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Contextual Features and Behavioral Functions of Self-Mutilation Among Adolescents

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Adolescent self-mutilative behavior (SMB) is a pervasive and dangerous problem, yet factors influencing the performance of SMB are not well understood. The authors examined the contextual features and behavioral functions of SMB in a sample of 89 adolescent psychiatric inpatients. SMB typically was performed impulsively, in the absence of physical pain, and without the use of alcohol or drugs. Moreover, analyses supported the construct validity of a functional model in which adolescents reported engaging in SMB for both automatic and social reinforcement. Considering the functions of SMB clarified the relations between SMB and other clinical constructs reported in previous studies such as suicide attempts, posttraumatic stress, and social concerns and has direct implications for the assessment and treatment of SMB.

Self-mutilative behavior (SMB) refers to the direct and deliberate destruction of one's own body tissue without suicidal intent. SMB is a pervasive public health problem occurring at a rate of 4% in the general adult population and 21% in adult clinical populations (Briere & Gil, 1998; Klonsky, Oltmanns, & Turkheimer, 2003). Adolescence is a period of significantly increased risk for SMB, as is evidenced by rates of 14%–39% in adolescent community samples (Lloyd, Kelley, & Hope, 1997; Ross & Heath, 2002) and 40%–61% in adolescent psychiatric inpatient samples (Darche, 1990; DiClemente, Ponton, & Hartley, 1991).

Despite the alarming prevalence and obvious dangerousness of SMB, it has received relatively little research attention and remains a poorly understood behavioral phenomenon. Several factors have contributed to the slow progress of research in this area. First, practical constraints, including the successful recruitment of research participants, the collection of reliable data, and the ethical and legal deterrents involved in the study of self-harm, have been a primary impediment to controlled research on SMB. Second, most previous studies of SMB have not used direct, systematic evaluation of self-mutilators but have taken the form of clinical case reports (e.g., Noshpitz, 1994; Offer & Barglow, 1960), large survey studies (e.g., Favazza & Conterio, 1989; Ross & Heath, 2002), or laboratory studies with healthy, nonmutilating participants (e.g., McCloskey & Berman, 2003). Variations in sampling and measurement methods used across these different studies have led to inconsistent and sometimes contradictory findings regarding the nature of SMB. Third, the few studies that have incorporated direct, systematic evaluation of self-mutilators generally have failed to move beyond evaluations of the clinical correlates of SMB and have neither examined the context in which SMB occurs nor tested theories about factors initiating or maintaining SMB. For instance, previous studies of adolescent SMB indicate it is correlated with a range of clinical constructs including: previous suicide attempts, hopelessness, symptoms of depression and anxiety, past loss or abuse, perfectionism, and loneliness, to name a few (Darche, 1990; Guertin, Lloyd-Richardson, Spirito, Donaldson, & Boergers, 2001; Klonsky et al., 2003; Penn, Esposito, Schaeffer, Fritz, & Spirito, 2003; Walsh & Rosen, 1988). Although the identification of such correlates may help predict who is at risk for SMB, this strategy does little to advance the understanding of why individuals engage in SMB—this is the primary goal of the current research.

There are many reasons individuals might engage in SMB. Some theoretical models suggest SMB is performed for the purpose of boundary definition, mastery of penetration and other sexual impulses, or mastery over death (see Suyemoto, 1998); however, perhaps as a result of problems operationalizing and measuring such constructs, these models have not received empirical support. More systematic research has demonstrated SMB may serve multiple functions such as the reduction of tension or to communicate with others (Brown, Comtois, & Linehan, 2002; Haines, Williams, Brain, & Wilson, 1995) Similar multifunction models of self-injury have been hypothesized and carefully evaluated among those with developmental disabilities (see Iwata et al., 1994) and may prove useful with nondevelopmentally disabled populations as well.

Building on these earlier findings, we recently developed and evaluated a comprehensive theoretical model that proposes four primary functions of SMB that differ along two dichotomous dimensions: contingencies for SMB that are automatic (i.e., within

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oneself)[1] versus social, and reinforcement that is positive (i.e., followed by the presentation of a favorable stimulus) versus negative (i.e., followed by the removal of an aversive stimulus; see Nock & Prinstein, 2004). Confirmatory factor analyses and reliability analyses supported the structural validity and reliability of this four-function model, with adolescents reporting engagement in SMB for automatic negative reinforcement (e.g., "To stop bad feelings"), automatic positive reinforcement (e.g., "To feel something, even if it is pain"), social negative reinforcement (e.g., "To avoid doing something unpleasant you do not want to do") and social positive reinforcement (e.g., "To get attention").

The primary goal of the current study was to extend this functional model in two ways. First, given that our four function model focuses solely on the reinforcement of SMB, our initial goal in the current study was to examine some of the contextual features that precede SMB (i.e., behavioral antecedents) as well as factors that may serve to punish SMB. We focused on several contextual features that have been discussed in previous reports but whose actual role in the performance of adolescent SMB has not been directly and systematically evaluated in a large clinical sample, including: the impulsiveness of SMB, the use of alcohol and drugs prior to SMB, the role of social modeling in the initiation of SMB, and the absence of physical pain experienced as a result of SMB. The information obtained in this study about the role of each of these contextual factors in the performance of adolescent SMB should have significant implications for researchers and clinicians alike. For instance, if alcohol use and social modeling influence the performance of self-harm, as suggested in an experimental study among healthy adult participants (McCloskey & Berman, 2003), then these factors should be targeted in research and intervention efforts. However, if these factors do not play a significant role in the performance of SMB, as was suggested in a large mail-in survey study of female adult self-mutilators (Favazza & Conterio, 1989), then researchers and clinicians may be better served by focusing on other factors influencing SMB.

Our second goal in this study was to use our functional model of SMB to help explain the relations between SMB and the heterogeneous list of clinical correlates identified in previous studies. Although it is certainly useful to know what constructs are correlated with SMB, a more detailed understanding of how and why these constructs are related to SMB would further elucidate the nature of SMB and facilitate research and clinical work in this area. We believed a consideration of the functions of SMB would help explain each of the previously observed correlations. Drawing from a functional perspective, we expected SMB to correlate with other clinical constructs for one of two reasons: The construct represents an antecedent condition or process that increases the probability of SMB, or the construct represents a functionally equivalent behavior. On the basis of such a model, the four functions of SMB should not relate uniformly to each of the clinical correlates of SMB, but rather each function should be related only with clinical constructs that represent a related antecedent process/dysfunction or that serve a similar function (convergent validity) and not with each of the other constructs (divergent validity).

Accordingly, on the basis of this functional theoretical model, we hypothesized a specific pattern of relations between the four functions of SMB and the associated clinical constructs. First, we hypothesized hopelessness and previous suicide attempts are uniquely associated with the automatic negative reinforcement function of SMB. That is, hopelessness represents a negative cognitive state from which one is likely to try to escape (i.e., an antecedent condition increasing likelihood of escape behavior) and suicide attempts represent a behavioral response that is often performed for the purposes of escape from negative affective or cognitive states (i.e., a functionally equivalent behavior; see Boergers, Spirito, & Donaldson, 1998; Hawton, Cole, O'Grady, & Osborn, 1982). Conversely, we did not expect engaging in SMB for automatic positive reinforcement or social communication to be associated with hopelessness or making a suicide attempt. Second, we hypothesized that symptoms of major depressive disorder (MDD) and posttraumatic stress disorder (PTSD) are uniquely associated with the automatic positive function, given the anhedonia, inactivity, and psychic numbness associated with these diagnoses are most likely to precipitate the need for SMB performed for feeling generation. Third, we hypothesized both social reinforcement functions of SMB are uniquely associated with social concerns such as loneliness and socially prescribed (vs. self-oriented) perfectionism. The demonstration of these specific relations would support the construct validity of our functional model of SMB but more importantly would enhance understanding of this complex behavioral phenomenon and its relations with other forms of psychopathology.

Method

Participants

Participants were 89 (23 boys, 66 girls) adolescent (12–17 years; $M = 14.7$, $SD = 1.4$) psychiatric inpatients who reported engaging in SMB in the previous 12 months. The ethnic composition of the sample was 76.4% European American, 8.9% Latin American, 4.5% African American, and 10.1% Mixed Ethnicity/Other. According to state census tract data, socioeconomic status for adolescents in this sample was: 3.0% High, 57.6% Moderate, 24.2% Low, and 15.2% Poverty. Participants in this study were included in our previous study of the functions of SMB (Nock & Prinstein, 2004); however, the current study examines a unique set of hypotheses and is thus reported separately.

Procedures

Data were obtained via comprehensive interviews administered on admission to an adolescent psychiatric inpatient unit. For participants admitted to the unit on more than one occasion during the study period, only data from the first admission were used. All study procedures were approved by the Institutional Review Board.

Measures

Self-mutilative behavior. Participants' engagement in SMB over the last 12 months was evaluated using the *Functional Assessment of Self-Mutilation* (FASM; Lloyd et al., 1997). Adolescents provided information about the frequency of different methods of SMB (i.e., whether and how many times they had engaged in behaviors such as cutting, burning, and inserting objects under their skin) and other characteristics of this behavior,

[1] We use the term *automatic* to refer to reinforcement that is conducted or carried out by oneself (consistent with previous research in applied behavior analysis) and not to refer to behavior that is performed without conscious effort (a definition often used in cognitive psychology).

including the amount of time they thought about each incident before engaging in the behavior, the degree of physical pain experienced, the use of alcohol and/or drugs during SMB, and their knowledge of the performance of SMB by their friends.

Participants also indicated on a scale ranging from 0 (*never)* to 3 (*often*) how often they had engaged in SMB for each of 22 different reasons. As supported by confirmatory factor analysis and reliability analyses (Nock & Prinstein, 2004) 21 of the items were placed into one of four subscales: automatic negative reinforcement (2 items: $\alpha = .62$), automatic positive reinforcement (3 items; $\alpha = .69$), social negative reinforcement (4 items: $\alpha = .76$), and social positive reinforcement (12 items: $\alpha = .85$). Subscale item means were used as the measure of each construct. A complete list of items, factor loadings, and frequency of endorsement of each method and function of SMB are included in Nock and Prinstein (2004).

Clinical constructs. Participants' number of symptoms of MDD, PTSD, and past suicide attempt status were evaluated with the Diagnostic Interview Schedule for Children (DISC; Shaffer et al., 1996), a structured clinical interview developed for use with children and adolescents ages 6 to 17 years. The DISC contains items that assess current and past symptoms, behaviors, and emotions corresponding to criteria from the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.; *DSM–IV*; American Psychiatric Association, 1994). The DISC has adequate diagnostic sensitivity (Fisher et al., 1993), test–retest reliability (Jensen et al., 1996), and criterion validity (Schwab-Stone et al., 1996). The presence of a suicide attempt in the previous 4 weeks was assessed via adolescents' self-report on the question: "In the past 4 weeks, have you tried to kill yourself?" This is consistent with the common use of structured interview items for the measurement of suicide-related constructs in adolescents (Nock & Kazdin, 2002; Prinstein, Nock, Spirito, & Grapentine, 2001).

Additional clinical constructs were examined through the use of well regarded and psychometrically sound rating scales in each domain. Hopelessness was assessed using the Hopelessness Scale for Children (Kazdin, Rodgers, & Colbus, 1986), a 17-item true–false scale measuring adolescents' negative expectancies for the future. Loneliness was assessed with the Revised UCLA Loneliness Scale (Russell, Peplau, & Cutrona, 1980), a 20-item, 4-point scale measuring statements describing the experience of being lonely and socially isolated. Perfectionism was assessed with the Child and Adolescent Perfectionism Scale (Hewitt & Flett, 1991), a 22-item, 5-point scale measuring multiple dimensions of perfectionism, with separate subscales for self-oriented (i.e., exceedingly high self-imposed self-standards) and socially prescribed (i.e., beliefs that others maintain exceedingly high standards for oneself) perfectionism.

Data Analytic Plan

Several data analytic strategies were used to evaluate the study hypotheses. First, the contextual features of SMB were evaluated by examining the descriptive statistics of adolescents' responses on the FASM. Second, the associations among the contextual features as well as their relations with the four functions of SMB were examined with correlational analyses. Third, after examining and controlling for the variance explained by demographic variables, relations between each of the four functions of SMB and the clinical constructs were evaluated via multiple regression analyses through the use of simultaneous entry.

Results

Contextual Features of SMB

Most self-mutilators contemplated SMB for a few minutes or less before performing each incident and reported not using alcohol or drugs during incidents of SMB, as is shown in Table 1. Despite the infrequency of alcohol and drug use during SMB, most adolescents reported experiencing little or no pain during each incident. In addition, 82.1% of adolescents reported SMB among at least one of their friends in the previous 12 months with an average of 4.11 ($SD = 3.17$, $Mdn = 4.00$, range = 0–11) SMB incidents, which suggests that social modeling may play a role in the performance of SMB.

Table 1
Descriptive Statistics for Contextual Features of SMB

Variable	*M*	*SD*
Contemplation		
Not at all	46	51.6
A few seconds	23	25.8
A few minutes	10	11.2
Less than one hour	2	2.2
Less than one day	1	1.1
1–2 days	1	1.1
More than 2 days	6	6.7
Alcohol/drug use	16	17.9
Pain		
No pain	42	47.2
Little pain	29	32.6
Moderate pain	11	12.4
Severe pain	7	7.9
Friends' SMB incidents	(4.11)	(3.17)

Note. $N = 89$. SMB = Self-mutilative behavior.

We performed additional analyses to examine the relations between these contextual features and the four functions of SMB. As is reported in Table 2, the four functions of SMB were significantly correlated. The shared variance among the subscales (15%–61%) indicates that although significantly related, the four functions represent distinct constructs. Endorsement of a social function for SMB was significantly associated with the amount of time spent contemplating SMB before engaging in this behavior and endorsement of the social positive reinforcement function was significantly associated with the number of SMB incidents performed by one's friends. In addition, endorsement of SMB for positive reinforcement (regardless of whether contingencies were automatic or social) was significantly associated with the absence of alcohol or drug use during SMB.

These relations are further clarified with a consideration of the associations among the contextual features examined. The experience of more physical pain during SMB was significantly associated with the amount of time spent contemplating SMB before doing it and the number of SMB incidents performed by one's friends. Thus, the more SMB hurts, the longer one thinks about it before doing it and the more likely one is to have a friend who also engages in SMB. Surprisingly, the experience of less physical pain was not related with the concurrent use of alcohol and drugs.

Relations Between the Behavioral Functions and Clinical Correlates of SMB

The relations between the four functions of SMB and adolescent age, gender, ethnicity, and socioeconomic status were evaluated in four simultaneous regression analyses. Entered as a block, these demographic variables failed to account for significant variance in scores on the automatic negative reinforcement subscale, $F(4, 84) = 2.19$, *ns*, $R^2 = .09$, or on the automatic positive reinforcement subscale, $F(4, 84) = 1.94$, *ns*, $R^2 = .08$, of the FASM. In

Table 2
Correlations Among Contextual Features and Behavioral Functions of SMB

	1	2	3	4	5	6	7	8
1. ANR	—							
2. APR	.52***	—						
3. SNR	.39***	.57***	—					
4. SPR	.34***	.57***	.78***	—				
5. Contemplation	.14	.12	.43***	.35***	—			
6. Alcohol/drug use	−.14	−.22*	−.15	−.25*	−.05	—		
7. Pain	.19	.07	.10	.13	.37***	.04	—	
8. Friends' SMB	−.03	.19	.11	.27*	.05	−.13	.41***	—

Note. SMB = self-mutilative behavior; ANR = automatic negative reinforcement; APR = automatic positive reinforcement; SNR = social negative reinforcement; SPR = social positive reinforcement.
* $p < .05$. ** $p < .01$. *** $p < .001$.

contrast, these demographic variables explained significant variance in scores on the social negative reinforcement subscale, $F(4, 84) = 2.93$, $p < .05$, $R^2 = .12$, and on the social positive reinforcement subscale, $F(4, 84) = 4.07$, $p < .05$, $R^2 = .12$. In these latter analyses, higher scores on both social negative and social positive reinforcement were associated with younger age, $\beta = -.22$ and $-.26$, respectively ($ps < .05$), and with ethnic minority status, $\beta = .26$ and .26, respectively ($ps < .05$). Therefore, adolescent age and ethnicity were controlled in subsequent analyses including the social function subscales.

The relations between the four functions of SMB and the clinical constructs mentioned above were evaluated in four simultaneous regression analyses. The clinical constructs examined explained significant variance in the automatic negative reinforcement, $F(7, 81) = 2.08$, $p < .05$, $R^2 = .20$; automatic positive reinforcement, $F(7, 81) = 5.72$, $p < .001$, $R^2 = .33$; social negative reinforcement, $\Delta F(7, 79) = 2.72$, $p < .05$, $\Delta R^2 = .18$; and social positive reinforcement, $\Delta F(7, 79) = 4.22$, $p < .001$, $\Delta R^2 = .24$, function subscales. Moreover, as shown in Table 3, the pattern of statistically significant relations supported the study hypotheses and the construct validity of our model. Specifically, recent suicide attempt and hopelessness were associated with only the automatic negative reinforcement function of SMB; depressive and posttraumatic stress symptoms were significantly associated with the automatic positive reinforcement function, and socially prescribed (but not self-oriented) perfectionism was related to the social reinforcement functions. In addition, depressive symptoms were also associated with the social reinforcement functions; however, loneliness was not significantly associated with any of the four functions.

Discussion

This study provided a detailed analysis of the contextual features and behavioral functions of adolescent SMB, a dangerous and alarmingly pervasive problem among this population. Our results indicate adolescent SMB typically is performed impulsively, without the use of alcohol or drugs, and in the absence of physical pain. These findings highlight salient concerns for researchers and clinicians. From a research perspective, this impulsiveness suggests that the performance of SMB is influenced by immediate internal and external contingencies rather than as the result of long-term decision-making processes and planning. However, it may be that this finding is specific to a population of individuals who have already engaged in SMB. The initial act of SMB may occur nonimpulsively, but subsequent acts may occur without substantial planning. Examination of antecedents to initial SMB episodes as compared with factors that serve to maintain or reinforce ongoing SMB is a high priority for future research. Nevertheless, from a clinical perspective, this impulsiveness and lack of physical pain is of high concern as this suggests SMB is difficult to prevent and treat given the limited time frame for

Table 3
Relations Between Clinical Correlates and Behavioral Functions of SMB

	ANR			APR			SNR			SPR		
Variable	*B*	*SE B*	β	*B*	*SE B*	β	*B*	*SE B*	β	*B*	*SE B*	β
Suicide attempt	**0.32**	**0.15**	**.22***	0.18	0.12	.14	0.09	0.09	.11	0.07	0.07	.10
Hopelessness	**0.05**	**0.03**	**.25****	−0.02	0.02	−.14	0.01	0.01	.09	−0.02	0.01	−.22
PTSD symptoms	0.02	0.02	.10	**0.05**	**0.02**	**.29****	0.00	0.01	−.06	0.00	0.01	−.07
MDD symptoms	0.04	0.04	.14	**0.10**	**0.03**	**.36****	0.04	0.02	.24***	0.06	0.02	.40***
Social-perfectionism	−0.01	0.01	−.14	0.00	0.01	.11	**0.01**	**0.01**	**.23*****	**0.01**	**0.01**	**.30****
Self-perfectionism	0.00	0.01	.01	0.00	0.01	−.06	0.00	0.01	.12	0.00	0.01	−.02
UCLA loneliness	−0.02	0.01	−.21	0.00	0.01	−.07	0.00	0.01	−.09	0.00	0.00	.03

Note. SMB = self-mutilative behavior; ANR = automatic negative reinforcement; APR = automatic positive reinforcement; SNR = social negative reinforcement; SPR = social positive reinforcement. Boldface values represent relations supporting study hypotheses.
* $p < .05$. ** $p < .01$. *** $p < .001$.

intervention and the lack of naturally occurring aversive consequences.

Our findings on the absence of physical pain during SMB are especially interesting. It has been proposed that SMB may be reinforced via the release of endogenous endorphins and that this release also serves to block the experience of pain (e.g., Haines et al., 1995). This may indeed be true in some cases; however, our results suggest that there is variability in the experience of pain during SMB. In this study, the experience of pain was associated with spending more time contemplating each incident of SMB and having a friend who also engaged in SMB, suggesting complex relations among pain and internal and social influences. The further explication of the relation between the experience of physical pain and SMB should figure prominently in the research agenda for SMB research, given the understanding of such relations holds promise for improving interventions aimed at blocking the soothing effects of SMB and increasing the naturally aversive consequences of such behaviors.

A substantial proportion of adolescents reported that their friends (from outside the hospital setting) had also engaged in SMB. Friends' behavior may increase adolescents' access to SMB through priming as a potential strategy for achieving automatic and social contingencies. Results indicated that the number of SMB incidents among friends was significantly associated with a social positive reinforcement function of SMB suggesting that some adolescents may believe that their friends' behavior was successful in eliciting specific social behaviors from others in the interpersonal context. Similar social influences have also been described in the literature on suicide contagion effects (Gould, 2001; Joiner, 2003) and represent another important avenue for further exploration.

Perhaps most importantly, the current study provided important information about the specific relations between the functions of SMB and related constructs, and these relations supported the construct validity of our functional model of SMB. Consistent with our predictions, the functions of SMB were differentially related to the clinical correlates from previous studies of SMB. Automatic negative reinforcement, the most frequently endorsed function among adolescents (Nock & Prinstein, 2004) was uniquely associated with hopelessness and a history of suicide attempts. Previous studies have reported associations between SMB and past suicide attempts and hopelessness (Dulit, Fyer, Leon, Brodsky, & Frances, 1994; Favazza & Conterio, 1989; Stanley, Gameroff, Michalsen, & Mann, 2001) but have failed to explain the nature of this relation. Given that adolescents who attempt suicide most often report they do so to escape negative experiences (Boergers et al., 1998; Hawton et al., 1982), our results suggest functional equivalence between these two forms of self-injurious behaviors in some instances.

The observed relations between an automatic positive reinforcement function for SMB and symptoms of MDD and PTSD support our hypothesis that the experience of feelings of emptiness, detachment, anhedonia, and a restricted range of affect may increase the likelihood of engaging in SMB for automatic positive reinforcement to generate certain sensations or feelings. Although not evaluated in the current study, we would hypothesize that the link between the experience of a significant loss or abuse during childhood and subsequent SMB (van der Kolk, Perry, & Herman, 1991; Zlotnick et al., 1996) may be specific to SMB for automatic positive reinforcement and that symptoms of depression and/or posttraumatic stress may mediate this relation. Long-term longitudinal analyses are needed to test this hypothesis; however, our data are consistent with such a model.

Previous research has consistently demonstrated a relation between perfectionism and self-injurious thoughts and behaviors (see Blatt, 1995, for a review). In the current study, the convergent and divergent validity of the social functions of SMB were supported via specific relations with socially prescribed perfectionism but not self-oriented perfectionism. Given both social functions were related with this dimension of perfectionism, it is possible that adolescents were attempting to use SMB to solicit assistance from others (i.e., social positive reinforcement) or to remove the perceived expectations of others (i.e., social negative reinforcement).

In addition, both social functions of SMB were significantly related with younger age, ethnic minority status, and symptoms of MDD. This last result supports the notion that socially reinforced SMB is not synonymous with the absence of psychopathology, as is sometimes implied in clinical settings. It is possible that either adolescents experience increased depressive symptoms after engaging in self-harm or that depressive symptoms precede self-harm, which may serve to alleviate depression via a social mechanism. For instance, it has been suggested elsewhere that self-harm behavior may serve to increase support within individuals' social networks (Walker, Joiner, & Rudd, 2001). Consistent with this notion, we recently found in a prospective study that a subgroup of adolescents who engage in SMB reported subsequent improvements in the quality of their relationship with parents (Hilt, Borelli, Nock, & Prinstein, 2004).

Overall, these findings provide clear directions for future research and clinical work on the etiologies, assessment, and treatment of SMB. First, these findings extend our functional model of SMB and offer additional support for its validity, further highlighting the advantages of the use of a functional approach in the study of SMB. Future research efforts that use this framework are likely to further enhance understanding of SMB, and clinicians are urged to use a functional perspective when assessing SMB in clinical settings. Clearly, all self-mutilators are not alike and the consideration of the function of this behavior can guide one's clinical and research conceptualizations. Second, this model offers clear targets for assessing antecedents and consequences of SMB in both research and clinical settings. This study demonstrated a small set of specific relations between the different functions of SMB and several antecedents and clinical correlates. Additional relations with other constructs are yet to be examined and can be derived directly from the model. For instance, we would anticipate automatic negative reinforcement to be related to high emotional reactivity, automatic positive reinforcement to be related to low reactivity and dissociation, and the social reinforcement functions to be associated with additional problems with social interaction and communication skills. Third, these findings suggest different treatment approaches may be warranted depending on the function of SMB. Researchers and clinicians who develop and evaluate such treatments should consider the different antecedents, correlates, and consequences associated with each function and tailor treatments accordingly, rather than by using a one-size-fits-all approach to the treatment of SMB.

Despite the strengths and implications of this study, several methodological factors limit the inferences that can be drawn.

First, although evaluating the functions of SMB through the use of self-report allowed us to gather data on multiple SMB incidents performed in a wide range of settings and for different reasons, the use of this methodology may suffer from potential biases (e.g., social desirability) and inaccuracies (e.g., distortions of retrospective recall). Second, our sample consisted of adolescent psychiatric inpatients, thus, these results may not generalize to other age groups or other settings. Third, these data were cross-sectional, limiting our ability to make conclusive statements about the direction of the observed relations among study constructs. Future studies are planned assessing the antecedents and consequences of SMB at multiple time points across a wide range of real-world settings to overcome these limitations and to further explicate the determinants of adolescent SMB. Continued work in this direction is likely to further develop our understanding of SMB and is necessary to improve methods for assessing and treating this pervasive and dangerous behavior problem.

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