


8-2010

Knowledge of Nonsuicidal Self-Injury in Populations That Self-Injure

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KNOWLEDGE OF NONSUICIDAL SELF-INJURY
IN POPULATIONS THAT SELF-INJURE

A Specialist Project proposal
Presented to
The Faculty of the Department of Psychology
Western Kentucky University
Bowling Green, Kentucky

In Partial Fulfillment
Of the Requirements for the Degree
Specialist in Education

By
Darcy Leanne Cates

August 2010

**KNOWLEDGE OF NONSUICIDAL SELF-INJURY
IN POPULATIONS THAT SELF-INJURE**

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Table of Contents

List of Tables	ii
Abstract.....	iii
Introduction.....	3
Literature Review.....	5
Methods.....	25
Results.....	26
Discussion.....	38
References.....	48
Appendix.....	50

List of Tables

Table 1. Facts and Myths about Self-Injury.....	9
Table 2. Mean scores on the Jeffrey and Warm Knowledge Measure	11
Table 3. Classification of Response Patterns on the JWKM for NSSI and no NSSI Groups.....	17
Table 4. Number of Instances of Self Injury for Overall Sample_	27
Table 5. Demographics of Respondents by Group	28
Table 6. Descriptive Statistics on the Jeffery and Warm Knowledge Measure.....	37
Table 7. Correlation Coefficients for item response and number of NSSI incidents	34
Table 8. Classification of Response Patterns on the JWKM for No NSSI, Limited NSSI, and Extensive NSSI groups.....	36

KNOWLEDGE OF NONSUICIDAL SELF-INJURY IN POPULATIONS THAT SELF-INJURE

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August 2010

50 Pages

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Archived data was utilized for the present study which examined knowledge about non-suicidal self-injury, or NSSI, in individuals who engage in various degrees of the behavior and those who do not self-injure. Knowledge about NSSI was measured in three groups of respondents: those with no history of self-injurious behavior (no NSSI group), those with more limited experience with NSSI who reported 1-30 incidences of NSSI (limited NSSI group), and those with an extensive history (extensive NSSI group) who reported over 30 incidences of NSSI. To measure knowledge, participants were asked level of agreement with myths and facts about NSSI using Jeffery and Warm's (2002) knowledge measure. It was hypothesized that the knowledge base would be higher in individuals with more extensive histories of NSSI. Further, individuals with limited histories of NSSI were predicted to have more knowledge than those who have never self-injured. Additionally, this study also hypothesized that the individual item response will vary; depending on extent of NSSI behavior.

Group mean scores on the measure were analyzed for differences using a one-way analysis of covariance (ANCOVA) while controlling for the differing group demographic variables of age, sexual orientation, and education level. Results indicated that individuals who have more extensive histories of NSSI evidenced higher mean scores on the measure when controlling for age, sexual orientation and educational level. Individuals with limited histories of NSSI evidenced lower mean scores, and those with no history of NSSI evidenced the lowest

scores. In regard to individual item response, items were correlated with seven levels of NSSI (no NSSI, one incident of NSSI, 2-4 incidences, 5-10 incidences, 11-20 incidences, 21-30 incidences and more than 30 incidences). It was found that accuracy was significantly correlated with degree of self-injurious behaviors, with the exception of one item. This item and three additional items also produced weak correlations with other items on the measure. Each item is discussed with regard to group item performance and possible deletions in order to strengthen the measure.

Overall, the results of this investigation supported the reliability and validity of the Jeffery and Warm (2002) knowledge measure for use with individuals who self-injure. Results are discussed in relation to the need for accurate knowledge about NSSI, the importance of refining and strengthen the measure for this use, and additional research directions.

Introduction

Nonsuicidal self-injury (NSSI), or the deliberate destruction of body tissue without suicidal intent, and for purposes not socially sanctioned, is a behavior that is evident in youth and young adults (Klonsky & Muehlenkamp, 2007; Nixon & Heath, 2009). NSSI is associated with a variety of clinical conditions such as depression, borderline personality disorder, bipolar disorder, eating disorders, and physical or sexual abuse (Klonsky & Muehlenkamp, 2007; Nixon & Heath, 2009). Shame and secrecy frequently accompany NSSI, as the behavior goes against societal norms and may be a basis for stigma in adolescent populations. At minimum, NSSI is indicative of ineffective or poor coping and psychological distress (Ross & Heath, 2002). A considerable number of young adults engage in the behavior (Yates, Tracy, & Luthar, 2008). Thus, it is important for professionals who serve children and young adults to be aware of and knowledgeable about NSSI in order to respond effectively. Further, experts advocate for developing community awareness and knowledge about NSSI as prevention and intervention. Such community awareness can prepare the community members to assist individuals who may feel ashamed about their behavior in seeking mental health assistance and support.

Several instruments have been designed to measure the severity, frequency and functions of NSSI in those who engage in the behavior (Cloutier & Humphreys, 2009). However, development of a measure designed to assess knowledge about NSSI can be useful within a prevention and intervention context. For example, knowing the extent and nature of NSSI knowledge in groups can assist in the design of training and universal prevention programs. Further, it will allow those who come into contact with individuals who self-injure a means to self-assess their knowledge and understanding of the behavior. Such self assessments may aid professionals in gaining accuracy of knowledge of an issue of concern to a number of youth.

Such an instrument to measure knowledge about NSSI was developed by Jeffery and Warm (2002) and used across various populations (Beld, 2007; Boeckmann, 2008; Butts, 2008; Clinard, 2010; Smith, 2009). It measures knowledge using ratings of agreement with ten facts and ten myths of NSSI as supported by the research. This instrument has been found to be reliable (Beld, 2007; Boeckmann, 2008; Butts, 2008; Clinard, 2010; Jeffery & Warm, 2002; Smith, 2009), and valid (Warm, Murray, & Fox, 2003) for this purpose.

This study seeks to gain information about the use of this measure with young adults, including individuals who self-injure. Results on the Jeffery and Warm Knowledge Measure (JWKM) will be compared across two NSSI groups to explore for item efficacy, reliability, and differential response patterns. The purpose of this study will be to examine select psychometric properties of the JWKM for select groups of responders in order to provide support for the use of the measure. It is expected that the results can then be used to make recommendations to strengthen and/or to refine the measure.

Literature Review

Overview of NSSI

Although there are many terms, behaviors, and definitions that researchers have used to describe self-injury, for the purposes of this current investigation, non-suicidal self-injury will be defined as the deliberate destruction of body tissue for purposes not socially sanctioned. It is also commonly agreed that the injury inflicted upon oneself in this definition is done so without the intent to die (Adler & Adler, 2005; Jeffery & Warm, 2002; Nixon & Heath, 2009; Walsh, 2006). Although the features of the behaviors in both NSSI and suicide or suicide attempts are similar, they are separate and distinct and serve different functions for the individual. Functions of non-suicidal self-injury serve to relieve distress or pain or regulate emotions in stressful situations (Whitlock & Knox, 2007), whereas suicide functions to end life and pain.

The results of several studies suggest that NSSI may be a prevalent problem for today's youth. Reports of prevalence rates of NSSI in the community range from 4% to 37.2% (Klonsky, Oltmanns, & Turkheimer, 2003; Ross & Heath, 2002; Yates et al, 2008), and are even higher in clinical samples (Nock & Prinstein, 2004). Researchers generally agree that the typical onset of NSSI is between the ages of 13 and 15 (Klonsky et al., 2003; Ross & Heath, 2002; Whitlock, Powers, & Eckenrode, 2006). NSSI has been noted to be more common in females than males (Gollust, Eisenberg, & Golberstein, 2008; Nixon, Cloutier, & Jansson, 2008; Simeon & Favazza, 2001; Yates et al., 2008). However, Heath, Schaub, Holly, and Nixon (2009) reviewed recent studies and found that current gender differences in NSSI are only seen in a clinical setting. They contend that the most recent studies on NSSI in the community show no gender difference in prevalence. However, gender differences have been noted in the type of self-injuring behavior used (Heath et al., 2009). Females are more likely to cut themselves and males

are more likely to hit or burn themselves (Heath et al., 2009, Laye-Gindhu & Schonert-Reichl, 2005; Whitlock, Eckenrode, & Silverman, 2006). Some researchers believe that the higher prevalence rates of NSSI in women that have been found in many studies may actually just reflect the tendency in women to seek help and/ or disclose (Whitlock, Powers, et al., 2006).

Inconsistent findings are noted in the prevalence and incidence of racial groups and NSSI. In some studies, NSSI has been found to be more common in Caucasian youth than in African American youth (Ross & Heath, 2002; Whitlock, Eckenrode, et al., 2006). Conversely, in other studies the opposite has been found (Yates et al., 2008). Also, NSSI may be more common in gay, lesbian, or bisexual youth (Heath et al., 2009; Gollust et al., 2008; Whitlock, Eckenrode, et al., 2006).

Although the presence of NSSI does not solely indicate a clinical diagnosis, adult and adolescent clinical populations evidence a higher frequency of NSSI. In clinical settings, 20% of adults and 40-80% of adolescents have been found to engage in NSSI (Klonsky & Muehlenkamp, 2007). Further, the *Diagnostic and Statistical Manual of Mental Disorders, Fourth-Edition – Text Revision (DSM-IV-TR; American Psychiatric Association, 2000)* lists NSSI as a possible symptom of borderline personality disorder. Other disorders and behaviors that are noted to co-occur with NSSI include posttraumatic stress disorder, anxiety, eating disorders, substance use or abuse, risk taking behaviors, suicidal behavior, and history of sexual, emotional, and/or physical abuse (Walsh, 2006). However, not all individuals who engage in self-injurious behaviors have a clinical disorder (Walsh, 2006). Of particular concern for this review are cases of NSSI among community samples, or children and adolescents with no diagnosable disorder (Ross & Heath, 2003, Walsh, 2006). Although these individuals do not

have a clinical disorder, and evidence areas of strength, these individuals lack the coping skills to deal adaptively with negative emotions and stress.

Adolescents and young adults who engage in NSSI often feel shame and maintain secrecy in order to avoid negative attention and embarrassment (Walsh, 2006). Those who engage in NSSI tend to have a sense of shame surrounding their self-injury due to its socially deviant nature. Individuals who engage in self-injury often engage in the behavior alone, tend to hide their scars or wounds, and are cautious about disclosing their behavior to others due to the socially unacceptable nature of the behavior and fear of rejection (Walsh, 2006).

Individuals who engage in NSSI report that they engage in the behavior to alleviate anxiety and psychological stress and remove negative feelings (Lloyd-Richardson, Nock, & Prinstein, 2009, Ross & Heath, 2002; Simeon & Favazza, 2001). They also report that NSSI is used as a coping strategy (Warm et al., 2003). Many researchers discuss the importance of training in how to respond to NSSI appropriately, without criticism and horror (Lieberman, 2004; Lieberman, Toste, & Heath, 2009; Walsh, 2006). Appropriate responses to the disclosure of NSSI are key to individuals seeking and remaining in treatment (Walsh, 2006). Walsh notes that insensitive responses by caregivers can result in driving the behavior into deeper secrecy and, thus, away from treatment.

Knowledge of NSSI

Lieberman and his colleagues (2009) emphasize the importance of training in how to respond to NSSI appropriately. In order to address the number of adolescents and young adults engaging in self-injury, professionals need knowledge and training about the behavior. Further, community members need to become aware of the basic nature of NSSI to assist in the identification and referral of individuals who self-injure for professional assistance. Whitlock

and Knox (2009) wrote about universal prevention approaches to addressing NSSI, which target an entire population without regard to risk factors. Universal prevention is intended to raise awareness of a behavior and empower communities to reach out to those individuals at risk. However, the initiative must be designed by highly knowledgeable individuals and executed with caution so as not to unintentionally cause negative consequences (Whitlock & Knox, 2009).

Several instruments have been designed to measure the nature of the behavior in those who self-injure, including the severity, frequency and functions of the behavior (Cloutier & Humphreys, 2009). However, an instrument measuring knowledge level of NSSI would be helpful to determine level of training needs. Jeffery and Warm (2002) studied medical and mental health providers understanding of NSSI by constructing their own measure, which will be here on referred to as the Jeffery and Warm Knowledge Measure (JWKM). The measure consisted of 20 items: ten items representing facts about self-injury, and ten items representing myths regarding self-injury. The myths and facts were obtained from psychological literature and research about NSSI (see Table 1). Using a five-point Likert scale, respondents rate the degree to which they agree or disagree with each statement by indicating one of the following: Strongly Agree (5), Agree (4), Unsure (3), Disagree (2), and Strongly Disagree(1). The responses yield scores ranging from 20 (poor understanding of NSSI) to 100 (very good understanding of NSSI). Jeffery and Warm found the measure to be satisfactorily valid and reliable and subsequent studies have corroborated the reliability of the instrument with professionals from disciplines that typically interact with individuals who self-injure or have a history of NSSI. Coefficient alphas range from .69 to .77 (Beld, 2007; Boeckmann, 2008; Butts, 2008; Clinard, 2010; Smith, 2009).

Table 1

Facts and Myths about Self-Injury

Facts about NSSI

- NSSI is a form of communication.
- NSSI provides a way of staying in control.
- NSSI provides distraction from thinking.
- NSSI can obtain feelings of euphoria.
- NSSI is a release for anger.
- NSSI expresses emotional pain.
- NSSI is a coping strategy.
- NSSI helps a person maintain a sense of identity.
- NSSI provides escape from depression.
- NSSI helps deal with problems.

Myths about NSSI

- NSSI is a sign of madness.
 - People who self-injure will “grow out of it” eventually.
 - NSSI is a manipulative act.
 - NSSI is a “woman’s problem.”
 - The best way to deal with people who self-injure is to make them stop.
 - People who self-injure have been sexually abused.
 - NSSI is a failed suicide attempt.
 - NSSI is attention seeking.
 - People who self-injure should be kept in psychiatric hospitals.
-

Table 1 (*continued*)

Everybody who self-injures suffers from Munchausen's Disease (self-inflicted injuries calculated to produce specific symptoms that will lead to medical hospital admissions).

Note. Adapted from "A study of service providers' understanding of self-harm," by D.

Jeffery and A. Warm, 2002, *Journal of Mental Health*, 11, p. 299.

Warm and her colleagues (2003) validated the Jeffery and Warm Knowledge Measure when they assessed the accuracy of the perceptions of myths and facts used in the measure with a group of self-injurers. Respondents were recruited from self-injury internet discussion groups and an online survey was taken by 243 individuals. Demographic and other personal information was asked of participants, in addition to the 20 items from the JWKM. Factor analysis was used to analyze the data and confirm the two factors: accurate and inaccurate perception of self-injury. The extent of agreement with each statement by self-injurers was mostly aligned with the classification of whether items were purported to be true or false prior to the analysis. Items that were classified as "facts" about self-injury were agreed with by over 50% of the respondents, except for the statement "NSSI helps a person to maintain a sense of identity" (49% agreed). Items classified as "myths" were disagreed with by at least 60% of the sample, with one exception: More respondents agreed than disagreed with the statement "People who self-injure have been sexually abused." Questions regarding history of sexual abuse were included in the survey, so the authors of this study applied a point-biserial Pearson's correlation and found that there was a positive correlation between experience of sexual abuse and agreement on this particular statement. This finding indicates that sexual abuse is related to self-injury, but is not

necessarily linked causally to self-injury. Hence, the results of this analysis support that the response pattern is consistent with the groupings of myths and facts.

Jeffery and Warm (2002) used their measure to assess health and medical service providers understanding of NSSI. Survey participants were 99 service providers; the sample included psychiatrists, psychologists, general practitioners, nurses, social workers, mental health support workers, as well as 16 individuals who self-injure. Results indicated that individuals who self injure (mean score of 79.81) evidenced the greatest understanding, followed by psychology workers (mean score of 79.37), social community workers (mean score of 77.16), with medical workers and psychiatrists, who are the mostly likely to work with those who self-injure, having the poorest understanding of NSSI, with mean scores of 69.78 and 71.00, respectively (Jeffery & Warm, 2002).

The level of NSSI knowledge of health and mental health professionals (Jeffery & Warm, 2002), self-injurers (Boeckmann, 2008; Clinard, 2010, Jeffery & Warm, 2002), school psychologists (Beld, 2007), teachers (Butts, 2008), and college students (Smith, 2009) has been assessed and compared using the JWKM. Across these samples, the mean scores of understanding of NSSI range from 61.05 to 80.18, suggesting that all groups studied endorse at least some of the myths outlined in the survey. Table 2 below contains the means scores for each of the groups studied on the NSSI knowledge measure.

Table 2

Mean scores on the Jeffrey and Warm Knowledge Measure

Group	<i>N</i>	<i>M</i>	<i>SD</i>
Young Adults			
NSSI Groups			

Table 2 (continued).

Boeckmann ^a	101	80.18	6.94
Jeffrey & Warm ^b	16	79.81	6.46
Clinard ^c	87	69.64	7.49
College Students			
Smith ^d	427	61.05	8.38
Professionals			
Jeffery & Warm ^b			
Psychology Workers	19	79.37	6.55
Social Community Workers	25	77.16	8.71
Medical Group	21	71.00	5.98
Psychiatrists	9	69.78	8.76
<u>Beld^e</u>			
School Psychologists ^c	64	79.11	6.27
<u>Butts^f</u>			
Teachers	263	68.83	6.23

^aFrom “Self-injury knowledge and peer perceptions among members of internet self-injury groups,” by E. Boeckmann, 2008, Unpublished Educational Specialist Project, Western Kentucky University, Bowling Green. ^bFrom “A study of service providers’ understanding of self-harm,” by D. Jeffery and A. Warm, 2002, *Journal of Mental Health*, 11, p. 299. ^cFrom “College Students Who Self-Injure: A Study of Knowledge and Perceptions of Self-Injury”, by S. E. Clinard, 2010, Unpublished Masters in Psychology Project, Western Kentucky University, Bowling Green. ^dFrom “Peer Perceptions of Self-Injurious Behaviors”, by F. S. Smith, 2009,

Unpublished Masters in Psychology Project, Western Kentucky University, Bowling Green.

^eFrom “Self-injury in the schools: A survey of school psychologists,” by A. Beld, 2007,

Unpublished Educational Specialist Project, Western Kentucky University, Bowling Green.

^fFrom “Self-injury in the schools: A survey of educators,” by J. Butts, 2008, Unpublished Educational Specialist Project, Western Kentucky University, Bowling Green.

Mean group differences in level of knowledge of NSSI are evident across the various groups. Among professionals, school psychologists and psychology workers demonstrate the highest level of knowledge, while psychiatrists and teachers evidence the lowest level of knowledge. College students who did not engage in NSSI evidenced the lowest level of knowledge across all groups. Within self-injuring groups, two samples of self-injurers (Boeckmann, 2008; Jeffery & Warm, 2002) had the two highest mean scores of knowledge about NSSI overall, while a third group of self-injurers (Clinard, 2010), had the third lowest score.

Mean group comparisons on the JWKM substantiate that mean scores differ statistically. Educators evidenced the lowest mean score of knowledge of NSSI among professionals (Butts, 2008). Teachers’ knowledge was also significantly lower than self-injurers (Jeffery & Warm, 2002), and significantly lower than other professionals, with exception of psychiatrists (Butts, 2008), according to one sample *t*-tests. Teachers and psychiatrists evidence similarly low levels of knowledge about NSSI (Butts, 2008).

Boeckmann (2008) surveyed the level of knowledge of a group of individuals who self-injure recruited from online NSSI discussion boards. Mean knowledge scores from individuals in this sample were compared with mean scores of medical worker samples obtained by Jeffery and Warm (2002), school psychologists (Beld, 2007), and teachers (Butts, 2008) using a series of one sample *t*-tests. Although Boeckmann’s mean knowledge score of this group of self-injurers was

the highest of the groups, it was not significantly different from the level of knowledge of self-injurers from Jeffery and Warm's sample (2002), from school psychologists (Beld, 2007), nor from psychology workers (Jeffery & Warm, 2002). Individuals who self-injure evidence about the same level of knowledge about NSSI as psychologists, who are most likely trained to treat individuals who engage in self-injury, or who gain knowledge through experience working with them.

Smith (2009) compared level of knowledge of college students who did not engage in NSSI with the mean scores of professionals and self-injury groups obtained by Jeffery and Warm (2002), Beld (2007), Butts (2008), and Boeckmann (2008). Given the two separate samples of self-injurers examined by Jeffery and Warm (2002) and Boeckmann (2008), a weighted mean was calculated for the comparison ($M = 80.12$, $n = 95$). All of the mean score comparisons yielded significant differences, with all college students in the sample, regardless of whether or not they knew someone who self-injured, exhibiting significantly lower levels of knowledge. It appears that students that personally come into contact with individuals who self-injure know much less about the behavior than those who engage in the behavior, and also less than those who come into contact with self-injurers in a professional capacity.

Clinard (2010) analyzed data from a group of college students with a history of NSSI using the JWKM and compared mean scores from this group to the mean score of college students who did not self-injure (Smith, 2009). College students who did not self-injure had significantly lower knowledge about NSSI than those who did engage in the behavior (Clinard, 2010).

It is interesting to note that the sample of self-injurers studied by Clinard (2010) scored much lower on the JWKM ($M = 69.64$) than did the other two groups of self-injurers in studies by Boeckmann (2008) and Jeffery and Warm (2002) ($M = 80.18$ and 79.81 , respectively). While

these mean scores have not been statistically compared, it appears that there may be some significant differences.

Response Patterns on the JWKM

When comparing item performance on the JWKM across the groups of young adults who engage in NSSI (Boeckmann, 2008; Clinard, 2010) and those who do not (Smith, 2009), differences emerge in responses by group. In order to categorize levels of knowledge about NSSI, Beld (2007), who used the JWKM in her survey of school psychologists, developed a criterion level to distinguish between good (accurate), poor (inaccurate), and problematic understanding of NSSI. The criterion level is a response rate of 70% for determination of items as good, poor, or problematic and was also used by Boeckmann (2008), Butts (2008), Clinard (2010), and Smith (2009). Under this criterion level, categorizations of good (accurate) understanding include items for which response rating frequencies of 4 (agree) or 5 (strongly agree) are greater than or equal to 70%. A categorization of poor (inaccurate) understanding includes items for which response rating frequencies of 1 (strongly disagree), 2 (disagree) or 3 (unsure) are greater than or equal to 70%. A categorization of problematic understanding includes items that do not reach the 70% level as either poor or good. Overall, just half of the items evidenced Good Understanding by at least one of the three groups, and only two items were well understood by all three groups. Accordingly, at least one of the three groups evidenced problematic or poor understanding on almost all of the items (18 out of 20). Self-injurers from internet groups (Boeckmann, 2008), college self-injurers (Clinard, 2010), and non-self-injuring college students all three evidenced good understanding on the items *NSSI is a “woman’s problem (myth),” and NSSI expresses emotional pain (fact)*. All groups appear to have a good understanding that both men and women can engage in NSSI, and that individuals self-injure in

response to emotional pain. All three groups also have problematic understanding about the following items: *NSSI is a form of communication* (fact), *People who self-injure will “grow out of it” eventually* (myth), and *People who self-injure have been sexually abused* (myth). It appears that groups of self-injurers have better understanding of some aspects of self-injury than do those who do not self-injure. Both self-injury groups had good understanding that *NSSI provides distraction from thinking* (fact), a statement that the non-self-injuring group showed problematic understanding. This response pattern across the three groups was also evident for the statements *NSSI is a release for anger* (fact), *NSSI is a coping strategy* (fact), *NSSI is a failed suicide attempt* (myth), and *Everybody who self-injures suffers from Munchausen’s Disease* (myth). This response pattern may indicate that those who self-injure may understand some functions of NSSI better than those who do not. Additionally, all groups appeared to have poor or problematic understanding on some items. The non-self-injuring college students evidenced poor understanding on several items that the self-injuring groups also found to be problematic: *NSSI can obtain feelings of euphoria* (fact), *NSSI provides escape from depression* (fact), *NSSI helps deal with problems* (fact), *People who self-injure should be kept in psychiatric hospitals* (myth), and *NSSI is a sign of madness / mental illness* (myth). It is interesting to note that while the two NSSI groups obtained similar classifications on most item, the internet self-injuring group evidenced good understanding on three items that self-injurers from the college sample evidenced problematic understanding: *NSSI is attention seeking* (myth), *The best way to deal with people who self-injure is to make them stop* (myth), and *NSSI provides a way of staying in control* (fact). A summary of the percentages of accurate responses from these three groups (Boeckmann, 2008; Clinard, 2010; Smith, 2009) is seen in Table 3.

Table 3

Classification of response patterns on the Jeffery and Warm Knowledge Measure for NSSI and no NSSI groups

	NSSI Groups		No NSSI
	Boeckmann ^b (n = 427)	Clinard ^c (n = 87)	Smith ^d (n = 101)
Facts^a			
NSSI is a form of communication.	62.2**	54.0**	39.6**
NSSI provides a way of staying in control.	85.4*	55.2**	18.7***
NSSI provides distraction from thinking.	91.5*	73.5*	51.9**
NSSI can obtain feelings of euphoria.	54.9**	47.1**	27.4***
NSSI is a release for anger.	98.8*	90.8*	54.6**
NSSI expresses emotional pain.	100.0*	93.1*	72.4*
NSSI is a coping strategy.	93.9*	71.0*	51.7**
NSSI helps a person maintain a sense of identity.	50.0**	16.3***	12.9***
NSSI provides escape from depression.	54.9**	35.5**	19.9***
NSSI helps deal with problems.	65.9**	27.9***	18.4***
Myths^a			
NSSI is a sign of madness / mental illness	45.1**	40.2**	17.2***
People who self-injure will “grow out of it” eventually.	67.9**	44.8**	57.5**

Table 3 (continued).

NSSI is a manipulative act.	47.6**	28.7***	15.8***
NSSI is a “woman’s problem.”	95.2*	96.6*	86.9*
The best way to deal with people who self-injure is to make them stop.	89.0*	44.8**	66.2**
People who self-injure have been sexually abused.	48.8**	54.1**	38.4**
NSSI is a failed suicide attempt.	97.6*	86.2*	63.9**
NSSI is attention seeking.	77.2*	39.5**	15.5***
People who self-injure should be kept in psychiatric hospitals.	56.1**	53.5**	19.7***
Everybody who self-injures suffers from Munchausen’s Disease (self-inflicted injuries calculated to produce specific symptoms that will lead to medical hospital admissions).	87.8*	75.8*	51.00**

* Denotes Good Understanding (% of designations of Strongly Agree and Agree \geq 70%); ** Denotes Problematic Understanding (30 % \leq % of designations of Strongly Agree and Agree \leq 70%); *** Denotes Poor understanding (% of designations of Strongly Agree and Agree \leq 30%). ^aFrom “A study of service providers’ understanding of self-harm,” by D. Jeffery and A. Warm, 2002, *Journal of Mental Health*, 11, p. 299. ^bFrom “Self-injury knowledge and peer perceptions among members of internet self-injury groups,” by E. Boeckmann, 2008, Unpublished Educational Specialist Project, Western Kentucky University, Bowling Green.

^cFrom “College Students Who Self-Injure: A Study of Knowledge and Perceptions of Self-Injury”, by S. E. Clinard, 2010, Unpublished Masters in Psychology Project, Western Kentucky University, Bowling Green. ^dFrom “Peer Perceptions of Self-Injurious Behaviors”, by F. S. Smith, 2009, Unpublished Masters Thesis, Western Kentucky University, Bowling Green.

To further understand the difference in response patterns the study samples were more closely inspected. The history of NSSI among each sample of self-injurers appears quite different. Boeckmann’s (2008) sample was recruited from online NSSI discussion boards and all participants were chosen because they had a history of NSSI, while the sample analyzed by Clinard (2010) was a subsample of the individuals who were recruited from university classes by Smith (2009). The intent of the sampling in this latter case was not to select self-injurers whereas recruitment of individuals who self-injure was the intent in the former study. Some participants recruited by Boeckmann from online boards had engaged in self-injury in the past but had since stopped; however, the majority of the participants responded that they were currently engaging in NSSI (66.3%). Conversely, in the sample analyzed by Clinard (2010), only 0.03% of the NSSI college sample ($n = 3$) reported that they currently engaged in the behavior, while the remainder reported that they had engaged in NSSI in the past. Further, 23% of the entire sample of Clinard’s college self-injurers indicated they only engaged in the behavior once, 28% reported 2-4 occurrences, 16% reported 5-10 incidences, 12% reported 11-20 occurrences, 5% reported 21-30, and 15% reported over 30 incidences of NSSI (2010). In contrast, the overwhelming majority (95.5%) of Boeckmann’s online sample reported over 30 incidences of NSSI, and 92.0% reported engaging in NSSI for over one year. A number of participants (52) engaged in the behavior daily and 67.3% of this daily NSSI group engaged it up to five times daily (2008). It appears that Boeckmann’s sample of self-injurers recruited from

online self-injury discussion boards collectively reported more extensive self-injurious behavior, both in frequency and duration. Clinard's sample appears to consist of individuals with a limited history of NSSI. It is important to note those who belong to self-injury online support groups may join these groups as an attempt to decrease distress, and therefore the sample may possibly have included individuals who report more severe forms of NSSI because they were in great distress.

Distinctions can be made when comparing the demographics and characteristics of those with more *extensive* histories of NSSI (Boeckmann, 2008) and those with *limited* history of the behavior (Clinard, 2010). The means of recruitment of the samples may possibly lend to the reasons the samples differ in intensity of behaviors. The participants of Clinard's limited NSSI group were recruited through undergraduate psychology courses, where they earned either extra credit or study participation credit to meet course research requirement. The purpose of the study was to measure peer perceptions about NSSI, so self-injurers were not the target participants. The extensive NSSI group participants (Boeckmann, 2008) were recruited through solicitation via postings to 26 MySpace NSSI groups. Groups were chosen for solicitation for the study with the prerequisites of group membership of 10 or more, with some group activity (postings) in the past four months. Group sizes ranged from 14 to 1586 members (mean membership of 267). Most of the groups were support groups (21), with five of the groups focusing on controlling or stopping self-injury, and one group promoting NSSI. Only discussion group members who reported a history of NSSI were included in the sample (Boeckmann, 2008).

In regard to demographic information, both groups, extensive and limited NSSI, were predominantly female (87% and 80.5%, respectively) and Caucasian (85.9%; 82.8%). The limited NSSI group had a larger percentage of African Americans (6.9) than the extensive group

(2.2). Age ranges were similar. More participants in the college sample of self-injurers indicated that their sexual orientation was heterosexual (80.2%) than the online group (52.2%). The percentage of online participants reporting bisexuality (31.5%) or questioning (13.0%) as their sexual orientation appears to be higher than percentages found in other studies. For instance, Whitlock, Eckenrode, et al. (2006), found that individuals who have self-injured on multiple occasions are more likely to be bisexual or questioning their sexuality than heterosexual. This finding would lend to reasons why the group with less intensive history of NSSI would evidence lower percentages of participants reporting bisexuality (10.5%) and questioning (3.5%; Clinard, 2010). The limited NSSI group was recruited from a university, and therefore they have more education than the participants in online groups, a difference possibly only due to the populations sampled.

Purpose

Non-suicidal self-injury is a behavior that is of concern for youth and adolescents. As noted in the prior literature review, the JWKM has been used with a variety of groups to assess level of understanding about NSSI (Beld, 2007; Boeckmann, 2008; Butts, 2008; Clinard, 2010; Jeffery & Warm, 2010; Smith, 2009). It evidences reliability ranging from .69 to .77 (Beld, 2007; Boeckmann, 2008; Butts, 2008; Clinard, 2010; Jeffery & Warm, 2010; Smith, 2009), and the validity of the two factors (myths and facts) has been supported by factor analysis (Warm et al., 2003). However, within NSSI populations, differences have been noted in responses. College students who reporting engaging in NSSI (Clinard, 2010) had a mean knowledge score of 69.64, while individuals engaging in self-injury that were recruited from online discussion groups (Boeckmann, 2008) reported a noticeably high mean knowledge score of 80.18. Further, in regard to item responses, the college group of self-injurers evidence problematic

understanding on three items that were well understood by internet self-injurers (*NSSI provides a way of staying in control, The best way to deal with people who self-injure is to make them stop, and NSSI is attention seeking*). Differences in group composition are also evident between self-injuring groups. Self-injuring participants from online support groups appear to report more extensive self-injuring, with the majority of the group reporting they currently engaged in self-injury, than do college self-injuring groups where only three individuals currently engaged in the behavior. Further, only 15% of the limited NSSI group reported 30 or more incidences of self-injury, while 95.5% of the online sample reported more than 30 occurrences. Sexuality and education were also demographic differences between the groups. Bisexuality was higher in the extensive NSSI group (31.5%). Most of the limited NSSI group indicated they were heterosexual (80.2%) while little more than half (52.2%) of the extensive group reported heterosexuality (Clinard, 2010; Boeckmann, 2008).

These differences call for further investigation of the instrument and its use with various NSSI populations. It is apparent that the more intense self-injurers have a different response pattern on the measure. However, the groups are not homogeneous in regard to extent of self-injury. Although most of Clinard's sample indicated limited NSSI history, 15% reported engaging in the behavior more than 30 times, a pattern of more extensive self-injurious behavior. Likewise, a small percentage of participants from Boeckmann's online group reported less intense behaviors. To clarify the groups for the purposes of analysis, it would be beneficial to group individuals strictly according to the extent of self-injuring behavior: no history of NSSI, limited NSSI behaviors, and extensive NSSI behaviors. The primary intent of this study is to investigate if self-injurers who have more extensive histories of the behavior differ from those

with limited experience with NSSI on how they rate statements about NSSI on the JWKM, and how reliable and accurate the measure is when used with these populations.

Hypothesis one predicts that the mean scores on the knowledge measure will differ on the basis of group membership when controlling for age, sexual orientation, education level and gender. The means for the total score and scale (myth and fact) will differ, with the extensive NSSI group obtaining higher mean scores than the limited NSSI, and both the extensive and limited NSSI groups higher than the college sample with no history of NSSI. The three groups differ in the demographic variables of age, sexual orientation, gender, and education. Therefore, the means of the three groups will be compared while controlling for these variables.

The second hypothesis will investigate the item response patterns for the three groups. It is predicted that item responses will vary depending on extent of self-injurious behavior, and that as the number of incidences of NSSI increases, so will the scores on individual items. Relationships between items, and between items and the number of incidences of NSSI, will also be examined and compared with group classification of response patterns in regard to good, problematic, and poor understanding of NSSI.

Data obtained from these analyses will then be used to support the adequacy of the instrument or to make recommendations for improvement of the instruments

Methods

Subjects

Archived data from Boeckmann (2008), Smith (2008), and Clinard (2010) was used for this investigation. Boeckmann surveyed 103 participants who self-injured by soliciting them from 26 online NSSI MySpace groups; two members were excluded by indicating lack of self-injurious behavior. The remaining 101 participants were mostly Caucasian (85.0%) females (87.0%) with ages ranging from 18 to 46 years (mean age of 21; modal age of 18). Over half of participants were heterosexual (52.2%), 31.5% were bisexual, and 13.0% were questioning, and 3.3% were gay/lesbian. Most respondents resided in the United States (89.1%), and indicated they completed at most their senior year of high school (55.4%).

Clinard (2010) utilized unanalyzed archived data from Smith (2009) for her study of knowledge level of college students who engage in NSSI using the JWKM. The sample contained 87 undergraduate college students aged 18 to 38, which were a subsample of 626 students who were originally surveyed by Smith. The intent of Smith's study was to focus on peer perceptions of NSSI and thus the students who indicated that they either engaged in NSSI prior to or at the time of the study were excluded from analysis. Respondents in Clinard's sample were mostly Caucasian (82.8%) females (80.5%) who were currently college freshmen (57%). In regard to sexual orientation, 80.2% indicated they were heterosexual, while 10.5% indicated they were bisexual, 3.5% indicated they were questioning, and 4.6% indicated they were gay/lesbian (Clinard, 2010).

Smith (2009) used the JWKM in her survey of undergraduate college students' peer perceptions of NSSI. Smith's population served as a non NSSI control or basis of comparison with the Boeckmann's and Clinard's groups. Smith surveyed 495 students, of which

68 (13.74%) were excluded from analyses because they indicated a history of self-injury.

Therefore her study analyzed the responses of the remaining 427 students, the majority of whom were Caucasian (88.6%), female (71.8%) and in their freshman year of college (60%).

Respondents were aged 18 to 46 ($M = 20.47$), and 40.5% were 18 years old. In regard to sexual orientation, 91.5% of the participants were heterosexual, 1.9% were questioning, 2.7% were gay/lesbian, and 1.2% were bisexual (Smith, 2009).

Instrument

The survey instrument was developed by Jeffery and Warm (2002), and used by several investigators (Beld, 2007; Boeckmann, 2008; Butts, 2008; Clinard, 2010; Smith, 2009) to establish level of knowledge of NSSI. Respondents were asked to indicate their level of agreement on a five-point Likert scale (1 = strongly disagree, 2 = disagree, 3 = unsure, 4 = agree, 5 = strongly agree) on ten myths regarding NSSI and ten items of factual information about NSSI. Professionals checked Jeffery and Warm's survey for face validity during development, and it was found to have a Cronbach's alpha coefficient of .75 and a split-half reliability of .84. Further studies using the measure found the instrument to be reliable with a Cronbach's alpha of .69, .70, and .71 (Beld, 2007; Butts, 2008; Clinard, 2010). A validity study by Warm, Murray, and Fox (2003) supports the distinctions between accurate and inaccurate perceptions of NSSI, and face validity was checked by professionals (Jeffery & Warm, 2002).

Results

Designation of Groups

First, in order to more clearly define the populations sampled by Clinard (2010), Boeckmann (2008), and Smith (2009), the data sets were combined and sorted into three groups based on frequency and extent of self-injury (extensive, limited, and no NSSI). This sorting was accomplished by qualifying group membership based on individual responses to a question asking the total number of NSSI occurrences. Response choices for this question were consistent across the three studies. The respondents were asked to indicate how many times they had self-injured by choosing one of the following responses: Never, one time, 2-4 times, 5-10 times, 11-20 times, 12-30 times, and more than 30 times. The frequencies of responses can be found in Table 4.

In order to determine what level of number of NSSI occurrences constitute limited and extensive NSSI, distributions of NSSI in other studies were examined. Studies by Whitlock and Knox (2007) and Heath, Toste, Nedecheva, and Charlebois (2008) that examined different aspects of self-injury also included surveys of level of self-injurious behavior in community samples. A bimodal distribution was present in number of incidents of NSSI reported by groups of self injurers in both studies (Heath et al., 2008; Whitlock & Knox, 2007). Similarly, the distribution in the current investigation was bimodal, with heights of frequency occurring at “Never self-injured” (494) and “more than 30 occurrences” of NSSI (83). Therefore group membership was chosen based on these peaks in the distributions; the participants who indicated had never self-injured were designated as the *no NSSI* group, the 83 participants indicating that they had engaged in NSSI more than 30 times were designated as the *extensive NSSI* group, and those who indicated they had self-injured one time to 30 times were designated as the *limited*

NSSI group. There were eight individuals who did not answer this question and they were excluded from the analysis. Additionally, 52 individuals did not answer every item on the JWKM, and were also excluded from the analysis. After these deletions, there were 652 total individuals: 83 extensive NSSI, 75 limited NSSI, and 494 in the no NSSI group.

Table 4

Number of Instances of Self Injury for Overall Sample

Lifetime Instances of NSSI	<i>n</i>
Never	494
Once	22
2 – 4 times	23
5 – 10 times	13
11 – 20 times	13
21 – 30 times	4
More than 30 times	83

Demographics of groups

After individuals were assigned to groups based on level of self-injurious behavior, basic descriptive statistics were used to determine the demographic information of the three groups (see Table 5). The three groups had similar mean ages but age ranges varied. The no NSSI group ($n = 494$) had a mean age of 20.49, with ages ranging from 18 – 54 years old; the limited NSSI group ($n = 75$) had a mean age of 20.16, with ages ranging from 18 – 38 years old; and the extensive NSSI group ($n = 83$) had a mean age of 20.77 with an age range of 18 – 46 years old. In regard to gender, all three groups were composed of mostly females (No NSSI = 64.3%;

limited NSSI = 80.0%; extensive NSSI = 86.7%). Caucasian was the most endorsed race/ethnicity across the three groups (No NSSI = 87.0%; limited NSSI = 81.3%; extensive NSSI = 84.3%). The no NSSI group had a larger number of African American participants (38 respondents; 7.7%) than both the limited NSSI (5 respondents; 6.7%) and the extensive NSSI (2 respondents; 2.4%). The NSSI groups had a greater percentage of Asian participants (limited = 4.0%; extensive = 4.8%) than the no NSSI group (0.8%). In regard to education, the extensive NSSI group included 18 participants who were in high school, while the other two groups had no high school participants. In examining sexual orientation, 94.6% of the no NSSI group indicated they were heterosexual, and 5.4% indicated they were gay, lesbian, bisexual, or questioning. The limited NSSI group evidenced slightly fewer individuals endorsing heterosexuality (81.1%), with 18.9% of the sample indicating gay, lesbian, bisexual, or questioning. Little over half of the extensive NSSI group (56.6%) indicated they were heterosexual, while 28.9% endorsed bisexuality, and 12.0% indicated they were questioning their sexuality. Only one individual in the extensive NSSI group endorsed gay as their sexual orientation, and one endorsed lesbian.

Table 5

Demographics of Respondents by Group

Demographics	Group		
	No NSSI (<i>n</i> = 494)	Limited NSSI (<i>n</i> = 75)	Extensive NSSI (<i>n</i> = 83)
Age			
Mean	20.49	20.16	20.77
Median	19.00	19.00	19.00

Table 5 (continued).

Mode	18.00	18.00	18.00
<i>SD</i>	4.49	3.12	5.34
Gender			
Male	175 (35.7%)	15 (20.0%)	11 (13.3%)
Female	315 (64.3%)	60 (80.0%)	72 (86.7%)
Race			
African American	38 (7.7%)	5 (6.7%)	2 (2.4%)
Asian	4 (0.8%)	3 (4.0%)	4 (4.8%)
Caucasian	429 (87.0%)	61 (81.3%)	70 (84.3%)
Hispanic	10 (2.0%)	2 (2.7%)	3 (3.6%)
Native American	1 (0.2%)	2 (2.7%)	1 (1.2%)
Other	11 (2.2%)	2 (2.7%)	3 (3.6%)
Education Level			
High School	0 (0.0%)	0 (0.0%)	18 (22.0%)
Freshman <25 hours	294 (60.0%)	39 (52.0%)	32 (39.0%)
Sophomore 25 – 54 hours	87 (17.8%)	16 (21.3%)	17 (20.7%)
Junior 55-58 hours	41 (8.4%)	14 (18.7%)	7 (8.5%)
Senior >89 hours	67 (13.7%)	5 (6.7%)	5 (6.1%)
Graduate Student	1 (0.2%)	1 (1.3%)	3 (3.7%)
Sexual Orientation			
Heterosexual	456 (94.6%)	60 (81.1%)	47 (56.6%)

Table 5 (continued).

Gay	7 (1.5%)	2 (2.7%)	1 (1.2%)
Lesbian	5 (1.0%)	1 (1.4%)	1 (1.2%)
Bisexual	7 (1.5%)	8 (10.8%)	24 (28.9%)
Questioning	7 (1.5%)	3 (4.1%)	10 (12.0%)

Descriptive Statistics for the JWKM

In regard to performance on the JWKM, The group total mean scores were ordered depending on level of self-injurious behavior. The extensive NSSI group scored highest among the three groups. The limited NSSI group obtained a JWKM mean knowledge score which was next highest, and the no NSSI group evidenced the lowest level of knowledge. Results for the Facts and Myths scales followed a similar pattern for each group. The means, standard deviations, and variance for each group are reported in Table 6.

Reliability on the JWKM was also analyzed across the three groups. All three groups evidenced good item reliability: The no NSSI group had a Cronbach's Coefficient Alpha of .72, the limited NSSI group had a Cronbach's Coefficient Alpha of .74, and the extensive NSSI group had a Cronbach's Coefficient Alpha of .70. These reliabilities were compared using a Z test for correlations from independent samples and were found not to be significantly different.

Table 6

Descriptive Statistics on the Jeffery and Warm Knowledge Measure

	Group			
	No NSSI (<i>n</i> = 494)	Limited NSSI (<i>n</i> = 75)	Extensive NSSI (<i>n</i> = 83)	Total Group (<i>N</i> = 652)
Total				
Mean score	61.13	68.67	79.17	64.30
<i>SD</i>	8.05	7.94	7.25	10.04
Variance	64.81	63.06	52.63	100.87
Scale				
Myths				
Mean	31.82	35.64	39.93	33.29
<i>SD</i>	4.67	4.64	4.31	5.40
Variance	21.78	21.53	18.56	29.17
Facts				
Mean	29.31	33.03	39.24	31.00
<i>SD</i>	7.10	5.10	4.64	7.43
Variance	50.44	26.03	21.55	55.16

Hypothesis One

Hypothesis one predicted that mean total and scale scores on the JWKM would vary by group when controlling for the demographic variables of age, sexual orientation, and education level. Gender, age, sexual orientation and education level were initially indicated as variables for covariates, however gender was found not to be a differing factor between the three groups. Three analyses of covariance (ANCOVAs) were conducted. The independent variable, group membership based on extent of self-injurious behavior, included three levels: no NSSI, limited NSSI, and extensive NSSI. The dependent variables for each of the ANCOVAs were as follows: mean scores on the JWKM total score, mean scores on the Myths scale, and mean scores on the Facts scale.

A preliminary analysis evaluating the homogeneity-of-slopes assumption indicated that the relationship between the covariates of age, sexual orientation, and education level, and the dependent variable differed significantly as a function of the independent variable. There was a significant effect of group membership on the JWKM mean total scores after controlling for the effect of age, sexual orientation, and education level, $F(2, 619) = 135.888, p < .01$, partial $\eta^2 = .31$. There was also a significant effect of group membership on JWKM mean scale scores after controlling for variables; Myths scale, $F(2, 619) = 87.38, p < .01$, partial $\eta^2 = .22$ and Facts scale, $F(2, 619) = 57.28, p < .01$, partial $\eta^2 = .16$.

The mean total scores on the JWKM, adjusted for initial differences, were ordered as predicted across the three groups. The extensive NSSI group had the largest adjusted mean scores (total score, $M = 77.82$; Myths scale, $M = 39.49$; Facts scale, $M = 38.33$), the limited NSSI group had a smaller adjusted mean scores ($M = 68.77$; Myths scale, $M = 35.69$; Facts scale, $M = 33.09$), and the no NSSI group had the smallest adjusted means ($M = 61.36$; Myths scale, $M =$

31.95; Facts scale, $M = 29.41$). Follow-up tests were conducted to evaluate pairwise differences among these adjusted means. There were significant differences in the adjusted means (JWKM total score, Myths scale, and Facts scale) between all three groups. Hypothesis one was supported.

Hypothesis Two

The second hypothesis investigated the relationship between the items and between the items and the severity of NSSI and explored the classification of the response patterns for each item by group. Hypothesis two predicted that item responses would vary depending on level of NSSI with more severe NSSI exhibiting stronger correlations with JWKM items. A Pearson r correlation coefficient was computed for each item on the JWKM to assess the relationship between the number of instances of self-injury endorsed (never, once, 2-4 times, 5-10 times, 11-20 times, 21-30 times, and more than 30 times) and item responses. Correlation coefficients ranged from .05 to .49 (see Table 7). Only one item was not significantly correlated to severity of NSSI: *People who self-injure will grow out of it eventually* (item 5).

Further, corrected item-total correlations were computed to assess the relationship between responses on each item with responses on the other items on the measure. Corrected item-total correlations ranged from -.01 to .65 (see Table 7). The item that was not significantly correlated to level of NSSI, *People who self-injure will eventually grow out of it eventually*, was also the least correlated with the other items on the measure; in fact, the relationship was negative. Additionally, three other items (*NSSI is a “woman’s problem”*, *NSSI is a manipulative act*, and *People who self-injure have a history of sexual abuse*) evidenced significant but weak correlations with other items on the measure.

The items that were not significantly correlated to level of NSSI or correlated strongly with other items on the measure were compared to the classification of response patterns for the three groups in order to determine how the groups performed on these items. In regards to classification of item response across groups, it was previously found that two items were well understood by all three groups, and only 9 items were well understood by at least one group. These findings did not change when the archived data sets were reorganized according to level of NSSI (extensive, limited, and no NSSI) for the current investigation (see Table 8).

NSSI is a “woman’s problem,” an item that evidenced a weak relationship with the other items, was the most well-understood item on the measure with all three groups agreeing that it was a myth. All three groups had problematic understanding of the myth *People who self-injure have a history of sexual abuse*. Likewise, the extensive NSSI group evidenced problematic understanding of *NSSI is a manipulative act*, and the limited and no NSSI had poor understanding.

Table 7

Correlation Coefficients for JWKM item response and NSSI severity

Item ^c	Severity	Corrected Item-Total Correlation
1 ^b	.185**	.400
2 ^a	.285**	.358
3 ^b	.488**	.649
4 ^b	.323**	.436
5 ^a	.055	-.14
6 ^a	.248**	.167
7 ^b	.157**	.319
8 ^a	.168**	.126

Table 7 (continued).

9 ^b	.378**	.611
10 ^b	.300**	.452
11 ^a	.350**	.441
12 ^a	.097*	.14
13 ^b	.374**	.408
14 ^a	.351**	.525
15 ^a	.336**	.618
16 ^b	.480**	.419
17 ^a	.238**	.396
18 ^b	.377**	.360
19 ^a	.224**	.403
20 ^b	.353**	.416

Note. Correlation between severity of NSSI and JWKM total scores was found to be significant at .618 at $p < .01$. ^aMyth items. ^bFact Items. ^cFrom “A study of service providers’ understanding of self-harm,” by D. Jeffery and A. Warm, 2002, *Journal of Mental Health*, 11, p. 299. * $p < .05$. ** $p < .01$.

Table 8

Classification of Response Patterns on the JWKM for No NSSI, Limited NSSI, and Extensive NSSI Groups

	Group		
	Extensive NSSI (n = 494)	Limited NSSI (n = 75)	No NSSI (n = 83)
Facts^a			
(1) NSSI is a form of communication.	62.7**	50.7**	41.5**
(3) NSSI provides a way of staying in control.	83.2*	50.7**	20.6****
(4) NSSI provides distraction from thinking.	90.4*	69.3**	51.0**
(7) NSSI can obtain feelings of euphoria.	56.7**	38.6**	28.9****
(9) NSSI is a release for anger.	98.8*	88.0*	58.3**
(10) NSSI expresses emotional pain.	100.0*	89.3*	74.7*
(15) NSSI is a coping strategy.	91.6*	66.7**	53.9**
(17) NSSI helps a person maintain a sense of identity.	48.2**	53.3**	14.2****
(19) NSSI provides escape from depression.	53.0**	32.0**	22.0****
(14) NSSI helps deal with problems.	65.0**	30.7**	19.6****
Myths^a			
(2) NSSI is a sign of madness / mental illness	47.0**	37.3**	18.4****
(5) People who self-injure will “grow out of it” eventually.	66.2**	41.3**	58.7**

Table 8 (continued).

(6) NSSI is a manipulative act.	42.2**	28.0***	15.5***
(8) NSSI is a “woman’s problem.”	95.2*	94.7*	88.9*
(11) The best way to deal with people who self-injure is to make them stop.	83.1*	45.3**	34.8**
(12) People who self-injure have been sexually abused.	47.0**	58.7**	36.7**
(13) NSSI is a failed suicide attempt.	96.4*	85.4*	65.2**
(16) NSSI is attention seeking.	72.3*	36.0**	15.7***
(20) People who self-injure should be kept in psychiatric hospitals.	55.4**	48.0**	20.0***
(18) Everybody who self-injures suffers from Munchausen’s Disease (self-inflicted injuries calculated to produce specific symptoms that will lead to medical hospital admissions).	81.9*	78.7*	48.8**

Note. Numbers in parenthesis represent the item number. Frequencies derived from rescaling the 5-point Likert scale (1-strongly disagree, 2-disagree, 3-unsure, 4-agree, 5-strongly agree) into two groups, Accurate (responses 4 and 5) and inaccurate (responses 1, 2, and 3). * Denotes Good Understanding (% of accurate responses $\geq 70\%$); ** Denotes Problematic Understanding (30 % \leq % accurate responses $\leq 70\%$); *** Denotes Poor understanding (% of accurate responses $\leq 30\%$). ^aFrom “A study of service providers’ understanding of self-harm,” by D. Jeffery and A. Warm, 2002, *Journal of Mental Health*, 11, p. 299.

Discussion

The current study explores the knowledge regarding NSSI of three samples of young adults with no history of NSSI, limited history, and extensive history, and examines whether knowledge differs depending on the extent of self-injury. It also investigates item response on the JWKM depending on varying degrees of self-injurious behaviors. The current investigation thus seeks to refine and strengthen the measure for future use.

Hypothesis One

Hypothesis one predicts that individuals with more extensive histories of self-injury present with more knowledge about NSSI as measured by JWKM than do those with limited histories of NSSI, and the limited NSSI group in turn evidences more knowledge than those who do not engage in NSSI. Hypothesis one is supported, as the extensive NSSI group evidenced the highest total mean scores on the JWKM, as well as highest mean scores on the both the Myths and Facts scales. Also as predicted, the limited NSSI group evidenced slightly lower means, which were higher than the no NSSI group, which evidenced the lowest means. Although the groups differed in the demographic aspects of age, sexual orientation, and level of education, this difference was found to account for little of the variance in scores, and thus it was determined that individuals answer the JWKM differently depending on their history of self-injury. It is possible that those who have engaged in the behavior a considerable number of times are more likely to understand more about the behavior, whereas those who have only tried it once or a few number of times know less about NSSI. The extensive NSSI group was largely made up of respondents from Boeckmann's (2008) sample of self-injurers recruited from online support groups due to the fact that 66% of her sample indicated that they had engaged in the behavior more than 30 times. It is possible that those who participate in online discussion boards are more

likely to read about and discuss NSSI with other individuals, and therefore would evidence more knowledge about the behavior than those who do not. Overall, the mode of learning notwithstanding, the level of self-injurious behavior is significantly related to knowledge of NSSI.

Hypothesis Two

Hypothesis two predicts that item responses on the JWKM vary depending on level of NSSI. Hypothesis two is supported. Findings show that 19 of the 20 items are answered differently based on seven categories of level of self-injurious behavior; only one question was not significantly correlated with level of NSSI. Responses on the JWKM were found to depend on severity of self-injury, and were correlated strongly (.62). As the number of instances of self-injury increase incrementally, so does the likelihood of answering these items correctly. This means that an individual who has self-injured 30 or more times is more likely to answer these items accurately than one who has only self-injured nine times, who is in turn more likely to answer more accurately than one who has never self-injured. The item that was found to be nonsignificant was compared with classification of item response across groups to further understand the findings.

Only one item on JWKM does not depend on level of self-injurious behavior; *People who self-injure will grow out of it eventually*. This item also yielded a significantly negative relationship with responses of the other 19 items on the measure. When examining item response by each group, it was found that all three groups' understanding of this item was problematic, indicating that this item does not differentiate between groups. Additionally, this item may be confusing to answer for those who are currently engaging in self-injury, as they may not know whether they are going to eventually stop the behavior. Conversely, it may be an accurate statement for someone who has stopped self-injuring and perhaps felt they had grown out of it.

When examining this item, its lack of correlation to level of NSSI and its negative correlation to the other items indicate that this item does not appear to work well within this measure when used with self-injuring populations. This item, among others, should be considered for deletion in future analyses if the measure is to be used with these populations.

One myth item that was significantly but weakly correlated with number of incidences of NSSI also was weakly correlated with the other items on the measure, and questioned accurate knowledge in regard to NSSI gender prevalence. *NSSI is a “woman’s problem”* is classified as a myth on the JWKM. The item received ratings of good understanding by all three groups. The weak correlation between this item and severity of NSSI indicates that there was not much variability in responses; all groups answered it accurately. This perhaps indicates that this item does not measure accuracy in knowledge of NSSI, as it did not differentiate between groups with high and low levels of NSSI.

Another myth, *People who self-injure have a history of sexual abuse*, is significantly but weakly correlated with severity of self-injury, as well as the other items on the measure. Upon examining the group performances on item response, it was found that all three groups had problematic understanding of this item. One explanation for this finding is possibly due to the fact that an individual who self-injures may answer this item depending on his or her history of sexual abuse. However, data regarding participants’ history of sexual abuse were not available for the current study; therefore the hypothesized explanation involving individual perspective of sexual abuse cannot be used to explain problematic understanding and inconsistent performance of this item. However, it is important to note that the correlations obtained in the current study of the JWKM item regarding sexual abuse are consistent with the results obtained by Warm, Murray, and Fox (2003), who found that more respondents who engaged in self-injury agreed

than disagreed with the false statement that people who self-injure had been sexually abused. They performed statistical analyses that determined that those who had experienced sexual abuse were more likely to see their behavior as related to that abuse than those with no history of abuse (Warm, Murray, and Fox, 2003). This item does not appear to work well with groups of self-injurers, due to its inconsistent performance across groups. This item should also be considered for deletion.

The item, *NSSI is a manipulative act*, is also significantly but weakly correlated with severity of self-injury and with other items on the measure. This item appeared to somewhat distinguish the level of knowledge between groups, as the extensive self-injuring group evidenced problematic understanding of this item, while the individuals with limited experience of NSSI and those individuals who had never engaged in NSSI had poor understanding. It is possible that individuals who do not engage in self-injury perhaps view that behavior as a manipulative act, and possibly view those who engage in it to be doing so in order to manipulate others, thus the poor performance on this item. While it is known from the literature that those who self-injure generally do not reveal the behavior to others, and perform it in secrecy (Walsh, 2006), perhaps some individuals who self-injure feel that they do so in order to manipulate the feelings and actions of those around them. Due to the extensive NSSI group, who have the most accurate knowledge about NSSI, evidencing problematic understanding, this is also an item that should be considered for deletion.

Limitations

The limitation of the study lies in the differences in survey items between the studies sampled. Boeckmann's (2008), Clinard (2010), and Smith (2009), were investigating different aspects of knowledge about self-injury targeting different groups and therefore many items

regarding self-injury did not overlap. Only one item regarding number of instances self-injury was the same across three studies. Some participants did not answer this item and therefore their survey information could not be used for comparison. Boeckmann's study targeted self-injurers and therefore asked many items regarding individuals' experience with self-injury, including age of onset, methods of self-injury, duration and frequency of self-injury, functions of the behavior, as well as extensive questioning about sources of information about NSSI. These questions were not asked by Smith or Clinard as those studies analyzed responses by participants who were recruited for a study targeting non self-injuring peers and questions about self-injurious behavior were limited. More information regarding an individual's history of self-injury would be useful to more clearly define the groups based on level of self injury. For instance, duration of NSSI, severity of the injury, and how often the incidents occur would give more information to decide severity of the behavior.

Strengths

A strength of the current study lies in sample size. Self-injury is often an isolated and secretive behavior; so having 158 self-injurers to compare across one measure is a considerably sized sample. Comparatively, the sample of self-injurers used in Jeffery and Warm's (2002) study that first used the JWKM was comprised of only 16 individuals. It was also fortunate that all three of the studies did share one variable, number of incidences of self-injury; thus comparisons beyond demographic information were possible.

Practical Implications

One implication of this study is that the JWKM could be strengthened and refined for future use. First, although previous studies have shown that individuals who engage in self-injury score higher on the JWKM (Warm, Murray, & Fox, 2003), there are several items that

may not accurately measure knowledge due to consistent performance across the three groups. Additionally, those who self-injure may be more likely to pull from their own personal experiences with NSSI when answering these items, which may not necessarily align with the myths and facts on the JWKM. As previously discussed, some items may not even be possible for those who currently engage in the behavior to answer objectively. However, this measure is also used with professionals, who may gain knowledge of NSSI by working with those who engage in the behavior or through professional development and training and thus this lack of objectivity would not be a factor.

This study found that more severe self-injurers evidence higher knowledge about NSSI than those with limited histories of NSSI, and also showed that most items on the JWKM were positively correlated with level of self-injurious behavior. However, one item on the measure (*People who self-injure will grow out of it eventually*) was not significantly correlated with level of self-injurious behavior. The purpose of the JWKM is to measure knowledge of NSSI, however if those who evidence high levels of knowledge (extensive NSSI group) answer this item no differently than those who evidence low levels of knowledge, it does not accomplish this end. Three other items were also weakly correlated with NSSI and with the other items on the JWKM. The reliability of the measure would be strengthened if these four items were deleted. The Cronbach's alpha would increase from .82 to .84, thus strengthening the measure.

Further Research

While this study provides analyses about group means on the JWKM and correlations of items, further analysis would be useful. The items previously discussed in regard to weak relationships to level of NSSI are items that future researchers may want to be consider deletion or editing in order to determine their usefulness within this survey. A factor analysis could used

to further refine the measure and lead to further clarification of the usefulness of individual items. These findings can be used to strengthen and refine the measure to be used by mental health, educational, and medical professionals, as well as community professionals who may plan prevention campaigns. It would be beneficial to remove items that do not appear to measure knowledge of NSSI accurately.

It is important to point out that this survey was originally constructed and subsequently tested in order to determine level of knowledge among professional groups, which often come into contact and are involved with treatment of individuals who self-injure. The measure had previously been found to accurately measure knowledge in professional groups (Beld, 2007; Butts, 2008; Jeffery & Warm, 2002). Perhaps the items that did not work well in distinguishing between different levels of NSSI, nor with differentiating between individuals with history of self-injurious behavior and those without, would work well in determining knowledge of professionals. Perhaps the use of this survey with non-professionals provides less clear information about level of knowledge due to the types of questions asked about NSSI with those who have personally engaged in it.

Conclusions

Overall, the analyses from this archival data support that individuals who engage in more severe forms of NSSI have more accurate knowledge of the behavior than those who have engaged in the behavior fewer times. The JWKM appears to work well with many types of groups in terms of measuring knowledge of NSSI, and evidencing good reliability and validity. Broadly, this measure would be useful in different aspects. One, it may be useful in constructing training modules about NSSI for professionals, students, and community members. Items on the measure would represent talking points for discussing what NSSI is and what it is not. This

measure could also be used to self-assess knowledge about self-injury in professional and community groups. Overall, the measure assesses knowledge of self-injury, although it should be refined for future use by deleting items and thus strengthening its validity.

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Appendix

Human Subjects Review Board Approval Letter



A LEADING AMERICAN UNIVERSITY WITH INTERNATIONAL REACH
HUMAN SUBJECTS REVIEW BOARD

In future correspondence, please refer to HS10-289, May 25, 2010

Darcy Leanne Cates
c/o Dr. Jones
Psychology
WKU

Darcy Leanne Cates:

Your research project, *NSSI Archival Data Study*, was reviewed by the HSRB and it has been determined that risks to subjects are: (1) minimized and reasonable; and that (2) research procedures are consistent with a sound research design and do not expose the subjects to unnecessary risk. Reviewers determined that: (1) benefits to subjects are considered along with the importance of the topic and that outcomes are reasonable; (2) selection of subjects is equitable; and (3) the purposes of the research and the research setting is amenable to subjects' welfare and producing desired outcomes; that indications of coercion or prejudice are absent, and that participation is clearly voluntary.

1. In addition, the IRB found that you need to orient participants as follows: (1) signed informed consent is not required; (2) Provision is made for collecting, using and storing data in a manner that protects the safety and privacy of the subjects and the confidentiality of the data. (3) Appropriate safeguards are included to protect the rights and welfare of the subjects.

This project is therefore approved at the Exempt from Full Board Review Level.

2. Please note that the institution is not responsible for any actions regarding this protocol before approval. If you expand the project at a later date to use other instruments please re-apply. Copies of your request for human subjects review, your application, and this approval, are maintained in the Office of Sponsored Programs at the above address. Please report any changes to this approved protocol to this office. A Continuing Review protocol will be sent to you in the future to determine the status of the project. Also, please use the stamped approval forms to assure participants of compliance with The Office of Human Research Protections regulations.

Sincerely,

Paul J. Mooney, M.S.T.M.
Compliance Coordinator
Office of Sponsored Programs
Western Kentucky University



cc: HS file number Cates HS10-289

The Spirit Makes the Master