RESEARCH ARTICLE

Cognitive behaviour hypnotherapy and Nonsuicidal self-injury disorder: Intervention study

Halima Sadia Qureshi,[1] Urooj Sadiq[2]

Abstract

Objective: To identify the effect of cognitive behaviour hypnotherapy on nonsuicidal self-injury condition.

Methods: The quasi-experimental study was conducted from May 2019 to April 2020 in Islamabad and Rawalpindi, Pakistan, and comprised students aged 18-25 years at various universities and colleges in the twin cities. The participants were screened using deliberate self-harm inventory for >2 events without suicidal intention in line with the Diagnostic and Statistical Manual of Mental Disorders 5th edition. They were then divided into two intervention and control groups. Over the following three months, the intervention group received cognitive behaviour hypnotherapy, while the control group did not receive any treatment. The groups were assessed post-intervention. The final phase comprised follow-up assessment of the condition. Data was analysed using SPSS 25.

Results: Of the 60 subjects, there were 30(50%) in each of the two groups. Overall, there were 41(68%) males and 19(32%) females. The majority of the subjects were aged 21-23 years 29(48%). More than 5 self-harm incidents were reported by 48(80%) subjects, while suicidal ideation was detected in 6(10%) students. The effect size of the study was good in terms of pre- and post-intervention values (d=4.90), the post-intervention and follow-up assessment values (d=0.32) and the pre-intervention and follow-up values (d=5.42). The comparison between treatment and no treatment groups indicated the effectiveness of treatment over no-treatment, $F(1, 58) = 53.16$, $p < .001$.

Conclusion: Cognitive behaviour hypnotherapy was found to be effective in treating the nonsuicidal self-injury condition.

Keywords: Nonsuicidal self-injury, Deliberate self-harm, Hypnotherapy, Cognitive therapy, Intervention study.

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Introduction

Nonsuicidal self-injury (NSSI) has been extensively studied and researched. The American Psychiatric Association proposed the Diagnostic and Statistical Manual of Mental Disorders fifth edition (DSM-5)[1] as a condition that needs further study. NSSI had several different definitions; in DSM-5, NSSI is defined as harming one's self physically, without suicidal intention.[2]

It is estimated that around 7.6% of adolescents meet the NSSI disorder criteria.[3] Around 87% of research on self-harm is done on adolescents, especially university students.[4] The higher percentage of research studies in this particular population could be because the prevalence of NSSI is higher in adolescents (46.5%) and young adults and lower (38.9%) in university students.[5]

Moreover, the risk involved in NSSI is the increased likelihood of suicidal attempts, and, in most cases, the cycle becomes repetitive.[6] The emotional and psychological aspects associated with the condition sometimes result in intentional or unintentional suicide.[7]

A study conducted in an armed forces hospital in Pakistan proved that around 80% of participants had minimum or no intention to commit suicide. However, the number of self-injury cases in emergency departments (EDs) demands in-depth research and study.[8]

Furthermore, it has been established that improvements in the prevention and intervention of NSSI are required as a separate measure.[9,6]

There have been two intervention studies done so far specifically for NSSI. The first one[10] evaluated emotion regulation group therapy (ERGT) for women with borderline personality disorder (BPD). Another intervention study[11] could not report the effectiveness of the treatment and the chances of relapse.

It is widely believed by both clinicians and researchers that NSSI is challenging to treat.[12,13] The severe and resistant nature of the condition asks for effective intervention to be introduced to deal with the damaging results of NSSI. There is need to study intervention in NSSI diagnosed as a separate disorder in DSM-5 excluding associated differential diagnoses, including BPD.[14]

The Four Function Model (FFM)[15] identified that four reinforcements could be interpersonal and intrapersonal

[1]Department of Psychology, Bahria University, Islamabad Campus, [2]Department of Psychology, Bahria University, Lahore Campus, Pakistan.

Correspondence: Halima Sadia Qureshi. Email: halimasaadiya@hotmail.com

situations, and in these two categories, reinforcements could be positive or negative. The positive interpersonal and intrapersonal reinforcements are targeted towards favourable responses in the case, like support, attention and relations stimulation. Similarly, the negative reinforcements of interpersonal and intrapersonal situations could be to stop an argument, to decrease tension, or provide relief. Based on this model, interventions can be planned using cognitive behavioural hypnotherapy (CBH) utilising the already available literature and evidence for cognitive behaviour therapy (CBT) and Hypnosis.

CBT has been an effective treatment for certain psychological conditions, including deliberate self-harm behaviour.[16] Additionally, Hypnosis has been used for several psychological disorders, like stress, anxiety and depression, with proven effective results.[17] Based on the evidence available for CBT and Hypnosis regarding their efficacy and suitability for integration, CBH is used.[18] The CBH is utilised following the Manual for Intervention.[19]

The current study was planned to identify the effect of CBH on NSSI cases. The hypothesis was that CBH would significantly reduce the number of days of NSSI between the pre-and post-intervention period, between the post-intervention and follow-up assessment, and between the pre-intervention and follow-up assessment. Lastly, there will be a significant difference between pre, post and follow-up intervention NSSI scores among the treatment and no-treatment groups.

Subjects and Methods

The quasi-experimental study was conducted from May 2019 to April 2020 in educational institutions (government colleges, semi-government and privates sector Universities) of Islamabad and Rawalpindi, Pakistan. These included Government Asgher Mall College for Boys, Rawalpindi, Capital University of Science and Technology (CUST) Islamabad, Bahria University, Islamabad, Air University, Islamabad. After approval from the institutional ethics review committee of Bahria University, Islamabad the sample size was determined using G-power calculator ver. 3.1[20] based on the results of a pilot study that was conducted due to lack of prior literature. The pilot study was conducted on a sample of 12 participants, with 10 completing the process, indicated the significant positive impact of CBH on NSSI symptoms.

The effect size 0.90 of the pilot study was used to determine the sample size of the main study for analysis of variance (ANOVA) and mean difference between two independent groups. The sample was raised using convenience sampling techniques from among students of either gender aged 18-25 years studying at various universities and colleges in the twin cities. A list of universities and colleges in the two cities was prepared, subject to permission from the institution and keeping in view the institution's proximity to the intervention location, one government college and three public and private-sector universities were selected. The inclusion criteria required at least three incidents of NSSI in the preceding three months and for the participants to be literate in English. Those having any differential diagnosis of NSSI, psychosis or drug use were excluded.

After taking informed consent from the participants, they were screened using Mclean screening instrument to screen BPD. The MSI-BPD instrument showed good sensitivity and specificity of 0.90 and 0.93, with a test-retest reliability being good at 0.72.[21]

During the selection and screening procedure, the demographics were obtained and the participants filled out the Deliberate Self-Harm Inventory (DSHI), which is part of Clinician-Administered NSSI Disorder Index (CANDI) that has shown good reliability, validity and feasibility, with interrater reliability 0.83, overall diagnostic agreement on all criteria 0.85, and internal consistency 0.71.[22] Also used was the Symptom Checklist-90 (SCL-90).[23] That can measure nine psychiatric symptoms and psychological distress. Its reliability, as assessed in Pakistan, ranges between 0.71 and 0.87. Scores on DSHI determined the number of days and incidents of self-harm required to meet the inclusion criteria. SCL-90 assisted in identifying differential diagnoses.

The initial assessment comprised suitability assessment for CBT, and Hypnosis was planned. The subjects were divided into intervention and control groups. They were not randomised in order to avoid bias. They groups were matched based on the frequency of days the participants had indulged in NSSI. CBH was presented as treatment in the intervention group, while the control group received no treatment. The rationale of the intervention was not blinded for the therapist or the participants.

There were 12-13 weekly CBH sessions of 50-60 minutes each. The sessions included thought record forms and homework tasks to monitor and practice the skills learned in the sessions. A single therapist conducted all sessions.

Each individual was analysed post-intervention to identify the effect of the intervention on the frequency of NSSI days. Data was analysed using SPSS 25. Paired sample t-test was used to identify the effect of the intervention on pre-intervention, post-intervention and at 3-month follow-up stages. The mixed model repeated measures ANOVA was used to identify the comparison between treatment and no-treatment groups' pre, post and follow-up scores. The paired sample t-test and ANOVA was used, although the

data was not normal, according to the F-test's effect size and robust nature.[24] P<0.05 was considered significant.

Results

Of the 600 students approached, 106(17.7%) were screened and 71(67%) of them were included. Finally, 60(84.5%) subjects completed the study till the follow-up stage; 30(50%) in each of the two groups (Figure). Overall, there were 41(68%) males and 19(32%) females. The majority of the subjects were aged 21-23 years 29(48%). More than 5 self-harm incidents were reported by 48(80%) subjects, while suicidal ideation was detected in 6(10%) students (Table-1). At baseline, the frequency of self-harm between the two groups was not significantly different (p>0.05) The most frequent NSSI method used was scratching to bleed 32(53.3%), punching 30(50%), banging the head against the wall 24(40%), cutting the wrist 20(33.3%), striking the skin with a sharp object 15(25%), preventing a wound from healing 13(21.7%), biting one's self 11(16.7%), other ways 10(16.7%), carving words on skin

Table-1: Sociodemographic variables of the study participants.

Description (N=60)	f	%
Gender		
Male	41	68
Female	19	32
Age		
18 – 20 year	26	43
21- 23 year	29	48
24-25 year	5	8
Occupation		
Student	55	92
Both (Student + Working)	5	8
No. of SH incidents		
5 incidents	12	20
Numerous	48	80
Suicidal Intention		
Yes	6	10
No	54	90

SH: Self-harm.

Table-2: Difference in pre-intervention, post-intervention and follow-up assessment of the cognitive behaviour hypnotherapy (CBH) group.

	Pre-test M±SD	Post-Test M±SD	Follow-up M±SD	t (29)	p	Cohen's d
Pair 1 (Pre & Post)	6.13±1.22	.87±.90		24.60	.01	4.90
Pair 2 (Post & Follow-up)		.87±.90	.60±.77	1.61	.12	.32
Pair 3 (Pre & Follow-up)	6.13±1.22		.60±.77	25.73	.01	5.42

M: Mean, SD: Standard deviation.

Figure: Flow-chart of the study.

DSHI: Deliberate self-harm incidents,
NSSI: Nonsuicidal self-injurious,
BPD: Borderline personality disorder,
CBH: Cognitive behaviour hypnotherapy.

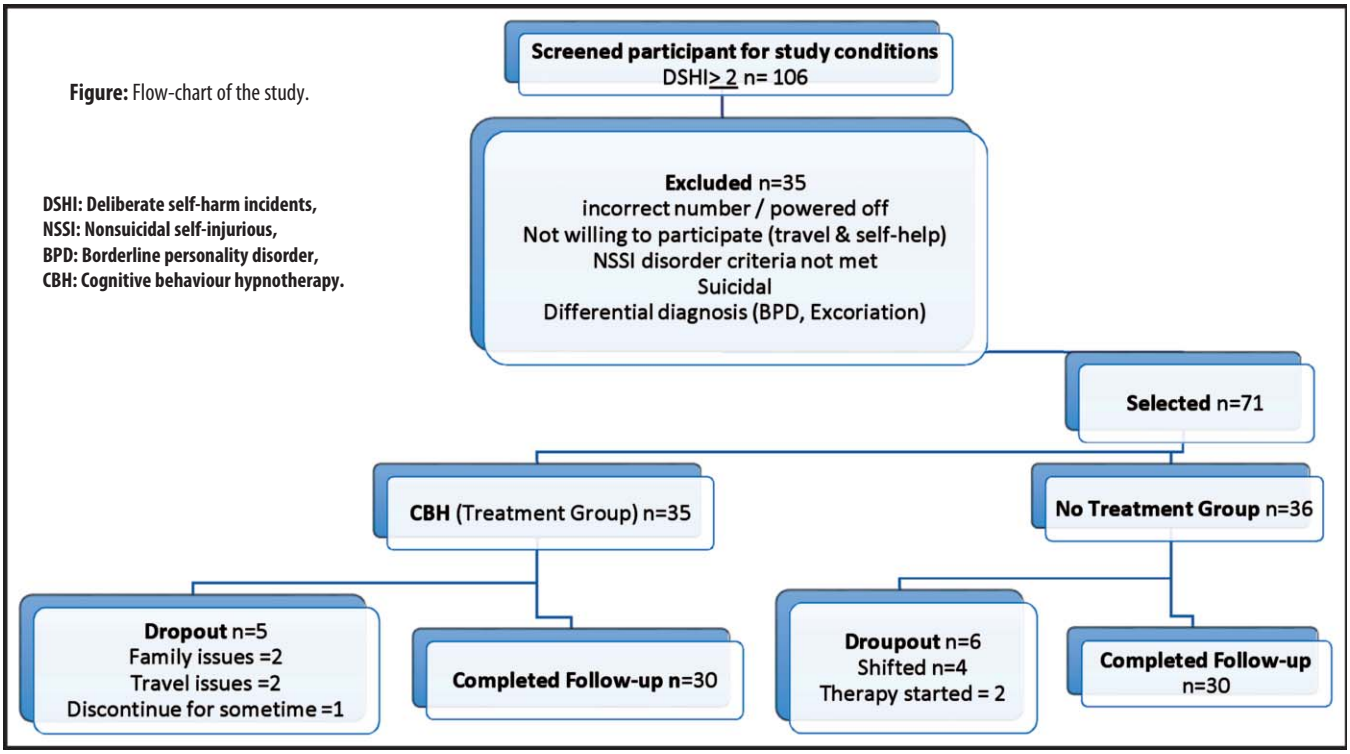

Table-3: Difference in pre, post and follow-up scores of the treatment and no-treatment group.

Predictor	Sum of Squares	df	Mean Square	F	p	η^2
(Intercept)	2546.27	1	2546.27	498.84	.001***	.90
Group	271.34	1	271.34	53.16	.001***	.48
Error	296.06	58	5.104			

Note. N=60. ANOVA= analysis of variance; Group= pre, post and follow-up group η2 represents partial Eta squared.
*** < 0.001.

6(10%), carving pictures on skin 4(6.7%), and burning with a cigarette, breaking one's bones 3(5%) each.

Within the intervention group, there was a significant difference in pre-intervention mean of 6.13±1.22 and post-intervention mean of 0.87±0.90 (p=0.01).

There was non-significant difference in post-intervention mean of 0.87±0.90 and follow-up mean of 0.60±0.14 (p=0.118).

There was a significant difference between the pre-intervention mean of 6.13±1.22 and follow-up mean value of 0.60±0.77 (p=0.01 (Table-2). The results of comparison between two groups (treatment vs no-treatment) revealed that there was a significant main effect of the intervention (CBH), F (1, 58) = 53.16, p < .001 (Table-3). This result indicates that treatment group ratings were significantly improved in comparison to the no-treatment group.

Discussion

In the current study, the first, third and fourth hypotheses were accepted, while the second hypothesis was rejected as there was no significant difference between post-intervention and follow-up assessments. Consistent with the past researches, CBT showed its effectiveness in managing self-harm behaviour,[25] and previous literature agrees that dysfunctional thoughts, suicidal cognitions, emotional problems, behavioural problems, and interpersonal issues can be dealt with using CBT. The detailed cognitive conceptualisation of irrational negative beliefs along with coping statements can help deal with self-harm behaviour. It also shows promising long-lasting results of improvement in the follow-up.[26] CBT is beneficial for self-harm behaviour and is also considered a highly effective therapy for other psychological disorders.[27]

In addition to CBT, the effectiveness of Hypnosis can also be determined in adolescents and adults with psychological disturbance. Clinical Hypnosis is now considered a teachable, safe, effective, and vital self-regulation skill.[28] Hypnosis has shown effectiveness for several problems, such as anxiety, pain, adjustment, stress and depression. Its efficacy is also highlighted when used as adjunctive therapy.[29] As discussed, the effectiveness of CBH is confirmed in the present study by providing support to existing literature regarding the valuable addition of Hypnosis in treatment to increase the efficacy.

Along with intervention strategies, identifying the most frequent deliberate self-harm strategy can help in planning the intervention as well as understanding the damage associated with self-destructive behaviour. The most frequent mode of self-harm was scratching to bleed, followed by punching oneself, banging head against something hard, and cutting the wrist or arm. These identifications can help the clinicians in measuring the impact of each of these types of self-harm and to plan prevention strategies. However, the least frequent mode of self-harm was burning with a cigarette or lighter, whereas dripping acid or rubbing the skin with sandpaper was never used by any participant in the current study. These frequencies point towards the latent understanding regarding the functioning of self-harm. The most frequent self-harm strategies were those that are more impulsive and instantly available without the use of any material or requirement, whereas the least used modes could be because of the non-availability of required materials or resources. Using this information, future research could target and figure out the specific demographics and treatment strategy correlates to control these harmful and impulsive urges.

Furthermore, the frequency of demographic characteristics reveals that self-harm has been seen frequently whenever the rules at home or in the family environment on daily activities are lenient. One explanation could be that they will be more prone to impulsive behaviour whenever there is less control over the adolescent or early adult activities. Also, adverse childhood experiences in the family can indicate that even when parents are not the source of negative experiences, other relatives and extended family can influence the individual's psychological well-being.

As per the findings discussed, the family environment and parental monitoring can be one factor to anticipate the onset of NSSI in adolescents. On the other hand, low parental monitoring could be a factor in developing NSSI.[30] Adverse childhood experiences and social support have been associated with an increased risk of NSSI.[31]

Future research can extend and identify familial factors specifically involved in NSSI. It can figure out the other demographic characteristics and their impact on treatment effectiveness and the functioning of the NSSI condition. Future research can also be conducted for longer than one year to figure out the effect of the

intervention on the DSM-5 criteria of NSSI disorder.

Conclusion

NSSI behaviour does exist in the community and is more frequent in early adulthood. In addition, CBH is an effective treatment strategy for NSSI and has long-lasting positive effects on the symptoms, as shown in the follow-up. However, there are no significant demographic characteristics linked with the efficacy of the treatment.

Disclaimer: The text is based on a Ph.D. thesis.

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