained waiting list, there was no opportunity to randomly assign subjects to different treatment conditions. We did devise an alternative strategy that permits some statistical comparisons. We noticed early in the process of operating the program that clients seemed to do better when they had participated in, and in most cases, completed two full courses of DBT. A course consisted of six months of treatment during which all the skills in the DBT manual were covered. Our interpretation was that the first round of DBT allowed the clients to learn the skills in a preliminary way, and the second round enabled them to consolidate this learning and to apply the skills in their day to day lives more consistently and effectively. The second round also offered more opportunity to generalize the use of the skills to the home environment post-discharge.

We therefore decided to compare two groups of clients comprised of those who had participated in two rounds of DBT treatment (defined here as seven months or more of residential care) versus those who had received one round or less (six months or less). The first group is referred to here as the “more treatment group.” Their lengths of stay in the program ranged from 7 to 20 months with an average of 12.3 months ( $SD = 4.14$ ). The comparison group is referred to as the “less treatment group.” Their lengths of stay ranged from two to six months with a mean of 4.0 months ( $SD = 3.16$ ).

The outcomes that we examined were the number of instances of non-suicidal self-injury (NSSI), number of suicide attempts, number of psychiatric hospitalizations, and the total number of days that clients spent in the hospital. NSSI was clearly differentiated from high lethality suicidal behavior in this program. Instances of NSSI included cutting, self-hitting, abrading, hitting, burning, scratching, self-piercing, and picking. A single incident of NSSI frequently involved inflicting more than one wound. Suicidal behavior included acts like overdose, hanging, jumping from a height, or ingestion of a poison. Our hypothesis was that clients who completed more treatment would do better on all outcome variables.

The more treatment group was comprised of 29 individuals or 69% of the total served. This group included 20 females (69%) and 9 (31%) males; the racial composition was 25 Whites, 1 Latino, and 1 Black. For the less treatment group, there were 11 females (85%) and 2 (15%) males, and the races were 11 Whites, 1 Latino, and 1 Black. Therefore, the two groups were different as to gender, but quite similar as to race.

All outcome variables were assessed during three time periods: the 6-month period immediately preceding admission to the Grove Street Program, the period

corresponding to the first round of DBT treatment (up to six months of treatment), and the 6-month period following discharge from the program. A series of 2 (more treatment vs. less treatment groups) X 3 (time) repeated measures ANOVAs were conducted to determine whether there were significant differences between the treatment groups or whether there were significant differences in outcome measures across the 3 time periods. There were no significant group X time interactions for any of the analyses reported below.

A major goal of the Grove Street Program is to eliminate clients' NSSI. There were no significant differences between the more treatment and less treatment groups in the number of self-injurious behaviors,  $F(1, 40) = 1.22$ , but there was a significant difference across the three time periods,  $F(2, 80) = 12.70$ ,  $p < .001$ . Post-hoc comparison of the time periods revealed a significant linear effect,  $F(1, 40) = 17.09$ ,  $p < .001$ , indicating a significant decrease in the occurrence of self-injury behaviors for both treatment groups. (See Figure 1.) It is noteworthy that NSSI continued to decline for both groups during the 6-month period following discharge from the Grove Street Program.

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Insert Figure 1 About Here

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We recoded the self-injury variable to determine whether there were differences between the more treatment and less treatment groups in the number of clients who had any occurrence of NSSI during the 6-month period after discharge from Grove Street. There was a significant difference between the groups in the number of clients who self-injured during the follow-up period,  $\chi^2(1) = 4.01$ ,  $p < .05$ . Only one client (3%) in the

more treatment group self-injured after discharge from the program, but 23% of the clients in the less treatment group engaged in self-injurious behavior after discharge.

The occurrence of high lethality suicidal behavior is another important clinical issue for these clients. For this outcome, there were no significant differences between the more treatment and less treatment groups in the number of suicide attempts  $F(1, 41) = 3.08$ . Moreover, there were no significant differences in the number of suicide attempts across the 3 time periods,  $F(2, 82) = 1.35$ . Figure 2 presents the graphs for suicide attempts for the more treatment and less treatment groups. Inspection of the graph for the group that received less treatment shows a U-shaped curve. For this group, suicide attempts appear to decrease during treatment at Grove Street, but then increase following discharge from the program.

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Insert Figure 2 About Here

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We recoded the suicide attempt variable to examine whether there were differences between the more treatment and less treatment groups in the number of clients who attempted suicide during the 6-month period after discharge from Grove Street. During the 6-month follow-up period, there were no differences between the treatment groups in the number of clients who attempted suicide,  $\chi^2(1) = 2.12$ . No clients in the more treatment group attempted suicide and only one client from the less treatment group had done so. However, this adolescent attempted suicide 9 times by overdose and was admitted to a long-term locked facility.

Overall, the findings indicate that suicidal behavior was unlikely to occur while these adolescents were in treatment at Grove Street. With the exception of one client in the less treatment group, suicidal behavior did not occur during the 6-month follow-up period. This adolescent, however, made multiple attempts and was eventually admitted to a locked treatment facility.

We also examined whether there were changes in the rates of psychiatric hospitalization because many of these adolescents had a history of hospitalization prior to referral to Grove Street. With regard to the number of psychiatric hospitalizations, there was a significant difference between the more treatment and less treatment groups,  $F(1, 40) = 10.85, p < .005$ . As shown in Figure 3, the less treatment group had a significantly higher number of psychiatric hospitalizations across the three time periods,  $F(2, 80) = 0.03$ . This indicates that psychiatric hospitalization did not change during treatment at Grove Street or during the 6-month follow-up period.

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Insert Figure 3 About Here

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We recoded the hospitalization variable to examine whether there were differences between the more treatment and less treatment groups in the number of clients who had been hospitalized during the 6-month period following discharge from the program. During the follow-up period, 14% of clients in the more treatment group were hospitalized at least once and 39% of clients in the less treatment group were hospitalized at least once. However, this difference in the number of clients who were hospitalized during the follow-up period was not statistically significant,  $\chi^2(1) = 3.24$ .

We also examined the number of days that clients spent in a psychiatric hospital. There were no significant differences between the groups in the number of hospital days,  $F(1, 40) = 0.66$ , but there was a significant difference across the three time periods,  $F(2, 80) = 3.96$ ,  $p < .05$ . Post-hoc comparison of the 3 time periods revealed a significant quadratic effect,  $f(1, 40) = 4.32$ ,  $p < .05$ . As shown in Figure 4, there is a U-shaped pattern, with a significant decrease in the number of days clients spend in a psychiatric hospital from the 6 month pre-treatment period to the first round of DBT treatment at Grove Street. However, the number of days in a psychiatric hospital increased following discharge from Grove Street. Inspection of Figure 4 reveals that the less treatment group had an increase in the number of hospital days following discharge, whereas the more treatment group remained the same. This finding suggests that clients in the less treatment group had a weakening of treatment effects after leaving the Grove Street Program.

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Insert Figure 4 About Here

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Overall, these findings indicate that the number of times that these adolescents were hospitalized did not change during the treatment and follow-up periods. However, the total number of days that these adolescents spent in an inpatient psychiatric facility decreased significantly while they were engaged in the first round of DBT treatment. In other words, the number of psychiatric hospitalizations remained the same, but the average duration of each hospitalization was shorter when clients were engaged in the first round of DBT treatment.

This decrease in the total number of days of inpatient psychiatric treatment was maintained during the 6-month follow-up period for the adolescents who received more DBT treatment. In contrast, the total number of days of inpatient psychiatric treatment increased somewhat for adolescents who received less treatment during the 6-month follow-up period. Even though the number of days of inpatient treatment for adolescents in the less treatment group increased during the 6-month follow-up period, these adolescents still spent fewer days in an inpatient psychiatric facility than they did during the 6-month period that preceded their referral to the Grove Street Program.

#### Discussion

The findings suggest that DBT can be effectively adapted to a residential treatment program to reduce self-injury and other problem behaviors in adolescents. The adolescents who were treated showed a significant decrease in NSSI after they entered the Grove Street Program. It is particularly noteworthy that self-injurious behaviors continued to decrease during the 6-month period following discharge from the program.

The absence of a control group requires that these findings be interpreted cautiously. Other factors, besides the DBT treatment provided at Grove Street, may account for these findings. It is important to recognize, however, that these adolescents were referred to this program because the severity of their disturbance was expected to worsen without intensive intervention. Hence, spontaneous remission or the passage of time probably cannot explain the improved outcomes for these clients.

Our hypothesis that clients who completed 2 rounds of DBT would have better outcomes than clients who completed 1 round or less (6 months or less of treatment) was generally supported. For adolescents who received 1 round of DBT, the decrease in the

number of self-injury incidents was comparable to the decrease exhibited by adolescents who received more treatment. However, during the follow-up period, there were significant differences in the number of clients who self-injured. During the 6-month period after discharge, only 3% of clients who received 2 rounds of DBT self-injured, whereas 23% of clients who received less treatment did so.

A similar pattern was found for rates of psychiatric hospitalization. The adolescents who received 2 rounds of DBT had a smaller number of hospitalizations than the adolescents who received less treatment. Moreover, 14% of adolescents who received 2 rounds of DBT were hospitalized at least once during the 6-month period following discharge from Grove Street, but 39% of the adolescents who received less treatment were hospitalized at least once following discharge from Grove Street. This difference was not, however, statistically significant.

Although the findings suggest that clients who received 2 rounds of DBT tended to have better outcomes than clients who received less treatment, it would be premature to conclude that longer or more intensive treatment produces more improvement because clients were not randomly assigned to receive 1 or 2 rounds of DBT. In some instances, clients who received treatment for 6 months or less were discharged to locked psychiatric facilities because they were unable to handle the demands of residential treatment. Adolescents who received less treatment had significantly higher rates of psychiatric hospitalization at all 3 time periods than adolescents who received 2 rounds of DBT, which suggests that adolescents who received less treatment exhibited more severe disturbance.



Even though we cannot conclude that longer treatment produces better outcomes for these adolescents, the present findings provide some valuable clinical insights. For example, these findings suggest that clients who have more extensive histories of psychiatric hospitalization may need additional services to succeed in a residential treatment program such as Grove Street. Alternatively, these clients may need additional treatment components or interventions that expand the focus beyond NSSI (e.g., more intensive family therapy, substance abuse treatment, CBT for major depression).

This study represents the first evaluation of DBT for self-injury in a residential treatment program for adolescents. As is often the case with this kind of initial evaluation, there are multiple limitations to the data presented here. The sample was very small and from a single treatment setting in Massachusetts. Two groups were compared as to treatment effects, but there was no random assignment. The two groups were not comparable as to gender distribution. Moreover, there was some evidence that the less treatment group was more dysfunctional in the six months prior to admission, in that substantially more of the less treatment group came from inpatient or locked residential settings. In addition, the less treatment group had higher rates of hospitalization in the six months prior to admission than the more treatment group. Therefore, better outcomes for the more treatment group may have been due to pre-existing differences in the level of disturbance and dysfunctional behavior in the two groups. It is possible that the less treatment group experienced poorer outcomes, not because they received less treatment, but because they were substantially more impaired.

Other influences that could have played a role in the positive outcomes for the more treatment group include historical/ contextual influences that are unknown. Another

concern is that treatment was evaluated only at six-months post-discharge. Ideally, additional assessments would have been performed 1 and 2 years post-discharge.

On the positive side, the data and results reported here do represent a step forward. This study appears to be the first regarding the treatment of self-injury and related problems in a community residential setting. The findings are encouraging because residential DBT treatment appeared to work quite well for a large portion of clients in terms of reduced rates of self-injury, hospitalization, suicidal behavior, and successful return to family living. This contribution is important in that large numbers of self-injuring youth are treated in such settings and empirical evaluation is warranted. Future studies in such residential settings should include larger, more diverse samples, employ randomized assignment and control groups, and perform more sophisticated statistical analyses.

#### Self-Injury Contagion in Residential Programs

A final topic for this chapter is the phenomenon of social contagion of self-injury. As just reviewed, one advantage of residential treatment settings is that intensive treatment can be provided over extended periods of time. However, congregate living can also lead to an exacerbation of problems. One such dilemma that has been frequently reported in the literature is the social contagion of self-injury. Ross and McKay (1979), Walsh and Rosen, (1988), Favazza (1987), Taiminen, Kallio-Soukainen, Nokso-Koivisto, Kaljonen, and Helenius (1998) and Walsh (2006) have all written on the topic of self-injury contagion. Walsh and Rosen have defined the phenomenon in two ways: 1) when acts of self-injury occur in two or more persons within the same group within a 24 hour period (Rosen & Walsh, 1989), and 2) when acts self-injury occur within a group in

statistically significant clusters or bursts (Walsh & Rosen, 1985). These two definitions have different emphases and are not incompatible.

Contagion episodes have generally been reported in children, adolescents or young adults living in institutional or treatment settings such as orphanages (Holden-Davis, 1914), inpatient units (Offer & Barglow, 1960; Crabtree & Grossman, 1974; Taiminen et al., 1998), prisons (Virkkunen, 1976), juvenile detention facilities (Ross & McKay, 1979), group homes (Walsh & Rosen, 1985), or special education schools (Rosen & Walsh, 1989). Unfortunately, self-injury contagion has yet to be studied in normative settings such as public schools, universities, and the community at large.

Although the phenomenon has been reported anecdotally for almost a hundred years, Walsh and Rosen (1985) were the first to provide some empirical evidence of self-injury contagion. We studied a group of 25 adolescents in a community-based group home over a one year period. We found that self-injury occurred in statistically significant clusters or bursts whereas other problems such as aggression, substance abuse, suicidal talk, and psychiatric hospitalizations did not.

Taiminen and colleagues (1998) replicated our findings in Finland. They studied a group of 51 adolescent psychiatric inpatients over a one year period. They also reported that self-injury occurred in statistically significant clusters. Of particular interest in their report was that two subjects self-injured for the first time while on the psychiatric unit. Taiminen and colleagues concluded that a majority of self-injury events in closed adolescent units may be triggered by contagion and that self-injury can spread to adolescents previously naïve to self-injury (Taiminen et al., 1998). Thus, treatment programs can be hotbeds of contagion where iatrogenic effects emerge. Clients who go to

such settings to receive help may instead acquire new problematic behaviors such as self-injury. Such risks make the need to understand, manage, and prevent contagion all the more important.

### Motivations Regarding Self-Injury and Contagion

One way to better understand contagion is to explore motivations for self-injury. This has been a fertile area for recent research. When individuals have been asked why they self-injure, they usually cite intrapersonal (internal psychological) reasons as being most important, with interpersonal functions of self-injury having a secondary role. For example, Osuch, Noll, and Putnam (1999) studied a sample of 75 adult inpatient self-injurers. Their factor analysis of self-report data looked at motivations for self-injuring. Six factors emerged in the order of: 1) affect modulation, 2) desolation (desire to escape feelings of isolation or emptiness), 3) self-punishment and other motivations, 4) influencing others, and 5) magical control of others, and 6) self-stimulation. Thus, the first three and the last concerned intrapersonal dimensions, while the fourth and fifth factors concerned more interpersonal motivations. For this sample, the interpersonal motivations were present but of secondary importance.

As noted elsewhere in this volume, Nock and Prinstein (2004) also found intrapersonal motivations to be more powerful than interpersonal in predicting self-injury. They proposed and evaluated four primary functions of NSSI: 1) automatic-negative reinforcement (e.g. removal of unpleasant affect), 2) automatic-positive reinforcement (e.g. to feel something better even if it was a different form of pain), 3) social-negative reinforcement (e.g. to avoid punishment from others), and 4) social-positive reinforcement (e.g. to gain attention from others or communicate unhappiness).

Their sample consisted of 108 adolescents admitted to an inpatient psychiatric unit. The group yielded a sample of 89 individuals who had self-injured at least once. The authors performed a factor analysis on patient self-report data and found that “scores on the automatic-positive reinforcement subscale were significantly higher than both social reinforcement subscales.” More than half of the self-injurers reported doing the behavior “to stop bad feelings.” Items on the automatic reinforcement subscales were endorsed by 24 to 53% of the subjects while items on the social reinforcement subscales were endorsed by only 6 to 24% of the subjects. They concluded that the subjects “reported engaging [in self-injury] in order to regulate emotions much more frequently than to influence the behavior of others” (p. 14).

Rodham, Hawton, & Evans (2004) reported similar results in their study of adolescents performing deliberate self-harm. Their sample included 220 fifteen and sixteen year old self-cutters from school settings in England. The most frequently selected reasons for cutting (from a list of eight options) were intrapersonal in nature. These included such items as: “I wanted to get relief from a terrible state of mind,” and “I wanted to punish myself.” Interpersonal items such as, “I wanted to find out if someone really loved me,” or “I wanted to get some attention,” or “I wanted to frighten someone,” were cited much less frequently (Rodham et al., 2004, p. 82). The authors concluded that youth who self-cut were more likely to cite depression, escalating affective pressure, or a need to take one’s mind off problems than interpersonal items such as reacting to arguments with others or seeking attention (Rodham et al., 2004).

While such research suggests that interpersonal factors are of secondary importance for most self-injury, when contagion episodes occur, the interpersonal

influences appear to become more salient. A very important line of future research would be to identify what contributes to social factors becoming especially prominent during contagion episodes.

Walsh had speculated elsewhere (Walsh, 2006) that the following dimensions may influence social contagion of self-injury:

- Desire for acknowledgment (e.g. “pay attention to me”)
- Desire to change the behavior of others (e.g. “if you don’t do x, I’ll cut myself”)
- Desire to punish (e.g. “see what you’ve made me do”)
- Desire to produce withdrawal (e.g. “perhaps now you’ll leave me alone”)
- Anticipation of aversive consequences (e.g. “if I assault someone I’ll go to jail, if I cut myself, the penalties are modest”)
- Competition for caregiver resources (particularly in residential settings where staff resources can be scarce)
- Peer competition (e.g. peers compete as to who is the “best” at NSSI)
- Direct modeling influences (behavior influenced by modeling alone without apparent contingencies)
- Disinhibition (e.g. those who are striving not to self-injure are disinhibited by witnessing self-injury in others)

Note that the first seven items in this list can be conceptualized as consistent with Nock and Prinstein’s (2004) functional approach. That is to say, these influences for self-injury contagion involve negative social reinforcement (e.g. producing the withdrawal of others or avoiding aversive consequences) or positive social reinforcement (receiving attention,

coercing others). However, the role of modeling effects such as direct imitation or disinhibition may not fall within their framework.

Nonetheless, the important topic pertaining to self-injury contagion in residential settings is how to prevent it when possible, and how to manage it when not. I have provided elsewhere (Walsh, 2006) a school protocol that can serve as a prototype for responding to self-injury in group settings of diverse types. The basic principles for preventing self-injury contagion are the following:

- 1) Encourage self-injurers to stop talking about the behavior with peers, explaining that such talk is triggering, conducive to contagion, and may thereby “hurt their friends”
- 2) Instead, self-injurers should talk to trusted adults such as counselors, therapists or parents about their self-injury
- 3) Consistent with this approach, self-injurers in a milieu should be expected to cover up wounds, scars, and bandages as these visual cues can also be triggering
- 4) Group treatment methodologies should concentrate on skills training and avoid/prohibit discussions of self-injury
- 5) Individual therapy should be the modality where self-injury is worked on in depth

#### An Empirical Study of Self-Injury Contagion at Grove Street

In the previously described Grove Street DBT program, we have striven to be consistent with the above five principles. Towards this end, the program has very clear rules about client communication regarding self-injury. Within the program, it is a major rule violation for clients to discuss self-injury or exhibit their wounds or scars in the

midst of peers. In addition, skills training groups have strict rules about not discussing details of self-injury or other self-harm behaviors. Instead, self-injury is discussed at length in individual DBT therapy with emphasis on data collection using diary cards and behavioral chain analyses. Problem solving and skills practice in individual therapy prioritizes learning healthy emotion regulation and interpersonal effectiveness skills to replace self-injury. Data have already been presented indicating that the program appears to be quite successful in reducing rates of self-injury.

In order to measure whether self-injury contagion was occurring in the program., we conducted an empirical study replicating the design of Walsh and Rosen (1985). For a two and half year period, we collected data on daily basis regarding the occurrence/ non-occurrence of self-injury. We then analyzed the distribution of self-injury occurrences to determine if the behavior had occurred in statistically significant clusters or bursts. The result was that no significant clustering was found; rather, the distribution of acts of NSSI appeared to be entirely random. Given our previous problems with self-injury contagion in group settings (Walsh & Rosen, 1985; Rosen & Walsh, 1989), we tentatively concluded that the strategies identified above to prevent social contagion of NSSI have been effective.

### Conclusion

This chapter has reviewed the modest amount of empirical data related to self-injury in residential settings. The benefits and potential risks of treating self-injury in residential programs have been discussed. A brief summary of a rare empirical study of treatment outcomes regarding NSSI in a group home setting has been presented. There is



a pressing need for further research regarding the treatment of NSSI in residential settings.

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Figure 1

Comparison of Clients Who Received One or Two Rounds of DBT for Number of Self-Injury Episodes

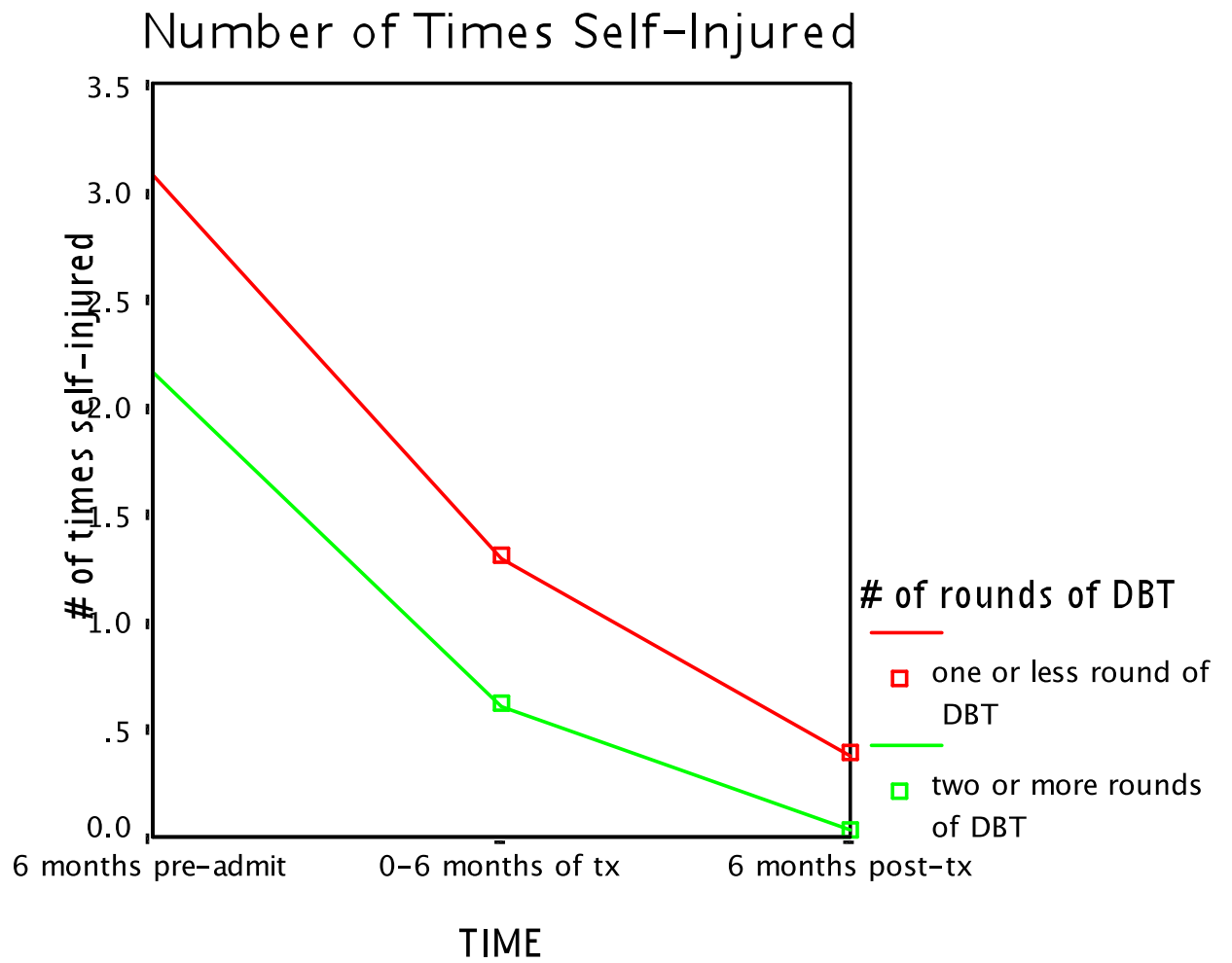


Figure 2  
Comparison of Clients Who Received One or Two Rounds of DBT for Number of Suicide Attempts

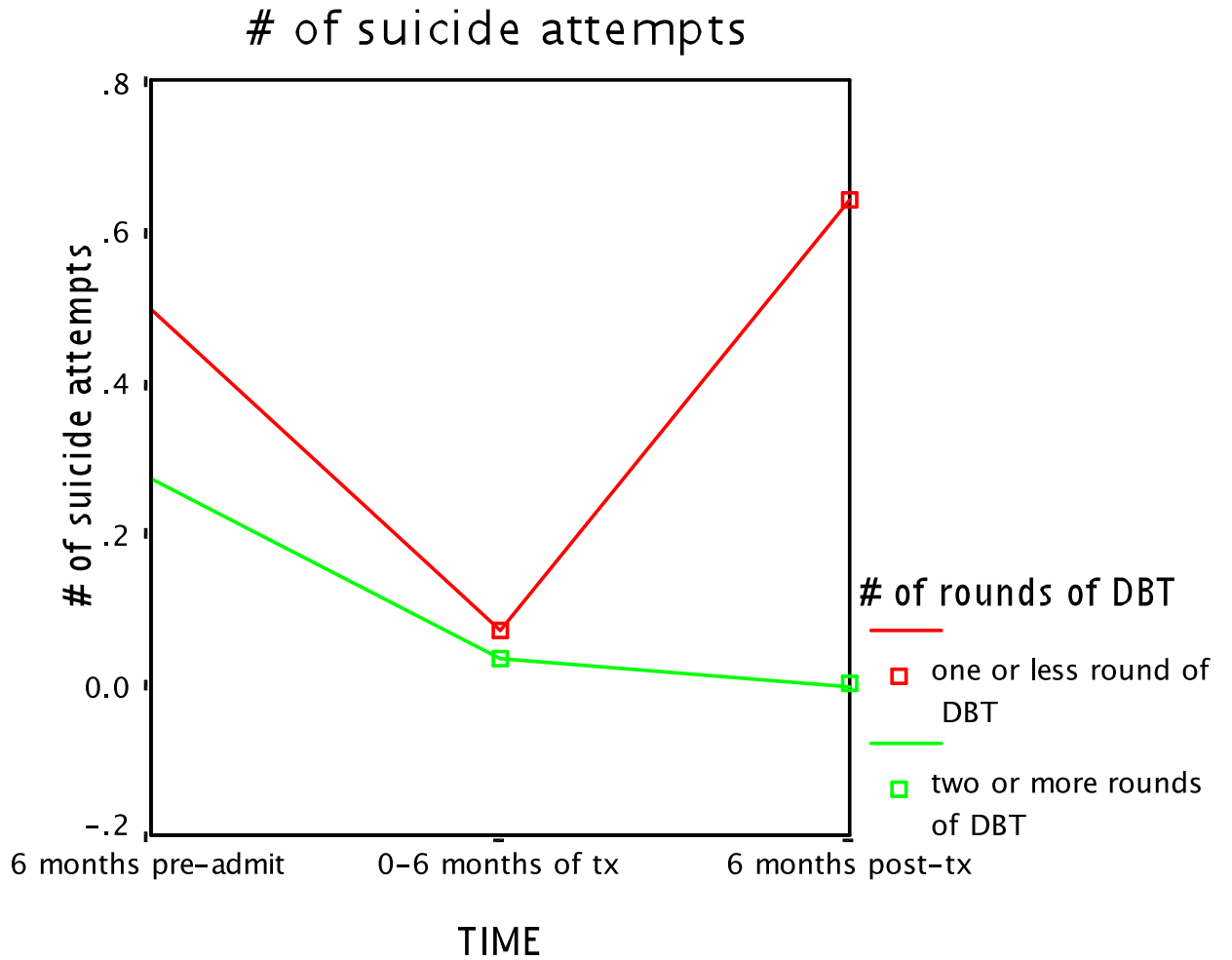


Figure 3

Comparison of Clients Who Received One or Two Rounds of DBT for Number of Psychiatric Hospitalizations

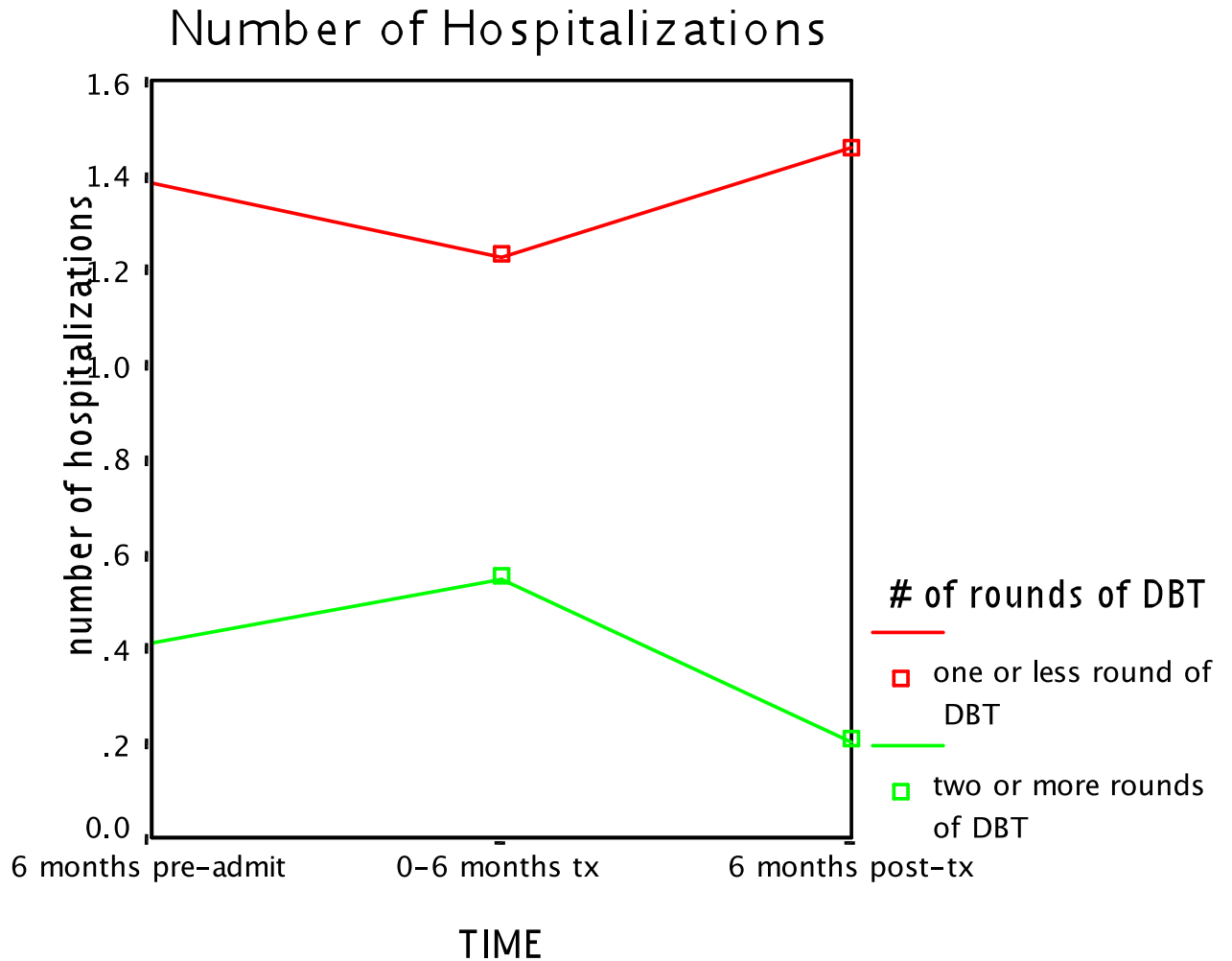


Figure 4

Comparison of Clients Who Received One or Two Rounds of DBT for Total Number of Inpatient Psychiatric Hospitalization

