



Borderline Traits, Distress Tolerance, and Non-Suicidal Self-Injury (NSSI) among At-Risk Adolescents



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Introduction

- A recent review on NSSI prevalence among adolescents across settings reported rates ranging from 17 to 60 percent (Brown & Plener, 2017).
- NSSI rates are often higher among females rather than males, especially in adolescent samples (Sornberger et al. 2012).
- Much of the existing literature on at-risk adolescents focuses on externalizing problems. Far less emphasis is placed on internalizing behaviors such as NSSI.
- Distress tolerance refers to the ability to withstand negative thoughts and emotions. Distress tolerance has been negatively related to NSSI engagement among adolescents (Nock & Mendes, 2008).
- Borderline personality disorder (BPD) features, such as affective instability and negative relationships, have also been associated with NSSI engagement (Selby et al., 2013).
- It is expected that sex, distress tolerance, and borderline features will be unique predictors of NSSI. However, it is unclear which variables will be most predictive when all three are considered simultaneously.

Methods

Sample

- 100 at-risk adolescents solicited from a military-style residential program in the southeastern U.S.
- 76% male, 23% female
- Ages 16-19 years ($M = 16.7$, $SD = .76$)
- 66% Caucasian, 20% African-American, 5% Latino(a), 1% Asian, 4% multiracial, 4% other
- 23.5% reported past engagement in NSSI
- Mean age of first engagement = 13.4 years ($SD = 3.00$)

Measures

- **Distress Tolerance Scale** (DTS; Simons & Gaher, 2005)
- **Personality Assessment Inventory- Adolescent** (PAI-A; Morey, 2007)
- **Self-Injurious Thoughts and Behaviors Interview, Short Form, Self-Report** (SITBI-SF-SR; Nock et al., 2007; Muehlenkamp et al., 2010)

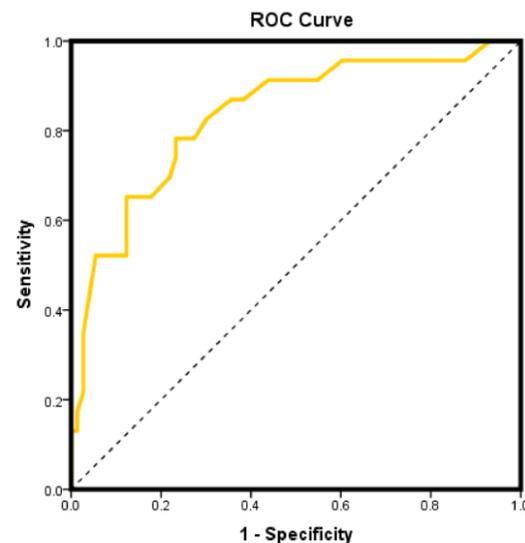
Procedure

- Part of a larger data collection at residential facility
- Data collection overseen by trained research assistants
- Computerized administration of all measures

Results

Data Analysis Procedure

- Bivariate correlations were calculated between DTS total score, PAI-A BOR score, NSSI engagement, and demographic characteristics (race and sex). Significant correlations were retained for regression analyses.
- Chi-square analyses were conducted to test sex differences in NSSI ideation and engagement.
- One-way ANOVAs were conducted to test differences in NSSI ideation and engagement across race.
- A logistic regression was conducted with NSSI engagement as the outcome variable. Sex, DTS total scores, and BOR scale scores were entered as predictor variables.
- As a follow-up analysis, Receiver Operating Characteristic (ROC) curves were plotted using BOR scores to predict NSSI engagement.



Bivariate Correlations

- NSSI engagement was significantly related to sex ($r = .24$, $p < .05$), PAI-A BOR scale scores ($r = .53$, $p < .001$), and DTS total scores ($r = .35$, $p < .001$).

Means Comparisons

- Females (63.6%) were significantly more likely than males (28.9%) to endorse NSSI ideation ($\chi^2(1) = 8.83$, $p < .05$).
- Females (40.9%) were more likely than males (17.3%) to endorse NSSI engagement ($\chi^2(1) = 5.39$, $p < .05$).
- No significant differences were observed across race.

Logistic Regression

- Results indicated that there was a significant association between sex, DTS, BOR, and NSSI engagement ($\chi^2(3) = 27.27$, $p < .001$).
- Individual predictors were examined and results indicated that BOR was the only significant predictor in the model when all predictors were included ($\beta = -.109$, $p = .001$).
- With all predictor variables included, 37.3% of the variance was explained ($R^2 = .373$).

ROC Curve

- A cutoff of ≥ 59.5 peak BOR T score classified participants as having engaged in NSSI with 77.1% accuracy, area under the curve (AUC) = 0.834, sensitivity = 78.3%, and specificity = 76.7% (see figure above).

Discussion

- Females were significantly more likely than males to endorse NSSI ideation and behavior. This finding is consistent with other research indicating that females who are involved in the juvenile justice system or who have externalizing symptoms are typically more psychologically severe than males in the same settings (Teplin et al., 2002).
 - Veysey (2003) suggested that females may exhibit more severe pathology in military-style treatment facilities, as these facilities are historically designed for males.
- Given that the sample consisted of non-treatment-seeking adolescents who do not necessarily meet criteria for BPD, it was expected that distress tolerance would be the strongest predictor of NSSI. However, PAI-A BOR explained nearly 40% of the variance in NSSI engagement, and was a stronger predictor than sex or distress tolerance.
 - Further research should examine more specific borderline components (e.g., affect instability, negative relationships) in relation to NSSI. For example, affective instability was a significant factor in NSSI engagement among a group of adolescents being treated for depression and suicide (Muehlenkamp et al., 2011). Less literature exists on how this relationship applies for adolescents in the current setting.
- Based on ROC analyses, it appears that a cutoff T score of 59.5 on the BOR scale can reliably predict a majority of those who have self-injured.
 - The PAI-A has demonstrated clinical utility in predicting PTSD (Calhoun et al., 2009), but little research exists on its accuracy to predict other forms of psychopathology. Future research should focus on testing other scales of the PAI-A in terms of ability to predict NSSI engagement.

Implications

- There is a need for increased attention on females in residential programs, as they often exhibit more severe pathology than males.
- Borderline features may be key targets for clinical assessment and treatment – even when a BPD diagnosis is not present.
- The PAI-A BOR may be useful in screening for risk of NSSI engagement by providing an accurate “cutoff score.” Other facets measured by the PAI-A (e.g., depression, stress, anxiety) may also provide clinical utility and should be further explored.
- Distress tolerance has been well-established as an important contributing factor to NSSI among adolescents. However, other constructs may play a more important role among this specific subset of at-risk adolescents.