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Relations Between Past-Week Physical Activity and Recent Nonsuicidal Self-Injury in Treatment-Seeking Psychiatric Adults

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Abstract

Objective: This research study examines the relationship between past-week physical activity and recent (i.e., within the past 30 days) non-suicidal self-injury (NSSI) in a sample of treatment-seeking adults. **Method**: Participants included 353 (49.29% female; mean age = 35.16 years) adults attending a partial hospitalization program for acute psychiatric issues. Data were extracted from the program's admission battery of computer-based self-report measures completed by each participant on the first treatment day. **Results**: Participants with a recent history of NSSI (i.e., within the past 30 days) engaged in significantly less past-week physical activity than those without a history of NSSI. Group differences remained significant while controlling for anxiety, but not depression. **Conclusions**: Results suggest that on average, individuals who have never engaged in NSSI exercise more in the week prior to entering the partial hospital program than those who have a recent history of NSSI. Regular physical activity may be an interesting area of study to explore as a promising adjunctive intervention for NSSI (e.g., vigorous exercise as a way to tolerate distress and manage urges to self-injure).

Keywords: self-injury; self-harm; health psychology; prevention; intervention

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Non-suicidal self-injury (NSSI) is defined as the direct, deliberate destruction of one's own body tissue in the absence of suicidal intent (Favazza, 1987, 2011). NSSI is highly prevalent among adult psychiatric patients; 45% report lifetime NSSI (Andover & Gibb, 2010) compared to 5.9% in the general adult population (Klonsky, 2011). NSSI is associated with various psychiatric correlates, most commonly borderline personality disorder (BPD), mood disorders, and anxiety disorders (e.g., Klonsky, Oltmanns, & Turkheimer, 2003; Nock, Joiner, Gordon, Lloyd-Richardson, & Prinstein, 2006). Further, NSSI is an identified risk factor for suicidality (Glenn & Klonsky, 2009; Klonsky, May, & Glenn, 2013; Klonsky & Olino, 2008) and the two behaviors often co-occur (see Hamza, Stewart, & Willoughby, 2012 for a review). Notably, NSSI also occurs in the absence of other psychopathology (Klonsky, 2011) and may serve various functions (e.g., affect regulation) when alternative coping skills are unavailable or underdeveloped (Nock & Prinstein, 2004, 2005). Thus, this behavior is not limited to mental health settings; primary care physicians/nurse practitioners and educators may also frequently be faced with NSSI in medical/primary care settings (Kameg, Woods, Szpak, & McCormick, 2013) and on college campuses (Taliaferro & Muehlenkamp, 2015; Whitlock et al., 2011).

Regardless of the clinical urgency to treat patients presenting with NSSI, there are currently no empirically supported treatments (ESTs) for NSSI specifically (Brent et al., 2013; Ougrin et al., 2015; Prinstein, 2008), highlighting the need for further study of factors that may influence this behavior. Currently, components of existing treatment packages have proven useful in reducing this behavior (e.g., dialectical behavior therapy [DBT], emotion regulation group therapy [ERGT]; see Turner, Austin, & Chapman, 2014 for a review). Certain skills

commonly taught in these treatment packages (e.g., distress tolerance in DBT) may shed light on the potential effectiveness of physical activity for NSSI. However, the first step in this exploration is to better understand relations between physical activity and its relation to psychopathology generally, and NSSI specifically.

Evidence for the use of exercise as an intervention to reduce mental health symptoms has been mounting over the past decade. For instance, programs of moderate-intensity physical activity have demonstrated comparable effects to antidepressant medications in reducing symptoms of depression and anxiety in large, meta-analytic reviews (see Asmundson et al., 2013; Stathopoulou, Powers, Berry, Smits, & Otto, 2006). Likewise, among patients with schizophrenia, interventions including 90 minutes per week of moderate to vigorous-intensity physical activity resulted in reduced psychiatric symptoms such as anxiety and depression, and significantly improved functioning and neurocognition (see Firth, Cotter, Elliott, French, & Yung, 2015 for a meta-analytic review). With regard to symptoms attributed to affect regulation difficulties, DeBoer and colleagues (2012) noted that moderate-intensity physical activity moderated the relationship between anxiety sensitivity, a measure of distress intolerance, and binge eating. Women who engaged in more physical activity reported less binge eating than those with comparable levels of distress intolerance who did not binge eat. More generally, physical activity/exercise has been linked to pleasant-activated feelings due to what researchers have labeled the "feel-good effect"; that is, exercise is associated with an increase in the experience of feelings such as enthusiasm and energy (see Hyde, Conroy, Pincus, & Ram, 2011). Together, these findings indicate that exercise may be a promising addition to treatments focusing on reducing NSSI.

A small body of research on the relationship between physical activity and NSSI suggests that physical activity may be effective in reducing urges to engage in NSSI (Klonsky & Glenn, 2008; Wallenstein & Nock, 2007). In a single case-study design with a 26-year-old female with persistent, recurrent NSSI, Wallenstein and Nock (2007) found that regular exercise (i.e., exercising with a workout video three times/eek for one hour) significantly reduced both urges and episodes of NSSI over five weeks. Of note, the patient stopped exercising at one time point during the course of the study after an initial drop in weekly episodes of NSSI and immediately began engaging in regular NSSI. Once exercise was resumed, no episodes of NSSI were reported for the remainder of the study. Additionally, regular exercise significantly increased (i.e., improved) the patient's mood ratings. At eight week follow-up, improvements were maintained and the patient had lost 20 pounds (Wallenstein & Nock, 2007).

Further support for the utility of exercise as a way to manage NSSI has been reported among a sample of young adults ($N = 39$) who were asked how they resisted urges to engage in NSSI during a structured interview (Klonsky & Glenn, 2008). Participants were asked how often and how helpful they found 48 different methods that could be utilized to cope with urges to self-injure. Two thirds (65.7%) of the sample reported "Doing sports or exercise recreationally" at least once to cope with and resist NSSI urges. Of those participants who had engaged in sports/exercise, 62.5% rated these activities as "very helpful" in managing urges. Further, these "very helpful" methods used to resist NSSI were reportedly successful (i.e., after using the method, the individual did not engage in NSSI) 85% of the time on average (Klonsky & Glenn, 2008).

The most frequently reported function of NSSI is affect regulation (e.g., Nock & Prinstein, 2004). Following some of the initial work in this area, additional hypotheses emerged

about the relationship between reduction of negative affect and NSSI. One notable hypothesis relevant to the current study involves the endogenous opioid system (Bresin & Gordon, 2013). The endogenous opioid system may be relevant to understanding NSSI due to: 1) the possibility that individuals who have engaged in NSSI have lower resting levels of β-endorphin and enkephalins (which may increase how rewarding NSSI is experienced to be), and/or 2) the possibility that β-endorphin and enkephalins are released when an individual engages in NSSI, leading to either an increase in positive affect or a decrease in negative affect (Bresin & Gordon, 2013). In regards to the current study's focus on exercise and NSSI, this hypothesis is interesting in that it may explain how exercise may affect urges to self-injure. That is, when one exercises, β-endorphins are released, increasing endogenous opioid levels, which leads to a decreased need/urge to engage in NSSI (Bresin & Gordon, 2013).

Whether regular exercise is related to NSSI, and/or whether exercise may be used for prevention and intervention efforts for NSSI, is largely unknown. Due to the potential promising benefits of exercise in reducing NSSI, this study aims to take a first step in understanding the relationship between physical activity and NSSI by examining between-group differences for participants with and without histories of NSSI. First, we aim to examine rates of past-week physical activity in this treatment-seeking sample of adults; this aim is exploratory in nature. Second, we hypothesize that participants with a recent history of NSSI (i.e., have self-injured within the past 30 days) will report less past-week physical activity than those who have never engaged in NSSI. Third, we hypothesize that participants with recent NSSI will have higher self-reported depression and anxiety scores than those with no NSSI history. And finally, we hypothesize that participants with more severe NSSI will report less past-week physical activity than those with less severe NSSI.

Methods

Procedures

The current study was reviewed and approved by the study site's Institutional Review Board. All participants included in the current study provided written consent and were given the option to withdraw from the study at any point or to decline to answer individual items. Data were collected on site in a partial hospitalization program. Patients completed the assessment battery in the morning of their first day of treatment.

Participants

The sample consisted of 353 adults (49.29% female; see Table 1) attending a partial hospitalization program with acute psychiatric issues (e.g., major depressive disorder, bipolar disorder). Participant age ranged from 18 to 72 years, with an average age of 35.16 years (SD = 13.60). The sample was predominately Caucasian (87.80%). The majority of participants (36.00%) had some college education, 26.30% completed undergraduate education, and 28.60% had postgraduate education. According to the diagnosis on record assigned by the program psychiatrist at intake, the majority of participants were diagnosed with Major Depressive Disorder (46.90%). Other diagnoses included Mood Disorder Not Otherwise Specified (8.50%) and Major Depressive Disorder, Recurrent, Severe With Psychotic Features (6.50%). Prior to admission, 52.00% had been hospitalized in the past six months for a psychiatric condition. Due to the transdiagnostic nature of NSSI, no participants were excluded from the study due to clinical presentation/diagnosis. Of note, participants with a history of NSSI (M = 27.95, SD = 9.00) were significantly younger than those without a history of NSSI (M = 37.42, SD = 14.02; t (217.72) = 7.27, p = .000); there were also significantly more female participants with a history of NSSI, χ^2 (1, n = 353) = 4.62, p = .03. This age difference is not surprising, as younger age has

been associated with NSSI among adults with histories of lifetime NSSI (see Klonksy, 2011). Reports of sex differences for NSSI are mixed (see Andover, Primack, Gibb, & Pepper, 2010).

Assessment Measures

Inventory of Statements about Self-Injury – Behavioral Scale (ISAS; Klonsky & Glenn, 2009; Klonsky & Olino, 2008). The ISAS – Behavioral Scale is a brief self-report measure that assesses lifetime NSSI. The ISAS lists 12 methods of NSSI: banging/hitting self, biting, burning, carving, cutting, wound picking, needle sticking, pinching, hair pulling, rubbing skin against rough surfaces, severe scratching, swallowing dangerous chemicals. Participants respond to each method in yes/no format. For the purposes of the current study, two additional categories were added to the ISAS: "embedding" (see Lloyd-Richardson, Perrine, Dierker, & Kelley, 2007) and "Other NSSI." If "Other NSSI" was endorsed, participants were asked to write in the method of NSSI not listed. The ISAS has shown excellent internal consistency, good reliability (one-to-four week test-retest), and construct validity (e.g., college students; Klonsky & Olino, 2008). In the current sample, the Cronbach alpha coefficient was .84, indicating good internal consistency.

History of NSSI. Three additional items were added to the admission battery to assess NSSI: age at first episode of NSSI, most recent episode of NSSI (e.g., past week, past 30 days), and length of time that passes between initial urge to self-injure and taking action (e.g., less than one hour, 7-12 hours later). Participants answered these three questions only if one of the abovementioned methods of NSSI was endorsed on the ISAS. The ISAS and these three questions were administered on the day of admission to the treatment program.

Center for Epidemiologic Studies Depression Scale (CES-D-10; Andresen et al., 1994). The CES-D-10 is a brief, widely used self-report instrument for depressive symptoms (e.g., "I had trouble keeping my mind on what I was doing"; "My sleep was restless"). Each of the 10

items are rated on a 4-point Likert scale indicating symptom frequency, ranging from 0 (*Rarely or none of the time [less than 1 day]*) to 3 (*All of the time [5-7 days]*). The CES-D-10 has shown strong predictive and discriminant validity and adequate retest reliability (Andresen et al., 1994). In the current study, a 24-hr time frame was adapted for the CES-D-10 at intake since the measure was given daily during treatment; only findings from day one were used in this study. In the current sample, the Cronbach alpha coefficient was .86, indicating good internal consistency.

Generalized Anxiety Scale-7 (GAD-7; Spitzer, Kroenke, Williams, & Lowe, 2006). The GAD-7 Scale is a 7-item self-report measure designed to screen for generalized anxiety disorder (GAD), and is also considered a broad screen for anxiety disorders generally (see Kroenke, Spitzer, Williams, Monahan, & Lowe, 2007; Skodol, Geier, Grant, & Hasin, 2014). Items consist of statements about worry (e.g., "Not being able to stop or control worrying") and general somatic tension (e.g., "Trouble relaxing"). Each item is rated on a 4-point Likert scale indicating symptom frequency, ranging from 0 (*not at all*) to 3 (*nearly every day*). Higher scores indicate higher levels of GAD symptoms. The GAD-7 has demonstrated good clinical utility and generally strong psychometric properties in primary care settings and the general population (Kroenke et al., 2007; Löwe et al., 2008; Spitzer et al., 2006). In the current study, a 24-hr time frame was adapted for GAD-7 and was administered at intake on day one of treatment in the program. In the current sample, the Cronbach alpha coefficient was .88, indicating good internal consistency.

International Physical Activity Questionnaire (IPAQ; Hagstromer, Oja, & Sjostrom, 2006). The IPAQ – Short Version is a self-report measure that assesses past-week physical activity. It is comprised of seven items that ask individuals how many days they engaged in vigorous exercise (e.g., heavy lifting, fast bicycling), moderate exercise (e.g., bicycling at a

regular pace, doubles tennis), and walking (e.g., for recreation or leisure) for at least 10 minutes at a time. Sitting (e.g., at work, watching TV) is also included in the original IPAQ but was removed from the current analyses due to the fact that all participants sit, while not all participants are assumed to reach past-week thresholds for the other areas of physical activity assessed. The IPAQ generates total scores for minutes of vigorous and moderate exercise, and walking, as well as generating a total score for metabolic equivalency of a task (MET). The IPAQ has been used extensively, with reliability and validity testing conducted across 12 countries. It has also been shown as a reliable measure among individuals with severe mental illness (Soundy, Taylor, Faulkner, & Rowlands, 2007). In the current sample, the Cronbach alpha coefficient was .69, which is consistent with other findings (see Meeus, van Eupen, Willems, Kos, & Nijs, 2011).

Data Analysis

The goals of the current study were to 1) explore past-week physical activity in a treatment-seeking sample of adults, 2) explore between-group differences in past-week physical activity by NSSI status (i.e., no NSSI history vs. NSSI in the past 30 days), 3) explore between-group differences in self-reported depression and anxiety by NSSI status, and 4) explore whether past-week physical activity is associated with NSSI severity among patients with a history of NSSI. All analyses were conducted in SPSS 22. All data were examined for significant outliers. A total of seven participants had MET total scores on the IPAQ greater than three standard deviations from the sample mean; therefore, their data was excluded from analyses. Independent-samples t-tests were utilized to achieve study aims with follow-up ANCOVAs controlling for self-reported depression and anxiety.

Results

NSSI and Exercise in the Current Sample

Rates of NSSI were comparable to those reported previously; 84 (23.80%) participants endorsed NSSI within the past 30 days. Please see Table 1 for further information about characteristics of NSSI, and Table 2 for rates of past-week physical activity and self-reported depression and anxiety by NSSI status. Of note, the Center for Disease Control Advisory Committee has a set minimum health recommendation, stating that adults should engage in 150 minutes of moderate exercise per week. In the full sample, 100 (28.90%) participants met this minimum according to MET total scores. However, 115 (33.20%) participants reported zero minutes of both vigorous and moderate physical activity in the past week. These numbers suggest that one third of participants in the full sample were sedentary in the week prior to assessment.

Between-Group Differences: NSSI, Past-Week Physical Activity, and Affective Symptomatology

An independent-samples t-test was conducted to compare differences in past-week physical activity for participants with past 30-day NSSI history compared to those without (see Table 2). Significant between-group differences emerged for two of the four categories of physical exercise. First, participants with recent NSSI (M = 60.89, SD = 99.11) engaged in significantly less physical activity than those without a history of NSSI (M = 112.74, SD = 269.08) for total minutes of past-week vigorous physical activity, t (340.15) = 2.63, p = .01 (mean difference = 51.84, 95% CI: 12.99 – 90.70) with a small to medium effect size (Cohen's d = .26). Second, participants with recent NSSI (M = 58.33, SD = 92.17) engaged in significantly less physical activity than those without a history of NSSI (M = 103.82, SD = 283.09) for total minutes of past-week moderate physical activity, t (344.86) = 2.26, p = .03 (mean difference =

45.49, 95% *CI*: 5.86 – 85.11) with a small to medium effect size (Cohen's *d* = .23). No significant between-group differences were found for past-week total minutes of time spent walking or for MET total.

A second independent-samples t-test was conducted to compare differences in self-reported depression and anxiety for participants with NSSI history compared to those without (see Table 2). Significant between-group differences emerged for self-reported anxiety. Participants with recent NSSI (*M* = 12.75, *SD* = 5.71) reported significantly higher anxiety than those without a history of NSSI (*M* = 10.65, *SD* = 5.34), *t* (344) = -3.06, *p* = .002 (mean difference = -2.09, 95% *CI*: -3.44 – -0.75) with a medium effect size (Cohen's *d* = .38). Group differences did not emerge for self-reported depression for those with recent NSSI (*M* = 17.45, *SD* = 6.74) compared to those with no NSSI history (*M* = 15.87, *SD* = 6.52), *t* (343) = -1.90, *p* = .06 (mean difference = -1.57, 95% *CI*: -3.20 - .06) with a small to medium effect size (Cohen's *d* = .24).

Follow-up ANCOVA analyses demonstrated persistent between-group significance for past-week vigorous physical activity controlling for self-reported anxiety, *F* (1, 342) = 3.82, *p* = .05, partial eta squared = .01, but not for depression, *F* (1, 341) = 2.65, *p* = .11, partial eta squared = .01. Between-group significance for past-week moderate physical activity did not persist when controlling for self-reported anxiety, *F* (1, 340) = 2.95, *p* = .09, partial eta squared = .01, or depression, *F* (1, 339) = 1.82, *p* = .18, partial eta squared = .01.

NSSI Group Differences by NSSI Severity and Recency

A severity indicator was created to differentiate participants in the sample who endorsed NSSI according to severity of NSSI method (e.g., cutting = moderate/severe NSSI, hair pulling = minor NSSI; see Lloyd-Richardson et al., 2007). Forty-nine participants (13.90%) endorsed

moderate/severe NSSI and 35 participants (9.90%) endorsed minor NSSI. No significant differences emerged for participants with minor versus moderate/severe NSSI for past-week vigorous exercise, moderate exercise, or walking.

Further, we looked at severity of NSSI based on the number of methods of NSSI endorsed in the current sample, which ranged from 1 to 12 methods ($M = 3.37$, $SD = 2.34$). No significant differences emerged in past-week physical exercise for participants who endorsed two or more methods of NSSI compared to those with less than two methods (Anestis, Khazem, & Law, 2015; Robertson et al., 2013). Collectively, these results suggest that total minutes of past-week physical activity did not differ based on NSSI method severity (e.g., minor hair pulling vs. moderate/severe cutting or number of methods). Finally, no significant differences emerged between past-week physical activity and how recently the last episode of NSSI occurred (e.g., day of assessment, past week, past 30 days; Cohen's *d* ranging from -.03 - .49).

Discussion

Non-suicidal self-injury is a transdiagnostic behavioral symptom associated with mood, anxiety, and personality disorders (Klonsky et al., 2003; Nock et al., 2006). A small and intriguing line of research has identified exercise as a potential mode of coping to manage urges to engage in NSSI (Klonsky & Glenn, 2008; Wallenstein & Nock, 2007). Findings from this study explored total minutes of past-week physical activity among treatment-seeking adults with and without histories of NSSI. A third of participants in the full sample reported no physical activity in the week prior to assessment. Significant between-group differences emerged for past-week physical activity among participants with a recent history of NSSI compared to those without, which persisted while controlling for anxiety symptoms, but not depressive symptoms. We understand this to be due to the fact that both of our groups had clinically significant levels

of depression, which may overshadow the effects of NSSI given the strong conceptual relationship between depression and inactivity. However, the impact of affective symptomatology cannot be ignored in this acute clinical sample; whether exercise effects on mood impact changes in NSSI behavior is an area that requires further exploration and has gotten some recent attention in the adolescent literature (Boone & Brausch, 2016). Finally, in regards to analyses examining NSSI severity, no significant differences emerged for severity of NSSI behavior, suggesting that the severity of NSSI is not likely contributing to the differences in rates of past-week physical activity seen in the between-group comparison (i.e., recent NSSI vs. no NSSI).

Although between-group differences in the full sample were small, they are important and clinically meaningful because individuals who have engaged in NSSI in the past month may be part of a population particularly at risk for insufficient physical activity. Generally, among those with severe mental illnesses (SMI), exercise recommendations are met by only 4 to 6% of the population (Kessler et al., 2010; Okoro et al., 2014), with one-third of individuals with SMI classified as inactive or sedentary (Okoro et al., 2014). Thus, increases in regular physical activity may benefit the majority of individuals struggling with acute psychiatric distress, not just those who have recently self-injured.

This study adds to the emerging body of research that suggests that regular exercise may be an important area of future study to consider as an intervention for NSSI (Klonsky & Glenn, 2008; Wallenstein & Nock, 2007). Although correlational in design, this is the first study to examine the relationship between these behaviors in a transdiagnostic sample size this large. Related literature examining affect regulation (a frequently reported function of NSSI; see Nock & Prinstein, 2004, 2005) also suggests the potential benefits of physical activity in moderating

distress tolerance (DeBoer et al., 2012). Distress tolerance is defined as the perceived ability to tolerate unpleasant internal states (Peterson, Davis-Becker, & Fischer, 2014) and some evidence suggests that low distress tolerance is related to NSSI (Anestis, Pennings, Lavender, Tull, & Gratz, 2013; Peterson et al., 2014). These studies on distress tolerance are consistent with functional models of NSSI that show that NSSI reduces negative, unwanted affect (Nock & Prinstein, 2004, 2005). Targeting increases in regular physical activity may serve as a promising adjunctive treatment for NSSI through preexisting treatment modalities (e.g., as a distress tolerance skill in DBT; Linehan, 1993) or standalone behavioral coping strategy to reduce negative affect and increase pleasant-activated feelings (Hyde et al., 2011). Over time, engagement in regular exercise enhances the ability to respond to the physical stress of exercise (i.e., the cross stressor adaptation hypothesis); some evidence suggests that exercise enhances the ability to respond more effectively to psychological stress as well (DeBoer et al., 2012). Thus, regular exercise may be beneficial for targeting NSSI directly, as well as the psychological correlates often associated with it (Klonsky et al., 2003; Nock et al., 2006). Whether future studies in this area show an indirect effect through affective symptomatology (e.g., depression) for the relationship between NSSI and physical activity or support a direct effect, exercise may still be a helpful adjunctive treatment due to the positive effects exercise has on mood generally (e.g., Asmundson et al., 2013; Stathopoulou, Powers, Berry, Smits, & Otto, 2006). Future work in this area will further understanding of these complex relationships by examining potential mediating factors involved (i.e., affective symptomotology).

Although findings are intriguing and indicate an association between exercise and NSSI, they should be interpreted in light of several limitations. In regards to methodology, the study utilized a self-report, cross-sectional study design, thus it is not possible to infer causal

associations between main variables of interest. It could be that exercise is protective against NSSI, or, more frequent exercise may be a proxy for another construct (e.g., innate health-consciousness) unexplored in the current study. In the latter case, increases in regular exercise may not affect NSSI. Second, the current study includes a naturalistic, treatment-seeking sample; participants represent a high acuity psychiatric sample, which may limit generalizability of results to other populations. Third, although the IPAQ is one of the most commonly used measures of physical activity, limitations regarding the reliability of self-reported physical activity remain, suggesting that more reliable, objective measurement may be necessary. Relatedly, study measures did not assess additional health information (e.g., dietary habits, weight) that may further explain differences in physical activity between groups of individuals with and without histories of NSSI.

Future research is needed to further support the efficacy of exercise for NSSI in more heterogeneous samples and in methodologically sound randomized controlled trials to understand this relationship. Finally, more precise measurements of physical activity should be considered in future studies that do not rely solely on self-report data (e.g., use of an actigraph unit to monitor participant rest and activity cycles). Nonetheless, current study findings are novel in attempting to further understand relations between NSSI and physical activity.

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Table 1

Participant Demographics and NSSI Characteristics

Variable	NSSI+ (n = 84)	NSSI- (n = 269)
Demographics:		
Age: *M* (*SD*)	27.95 (9.00)	37.42 (14.02)
Gender: % Female	59.52%	46.10%
Ethnicity: % White	90.48%	86.99%
NSSI Characteristics:		
Age of onset: *M (SD)*	17.08 (9.45)	
Number of methods: *M (SD)*	3.37 (2.34)	
Most common method types: *n* (%)		
"Skin picking"	41 (48.80%)	
"Banging/hitting self"	39 (46.40%)	
"Cutting"	38 (45.20%)	
Recency of NSSI:		
Past 30 days *n* (%)	47 (56.00%)	
Past 7 days *n* (%)	30 (35.70%)	
Day of assessment *n* (%)	7 (8.3%)	
Time between urge and action:		
Less than 1 hour *n* (%)	40 (52.60%)	
1-3 hours *n* (%)	18 (23.70%)	
4-6 hours *n* (%)	3 (3.90%)	

7-12 hours *n* (%)	1 (1.3%)
13-24 hours *n* (%)	14 (18.4%)

Note. NSSI+ = Participants who reported non-suicidal self-injury (NSSI) within the past 30 days, NSSI- = Participants with no history of NSSI.

Table 2

Between Group Differences for Past-Week Physical Activity and Affective Symptomatology by NSSI Status

	NSSI+		NSSI-					
Variable	*M*	*SD*	*M*	*SD*	*t*	*p*	95% CI	Cohen's *d*
Vigorous Minutes	60.89	99.11	112.74	269.08	2.63	.01	12.99 – 90.70	.26
Moderate Minutes	58.33	92.17	103.82	283.09	2.26	.03	5.86 – 85.11	.23
Walking Minutes	246.85	398.11	222.67	393.39	-.49	.63	-121.29 – 72.94	.06
MET Total	1535.07	1817.16	2059.28	3791.26	1.22	.22	-319.44 – 1267.86	-.18
CES-D-10	17.45	6.74	15.87	6.52	-1.90	.06	-3.20 – .06	.24
GAD-7	12.75	5.71	10.65	5.34	-3.06	.002	-3.44 – -.75	.38

Note. NSSI+ = Participants who reported NSSI within the past 30 days, NSSI- = Participants with no history of NSSI, MET = metabolic equivalency of a task, CES-D-10 = Self-reported depressive symptoms, GAD-7 = Self-reported anxiety symptoms.