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Identifying Clinical Distinctions Between Nonsuicidal Self-Injury and Eating Disorders in Adolescents

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IDENTIFYING CLINICAL DISTINCTIONS BETWEEN NONSUICIDAL SELF-INJURY AND EATNG DISORDERS IN ADOLESCENTS

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Eating disorders and non-suicidal self-injury (NSSI) are pervasive behaviors that typically begin in early to mid-adolescence. They commonly co-occur, resulting in increasingly negative psychological and physical outcomes than either behavior alone. Emotion reactivity and family functioning have been studied in relation to both eating disorders and NSSI. Both constructs have demonstrated strong relationships to these behaviors, but emotion reactivity appears to be more strongly associated with NSSI, while family functioning appears to be more strongly related to eating disorders. The current study sought to determine whether emotion reactivity and family functioning could differentiate between adolescents with only an eating disorder, only NSSI, or both behaviors. Data were collected from 229 adolescents in both inpatient and outpatient treatment programs who reported either a diagnosed eating disorder, past week NSSI, or both. Results indicated that increased emotion reactivity increased the likelihood that an individual was categorized in the NSSI only group compared to the eating disorder group and the comorbid group. There was no main effect for family functioning across all analyses. Based on these results, emotion reactivity may be an important variable to consider in distinguishing between adolescents with eating disorders who may or may not engage in NSSI, and may provide further insight when examined longitudinally

Introduction

Eating disorders and nonsuicidal self-injury (NSSI) are both growing public health concerns, particularly for adolescents (Muehlenkamp, Claes, Havertape, & Plener, 2012; Wade, Keski-Rahkonen, & Hudson, 2011). Existing research has established a strong link between maladaptive family functioning and eating disorders (Holtom-Viesel & Allan, 2013), as well as a relationship between emotion reactivity and NSSI (Nock et al., 2008). However, little research has investigated both family functioning and emotion reactivity in relation to both NSSI and eating disorders within a clinical adolescent population. As these constructs have been shown to be important to both NSSI and eating disorders, the relationship between these variables may be important in their comorbidity. Both behaviors have been shown to significantly increase risks for suicidality and other pathologies in this age group, particularly when they co-occur (Nock, Hwang, Sampson, & Kessler, 2010; Whitlock et al., 2012). Studying these two constructs in tandem within NSSI and eating disorders will provide important and previously unverified information on how family functioning and emotion reactivity may interact to worsen the presentations of NSSI and eating disorder symptoms, and potentially create an environment in which these comorbid conditions may be more likely to occur.

NSSI has been defined as the destruction of bodily tissue without suicidal intent for reasons not socially sanctioned (Klonsky & Muehlenkamp, 2007). It is estimated that anywhere from 14-45% of adolescents will engage in NSSI at some point in their youth (Cloutier, Martin, Kennedy, Nixon, & Muehlenkamp, 2010; Glenn, Blumenthal, Klonsky, & Hajcak, 2011). There are many potential forms of NSSI; however, the most commonly reported methods are self-cutting, banging/hitting oneself, severe scratching,

and burning (Klonsky & Muehlenkamp, 2007). Although less commonly endorsed, self-starvation and purging have been included as forms of self-harm in a select number of studies and occur independent of an eating disorder (Farber, 2008).

Eating disorders encompass a range of diagnoses that describe behaviors such as self-starvation, binging, purging, excessive dieting, and over exercise (Smink, van Hoeken, & Hoek, 2012). These disorders occur in less than 1-9% of adolescents, depending upon the disorder (Swanson, Crow, Le Grange, Swendsen, & Merikangas, 2011). Eating disorders commonly occur alongside other psychiatric disorders, particularly mood and anxiety disorders (Hudson, Hiripi, Pope, & Kessler, 2007). Perhaps most disturbing is that all major eating disorder diagnoses typically begin in early adolescence, years earlier than many other psychiatric disorders (Hudson et al., 2007; Swanson et al., 2011). Behaviors that occur in pursuit of extreme thinness and an unhealthily low body weight, such as self-starvation and excessive dieting, are diagnosed as anorexia nervosa (AN; Selby et al., 2010). AN occasionally presents with binge eating and purging behaviors, classified as the binge-purge subtype (AN-BP; APA, 2013). Without these behaviors, individuals are classified with the restrictive subtype (AN-R; APA, 2013). Bulimia nervosa (BN) is characterized by a cycle of binge eating and purging, which can take on the form of vomiting, excessive laxative use and exercise, and fasting (APA, 2013; Fischer & Peterson, 2015). Among all eating disorder diagnoses, AN-BP and BN have been shown to have the worst outcomes, including higher rates of comorbid psychiatric disorders and increased suicidality (Milos, Spindler, Hepp, & Schnyder, 2004; Selby et al., 2010).

Eating disorders and NSSI commonly co-occur, with about 13-69%, depending on diagnosis, of individuals with an eating disorder also engaging in NSSI (Sansone & Levitt, 2002; Svirko & Hawton, 2007). Many epidemiological studies have found NSSI rates within eating disorder populations to be nearly twice the rates of NSSI within other psychiatric conditions (Favaro & Santonastaso, 2000). Similarly, about 17% of individuals with NSSI report clinically significant eating disorder symptoms (Taliaferro & Muehlenkamp, 2015). Both disorders report similar ages of onset, between 10-15 for eating disorders (Hudson et al., 2007; Killen et al., 1994; Martínez-González et al., 2003) and 12-14 years of age for NSSI (Jacobson & Gould, 2007). These behaviors also share several common precipitants, particularly childhood abuse, poor family support, and recent negative life events (e.g., Baetens et al., 2015; Glassman, Weierich, Hooley, Deliberto, & Nock, 2007; Holtom-Viesel & Allan, 2014; Hudson et al., 2007; Swanson et al., 2011).

Emotion Dysregulation

In order to fully understand emotion reactivity, emotion dysregulation must first be fully understood. Both NSSI and eating disorders have been found to serve largely emotion regulatory purposes (Buckholdt et al., 2015). *Emotion regulation* has been defined as the ability to experience and differentiate the full range of emotions and respond spontaneously and appropriately (Paivio & Greenberg, 1998), as well as an ongoing process of emotional patterns in response to changing momentary contexts (Cole, Michel, & Teti, 1994). By contrast, emotion dysregulation refers to patterns of emotion regulation that impair normal functioning and can become symptomatic of psychopathology and disrupt cognitive processes, such as attention, social emotional

responses, and emotional flexibility (Cole et al., 1994). Gratz and Roemer (2004) proposed six dimensions of emotion regulation – acceptance of negative emotions, engagement in goal-directed activity when distressed, absence of impulsive behavior when distressed, access to effective emotion regulating strategies, emotional awareness, and emotional clarity – each of which is important to healthy emotion regulation and have been studied extensively in relation to both NSSI and eating disorders.

In a self-injuring undergraduate sample and a clinical sample, limited access to effective emotion regulating strategies, a lack of goal-directed activity when in distress, and impulsive behavior when in distress were most associated with deliberate self-harm (Buckholdt et al., 2015). Within the clinical sample, nonacceptance of negative emotions was also associated with deliberate self-harm; however, in the undergraduate sample, this association was absent, but lack of emotional awareness and lack of emotional clarity was also associated with deliberate self-harm (Buckholdt et al., 2015; Turner, Chapman, & Layden, 2012) and increased frequency (Heath, Toste, Nedechava, & Charlebois, 2008). Based on this research, it appears as though emotion dysregulation differs across self-injuring samples, suggesting that these deficits may become more pronounced when taking other factors and comorbid diagnoses into account.

Many studies have shown that negative emotional states directly precede engagement in NSSI and are alleviated following completion (Claes, Klonsky, Muehlenkamp, Kuppens, & Vandereycken, 2010). An ecological momentary assessment study found that later engagement in NSSI was most closely linked with feeling sad, worthless, angry, rejected, and/or numb (Nock, Prinstein, & Sterba, 2010), interpersonal conflict (Turner, Cobb, Gratz, & Chapman, 2016), and lesser perceived social support

(Turner, Wakefield, Gratz, & Chapman, 2017). Furthermore, engagement in NSSI has been shown to fulfill a largely intrapersonal function, rather than an interpersonal function (Nock, 2009), further supporting the idea that NSSI not only serves to alleviate negative affect, but also provides positive affect. Similarly, empirical research suggests that NSSI is strongly and positively reinforced. Nock and Prinstien (2004; 2005) found that self-injuring adolescents in an inpatient psychiatric unit, most often endorsed internal, rather than social, reasons for engaging in NSSI.

Similar to NSSI, individuals with eating disorders report an impaired ability to regulate their emotions. Specifically, these individuals report inabilities to recognize and identify both their own and other's emotional experiences (Bydlowski et al., 2005). This lack of emotional clarity is supported by several studies, all suggesting that individuals with eating disorders are unable to recognize, and therefore effectively regulate, their emotions (Kessler, Schwarze, Filipic, Traue, & von Wietersheim, 2006; Pinaquy, Chabrol, Simon, Louvet, & Barbe, 2012; Sim & Zeman, 2005; Speranza, Loas, Wallier, & Corcos, 2007). Speranza and colleagues (2007) further discovered that a lack of emotional clarity prospectively predicted worse treatment outcomes in patients with eating disorders. Furthermore, difficulties in emotion regulation have been found to not only occur alongside eating disorder behavior, but also to contribute to emotional and over-eating, independent of comorbid psychopathology (Gianini, White, & Masheb, 2013).

Much research on comorbid eating disorders and NSSI has assessed the differing emotion regulation functions served by each behavior. Buckholdt and colleagues (2015) found that individuals used both NSSI and disordered eating to modify or altogether

avoid processing negative emotions. Research has been consistent in supporting the idea that those who engage in both NSSI and disordered eating are not only unwilling to process negative emotions but also unaware that they are even experiencing negative emotions (Anestis et al., 2012; Buckholdt et al., 2015). According to Gross (1998), individuals regulate their response tendencies, and choose the response that best fits their current circumstance. As both NSSI and eating disorders have been found to regulate negative emotions (Fischer & Peterson, 2015), albeit maladaptively, this theory provides further support for the idea that individuals who regularly engage in both behaviors may be unable to fully regulate the negative emotional states preceding and triggering NSSI and disordered eating. Furthermore, separate ecological momentary assessment studies have found that NSSI and eating disorder behaviors share many common triggers, such as feeling worthless and/or worried, thought to increase negative affect (Nock et al., 2010b; Shingleton et al., 2013; Turner et al., 2016). Nock and colleagues (2010b) found that adolescents who had self-injured within the past two weeks were significantly more likely to have reported feeling sad/worthless, angry at themselves or another, rejected, or numb directly preceding an episode of NSSI. Adolescents with a history of NSSI also reported that thoughts of binging or purging were directly preceded by feelings of worthlessness and/or rejection/hurt (Shingleton et al., 2013).

Currently, most research focused on the overlap of NSSI and disordered eating has used college undergraduate samples. The use of this type of sample does provide certain benefits, as college students often report particularly high rates of these behaviors. However, the use of college undergraduates as a primary data source does not often allow researchers to investigate the effects of severe NSSI combined with clinically significant

eating disorders, as eating disorders have a relatively low occurrence rate in the general population. Studies using clinical samples of diagnosed eating disorder patients have found severely increased usage of NSSI and a greatly heightened risk for future suicidal behavior in comparison to NSSI rates in a community sample (Fischer & Peterson, 2015). Other research using a clinical sample of anorexia nervosa patients showed heightened suicidal behavior even more so than other psychiatric inpatients (Farber, Jackson, Tabin, & Bachar, 2007). AN patients also showed severely lessened anxiety about death and the annihilation of their bodies from prolonged eating disorder behavior, even more so than individuals who engage in NSSI (Farber et al., 2007).

Emotion Reactivity

Emotion regulation has been studied extensively in relation to both NSSI and eating disorders; however, much less attention has been given to the role of emotion reactivity. *Emotion reactivity* refers to how all emotions are experienced, rather than if emotion is able to be experienced. For instance, individuals with increased emotion reactivity may be more sensitive and easily bothered by circumstances that may not bother others. Increased emotion reactivity may also spend more time ruminating over events that produce an emotional response. Specifically, emotion reactivity describes how emotion is experienced in terms of what types of stimuli trigger these emotions and for how long they are experienced (Nock et al., 2008). Existing work on emotion reactivity attempts to explain why psychopathologies may develop; increased emotion reactivity has been found to predispose individuals to a decreased ability to regulate emotion, resulting in greater psychopathology (Nock et al., 2008).

NSSI engagement is typically triggered by negative affect, most often taking the forms of feeling worthless or pressured, worried, and having memories or reminders of negative life events (Nock et al., 2010b). Emotions preceding and triggering NSSI have been found to be more difficult to regulate compared to than those that tend to not trigger NSSI (Nock et al., 2010b), meaning that individuals with increased emotion reactivity may be predisposed to engage in more extreme behaviors to avoid or rid themselves of these emotions, including NSSI. Further research has supported this, as individuals who self-injure have been found to be more reactive to negative stimuli than those who do not (Glenn et al., 2011).

Total scores on the Emotion Reactivity Scale (ERS; Nock et al., 2008) have been found to correlate with general NSSI engagement, as well as with the affect regulation function of NSSI (Zelkowitz, Cole, Han, & Tomarken, 2016). Overall, however, emotion reactivity was not associated with other NSSI functions (Zelkowitz et al., 2016). Discrepancies in this area of research may be due in part to sampling techniques. Glenn et al. (2011) and Zelkowitz et al. (2016) both utilized non-clinical university student samples. Although NSSI is a common problem among university students (Swanell, Martin, Page, Hasking, & St. John, 2014), NSSI generally onsets during adolescence, making this age-group ideal for the study of self-injury (American Psychiatric Association [APA], 2013). Because the research on NSSI and emotion reactivity has been concentrated in undergraduate samples, examining this construct within a clinical sample of adolescents will offer further insight into this relationship and potentially identify other psychosocial correlates of NSSI closer to its initial onset.

Most research on the relationship between emotion and eating disorders has focused on emotion dysregulation rather than emotion reactivity. The little existing research including emotion reactivity has found individuals with eating disorders to be more emotionally reactive, especially to situations related to eating and the body (Gutiérrez-Maldonaldo, Ferrer-García, Caqueo-Urízar, & Letosa-Porta, 2006). Similarly, daily diary studies have shown that thoughts of disordered eating behaviors are often preceded by feelings of low social support, negative memoires, and self-hatred (Turner, Yui, Claes, Muehlenkamp, & Chapman, 2016). Additionally, emotion dysregulation has been found to be one important factor in the development of disordered eating (Monell, Högdahl, Mantilla, & Birgehård, 2015; Racine & Wildes, 2013). Difficulties with managing emotions often begin in adolescence as these abilities continue to develop, which helps to explain the higher rates of disordered eating seen in this age group (Garnefski et al., 2002). Concerns about the body, seen in all eating disorder diagnoses, are managed by compensatory behaviors, particularly food restriction and various purging behaviors (Monell et al., 2015). These compensatory behaviors fuel further concerns about the body, creating a pernicious and all-consuming cycle (Monell et al., 2015). From this research, it is clear that emotion reactivity plays some role in development and maintenance of eating disorders. However, further work is needed to confirm exactly how emotion reactivity influences eating disorder behaviors.

Emotion reactivity has also been proposed as a differentiating factor between NSSI and eating disorders. Those with NSSI have been found to be strongly reactive to external and internal stimuli (Nock et al., 2008). Those who engaged in disordered eating were found to be more emotionally reactive than healthy controls; however, they were

not as reactive as those with NSSI (Nock et al., 2008). Similarly, those with eating disorders have been found to be less impulsive than those with NSSI (Claes et al., 2015a). Greater emotion reactivity has also been linked with more frequent suicidal behavior (O'Connor & Nock, 2014) and therefore, may create a greater potential for suicidal crises and attempts. Although little research has explicitly compared emotion reactivity between individuals with NSSI and those with eating disorders, it appears as though these behaviors may differ in terms of this construct. More work is needed in this area to determine how emotion reactivity may differentially related to NSSI and eating disorders.

Family functioning

Family functioning has been referred to as the interactions of family members that involve physical, emotional, and psychological behaviors (Holtom-Viesel & Allan, 2013). Little research has examined the role of family functioning in the onset or maintenance of NSSI. One recent study found that familial difficulties, such as past abuse, invalidating environments, and increased parental control, may be particularly important in the development of NSSI (Martin, Bureau, Cloutier, & Lafontaine, 2011). Other family issues, such as increased conflict and less support than observed in healthy families, have been shown to increase risk for NSSI. Although family conflict has been associated with greater engagement in NSSI (Wilcox et al., 2012), certain types of familial problems are most salient to NSSI. More conflict, lesser cohesion and support, and parental alienation and criticism have all been established as particular drivers of NSSI (Adrian, Zeman, Erdley, Lisa, & Sim, 2011; Yates, Luthar, & Tracy, 2008). Childhood abuse (Briere, 1988; Wilcox et al., 2012) and insecure attachment (Tatnell, Kelada, Hasking, & Martin, 2014) have also been associated with NSSI.

Additionally, specific parenting strategies have been linked to later onset of NSSI. Past experiences of invalidating parental behavior, defined as unsupportive behaviors from the parents paired with high negativity and unnecessary control, have been associated with greater emotion dysregulation (Linehan, 1993). These deficits, in turn, can manifest as NSSI engagement. In a study by Baetens and colleagues (2014), adolescents who self-injured reported perceiving more behavioral and psychological control from their parents than did adolescents who did not self-injure. An interaction between parent-reported support and control was also observed, such that NSSI was most likely when support was low and control was high (Baetens et al., 2014). Lower socioeconomic status was also associated with NSSI engagement (Baetens et al., 2014). More recent work has further solidified these findings, showing that adolescents with a history of self-injury reported more maladaptive family functioning, more negative affect and less positive affect (Crowell et al., 2008; Kelada, Hasking, & Melvin, 2016). However, family functioning has not been studied in relation to the intrapersonal and emotion regulatory functions of NSSI, leaving a large gap in the literature that the proposed study seeks to fill.

Family functioning has been more heavily researched in eating disorders than in NSSI (Depestele et al., 2015; Fiorillo et al., 2015). Negative family functioning has been found to precede eating disorder diagnoses; however, the exact mechanisms through which family functioning influences disordered eating is not clear. Preliminary studies have shown that the families of individuals with an eating disorder have more difficulties with task accomplishment, role performance, conflict, negativity, communication, and affective expression (Holtom-Viesel & Allan, 2013). One daily diary study found that

thoughts/urges of disordered eating most commonly began in the presence of family members (Turner et al., 2016). In particular, familial conflict and the quality of the mother-daughter relationship has been found to be strongly associated with disordered eating (Cooley, Toray, Wang, & Valdez, 2008; Wheeler, Wintre, & Polivy, 2003). Further research has established that maternal dieting and poor maternal body image are related to later onset of disordered eating through maternal modeling of disordered eating and negative feedback about the daughter's weight and/or shape (Agras, Hammer, & McNicholas, 1999; Benedikt, Wertheim, & Love, 1998; Hill & Franklin, 1998). Some disagreement about the role of family functioning may come from how family-functioning is measured. In studies utilizing self-report data from those with eating disorders, families are reported to be more critical , less supportive, and show higher than average rates of psychopathology (Depestele et al., 2015; Holtom-Viesel & Allan, 2013). However, parent reports of family functioning show that functioning is significantly more positive and less pathological than healthy families (Holtom-Veisel & Allan, 2013). Differences in reports of family functioning have a few potential sources: patients may have a distorted view of his or her family, parents reports may be positively biased, and parents may report less dysfunction in order to minimize the amount of blame placed on the family for the child's disorder. Regardless, it is clear that family functioning has some influence on the presentation and perception of eating disorder symptomology, and thus should continue to be studied to be fully understood. Additionally, very little research investigates the exact role of family functioning in NSSI; however, functional studies have found that family relational issues are often drivers for engaging in NSSI (Nock, 2009). Furthermore, eating disorder patients who also engage in NSSI have

reported poorer family functioning than eating disorder patients with no NSSI engagement (Depestele et al., 2015). It is clear that family functioning plays an important role in the development and maintenance of eating disorders, but further research is needed to determine how family functioning may differentially affect NSSI and eating disorders.

Rationale and Hypotheses

It is well established that NSSI and eating disorders are commonly comorbid and share many risk factors, precedents, and outcomes. However, the significant gaps in the literature differentiating these constructs among NSSI, eating disorder, and comorbid groups as described in the previous sections have created uncertainty in determining the relative importance emotion reactivity and family functioning to each behavior. To date, no research has compared these subgroups on these constructs. As previously demonstrated, family functioning and emotion reactivity may be especially important in differentiating individuals with NSSI from those with eating disorders. The current study sought to fill this void by examining these two behaviors in tandem within a clinical sample. The goal was to examine these constructs in a clinical sample to enhance understanding of the relationships between them since these samples generally exhibit clinically significant levels of the psychopathologies under investigation. Additionally, the use of adolescents only as participants was strongly supported by the literature. As NSSI is most common in adolescence and most often begins during this developmental stage (APA, 2013), this sample would hopefully captures a greater proportion of the population currently engaging in NSSI. Similarly, eating disorders have an average onset

age during adolescence (APA, 2013), again allowing the sample to capture a large proportion of the population with a current eating disorder.

As emotion reactivity has been shown to play a significant role in NSSI, it was expected to also play a role in eating disorder behaviors. However, it was expected that emotional reactivity would not be as strong a factor in eating disorder behaviors. Conversely, the strong role of the family in eating disorder behaviors as opposed to NSSI led to the assumption that maladaptive family functioning would be more important in differentiating individuals with eating disorder behaviors from those with NSSI. Additionally, patients who are highly reactive and have maladaptive family structures were expected to be most likely to engage in both NSSI and eating disorder behaviors, as both behaviors may be utilized to reduce negative affect.

The current study sought to answer the following question: can emotion reactivity and family functioning be used to differentiate between those with NSSI, those with eating disorders, and those who engage in both behaviors? To answer this question, a multinomial logistic regression was used to test how well the constructs of family functioning and emotion reactivity discriminated between three predefined groups: NSSI only, eating disorder only, and comorbid NSSI and eating disorder.

Hypothesis 1: Emotion reactivity predicting NSSI. First, it was hypothesized that greater emotional reactivity would increase the likelihood that an adolescent was categorized into the NSSI only group as compared to the eating disorder only group. Based on the previously reviewed literature, emotion reactivity appeared to have a stronger relationship with NSSI as compared to disordered eating. Thus, greater emotion reactivity should be more predictive of NSSI than disordered eating.

Hypothesis 2: Maladaptive family functioning predicting eating disorders. Second, it was hypothesized that more maladaptive family functioning would increase the likelihood that an adolescent was categorized into the eating disorder only group as compared to the NSSI only group. Family functioning has long held a strong relationship to the development of eating disorders, both retrospectively and longitudinally. Although negative family relationships and events can influence an adolescent's decision to engage in NSSI, these factors do not have the same importance to the overall development of NSSI.

Hypothesis 3: Emotion reactivity and maladaptive family functioning predicting comorbidity. Third, it was hypothesized that both greater emotional reactivity and maladaptive family functioning would increase the likelihood that an adolescent was categorized into the comorbid group as compared to both the NSSI only and eating disorder only groups. As described in hypotheses 1 and 2, greater emotion reactivity should be more strongly predictive of NSSI only group membership, and greater maladaptive family functioning should be more strongly predictive of eating disorder only group membership. Thus, the comorbid group should have high levels of both emotion reactivity and maladaptive family functioning, as both behaviors are present.

Method

Participants

The proposed project used archival data. The sample of this study was comprised of both inpatients and outpatients of the Alexian Brothers Behavioral Health Hospital's (ABBHH) self-harm and eating disorder treatment programs based in Chicago. Potential

patients were referred by area mental health treatment providers for a level-of-care assessment. Incoming patients were given the option to participate in research during standard intake procedures. Upon intake into one of the treatment programs, participants were given primary through quinary diagnoses that were used to categorize participants into diagnostic groups for analyses. Those who received an eating disorder diagnosis on any level were coded as having an eating disorder. Participants with an eating disorder diagnosis who reported no past week NSSI on the Alexian Brother Urge to Self-Injure Scale (ABUSI) were sorted into the eating disorder only group. Participants with no eating disorder diagnosis who reported any NSSI engagement in the past week on the ABUSI were sorted into the NSSI only group. Participants with an eating disorder diagnosis who also reported any past week NSSI engagement on the ABUSI were sorted into the comorbid group. There were 64 participants with an eating disorder only, 68 with current NSSI only, and 97 with both an eating disorder and current NSSI. Data were collected over a three-year period; therefore, while cohort and history effects could be present, it is unlikely given the small time frame. Recruitment for the study has been completed, with a final sample size of n=1089. For the current study, participants were only included if they fell within the age range of 10 to 17 and had an eating disorder and/or past week NSSI. Only participants who met these criteria were included, resulting in a sample size of n=229.

The sample was largely female (93.3%) and non-Hispanic white (66%), with a mean age of 14.94 and standard deviation of 1.43. The original research study was approved by the ABBHH's IRB; additional IRB approval was granted for the researcher to obtain and use the archival data for this project. All individual level data were de-

identified according to "Safe Harbor" de-identification standards (U.S. Department of Health and Human Services [HHS], 2012) to protect private health information. The original study included a large battery of measures; the ones relevant to the proposed project are described in the following section.

Measures

For the current project, three main assessment devices were utilized to measure the variables of interest. In addition to these measures, demographic and diagnosis data were gathered from patient records and were included in the deidentified dataset.

Alexian Brothers Urge to Self-Injure Scale. Self-injury history was assessed using the Alexian Brothers Urge to Self-Injure Scale (ABUSI; Washburn, Juzwin, Styer, & Aldridge, 2010; see Appendix A). The ABUSI is a five-item scale that measures an individual's motivation to self-injure, as well as recent and past self-injury history. Items are measured on a 7-point Likert scale, ranging from 1 to 7, with higher scores reflecting a greater urge to self-injure. For the current study, only the item assessing past week NSSI was used in order to sort participants into diagnostic groups, with any individuals who reported self-injury in the past week being sorted into either the NSSI only or comorbid group. The ABUSI has demonstrated strong internal consistency ($\alpha = .92$) and reliability (Washburn et al., 2010). In the current study, the ABUSI demonstrated strong reliability ($\alpha = .93$).

Emotion Reactivity Scale. Emotion reactivity was measured using the Emotion Reactivity Scale (ERS; Nock, Wedig, Holmberg, & Hooley, 2008; see Appendix B). The ERS is a 21-item measure comprised of three subscales: sensitivity, arousal/intensity, and persistence (Nock et al., 2008). Items are measured on a 5-point Likert scale, from 0 (*not*

at all like me) to 4 (*completely like me*). Total scores were calculated by averaging all relevant responses, with the total score ranging from 0 to 4. Higher scores are indicative of greater reactivity (Nock et al., 2008). The ERS has demonstrated strong validity and internal reliability (α = .94), and its subscales have also demonstrated good reliability (α = .81-.88; Nock et al., 2008). In the current study, the ERS demonstrated strong reliability (α = .97).

McMaster Family Assessment Device. The Family Assessment Device (FAD; Epstein, Baldwin, & Bishop, 1983) is a 60-item scale used to measure family emotional support and status (see Appendix C). This measure consists of seven subscales: general family functioning, communication, affective responsiveness, problem solving, behavior control, affective involvement, and roles. However, only the general family functioning scale was used in the current study, which measures overall family health and pathology. This device uses a 4-point Likert scale to score responses, from 1 (*strongly disagree*) to 4 (*strongly agree*). Scores were calculated by averaging all responses after reverse coding positively weighted items. Total subscale scores range from 1 to 4, with higher scores indicating more maladaptive functioning. The FAD has demonstrated strong validity and reliability (α = .87; Aarons, McDonald, Connelly, & Newton, 2007). In the current study, the general family functioning subscale of the FAD demonstrated strong reliability (α = .92).

Procedure

Patients were referred from area mental health professionals to the hospital for a level-of-care assessment, and upon arrival, were assessed to determine individual treatment need. After treatment need was determined, patients were referred to the

treatment program best suited to fit their individual needs. After assignment to a program, patients completed assessment measures at the time of admission, and again at discharge, as part of routine clinical assessment and organizational improvement processes. Measures completed by each group differed based upon primary diagnosis; however, all measures, except for the EDE-Q and a measure assessing NSSI severity not included in the proposed project, were completed by both groups. Additional clinical and demographic data were obtained from electronic medical records.

Results

Data Analysis Plan

Diagnostic groups were determined by the presence or absence of NSSI in the past week and an eating disorder diagnosis, either anorexia nervosa, bulimia nervosa, or eating disorder not otherwise specified, all meeting standards set by the DSM-5 (American Psychiatric Association [APA], 2012). Groups were defined as NSSI only (having past week NSSI with no eating disorder diagnosis), eating disorder only (having an eating disorder diagnosis with no past week NSSI), and comorbid NSSI and eating disorder (having past week NSSI and an eating disorder diagnosis).. Differences among the proposed study's diagnostic groups by predictor variables (emotion reactivity and general family functioning) are addressed in the following section. Bivariate Pearson correlations were used to examine pre-existing relationships between the predictor variables.

A multinomial logistic regression was run to determine the likelihood that the independent variables would correctly categorize into their respective groups (see previous section). The emotion reactivity scale total score and general family functioning

subscale score from the FAD were entered into the equation as continuous independent variables, and diagnostic group was entered as the dependent variable. To examine differences between all groups, one analysis was run comparing the NSSI only and eating disorder only groups to the comorbid group, and another analysis was run comparing the NSSI only and comorbid groups to the eating disorder group. This set of analyses allowed all groups to be compared to each other.

Preliminary Analyses

A one way ANOVA was run to assess differences in emotion reactivity and family functioning by group. A summary of these results can be found in Table 1.

Table 1
Means and standard deviations of variables by diagnostic group in adolescent sample

	Eating disorder only (n = 64)	NSSI only (n = 68)	Comorbid (n=97)
Emotion Reactivity	1.98 (1.29)[b]	3.20 (1.01)[a,c]	2.12 (1.18)[b]
Family Functioning	2.58 (0.20)	2.58 (0.21)	2.54 (0.19)

Superscripts denote significant differences between groups, $p < 0.001$
[a] Different from eating disorder only
[b] Different from NSSI only
[c] Different from comorbid

Bivariate Pearson correlations were also run to determine if there was a pre-existing relationship between emotion reactivity and family functioning in the full sample or any of the diagnostic groups. In the full adolescent sample, emotion reactivity and family functioning were not correlated, r=0.08, p=0.271. In the eating disorder only group, emotion reactivity and family functioning were not correlated, r=-0.004, p=0.979. In the NSSI only group, emotion reactivity and family functioning were not correlated,

r=0.11, *p*=0.400. In the full adolescent sample, emotion reactivity and family functioning were not correlated, *r*=0.14, *p*=0.300.

Hypothesis Testing

All assumptions for a multinomial logistic regression were checked before running the analyses. The independent variables were normally distributed and there was no multicollinearity between the independent variables. The total score for the ERS and the general family functioning subscale of the FAD were entered as continuous independent variables, and diagnostic group was entered as the categorical dependent variable. Two multinomial logistic regressions were run, using two different diagnostic groups as the reference category. This allowed for all possible between-group comparisons to be made. The first analysis used the comorbid group as the reference category. The second analysis used the NSSI only group as the reference category, and was run only to examine differences between the eating disorder only and NSSI only groups.

The first multinomial logistic regression model was run to test the second and third hypotheses using the comorbid group as the reference group. The first model showed a trending significant main effect of family functioning, such that decreased family functioning significantly increased the likelihood that an individual would be categorized in the eating disorder only group compared to the comorbid group (adjusted OR: 1.709; 95% confidence interval [CI]: 0.933-3.130). However, there was no main effect for family functioning in predicting the NSSI only group compared to the comorbid group. There was also a significant main effect for emotion reactivity, such that increased emotion reactivity significantly increased the likelihood that an individual

would be categorized in the NSSI group compared to the comorbid group (adjusted OR: 2.142; 95% CI: 1.509-3.038). However, there was no main effect for emotion reactivity in predicting the eating disorder only group compared to the comorbid group. The second multinomial logistic regression model was run to test the first hypothesis using the eating disorder only group as the reference group. In the second model, there was no main effect of family functioning predicting the NSSI only group compared to the eating disorder only group. There was a main effect for emotion reactivity, such that increased emotion reactivity significantly increased the likelihood that an individual would be categorized in the NSSI group compared to the eating disorder only group (adjusted OR: 2.674; 95% CI: 1.847-3.871). See table 2 for results.

Table 2
Results of the multinomial logistic regression in adolescent sample

			b	SE	Wald	*p*
Model 1	Eating disorder only group	Intercept	-1.596	2.468	0.419	0.518
		ERS total score	-0.075	0.157	0.229	0.632
		FAD general functioning score	0.655	0.963	0.463	0.496
	NSSI only group	Intercept	-3.253	2.512	1.677	0.195
		ERS total score	0.778	0.172	20.384	<0.001*
		FAD general functioning score	0.456	0.964	0.224	0.636
Model 2	NSSI only group	Intercept	-1.657	2.583	0.411	0.521
		ERS total score	0.853	0.178	22.969	<0.001

	FAD general functioning score	-0.199	0.992	0.463	0.496

* p is significant at the .05 level
Model $\chi^2 = 34.862$; $p < 0.001$, -2 log likelihood = 334.254, Pseudo R^2 (Nagelkerke) = 0.203.

Exploratory Analyses

In addition to the analyses to test main hypotheses, exploratory analyses were run to determine if this same pattern of results would be found in all age groups. The same regression models were run again, using the full sample (ages 10-73). Due to the wide age range (10-73), outliers were determined and removed. For the current study, an outlier was defined as any score that fell three standard deviations above or below the mean of the variable under review. The first removal of outliers resulted in a sample size of *n*=435. Because there were still several cases skewing the normal distribution of age, outliers were again determined and removed, resulting in a final sample size of *n*=423, with a range from 10 to 41. In the full sample, the eating disorder only group had a sample size of n=126, the NSSI only group had a sample size of n=146, and the comorbid group had a sample size of n=149. The sample was largely female (93.3%) and non-Hispanic white (71.7%) with a mean age of 18.53 and a standard deviation of 6.05. Table 4 details variable means and standard deviations by group.

Table 3
Means and standard deviations of variables by diagnostic group in full sample

	Eating disorder only (n = 126)	NSSI only (n = 146)	Comorbid (n=149)
Emotion Reactivity	2.10 (1.25)[b]	3.20 (0.94)[a,c]	2.07 (1.14)[b]
Family Functioning	2.58 (0.23)	2.58 (0.21)	2.55 (0.19)

Superscripts denote significant differences between groups, $p < 0.001$
[a] Different from eating disorder only
[b] Different from NSSI only

[c] Different from comorbid

Bivariate Pearson correlations were also run to determine if there was a pre-existing relationship between emotion reactivity and family functioning in the full sample or any of the diagnostic groups. In the full sample, emotion reactivity and family functioning were not correlated, r=0.08, p=0.151. In the eating disorder only group, emotion reactivity and family functioning were not correlated, r=0.10, p=0.343. In the NSSI only group, emotion reactivity and family functioning were not correlated, r=0.11, p=0.301. In the full adolescent sample, emotion reactivity and family functioning were not correlated, r=0.03, p=0.763.

In the first multinomial logistic regression model, using the comorbid group as the reference group, there was no main effect for family functioning in predicting group membership. There was also no main effect for emotion reactivity in predicting the eating disorder only group compared to the comorbid group. However, increased emotion reactivity did significantly increase the likelihood that an individual would be categorized in the NSSI only group compared to the comorbid group (adjusted OR: 2.474; 95% CI: 1.866-3.279). The second model, using the eating disorder only group as the reference group, did not find a main effect for family functioning. There was a main effect for emotion reactivity, such that increased emotion reactivity significantly increased the likelihood that an individual would be categorized in the NSSI only group compared to the eating disorder only group (adjusted OR: 2.404; 95% CI: 1.792-3.223). See table 4 for results.

Table 4
Results of the multinomial logistic regression in full sample

	b	SE	Wald	*p*

Model 1	Eating disorder only group	Intercept	-2.056	1.711	1.444	0.230
		ERS total score	0.029	0.118	0.059	0.808
		FAD general functioning score	0.664	0.664	1.001	0.317
	NSSI only group	Intercept	-3.512	1.845	3.624	0.057
		ERS total score	0.906	0.144	39.681	<0.001*
		FAD general functioning score	0.269	0.705	0.146	0.702
Model 2	NSSI only group	Intercept	-1.456	1.936	0.566	0.452
		ERS total score	0.877	0.150	34.310	<0.001*
		FAD general functioning score	-0.395	0.740	0.284	0.594

* *p* is significant at the .05 level
Model χ^2= 58.580; $p < 0.001$, -2 log likelihood = 562.902, Pseudo R^2 (Nagelkerke) = 0.196.

Discussion

Previous research has established the importance of emotion reactivity and family functioning in relation to both eating disorders and NSSI; however, this study is one of the first to examine both of these constructs in relation to these behaviors in an adolescent-only clinical sample. As previously stated, the ages of onset for eating disorders (Killen et al., 1993; Martínez-González et al., 2003) and NSSI (Jacobson & Gould, 2007) typically fall in early to mid-adolescence, making it especially important to study these behaviors within this age group.

Of the current study's results, the one most supported by the literature was the relationship between emotion reactivity and NSSI engagement. Confirming the first hypothesis, heightened emotion reactivity significantly increased the likelihood that an adolescent was categorized in the NSSI only group as compared to the eating disorder group. However, contrary to the third hypothesis, heightened emotion reactivity also increased the likelihood that an adolescent would be categorized into the NSSI only

group as compared to the comorbid group. Emotion reactivity was not found to be related to eating disorders, and appeared to distinguish between those who had recently engaged in NSSI and those who had not. The NSSI only group was significantly differentiated from the eating disorder only and comorbid group on emotion reactivity, with those who had recent NSSI only reporting significantly greater levels of emotion reactivity than those that also had an eating disorder. It is possible that individuals who engage in self-injury may be more sensitive to negative emotions and experience them more intensely and persistently than those that do not self-injure. Past research has shown that individuals who currently engage in NSSI react more strongly to negative stimuli than do individuals who do not self-injure (Glenn et al., 2011). Furthermore, emotion reactivity has demonstrated a particularly strong relationship with the affect regulation function of self-injury (Zelkowitz, Cole, Han, & Tomarken, 2016), meaning that individuals who self-injure most often do so to rid themselves of negative emotions. Therefore, individuals with heightened emotion reactivity may be at a greater risk for self-injury. Further longitudinal work is needed to determine whether emotion reactivity is in fact a true risk factor for NSSI, as cross-sectional research cannot confirm this temporal relationship.

Additional results indicate that those with eating disorders are less emotionally reactive than those with recent NSSI, a pattern not yet observed in this area of study. This finding seems to fit well with current models of self-injury and eating disorder behaviors. Those who engage in NSSI most frequently do so to either relieve negative affect or induce positive affect (Nock, 2009), a pattern which is not so strongly observed in those with eating disorders (Muehlenkamp, Peat, Claes, & Smit, 2012). Eating disorder

behavior is primarily used to pursue and alleviate body image concerns (Muehlenkamp et al., 2012), while relief from negative affect is a secondary goal for this set of behaviors. By contrast, affect regulation is often the primary goal of NSSI engagement (Nock, 2009; Nock & Prinstein, 2004; 2005). It follows then, that if the primary goal of NSSI, unlike eating disorders, is affect regulation, these individuals may attend to and respond more intensely to negative stimuli than for those behaviors for which affect regulation is not the primary goal. One of the major confounds of the current study is the lack of a control group for further comparison. Specifically, it would important to examine whether individuals with eating disorders are more emotionally reactive than healthy counterparts. Previous research would suggest they are (Gutiérrez-Maldonaldo et al., 2006; Nock et al., 2008); however, without a healthy control group, this assumption cannot be confirmed.

Another finding of interest was the inconsequential role of family functioning in differentiating the diagnostic groups. Contrary to the second hypothesis, decreased family functioning did not significantly increase the likelihood that an individual would be categorized in the eating disorder group in comparison to the NSSI only group. It was, however, a trending predictor of the eating disorder group over the comorbid group. Previous research has shown that poor family functioning is strongly related to eating disorders. In particular, increased familial conflict and maternal disordered eating, which can negatively influence family functioning, are the most strongly associated with children's eating disorders (Agras et al., 1999; Benedikt et al., 1998; Cooley et al., 2008; Hill & Franklin, 1998; Wheeler et al., 2003).

There are mixed results linking family functioning to NSSI engagement. Similar to eating disorders, family conflict is linked to increased NSSI engagement (Wilcox et al.,

2012). However, it is unclear if the same types of familial conflict are reported in relation to both behaviors. Lack of family support is reported by both (Baetens et al., 2014; Wheeler, Wintre, & Polivy, 2003), but in addition, greater parental control, less cohesion, parental alienation, and parental criticism have been implicated in the maintenance of NSSI (Adrian et al., 2011; Depestele et al., 2015; Kelada et al., 2016; Linehan, 1993; Yates et al., 2008). Comparisons between these studies are difficult, firstly because of the differences in sample type – split between community samples and clinical samples, but most importantly, because of the vast range of different measures used to assess family functioning. Most of the studies of eating disorders used a myriad of measures to assess family-related constructs, and most of the studies of the family in relation to NSSI used the FAD to measure various aspects of family conflict. Furthermore, all studies reviewed were cross-sectional in nature, meaning that determining whether these familial factors are risk factors for NSSI and eating disorders is impossible. From these studies, it is clear that these behaviors have an effect on overall family functioning; however, our measure of family functioning may not have assessed the most salient aspects of the family environment to eating disorders and NSSI. Future research may benefit from examining additional and more specific aspects of family functioning. Additionally, the comparison of eating disorders and NSSI should still be studied as exploratory analyses did find some trending differences between the comorbid and eating disorder group. Larger sample size and greater power may be able to confirm this finding.

Limitations, Implications, and Conclusions

The current study also has several limitations. First, a significant portion of the sample was excluded from analyses due to incomplete data and age. Second, the current

study did not control for known covariates, such as depression and anxiety. Only one study has established a significant difference in emotion reactivity between eating disorders and NSSI (Smith et al., 2017). However, studies of familial influence on these behaviors has found that similar types of family dysfunction predict both NSSI and eating disorders (Baetens et al., 2014; Wheeler, Wintre, & Polivy, 2003), so the inclusion of these covariates may not be warranted. Third, the results may be limited in their generalizability due to the clinical nature of the sample. Although the use a clinical sample greatly increases the base rate of these behaviors and provides a wider range of symptomology to examine, this type of sample is not generally representative of the population. Lastly, the current study did not utilize a control group with which to compare our diagnostic groups. Without a control group, we are unable to determine whether the observed relationships between emotion reactivity, family functioning, and our diagnostic groups is any different from what would be observed in a healthy population.

Based on the findings of the current study, several areas of research may benefit from further study to solidify our findings. Future research should include additional variables in this model, as emotion reactivity and family functioning alone may not be sufficient to determine diagnostic group membership. In this same vein, examining more aspects of family functioning may provide a more accurate picture of how the family influence the development and maintenance of NSSI and eating disorders. Furthermore, the inclusion of covariates into these models would help advance our understanding of how emotion reactivity and family functioning work to predict eating disorders and NSSI in the presence of other common factors. Lastly, the addition of a control group may

provide further insight into the relative importance of emotion reactivity and family functioning by establishing a baseline for these constructs within a healthy sample.

Despite these limitations, the results of the current study highlight the importance of examining differences between self-injury and eating disorders. Due to the high rate of cooccurrence and the increased risk for suicide (Anestis et al., 2012; Sansone & Levitt, 2002) and negative treatment outcomes (Smith et al., 2017) when NSSI and eating disorders present together, it is especially important to study these behaviors when they co-occur. Furthermore, based on the current study, emotion reactivity may be an important construct to include in the future study of eating disorders, as it may be a useful determinant of those individuals who will begin NSSI, and therefore, at a greater risk for other negative outcomes. Clinically, clients who demonstrate greater emotion reactivity should be more closely monitored for NSSI engagement and may identify individuals who would most benefit from early interventions.

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Appendix A

Alexian Brothers Urge to Self-Injure Scale (ABUSI)

The questions below apply to **the last week**. Place an "X" in the box next to the most appropriate statement.

1. How often have you thought about injuring yourself or about how you want to injure yourself?

- ☐ **Never**, 0 times in the last week
- ☐ **Rarely**, 1-2 times in the last week
- ☐ **Occasionally**, 3-4 times in the last week
- ☐ **Sometimes**, 5-10 times in the last week
- ☐ **Often**, 11-20 times in the last week
- ☐ **Most of the time**, 20-40 times in the last week
- ☐ **Nearly all of the time**, more than 40 times in the last week, or more than 6 times a day

2. At the most severe point, how strong was your urge to self-injure in the last week?

- ☐ **None** at all
- ☐ **Slight**, that is, a very mild urge
- ☐ **Mild** Urge
- ☐ **Moderate** Urge
- ☐ **Strong** Urge, but **easily** controlled
- ☐ **Strong** Urge, but **difficult** to control
- ☐ **Strong** Urge **and would have self-injured in able to**

3. How must time have you spent thinking about injuring yourself or about how you want to injure yourself?

- ☐ None.
- ☐ Less than 20 min.
- ☐ 21-45 min.
- ☐ 46-90 min.
- ☐ 90 min. to 3 hrs.
- ☐ 3-6 hrs.
- ☐ More than 6 hrs.

4. How difficult was it to resist injuring yourself in the last week?

- ☐ Not difficult at all

- Very mildly difficult
- Mildly difficult
- Moderately difficult
- Very difficult
- Extremely difficult
- Was not able to resist

5. Keeping in mind your responses to the previous questions, please rate your overall average urge or desire to injure yourself in the last week.

- **Never** thought about it and **never** had the urge to self-injure.
- **Rarely** thought about it and **rarely** had the urge to self-injure.
- **Occasionally** thought about it and **occasionally** had the urge to self-injure.
- **Sometimes** thought about it and **sometimes** had the urge to self-injure.
- **Often** thought about it and **often** had the urge to self-injure.
- Thought about self-injury **most** of the time and had the urge to do it **most** of the time.
- Thought about self-injury **nearly all** the time and had the urge to do it **nearly all** the time.

Appendix B

Emotion Reactivity Scale

This questionnaire asks different questions about how you experience emotions **on a regular basis (for example, each day)**. When you are asked about being "emotional," this may refer to being angry, sad, excited, or some other emotion. Please rate the following statements.

		0 Not at all like me	**1** A little like me	**2** Somewhat like me	**3** A lot like me	**4** Completely like me
1	When something happens that upsets me, it's all I can think about it for a long time.	**0**	**1**	**2**	**3**	**4**
2	My feelings get hurt easily.	**0**	**1**	**2**	**3**	**4**
3	When I experience emotions, I feel them very strongly/intensely.	**0**	**1**	**2**	**3**	**4**
4	When I'm emotionally upset, my whole body gets physically upset as well.	**0**	**1**	**2**	**3**	**4**
5	I tend to get very emotional very easily.	**0**	**1**	**2**	**3**	**4**
6	I experience emotions very strongly.	**0**	**1**	**2**	**3**	**4**
7	I often feel extremely anxious.	**0**	**1**	**2**	**3**	**4**
8	When I feel emotional, it's hard for me to imagine feeling any other way.	**0**	**1**	**2**	**3**	**4**
9	Even the littlest things make me emotional.	**0**	**1**	**2**	**3**	**4**
10	If I have a disagreement with someone, it takes a long time for me to get over it.	**0**	**1**	**2**	**3**	**4**
11	When I am angry/upset, it takes me much longer than most people to calm down.	**0**	**1**	**2**	**3**	**4**
12	I get angry at people very easily.	**0**	**1**	**2**	**3**	**4**
13	I am often bothered by things that other people don't react to.	**0**	**1**	**2**	**3**	**4**
14	I am easily agitated.	**0**	**1**	**2**	**3**	**4**
15	My emotions go from neutral to extreme in an instant.	**0**	**1**	**2**	**3**	**4**
16	When something bad happens, my mood changes very quickly. People tell me I have a very short fuse.	**0**	**1**	**2**	**3**	**4**
17	People tell me that my emotions are often too intense for the situation.	**0**	**1**	**2**	**3**	**4**
18	I am a very sensitive person.	**0**	**1**	**2**	**3**	**4**
19	My moods are very strong and powerful.	**0**	**1**	**2**	**3**	**4**
20	I often get so upset it's hard for me to think straight.	**0**	**1**	**2**	**3**	**4**
21	Other people tell me I'm overreacting.	**0**	**1**	**2**	**3**	**4**

Other relevant questions/comments:

Appendix C

McMaster Family Assessment Device

This assessment contains a number of statements about families. Read each statement carefully, and decide how well it describes your own family. You should answer according to how you see your family.

For each statement are four (4) possible responses:

SA	Strongly Agree	The statement describes your family very accurately.
A	Agree	The statement describes your family for the most part.
D	Disagree	The statement does not describe your family for the most part.
SD	Strongly Disagree	The statement does not describe your family at all.

Try not to spend too much time thinking about each statement, but respond as quickly and as honestly as you can. If you have difficulty, answer with your first reaction. Please be sure to answer every statement and mark all your answers in the space provided next to each statement.

_____ 1. Planning family activities is difficult because we misunderstand each other.

_____ 2. In time of crisis we can turn to each other for support.

_____ 3. We cannot talk to each other about sadness we feel.

_____ 4. Individuals are accepted for what they are.

_____ 5. We avoid discussing our fears and concerns.

_____ 6. We can express feelings to each other.

_____ 7. There are lots of bad feelings in the family.

_____ 8. We feel accepted for what we are.

_____ 9. Making decisions is a problem for our family.

_____ 10. We are able to make decisions about how to solve problems.

_____ 11. We don't get along well together.

_____ 12. We confide in each other.