

Vojna Tapola

Self-injurious Behavior
Assessment and Treatment



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ABSTRACT

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This research explored the conceptualisation of self-injurious behavior (SIB) in terms of similarities and differences amongst the two types of this behavior. It further explored the efficacy of a brief psychological intervention for SIB as well as the effect of a brief training in the assessment and treatment of SIB on the attitudes psychiatric personnel hold towards people who engage in SIB. The participants in two of the three studies reported here were individuals who following a self-injury episode approached the accident and emergency unit at the Central Finland Community General Hospital. The participants in the third study were psychiatric personnel from the North Karelia Health District. The data in the first study consisted of 46 self-injurious acts committed by the study's 16 participants. In the second study, the data pertained to the participants' responses to multiple psychometrically sound instruments at baseline and at follow-up points. The third study consisted of participants' pre and post training responses on a questionnaire measuring staff attitudes towards people who engage in SIB. The findings from the studies suggest the following: (i) non-suicidal self-injurious behavior (NSSI) and suicidal self-injurious behavior (SSI) co-occur and share certain similarities but also differ; (ii) SIB within individuals is changing with multiple different motivational factors at different time points; (iii) a comprehensive assessment of SIB using valid instruments is imperative; (iv) a brief 4-session psychological intervention is followed by a decrease in the frequency of SIB, with the decrease still present at 6-month follow-up; (v) a brief intervention can be taught to and implemented by the staff with no prior psychotherapeutic training; (vi) the attitudes of the psychiatric personnel towards individuals who engage in SIB are complex and ambivalent; (vii) a brief training in the assessment and treatment of SIB is followed by an improvement in personnel attitudes. This research contributed to the SIB field by illustrating how evidence-based assessment of SIB antecedents and consequences can result in treatment tailored to individuals' specific needs. The research advocated that effective SIB intervention is grounded in evidence-based elements and cuts across different psychotherapeutic approaches. Because the implementation of evidence-based practices requires change at the level of policy making, this research explicates the need for the formation of Current Care Guidelines for SIB in Finland, with psychologists having a greater role in its assessment and treatment.

Keywords: self-injurious behaviour, brief intervention, attitude, training

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Diss.

Tässä tutkimuksessa kartoitettiin itseä vahingoittavan käyttäytymisen (self-injurious behavior, SIB) käsitettä ja sen kahden eri muodon eroavaisuuksia ja yhteneväisyyksiä. Lisäksi tutkittiin lyhyen psykologisen intervention vaikuttavuutta SIB:n hoidossa. Lisäksi tutkittiin psykiatriselle hoitohenkilökunnalle annettua lyhyttä SIB:n arviointiin ja hoitoon keskittyntä koulutusta ja sen vaikutusta hoitohenkilökunnan asenteisiin itseään vahingoittavia henkilöitä kohtaan. Tutkimus koostui kolmesta osatutkimuksesta. Kahden ensimmäisen osatutkimuksen osallistujat olivat henkilöitä, jotka saapuivat helmikuun 2007 ja helmikuun 2008 välisenä aikana Keski-Suomen keskussairaalan ensiapuun itsensä vahingoittamisen jälkeen. Kolmannen osatutkimuksen osallistujat olivat Pohjois-Karjalan sairaanhoitopiirin psykiatrista henkilökuntaa. Ensimmäisen tutkimuksen aineisto koostui 46:sta itseä vahingoittavasta teosta, joiden tekijöinä olivat tutkimuksen 16 osallistujaa. Toisen tutkimuksen aineisto kerättiin arvioimalla osallistujien vastauksia psykometrisesti luotettaviin kyselylomakkeisiin, joihin osallistujat vastasivat tutkimuksen alku- ja seurantahetkellä. Kolmannen tutkimuksen aineisto koostui osallistujien ennen koulutusta ja sen jälkeen täyttämistä kyselylomakevastauksista, jotka mittasivat henkilökunnan asenteita itseään vahingoittavia henkilöitä kohtaan. Tutkimusten keskeiset tulokset olivat: (i) ei-itsetuhoista itseä vahingoittavaa käyttäytymistä (non-suicidal self-injurious behavior, NSSI) ja itsetuhoista itseä vahingoittavaa käyttäytymistä (suicidal self-injurious behavior, SSI) esiintyy samanaikaisesti ja niissä on samoja piirteitä, mutta ne myös eroavat toisistaan; (ii) yksilön SIB muuttuu muotoaan, ja eri ajankohtina sitä ohjaavat useat erilaiset motivaatiotekijät; (iii) SIB:tä pitää arvioida perusteellisesti ja pätevillä mittareilla; (iv) lyhyt, neljän käyntikerran psykologinen interventio voi vähentää SIB:n esiintymistiheyttä, ja intervention vaikutuksen voidaan havaita säilyvän seurannassa kuuden kuukauden jälkeen; (v) lyhyt interventio voidaan kouluttaa henkilökunnalle, jolla ei ole aiempaa psykoterapeuttista koulutusta; (vi) psykiatrisen henkilökunnan asenteet itseään vahingoittavia henkilöitä kohtaan ovat monimutkaisia ja ristiriitaisia; (vii) lyhyt SIB:n arviointiin ja hoitoon keskittyvä koulutus voi parantaa asenteita henkilökunnassa, joka hoitaa itseään vahingoittavia henkilöitä. Tämä tutkimus esittää, miten SIB:tä edeltäviä tapahtumia ja sen seurauksia arvioimalla voidaan päätyä hoitomuotoihin, jotka vastaavat yksilön erityisiin tarpeisiin. Tehokas SIB-interventio pohjautuu näyttöön perustuviin käytäntöihin. Koska näyttöön perustuvien käytäntöjen omaksuminen vaatii muutosta hallinnollisen ohjauksen tasolla, tässä tutkimuksessa esitetään, että Suomessa on laadittava SIB:lle käyvän hoidon suositukset, joissa psykologeilla on aiempaa suurempi osuus SIB:n arvioinnissa ja hoidossa.

Asiasanat: itsensä vahingoittaminen, itsetuhoisuus, lyhyt interventio, asenteet, koulutus

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- II Tapola, V., Lappalainen, R., & Wahlström, J. (2010). Brief intervention for deliberate self-harm: An exploratory study. *Suicidology Online*, 1, 95–108.
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Taking into account the instructions given and comments made by the co-authors, the author of the thesis collected the data, conducted the analyses, and wrote the reports of the three publications.

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LIST OF ABBREVIATIONS

3ST	Three Step Theory
AAQ	Action and Acceptance Questionnaire
ACT	Acceptance and Commitment Therapy
BA	Behavior Activation
BAI	Beck Anxiety Inventory
BAT	Behavior Activation Therapy
BATD	Behavior Activation Therapy for Depression
BDI	Beck Depression Inventory
BPD	Borderline Personality Disorder
CBT	Cognitive Behavior Therapy
CDC	Centers for Disease Control
C-SSRS	Columbia Suicide Severity Rating Scale
DBT	Dialectic Behavior Therapy
DERS	Difficulty in Emotion Regulation Scale
DSH	Deliberate Self Harm
DSM	Diagnostic and Statistical Manual of Mental Disorders
ER	Emotional Regulation
ERGT	Emotion Regulation Group Therapy
GAD	Generalized anxiety disorder
HRQoL	Health-related Quality of Life
ICD	International Classification of Diseases
IMV	Integrated Motivational-Volitional Model
MACT	Manual-assisted Cognitive Behavior Therapy
NICE	National Institute of Clinical Excellence
NSSI	Non-suicidal self-injurious behavior
RCT	Randomized clinical trial
SASII	Suicide Attempt Self Injury Interview
SFBT	Solution Focused Brief Therapy
SIB	Self-injurious behavior
SSI	Suicidal self-injurious behavior
TAU	Treatment as usual
USP	Understanding Suicidal Patients

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1 INTRODUCTION

1.1 Why study self-injurious behavior (SIB)

The World Health Organization (2014) report on Suicide Prevention estimates that 804 000 suicides have taken place worldwide in 2012, with an annual global suicide mortality rate of 11.4 per 100 000 population (15.0 for males and 8.0 for females). This number is larger than that of the entire population of the Finnish capital city Helsinki. According to the World Health Organization (2008), suicide represents 1.3% of the total global burden of disease. Nonfatal suicidal behaviors, which are often repetitious and pose a subsequent risk of suicide (Cooper et al., 2005; Hawton, Hall, Simkin, Bale, & Bond, 2003), occur 36 times more frequently than suicides (Hawton & Harriss, 2008b), presenting a significant burden too. In 2011 the number of people receiving emergency treatment for self-injury was 487,700 (Centers for Disease Control, 2012). The direct financial cost associated with suicide deaths and nonfatal suicidal behavior has been estimated at 0.7\$ billion in the United States alone (Palmer, Revicki, Halpern, & Hatzianandreu, 1995). Further indirect costs incurred due to years of potential life lost, lost earnings, suicide-attempt related disability, and lost productivity of those grieving a suicide death are estimated to be 34.6\$ billion (Centers for Disease Control, 2012).

According to the official statistics of Finland (Statistics Finland, 2012), in Finland, in 2012, suicide mortality or the number of suicides a year per 100,000 population was 16.1. Suicide attempts are estimated to be 10–20 times more frequent. Compared with other EU countries, the suicide mortality of Finns aged under 65 was around 1.5 times as high as the EU average in 2010. The financial loss due to suicide among the working age population in Finland is estimated to be several hundreds of million euros per year.

Emotional devastation suffered by families, friends and others affected by suicide death or nonfatal self-injurious behavior cannot be measured in numbers. The behavior runs counter to the basic belief of the purpose of life.

The alarming financial and emotional consequences of the behavior justify

the academic study of the behavior, with the aim of improving understanding and developing prevention.

1.2 Defining and classifying SIB

1.2.1 SIB nomenclature

Currently, the field of SIB is subjected to vast amounts of studies. Yet, the understanding and prevention brought about by means of integrating results of scientific research is still at an embryonic stage. As recognized by the United States Centers for Disease Control and Prevention (CDC), the main impediments to utilizing vast scientific information are staggering definitional ambiguity and the lack of consensus regarding the conceptualization of SIB (Crosby, Ortega, & Melanson, 2011; Mangnall & Yurkovich, 2008).

To begin with the variety of nomenclature SIB has so far been discussed using the terms such as partial suicide (Menninger, 1938), parasuicide (Linehan, Camper, Chiles, Strosahl, & Shearin, 1987), deliberate self-harm (Pattison & Kahan, 1983), delicate self-cutting (Pao, 1969), wrist cutting syndrome (Rosenthal, Rinzler, Wallsh, & Klausner, 1972), self-harm (Farber, 2000), bodily harm (Contario & Lader, 1998), self-mutilation (Favazza, 1987), self-harm (Beasley, 2000), repeated self-injury (Crowe & Bunclark, 2000), self-wounding (Huband & Tanam, 2000), and deliberate self-harm (Graz, 2003; Mangnall & Yurkovich, 2008).

At the outset of the present research in 2007, the prevailing terminology was Deliberate Self Harm (DSH), which, in the absence of any consensus regarding appropriate terminology, was also adopted in Study II. Since 2007 much has happened in both nomenclature and the classification of SIB, including the recognition of the importance of making a distinction between nomenclature and classification. According to O'Carroll and colleagues (1996) nomenclature refers to a set of commonly defined terms and classification is described as going beyond nomenclature and towards comprehensiveness. It refers to systematically arranging items into groups or categories that have scientific validity and are accurate enough to be used in research and clinical practice.

In both classificatory systems the Diagnostic and Statistical Manual of Mental Disorders IV (DSM-IV; American Psychiatric Association, 1994) and the International Classification of Diseases 10 (ICD-10; World Health Organization, 2015) SIB has been classified as a symptom of borderline personality disorder (BPD). However, as it was shown empirically that SIB can occur in the absence of BPD, as a component of depressive states, or even without classifiable psychopathology, scientific discussion led to the inclusion of two new conditions: suicidal behavior disorder, and non-suicidal self-injury disorder (NSSI) in the DSM-5 (American Psychiatric Association, 2013). Currently, agreement has been reached with the DSM-5 that *SIB is classified as suicidal as opposed to nonsuicidal "if any nonzero stated or inferred intent to die is a reason for the behavior"* (Posner, Brodsky, Yershova, Buchanan, & Mann, 2014, p. 11). The nonzero intent

may appear somewhat puzzling to academics, yet clinicians recognize it easily. For example, asking “Was the end goal of your cutting/overdose/... to end your life?” may evoke the answer “no”, based on which a clinician may misclassify the behavior if the motivation was, as it often is, mixed. Thus, asking instead “Did any part of you at any point during the time you harmed yourself feel like ending your life” may evoke a different response. Thus, the nonzero intent to die is essential in classifying behavior as suicidal. NSSI however is differentiated from SSI in that *NSSI is performed with the intent to self-injure but without intent to die*. Thus, in defining the NSSI, the purpose or intent or function of the behavior must be elucidated.

The placement of these disorders in the DSM-5 under Section III, which covers emerging measures and models for an evolving DSM of the future, implies that SIB is a clinical condition that needs further investigation. For physicians and psychiatrists who diagnose, the DSM-5 SIB additions improve diagnostic precision and may help draw attention to SIB itself instead of SIB as associated with mental illness, such as depression or BPD. For psychologists however, the DSM-5 inclusions provide little assistance in explaining and comprehending the behavior. DSM itself is a descriptive manual and as such does not even deal with causality. Because self-injurious behavior is characterized by a complex interplay of biology, psychology, environment, and culture (O'Connor, Platt, & Gordon, 2011), there is a need to move beyond psychiatric categories to be able to understand the causes of this behavior. In an attempt to comprehend the behavior and be more successful in saving people's lives, the interdisciplinary field of suicidology has evidenced not only the developments in syndromal approach but also a significant rise in empirical research and clinical applications of the functional approach, as first advocated by Nock and Prinstein (2004). Within this perspective, variables that may be conceptualized as motivating or reinforcing the behaviors are emphasized and NSSI and SSI are understood as behaviors *sui generis*, not simply as by-products or symptoms of mental illness (O'Connor, 2011).

1.2.2 NSSI and SSI: refining and distinguishing

Whether understood or not, SIB is present, it is prevalent, and those suffering the condition must be helped. For psychological treatment to be effective, it is essential to also seek to better comprehend this behavior, no matter how complicated this may be. It is no surprise then that over the years, psychologists have become the main students of SIB. Most notably, the work of Matthew Nock (Nock & Kessler, 2006) introduced new terminology, nonsuicidal self-injury (NSSI) and suicidal self-injury (SSI), which were also adopted in Studies II and III.

NSSI

Nock and Favazza (2009) define NSSI as self-directed, deliberate destruction or alteration of bodily tissue in the absence of suicidal intent. NSSI typically refers

to behaviors such as self-cutting, head banging, burning, self-hitting, scratching to the point of bleeding, and interfering with wound healing (Nock, 2010). NSSI is found to have its onset in adolescence (Glenn & Klonsky, 2009; Nock, 2010; Nock & Prinstein, 2004), and according to some studies it occurs more often among females than males (Muehlenkamp & Gutierrez, 2007; Plener, Libal, Keller, Fegert, & Muehlenkamp, 2009; Prinstein et al., 2008; Ross & Heath, 2002; Yates, Tracy, & Luthar, 2008). Other studies however do not find any sex differences with respect to the prevalence of NSSI in adolescents (Andover, Primarck, Gibb, & Pepper, 2010; Jacobson, Muehlenkamp, Miller, & Turner, 2008; Nock, Joiner, Gordon, Lloyd-Richardson, & Prinstein, 2006; Nock & Prinstein, 2004). It has been repeatedly found however that females are more likely to use self-cutting as a SIB method, whereas males are more likely to use self-hitting and burning as methods of SIB (Andover, Primarck et al., 2010). With respect to the prevalence of NSSI in early and late adulthood, no sex differences are found (Claes et al., 2010; Gratz, Conrad, & Roemer, 2002; Heath, Toste, Nedecheva, & Charlebois, 2008).

Risk factors reported for NSSI include: being female (Bhui, McKenzie, & Rasul, 2007; Kessler, Borges, & Walters, 1999; Evans, Hawton, Rodham, & Deeks, 2005; Shin et al., 2009), young age (Beghi, Rosenbaum, Cerri, & Cornaggia, 2013), recent negative life events and interpersonal problems (Farmer & Creed, 1989; Powell, Geddes, Hawton, Deeks, & Goldacre, 2000), and difficulty with partners (Hawton et al., 2003; Murphy et al., 2007). NSSI is further distinct from SSI based on motivation; NSSI is used to decrease dissociation (Briere & Gil, 1998), and express anger or punish oneself (Brown, Comtois, & Linehan, 2002). Finally, those who engage in NSSI are found to use a greater number of methods of self-injury (Nock & Kessler, 2006).

Nock and Prinstein (2004) propose an integrated theoretical model, known as the functional approach to understanding the development and maintenance of NSSI. As opposed to a syndromal approach, which approaches SIB as a symptom of mental illness, a functionalist approach “classifies and treats SIB according to the functional processes that produce and maintain it (i.e., antecedent and consequent contextual influences)” (Nock & Prinstein, 2004, p. 885). Drawing on findings from narrative case reports, theoretical reviews, and those of experimental studies, they propose four primary functions of SIB: automatic negative (i.e. cessation of negative thoughts or feelings), automatic positive (i.e. generating feelings), social positive (i.e. achieving desired social reaction), and social negative (i.e. avoidance of doing something unpleasant). Physiological evidence supports the automatic function, as NSSI is followed by a decrease in physiological arousal (Haines, Williams, Brain, & Wilson, 1995), possibly by means of the release of endogenous opioids (Sher & Stanley, 2009).

While this model has received much support (Lloyd-Richardson, Perrine, Dierker, & Kelley, 2007; Nock & Prinstein, 2005), it has been further re-viewed and expanded by Nock (2008), with additional emphasis on the social functions of the model and on behavior as a form of communication. According to this expanded model, NSSI communicates two fundamental signals: those of dis-

tress and those of strength. The signals are maintained over time by either positive or negative reinforcements. Nock (2008) assumes that the use of NSSI to communicate these signals develops over time in circumstances where the individual suffers a lack of success when using less intense forms of communication. For example, when reassurance-seeking behavior fails to deliver, a person may turn to crying. When the environment is not receptive to this either, the person may engage in cutting to elicit caregiving. In contrast, the intention can be to signal signs of strength to others and this way ward off potential predators. Here too the escalation of communication hypothesis applies. To exemplify, one may start with a “gothic” style (black clothing and death related accessories), escalate to piercing and tattoos and finally to cutting. This theory is supported by studies on the relation between peer victimization and engaging in NSSI (Hilt, Nock, Lloyd-Richardson, & Prinstein, 2008).

Recently, Klonsky et al. (2015) examined the structure of NSSI functions in adolescent and adult patients receiving acute-care treatment for NSSI. They concluded that the converging evidence from two different measures of NSSI functions indicated that the functions of NSSI are well captured by a two-factor structure. One factor represents interpersonal functions, or social reinforcement of NSSI (e.g. influencing others, facilitating peer bonding), and a second factor refers to intrapersonal functions, or self-focused reinforcement of NSSI (e.g. reducing one’s negative emotions, ending dissociative experiences).

SSI

Within the domain of suicidal self-injury, the definitional clarity and precision are crucial with respect to the terms suicide, suicidal attempt, and suicidal ideation. The US Centers for Disease Control and Prevention (CDC) (Centers for Disease Control, 2015) defines suicide as death caused by self-directed injurious behavior with an intent to die as a result of the behavior. It defines suicide attempt as a nonfatal, self-directed, potentially injurious behavior with an intent to die as a result of the behavior even when the behavior does not result in injury. Suicidal ideation is defined as thinking about, considering, or planning suicide.

Although suicidal thoughts are a prerequisite of suicide attempts, the majority of ideators will never act on their thoughts (May & Klonsky, 2016). For this reason it is crucial to understand factors that differentiate those who only engage in suicidal ideation from those who engage in suicide attempts.

Currently, our knowledge base regarding general risk factors for suicidality is rich. Amongst the documented potential risk factors for suicidality overall are almost all psychiatric illnesses (Nock, Hwang, Sampson, & Kessler, 2010), many personality disorders (Chioqueta & Stiles, 2000), substance abuse (Sheer et al., 2006), hopelessness (Cox, Enns, & Clara, 2004), physical and sexual abuse (Brezo, Paris, & Turecki, 2006), low educational attainment (Nock et al., 2008), stressful life events (Grover et al., 2009), low social support (Evans, Hawton, & Rodham, 2004), poor problem-solving skills (Sadowski & Kelly, 1993), non-suicidal self-injury (Klonsky, May, & Glenn, 2013), male gender (Ougrin et al., 2012), social isolation (Cavanagh, Carson, Sharpe, & Lawrie, 2003), sleep diffi-

culties (Goldstein, Bridge, & Brent, 2008; Lapierre et al., 2011), and negative life events (Haw & Hawton, 2008; Heikkinen, Aro, & Lönnqvist, 1994) among others.

The problem with such a long list, as pointed by May and Klonsky (2016), is that it includes almost all the negative events that could befall someone, thus shedding doubt on its practical use in clinical risk assessment or in building theories of suicidality. May and Klonsky (2016) further point to another difficulty in most suicide research thus far: most of the potential risk factor literature compares suicide attempters and suicide ideators to nonsuicidal individuals, but not to each other. As such it lacks specificity in distinguishing as to which variables are associated with suicide ideation, and which with suicide attempts. According to Nock et al. (2010), much of the predictive power of Axis I disorders for suicide attempts is explained by the relationship of these disorders to suicide ideation, rather than to attempts. Identifying these variables is essential in developing useful screening tools, and also in explicating the transition from suicidal thoughts to behaviors.

May and Klonsky (2016) attempted to consolidate what is known about common suicide correlates in differentiating adults who have attempted suicide and survived (attempters), from those who have only considered suicide but never attempted (ideators). Using a meta-analysis of 27 studies comparing sociodemographic and clinical variables between attempters and ideators. Thus, when comparing attempters to ideators, all 12 variables they studied had negligible to moderate effects. Specifically, depression, alcohol use disorders, hopelessness, gender, race, marital status, and education were all similar in attempters and ideators ($d = .05$ to $.31$). However, anxiety disorders, PTSD, drug use disorders, and sexual abuse history were moderately elevated in attempters compared to ideators ($d = .48$ to $.52$).

In their recent study Dhingra, Bodusek, and O'Connor (2015), drawing on the Integrated Motivational-Volitional (IMV) Model of suicide behavior (O'Connor, 2011) also examined the factors associated with suicidal ideation versus those associated with suicide attempts. They found that suicide attempters differed from suicide ideators on all volitional factors: fearlessness about death, impulsivity, and exposure to suicidal behavior. Compared with ideators, attempters were more likely to have a family member and close friend who had self-injured or attempted suicide, and were more impulsive and fearless about death. Both attempters and ideators differed from controls on motivational factors of defeat, entrapment, burdensomeness, and belongingness, and ideators differed from controls on brooding rumination, the ideators and attempters did not differ from each other on any of these measures. The authors were further not able to replicate the widely documented association between depression and anxiety and suicidal behavior.

These findings run counter to the conventional approach that puts psychiatric disorders at the top of the list of risk factors for suicide attempts (American Foundation for Suicide Prevention, 2014). In May and Klonsky's (2016) study, not even hopelessness could differentiate between attempters and ideators.

These results reinforce the view that we need to move beyond psychiatric categories in order to better understand suicidal behavior (Dhingra et al, 2015, O'Connor and Nock, 2014).

1.2.3 NSSI and SSI: similarities and co-occurrence

Despite the multitude of differences, the behaviors have much in common. Previous SIB is a risk factor for both NSSI and SSI (Modestin et al., 1992; Powell et al., 2000; Sharma et al., 1998; Whitlock & Knox, 2007). Both correlate with a high number of the psychiatric diagnoses, low socioeconomic status, and both are motivated by the need to relieve negative emotions (Brown et al., 2002). Specific psychiatric diagnoses that occur in both are mood disorders, anxiety disorders, and substance abuse (Mangnall & Yurkovich, 2008).

Although the behaviors have important differences and similarities, they are also known to co-occur, especially in the adult population (Asarnow et al., 2011; Boxer, 2010; Brown et al., 2002; Dulit, Fryer, Leon, Brodsky, & Frances, 1994; Jacobson et al., 2008; Klonsky, 2007; Muehlenkamp & Gutierrez, 2007; Nock et al., 2006; Sansone, Songer, & Sellbom, 2006). NSSI has consistently been found a predictor of SSI (Andover & Gibb, 2010; Brunner et al., 2007; Darke, Torok, Kaye, & Ross, 2010; Favaro et al., 2008; Lloyd-Richardson et al., 2007; Nock et al., 2006; Tang et al., 2011; Whitlock & Knox, 2007; Whitlock, Muehlenkamp, & Eckenrode, 2008). Longitudinal studies too have shown NSSI to predict suicidal behavior (Asarnow et al., 2011; Prinstein et al., 2008; Wilkinson, Kelvin, Roberts, Dubicka, & Goodyear, 2011). The link between NSSI and SSI was significant even after participant age, gender, ethnicity, and socioeconomic status (SES) were controlled statistically (Asarnow et al., 2011; Darke et al., 2010; Tang et al., 2011). NSSI was more predictive of SSI than depression (Andover & Gibb, 2010; Asarnow et al., 2011), hopelessness (Andover & Gibb, 2010; Wilkinson et al., 2011), family functioning (Wilkinson et al., 2011), borderline personality disorder characteristics (Andover & Gibb, 2010), post-traumatic stress, and a history of child abuse (Asarnow et al., 2011; Whitlock et al., 2008). Table 1 provides a more detailed summary of the similarities and differences between NSSI and SSI.

1.2.4 Linking NSSI and SSI: theoretical models

Hamza, Stewart, and Willoughby (2012) have summarized the three prevalent theoretical models that attempt to explain the link between NSSI and SSI. According to the Gateway Theory NSSI and SSI exist along a continuum of SIB. At one extreme end is NSSI and at the other completed suicide (Brausch & Gutierrez, 2010; Linehan, 1986; Stanley, Winchell, Molcho, Simeon, & Stanley, 1992). NSSI is considered to develop prior to SSI, which has its roots in escalating NSSI. This is supported by findings that NSSI has an earlier age of onset

TABLE 1 NSSI and SSI: differences and similarities

NSSI	SSI
<ul style="list-style-type: none"> • primary intent to regulate intolerable negative internal emotional or cognitive state (Chapman et al., 2006; Gratz, 2003; Klonsky & Glenn, 2009) 	<ul style="list-style-type: none"> • primary intent to die/terminate conscious experience (Jacobson et al., 2008; Nock & Kessler, 2006; Silverman et al., 2007)
<ul style="list-style-type: none"> • intent to modify conscious experience (Walsh, 2006) 	<ul style="list-style-type: none"> • intent to unburden others (Baetens et al., 2011; Brown et al., 2002; Joiner, 2005)
<ul style="list-style-type: none"> • low-lethality methods (Skegg, 2005) • use of multiple methods (Lloyd-Richardson et al., 2007; Muehlenkamp & Gutierrez, 2004) 	<ul style="list-style-type: none"> • more lethal methods (Andover & Gibb, 2010; Brown, Henriques et al., 2004; Harriss & Hawton, 2005; Nock, 2010) • use of the same method (Bergen et al., 2012)
<ul style="list-style-type: none"> • few require medical help for injuries (Fortune et al., 2008; Madge et al., 2008) 	<ul style="list-style-type: none"> • estimate well lethality of the behavior (Cooper et al., 2005; Stanley et al., 2001)
<ul style="list-style-type: none"> • chronic history and high frequency (Heath et al., 2008) 	<ul style="list-style-type: none"> • low frequency across lifetime (Lilley et al., 2008)
<ul style="list-style-type: none"> • age of onset 13 (Jacobson & Gould, 2007; Nock, Borges, Bromet, Cha et al., 2008) 	<ul style="list-style-type: none"> • age of onset 16 (Wichstrøm, 2009)
<ul style="list-style-type: none"> • decrease with age after middle age (Favazza, 2009; Hawton & Harriss, 2008a) 	<ul style="list-style-type: none"> • increase with age (Horton, 2006)
<ul style="list-style-type: none"> • females more likely to enagage (Jacobson et al., 2008; Muehlenkamp et al., 2009) 	<ul style="list-style-type: none"> • females attempt at higher rates (Gold, 2006; Madge et al., 2008), males die more from acts (Cooper et al., 2005)
<ul style="list-style-type: none"> • lifetime prevalence in adults up to 21% (Klonsky, Oltmanns, & Turkheimer, 2003) and up to 80% in clinical population (Heath et al., 2009) 	<ul style="list-style-type: none"> • lifetime prevalence worldwide 2.7% (Nock, Borges, Bromet, Alonso et al., 2008)
<ul style="list-style-type: none"> • high heterogeneity of psychiatric diagnosis (Jacobson et al., 2008; Klonsky, Oltmanns, & Turkheimer, 2003) • lower rates of psychiatric morbidity (Bertolote et al., 2004) 	<ul style="list-style-type: none"> • strong association with depression, substance abuse, mania, PTSD (Cooper et al., 2005; Haw et al., 2001; Nock & Kessler, 2006) • chronic mental illness (Modestin et al., 1992) • more medically severe (Muehlenkamp & Gutierrez, 2004)
<ul style="list-style-type: none"> • presence of physical abuse (Gratz & Chapman, 2007; Whitlock et al., 2008) 	<ul style="list-style-type: none"> • presence of childhood sexual abuse (Horesch et al., 2009; Joiner et al., 2007)
<ul style="list-style-type: none"> • recent negative life events and interpersonal problems (Farmer & Creed, 1989; Powell et al., 2000) • difficulty with partners (Hawton et al., 2003; Murphy et al., 2007) 	<ul style="list-style-type: none"> • negative life events (Haw & Hawton, 2008) • history of suicide in first degree relative (Sharma et al., 1998) • low employment rates (Horton, 2006; Milner et al., 2013) • social isolation (Cavanagh et al., 2003; Goldstein et al., 2008) • sleep difficulties (Lapierre et al., 2011; Goldstein et al., 2008)

(continues)

TABLE 1 (continues)

NSSI	SSI
<ul style="list-style-type: none"> • dissociation function (Briere & Gil, 1998) • self-punishment function (Brown et al., 2002) • impulsivity in form of negative urgency (Glenn & Klonsky, 2010; Lynam et al., 2011) • greater reason for living/less hopelessness (Brausch & Gutierrez, 2009; Claes et al., 2010) 	<ul style="list-style-type: none"> • deficits in problem solving/inability to generate solutions (Pollock & Williams, 2001; Williams et al., 2005) • constricted cognition (Joiner, 2005; Skegg, 2005; Speckens & Hawton, 2005) • deficits in positive future thinking (O'Connor & Cassidy, 2007; O'Connor et al., 2008) • hopelessness (Brown et al., 2000; Thompson et al., 2009)
NSSI + SSI	
<ul style="list-style-type: none"> • previous SIB as risk factor (Powell et al., 2000; Whitlock & Knox, 2007) • correlate with high number of psychiatric diagnoses (Brown et al., 2002; Kessler et al., 1999) • specific psychiatric diagnoses: mood disorders, anxiety disorders, substance abuse (Mangnall & Yurkovich, 2008), borderline personality disorder (Andover, Primarck et al., 2010; Jacobson et al., 2008; Linehan, 1993) • personality traits of impulsivity and aggression (Di Pierro et al., 2012; Nock & Kessler, 2006; Skegg, 2005; Di Pierro et al., 2012) • common motivation to modulate internal states and obtain relief (Hjelmeland & Hawton, 2004; Linehan, 1993) • peak in adolescence and early adulthood (Centers for Disease Control, 2010; Klonsky & Muehlenkamp, 2007; Rodham & Hawton, 2009) • negative and invalidating family environment (Klonsky & Glenn, 2009; Linehan, 1993) 	

than SSI (Muehlenkamp & Gutierrez, 2007; Nock, Borges, Bromet, Cha et al., 2008). The hypothesis that NSSI precedes SSI can only be examined using longitudinal research designs. When Hamza and colleagues (2012) reviewed the three available longitudinal studies covering this topic, the results were limited. The one finding agreeing with the Gateway Theory came from a study by Asarnow et al. (2011). Here it was found that NSSI may be a stronger predictor of suicidal behavior than is suicidal behavior a predictor of NSSI.

According to The Third Variable Theory the link between NSSI and SSI is false and it is a third variable that explains the co-occurrence of NSSI and SSI. Rather than NSSI increasing the risk of SSI, it is speculated that the presence of a psychiatric disorder, such as BPD, increases the risk for both NSSI and SSI (Jacobson et al., 2008; Nock et al., 2006). Perceived level of psychological distress could be another such variable increasing the risk for both NSSI and SSI (Muehlenkamp & Gutierrez, 2007; Whitlock & Knox, 2007). Also, shared biological vulnerabilities may predispose individual for both NSSI and SSI. One such is a gene that reduces serotonin uptake (i.e. s allele for 5-HTT) (Lin & Tsai, 2004). Other studies too attest to the role of serotonin in SIB (Sher & Stanley, 2009). However, repeated findings that SSI involves a greater level of psychosocial risk undermine the validity of the third variable theory (Claes et al., 2010; Ja-

cobson et al., 2008). This theory is also contrary to the consistent finding that NSSI is a unique risk factor for SSI.

According to Joiner's (2005) Interpersonal Theory of SSI, ending one's life requires overcoming the fear and pain associated with it. This ability according to Joiner (2005) is acquired. By repetitively engaging in NSSI individuals become desensitized to the pain and fear related to SSI. Other ways of becoming desensitized and thus acquiring the capability to engage in SSI are drug and alcohol abuse, or exposure to violence. The existence of multiple ways of desensitization to pain also helps us to understand that also those who do not engage in NSSI may be at risk for SSI. According to this theory NSSI is not sufficient for SSI, except when it leads to an acquired capability for SSI and when this capability is combined with the belief that one is a burden to others and with the perception that one lacks social support. This further explains why many who engage in NSSI do not engage in SSI – they may not experience social isolation or feel they are burden to others.

Supporting this theory is research which indicates that more frequent NSSI predicts more lethal SSI (Andover & Gibb, 2010), and that multiple methods of NSSI, as well as more years spent engaging in NSSI predict the number of SSI (Nock et al., 2006). Critics of this theory have posited that individuals who engage in NSSI have a high tolerance for pain prior to engaging in NSSI (Franklin, Hessel, & Prinstein, 2011). This hypothesis is yet to be tested using longitudinal research designs.

Thomas Joiner's theory was the first among a new generation of theories to introduce a framework according to which suicidal ideation and the progression from ideation to attempts were regarded as separate processes with separate sets of explanations and risk factors. Inspired by Joiner's work, Klonsky and May (2014, 2015), recently proposed that an "ideation-to-action" framework ought guide all suicide theory and research, so that the development of suicide ideation and the progression from ideation to suicide attempts should be seen as separate processes with distinct explanations.

Within an ideation-to-action framework, Klonsky and May (2015) propose their own Three Step Theory (3ST) of suicide, illustrated in Figure 1. The 3ST theory provides separate explanations for the development of suicidal ideation and the progression from suicidal ideation to attempts. The theory's first step concerns the development of suicidal ideation. This begins with pain, regardless of its source. The nature of the pain thus is intentionally not specified, acknowledging that different sources of pain can all lead to a decreased desire to live. For the development of suicidal ideation however, pain alone is not sufficient – hopelessness too is required. Thus, step one proposes that it is the combination of pain and hopelessness that is required for the development of suicidal ideation. The second step of the theory accounts for the impact of connectedness in ideation intensity. It postulates that the suicidal ideation will remain moderate rather than strong as long as one's connectedness to life is greater than one's pain. Connectedness here is not limited to connection to other people. It is used more broadly to denote one's attachment to a job, project, role, interest,

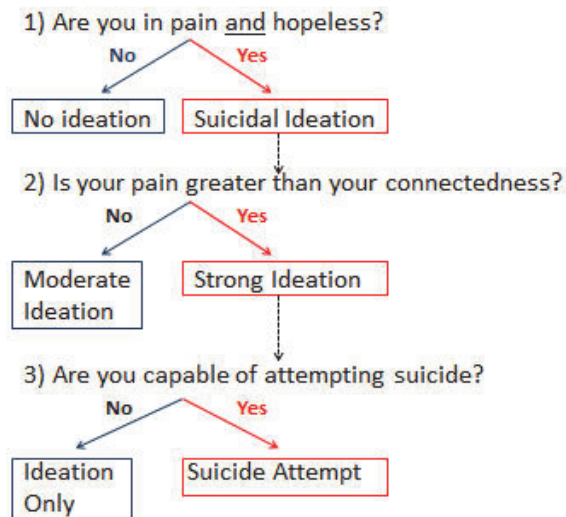


FIGURE 1 Illustration of Three-Step Theory (3ST) of suicide (Klonsky & May, 2015)

or any other way of perceiving the meaning or purpose that keeps one involved in living. As authors of the theory point out, disrupted connectedness in 3ST is similar to low belongingness and burdensomeness in Joiner's Interpersonal Theory. The main difference between the two is that the 3ST theory does not see disrupted connectedness as necessary in the development of pain and hopelessness and therefore in the development of suicidal ideation. Rather, it views connectedness as a protective factor against strong suicidal ideation in those at high risk due to pain and hopelessness. The third step of the theory concerns the progression from ideation to attempts. Again, the authors of the 3ST agree with Joiner in that the key determinant is acquired capability, which stands for one's habituation to pain, injury and death. 3ST takes a broader perspective and proposes three specific categories of variables that contribute to suicide capacity: dispositional, acquired, and practical. Dispositional refer largely to genetics and pain sensitivity. Acquired refer to role of habituation to experiences associated with pain, injury, fear, and death in the development of capacity for a suicide attempt. Practical are the concrete factors that make suicide attempt easier, such as knowledge of and access to lethal means.

Another recent theory of suicide likely spawned by Joiner's Interpersonal Theory is that of Integrated Motivational-Volitional model (IMV), proposed by Rory O'Connor (2011), and illustrated here in Figure 2. Similarly to 3ST, the IMV theory examines the factors associated with the development of suicidal ideation and the transition of these into suicidal behavior. Its development was influenced by a large number of theoretical frameworks, of which O'Connor (2011) finds the following three to have been the most influential: (i) the theory of planned behavior (TPB, Ajzen, 1991), according to which the prediction of any behavior can be divided into motivational and volitional factors; (ii) the

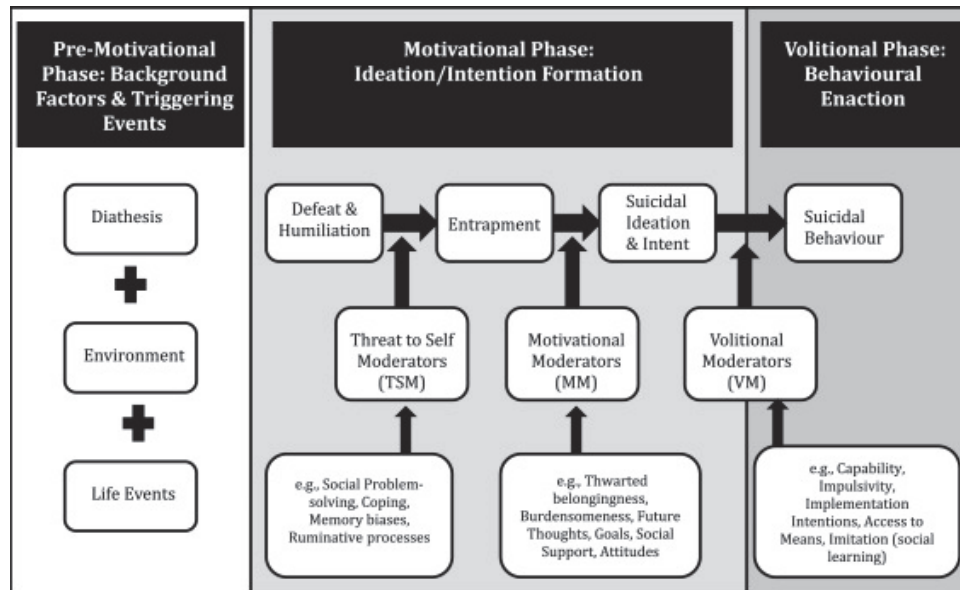


FIGURE 2 Integrated Motivational-Volitional Model of suicidal behavior (O'Connor, 2011)

diathesis-stress hypothesis (Schotte & Clum, 1987), which emphasizes the role of cognitive and biological vulnerability factors that become pernicious when activated by stress, and (iii) the arrested flight model of suicidal behavior (Williams, 2001), according to which the situation of arrested flight (feeling defeated, trapped with no rescue) set the conditions for suicidal behavior that can come about from actual traumatic experiences or the way one perceives their life circumstances.

Dhingra, Boduszek, and O'Connor (2015) see IMV as conceptualizing suicide as behavior, instead of a by-product of mental illness. Such behavior is seen to result from a complex interplay of various factors. The IMV proposes a three-phase framework in the development of suicidal behavior, with specific factors at play in each stage. The main premise of the model is that the factors underlying the development of suicidal ideation are different from those involved with suicidal behavior. The pre-motivational (before the commencement of ideation formulation) phase comprises the background factors, such as personality and individual difference variables, deprivation, and vulnerabilities, as well as life events, such as relationship crisis, that provide a larger biosocial context for suicide. The motivational phase is concerned with one's intention to engage in suicidal behavior. Intention is determined by feelings of entrapment where suicidal behavior is seen as the solution to life circumstances. The feelings of being trapped in turn are triggered by defeat/humiliation appraisals that are often related to chronic or acute stressors. The transitions from the defeat/humiliation stage to entrapment, from entrapment to suicidal ideation/intent, and from ideation/intent to suicidal behavior (the volitional phase of the IMV) are determined by stage specific moderators (i.e. factors that facili-

tate/obstruct movement between the stages). The volitional phase includes variables such as self-injury or suicide by a family member, self-injury or suicide by a close friend, impulsivity, and fearlessness about death. The model proposes that it is the volitional phase factors rather than motivational phase factors that distinguish between ideation and enactment.

Although the IMV model is relatively new, there is growing empirical evidence for its utility in understanding both suicidal behavior and self harm (Dhingra, Boduszek, & O'Connor, 2016).

1.3 SIB intervention

1.3.1 Introduction to intervention

The previous section elucidated how in the magnitude of research the nomenclature and classification of SIB is lacking in operational definitions. This section illustrates how the empirical research on psychological interventions with respect to SIB is not only *lacking in something*, but is, put plainly, *lacking*. That is, the amount of research handling this issue is frightfully limited. Before further elaborating on the review of studies on psychological interventions, it is important once again to highlight that the research at hand adopts a functionalist approach to SIB. It is especially important for this approach to be differentiated here from a syndromal approach that sees SIB as a syndrome of psychiatric illness, and accordingly believes that treating the disorder itself will lead to reduction in SIB as a result. The research at hand is not concerned with the syndromal approach, but rather *sees SIB as a behavior to be treated directly*, rather than as a symptom of psychiatric disorder.

1.3.2 Review of RCTs on psychological interventions for SIB

Ward-Ciesielski and Linehan (2014) provide a comprehensive list of randomized clinical trials (RCT) of treatments that target SIB; the list consists of 46 studies. They further point out that of those 46 studies, most are underpowered, use no psychometrically sound outcome measures and worse still, most exclude individuals with a high risk of suicide. To take the issues further, if out of these 46 RCTs we exclude those focusing on pharmacotherapy as a form of intervention, we are left with even less to go on with.

In 1998 Hawton, Arnesman, and colleagues conducted a systematic review of the efficacy of psychosocial and pharmacological treatments in preventing repetition of SIB. Their study reviewed 20 RCTs, and concluded that out of 17 studies that focused on psychosocial treatments only one showed significantly reduced rates of SIB: Linehan, Armstrong, Suarez, Allmari, and Heard's (1991) study of dialectic behavior therapy (DBT) vs. standard aftercare.

Between 1998 and 2008, when Study II took place, further research was conducted. No significant results were yielded in studies evaluating manual-

assisted cognitive behavioral therapy (MACT) (Evans et al., 1999; Tyrer et al., 2003), as well as problem-solving intervention (Donaldson, Spirito, & Esposito-Smythers, 2005). However, in 2006, Weinberg, Gunderson, Hennen, and Cutter did show some support for MACT, a six-session face-to-face intervention. SIB acts were significantly fewer for the experimental group. A brief outpatient intervention study by Brown et al. (2005), where the participants in experimental condition were offered 10 sessions of cognitive behavioral therapy (CBT), showed significantly fewer suicide attempts for the experimental group.

The most convincing and most empirically supported results however, were yielded by studies examining dialectic behavior therapy (DBT) in treating SIB (Koons et al., 2001; Linehan et al., 2006; Verheul et al., 2003). When compared to treatment as usual, DBT results in lesser frequency of SIB, less hospitalizations, and other outcome variables (Linehan et al., 2006; Robins & Chapman, 2004).

1.3.3 On DBT as treatment for SIB

While the treatment manuals that describe DBT (Linehan, 1993; Linehan, Heard, & Armstrong, 1993) refer to it as a treatment for borderline personality disorder (BPD), according to Linehan (1999) DBT and its theoretical background were originally designed for use with individuals who engage in SIB. With respect to the theoretical background, DBT beginning tenets were that SIB individuals lack relevant self-regulation (including emotional regulation) and distress tolerance skills and that the skills these individuals do have are tampered with by personal as well as environmental factors, which often reinforce inappropriate and self-injurious behaviors. Translated into intervention, this meant emphasis on behavioral skills training and stress management, as well as capability enhancement. DBT teaches skills for accumulating positive life events and for achieving a sense of mastery. As DBT evolved, strategies that reflect radical acceptance and validation of a person's capacities and their current level of functioning were added to the treatment. Change is further arrived at by means of utilizing dialectics - making use of oppositions in the therapeutic relationship. The dialectic inherent in every therapeutic relationship with people who engage in SIB is the need for radical acceptance of these people in the context of simultaneously working to achieve change. To sum up, DBT is intensive manualized treatment that typically lasts 12 months and consists of both weekly individual sessions and group sessions, as well as phone consultations. It includes skills training in mindfulness, emotion regulation, distress tolerance, and interpersonal skills. It utilizes directive techniques as well as supportive ones in the form of reflection, empathy, validation and acceptance.

1.3.4 Factors contributing to SIB as a target for psychological interventions: targeting emotional regulation with a functional approach

At about the same time as DBT studies showed promising results for this intervention with BPD patients who engage in SIB, the need for a direct SIB inter-

vention became more pronounced. In order to develop such interventions, studies were conducted that focused on identifying those factors that contribute to SIB occurring in the first place. Klonsky (2007) provides a review of evidence for the functions of SIB. Reviewing 18 empirical studies on the functions of SIB he identifies the following seven functions: affect-regulation, anti-dissociation, anti-suicide, interpersonal boundaries, interpersonal influence, self-punishment, and sensation seeking. The 18 studies showed strong support for affect-regulation function, indicating that acute negative affect takes place prior to SIB and that relief and decreased negative affect follows SIB. For example, Klonsky (2011) clarifies this evidence for emotion-regulation function by demonstrating how in young adults SIB is followed by reductions in emotions such as tension, fear, and sadness. A decrease in arousal after SIB has been supported by laboratory studies (Welch, Linehan, Sylvers, Chittams, & Rizvi, 2008) as well as by psychophysiological research (Brain, Haines, & Williams, 1998; Haines et al., 1995). Even though most studies concentrate on SIB as a way of reducing negative emotions (Briere & Gil, 1998; Kumar, Pepe, & Steer, 2004; Laye-Gindhu & Schonert-Reichl, 2005), it has been noted that when used to generate positive affects (as in anti-dissociation function) SIB is related to greater lifetime frequency of the behavior (Armey, Crowther, & Miller, 2011; Jenkins, & Schmitz, 2012). Thus, emotional regulation (ER) is a clear target in the treatment of SIB (Gratz, 2003, 2007; Gratz & Roemer, 2004) warranting its more precise conceptualization.

ER difficulties have not been widely researched in adults nor have they been well conceptualized. Gross (1998) defines ER as forming which emotions one has, when one has them, and how he or she experiences and expresses them. It refers to regulation of emotions as opposed to regulation by emotions. Defined in this way, any activity can be seen as emotion regulatory. In order to achieve greater precision Gross, Sheppes, and Urry (2011) identify the core features of ER: the activation of goal to modify the emotion-generative processes, the engagement of the processes that are responsible for altering the emotion trajectory, and the impact of emotion regulation on emotion dynamics (latency, intensity, duration of responses experientially, behaviorally, or physiologically). ER has also been the subject of broader affect regulation discussion (Westen, 1994), where it has been contrasted with coping and mood regulation.

The conceptualizations of ER of most interest to Study II are Linehan's (1993) biosocial and Gratz and Roemer's (2004) multidimensional theories. According to Linehan (1993) emotion dysregulation includes heightened emotional vulnerability, so that those suffering difficulties in the ER system experience both positive and negative emotions more intensely and take longer to return to a baseline emotional state. In addition, they lack sufficient emotion regulation skills that would help manage high emotional arousal. These skills refer to the ability to experience and label emotions and the ability to reduce high emotional arousal. Gratz and Roemer (2004) further expand ER conceptualization, highlighting that emotion regulation does not only involve the modulation of emotional arousal, but also several other dimensions: acceptance of emotions, en-

gaging in goal-directed behavior, impulse control, emotional awareness, access to emotion regulation strategies and emotional clarity.

Gratz and Roemer (2004) also developed a comprehensive and psychometrically sound measure, the Difficulty in Emotion Regulation Scale (DERS) to assess emotion dysregulation in adults. DERS subscales measure the multiple dimensions of ER. Studies using DERS have shown that the dimensions assessed can differentiate between individuals who engage in NSSI and those who do not (Anderson & Crowther, 2012; Gratz & Tull, 2010). With respect to adults, the dimension "limited access to ER strategies" has been found to be of most importance (Turner, Chapman, & Layden, 2012).

Gratz and Gunderson (2006) developed an experiential avoidance model (EAM) to understanding of ER in SIB. Here, they understand SIB as a behavior that falls within a broader class of experiential avoidance behaviors. Such behaviors function to avoid undesired internal experiences or external conditions eliciting them (Hayes, Wilson, Gifford, Follette, & Strosahl, 1996). In particular, Gratz and Gunderson (2006) focused on SIB as the avoidance of emotional experiences. They then designed and tested an acceptance-based emotion regulation group therapy (ERGT) targeting SIB in women with BPD. The preliminary results were promising, indicating positive effects on SIB and emotion dysregulation. The intervention was a 14-week, acceptance-based, behavioral group intervention grounded in the multidimensional understanding of emotional regulation as well as in principles of Acceptance and Commitment Therapy (ACT; Hayes, Strosahl, & Wilson, 1999). In ACT, as the name implies, acceptance of one's internal experiences, including emotions, is essential. ACT helps people to (i) accept themselves and others compassionately, accept their thoughts and feelings, including unwanted ones, instead of trying to change them or acting upon them; (ii) choose direction – pursue what is really important to them; and (iii) take action – commit to achieving goals that matter. There is a growing body of evidence that ACT is an effective approach, covering areas such as psychosis (Bach & Hayes, 2002), addiction (Gifford et al., 2004), GAD (Evans et al., 2008), depression (Kohtala, Lappalainen, Savonen, Timo, & Tolvanen, 2015; Lappalainen, Langrial, Oinas-Kukkonen, Tolvanen, & Lappalainen, 2015), and even clients seen in general outpatient practice (Strosahl, Hayes, Bergan, & Romano, 1998).

1.3.5 Factors contributing to SIB as a target for psychological interventions: targeting positive future thinking with SFBT

Thus far, it is demonstrated that emotional regulation is a sound target for any intervention for people who engage in SIB. Another plausible, but less researched target is that of positive future thinking. Namely, the lack of future thinking is particularly associated with suicide risk (Hunter & O'Connor, 2003; MacLeod, Pankhania, Lee, & Mitchell, 1997). A study by O'Connor, Fraser, Whyte, MacHale, and Masterton (2008) showed that positive future thinking was implicated in outcome following repetitive SIB. Patients that reported high

positive future thinking following an episode of SIB, exhibited the best outcome in terms of hopelessness and suicidal thinking two months later.

Although less researched, the notion of future thinking as implicated in suicide risk is not new. The link between hopelessness, which is defined as pessimism for the future, has been established by Beck, Steer, Kovacs, and Garrison in 1985. Hopelessness has been reported to be a predictor of SIB in other studies too (Brezo, Paris, & Turecki, 2006; Hawton, Saunders, & O'Connor, 2012). It has further been established that hopelessness which involves low levels of positive future thinking and not that which involves high levels of negative future thinking, is implicated in SIB (Hunter & O'Connor, 2003; MacLeod et al., 1997; O'Connor et al., 2008). Furthermore, low levels of positive future thinking have been associated with SIB independent of depression and negative attributional style (Hunter & O'Connor, 2003; O'Connor, Connery, & Cheyne, 2000; Williams, Van der Does, Barnhoffer, Crane, & Segal, 2008). Positive future thinking thus provides a valid target for treatment intervention.

One therapeutic approach, which easily lends itself to the generation of positive future expectancies is Solution Focused Brief Therapy (SFBT). This approach was developed by De Shazer and colleagues at the Brief Family Therapy Institute (De Shazer, 1985). SFBT focuses on solutions and the future, making it well suited to intervene with the SIB process. Bowles, Mackintosh, and Torn (2001) understand the approach to be both a system of communication and a set of assumptions concerning how to motivate people to change and grow. According to Franklin, Trepper, Gingerich, and McCollum (2012) the basic tenets of SFBT include: (i) solution building rather than problem solving, (ii) the therapeutic focus on the client's desired future, (iii) clients are encouraged to increase the frequency of current behaviors that are useful to them, (iv) there are exceptions to every problem and it is the therapist's task to use these exceptions to co-construct solutions, (v) small increments of change lead to large increments of change, and (vi) the client's solutions are not necessarily directly related to any identified problem. The results of meta-analytic reviews of SFBT (Kim, 2008; Stams, Dekovic, Buist, & De Vries, 2006), show positive and small-to-medium effects of SFBT. Although the effects are not large, of specific relevance to Study II is SFBT's ability to produce a positive effect in less time. In fact, SFBT has been utilized in treatment of SIB in the form of a single-session intervention (Lamprecht et al., 2007). The results of this pilot study do not allow for conclusions regarding SFBT's effectiveness, and the authors call for controlled studies to determine what the effects and limitations of this approach to SIB are. Other authors too attest to the benefits of using SFBT with SIB (De Castro & Guterma, 2008; Henden, 2008; Laydon, MacKenzie, Jones, & Wilson-Stonestreet, 2008; McAllister, Zimmer-Gembeck, Moyle, & Billett, 2008; Wiseman, 2003).

1.3.6 Summary of intervention targets and evidence-based intervention modalities

Thus, the reasonable targets for intervention aimed at people who engage in SIB identified in research reviews are emotion regulation and positive future think-

ing. The identified potential approaches to implementing these targets are DBT, ACT, and SFBT. All the approaches have an interest in helping people achieve a future they value, and increase mastery. DBT and ACT have been shown to be effective in emotional regulation, and they even share some of the techniques used, such as mindfulness. While DBT has the most promising results in the treatment of SIB, it is also time-consuming and costly, thus running counter to Study II's desire to develop a time limited and economically feasible intervention. Also, most interventions discussed above employ highly skilled professionals to deliver the treatment.

The second study of this research however was designed in response to the Finnish managed care organizations' need for a psychosocial intervention for SIB that is both time-limited and economically feasible, as well as readily transferrable to units that are first to engage people with SIB, such as accident and emergency departments and various acute and consultation psychiatric units. Most clinicians in these units have no specific training in the assessment and treatment of people who engage in SIB. For these reasons, deliberations regarding which approaches to choose ended with a focus on ACT techniques for tackling the target of emotional dysregulation and SFBT techniques for tackling the lack of positive future thinking.

1.4 Improving attitudes towards SIB among psychiatric personnel

1.4.1 Why improve attitudes?

Any discussion of what method to use when tackling SIB directly would be incomplete should no attention be drawn to the therapeutic relationship. To better understand the association between the therapy relationship and treatment effectiveness, Norcross and Lambert (2011) studied over 20 meta-analyses to reach the following conclusions: (i) positive treatment outcome is attributable to the therapeutic relationship as much as it is to a particular method of treatment; (ii) guidelines for treatment and practice must tend to those behaviors of the therapist that promote the relationship; (iii) any effort to promote evidence-based practice that does not include the relationship is not complete and is possibly also misleading. The same report lists specific elements of the therapeutic relationship, one of them being positive regard and affirmation, which is found to be a significant part of the process-outcome equation (Farber & Doolin, 2011). Henden (2008) speaks of affirmation in relationships with people who engage in SIB in terms of complimenting, and of positive regard in terms of the importance of optimism, hope and trust. According to Linehan (1993, p. 514): "A strong positive relationship with a suicidal patient is absolutely essential." Others too see the rapport between the staff and the patient and staff readiness to engage with the patient to be at the core of interrupting the suicidal process

(Wolk-Wasserman, 1987), pointing out that disturbances in rapport due to the caregiver's attitudes may even be fatal (Ramberg & Wasserman, 2003).

In light of the firm knowledge of the importance of positive attitudes in the treatment of SIB individuals, it is alarming that multiple studies show staff working with SIB individuals to be anything but positive and respectful towards their patients. Within larger confines of society, the behavior is often misunderstood and a strong social stigma is attached to it. The same stigmatizing attitudes and behaviors however are present amongst mental health staff, as they too may view SIB as confined to adolescence (Long, Manktelow, & Tracey, 2013), and not even worthy of care (Simpson, 2006). In cases where it is acknowledged that this behavior occurs in adults, the staff tend to be of the opinion that treatment is not effective, which then interferes with their decisions regarding both assessment and treatment referrals (House, Owens, & Storer, 1992). Other studies too found the association between a decrease in therapeutic behavior and negative attitudes of staff (Mackay & Barrowclough, 2005). Yet others find that the behavior of staff with negative attitudes can even be punitive (Taylor, Page, Morrell, Harrison, & Carter, 2005). In the context of knowing that the risk of further self-injurious behavior is especially high for those patients who leave the hospital without appropriate assessment (Hickey, Hawton, Fagg, & Weitzel, 2001), it becomes apparent why the focus on attitudes is imperative for treatment of people who engage in SIB. The implementation of strategies to improve attitudes ought to begin at educational institutions, as even nursing students were found to have negative attitudes towards people who self-injure (Mamta, Gaikward, & Tamphasana, 2013).

1.4.2 Defining attitudes

This leads us to the question of what attitudes are and what action to take in order to improve them. Social psychologists have studied attitudes in the context of racial prejudice (Devine & Plant, 2003) and in understanding the persuasion process (Petty & Cacioppo, 1986). The assumption where the role of attitudes in attitude-to-behavior processes was examined was that the formation of positive attitudes leads to a change in a behavior in a positive direction.

Ajzen and Fishbein (1980) present several models of how attitudes towards objects lead to specific behaviors; of most relevance to the present work is the dissociation model by Devine (1989). In this model Devine makes a distinction between stereotypes and attitudes. A stereotype refers to knowledge of the attributes associated with a specific group. An example of a prominent stereotype with respect to SIB is that people who engage in SIB are attention seekers. The attitude, on the other hand, according to this model refers to the acceptance of the known content of a cultural stereotype.

Devine (1989) further discusses the importance of automatic and controlled processes of activation in the dissociation model. She posits that different cognitive processes are behind the activation of stereotypes, than are behind the activation of attitudes. Stereotypes have a longer socialization history and have been activated more frequently. Because of this, their activation is auto-

matic, and it is what Devine calls “a default” basis for responding when encountering a member of the stereotyped group.

Attitudes, on the other hand, take longer to develop, as they are learned only after the early learning of the stereotype. Because of this, the cognitive processing behind the activation of personal attitudes is controlled. The implication here is that because the “default” response is always the stereotype (Banaji & Greenwald, 1995; Bargh, 1999), time and cognitive effort is needed to override this. The “default” stereotype position can influence information processing, and in the absence of time and effort, the attitudes of those whose attitudes do not accept the stereotype can be influenced. Effort and time are needed for the automatic activation of the stereotype to be observed and prevented from influencing the activation of the attitudes.

The model further posits that both stereotypical thoughts and non-prejudiced attitudes can co-exist within the same individual. The change from prejudice to nonprejudice within this model is not seen as an all-or-none event, but rather as a process.

1.4.3 Attitude change

Attitude change has mostly been studied in terms of the conditions under which people are persuaded by others. Within this context the most frequently promoted concept is that of involvement. A theory of attitude change developed by Sherif in the 1950s gives involvement a major role in persuasion (Hovland, Harvey, & Sherif, 1957). Johnson and Eagly (1989) furthered the understanding of involvement by pointing out that different types of involvement exist and they have different effects on persuasion. The current study assumes that the type of involvement relevant to the persuasion of psychiatric personnel and their attitude change is outcome-relevant involvement.

Cognitively oriented persuasion researchers claim that “involvement increases message recipients’ motivation to process information about the issues discussed in a message” (Johnson & Eagly, 1989, p. 292). For them, outcome involvement is the extent to which the attitudinal matter under elaboration is personally significant, or relevant to their present important goals or outcomes. The definition of involvement also focuses on the self: for outcome related involvement the salient aspect of the self is one’s ability to achieve favorable outcomes. From the point of view of the cognitive response approach, motivation is essential to persuasion (Petty, Ostrom, & Brock, 1981). This approach views persuasion as mediated by the valence of the message recipients’ message related thoughts; involvement will decrease persuasion for messages that provoke mostly negative, depreciative thoughts and will increase persuasion for accepting thoughts. Research by Petty, Wells, and Brock (1976) demonstrated that messages that contain weak arguments evoke negative thoughts, whereas those that contain strong arguments evoke accepting thoughts. In their review Johnson and Eagly (1989) found that with outcome-relevant involvement, high-involvement subjects are more persuaded by strong arguments and less by weak arguments. The obvious goal for health care personnel then is learning

how to inhibit stereotype-based responses and replace them with personal attitude responses.

The current research proposes to facilitate the process of attitude change with training that is based on strong evidence-based arguments and supported by practical clinical examples. The need for structured training in evidence-based assessment and treatment of SIB has been noted elsewhere (McNiel et al., 2008). More positive attitudes were associated with specific training in SIB (Herron, Ticehurst, Appleby, Perry, & Cordingley, 2001), and it has been suggested that education on SIB has the potential to improve attitudes (Perboell, Hammer, Oestergaard, & Konradsen, 2014). Education can also improve staff's confidence and their skills to work with self-injuring individuals (Jacobson, Osteen, Jones, & Berman, 2012). Improving attitudes of personnel towards people who self-injure has the potential to improve the quality of the therapeutic relationship with these people – a factor essential in all treatment outcomes. It also has the potential to improve the personnel's feelings of efficacy and confidence to work with these individuals, and most importantly, it has the potential to influence the outcome of the self-injurious crisis.

1.5 Aims of the research

The aim of Study I concerned *the what* of the SIB. The goal was to achieve a greater conceptual clarity by looking at the similarities and the differences between NSSI and SSI once the behavior was assessed using a solid psychometric tool. Study II was concerned with another *what* – *what can be done* about it in terms of the brief psychological intervention. Study III focused on the *how*, the way or the attitude with which individuals with SIB are approached.

More specifically, Study I aimed to examine the similarities and differences between NSSI and SSI in a group of adult women who engaged in both types of behavior. Accordingly, the aims were to examine the differences and similarities in NSSI and SSI in a group of adult women with respect to (i) methods used and lethality of methods, (ii) intent and impulsivity of act, (iii) precipitating events, and (iv) consequences.

In Study I, the following hypotheses were explored: (i) the methods used at a self-injury episode differentiate between NSSI and SSI; methods used in SSI episodes would be more lethal, (ii) both NSSI and SSI are performed impulsively, (iii) NSSI and SSI differ in reported intent, i.e., NSSI's primary intent being affect regulation, whereas SSI relating to reported intent to die as a consequence of the behavior, (iv) NSSI acts would be precipitated by dissociation and interpersonal conflict, whereas SSI episodes would be precipitated by feelings of depression, and (v) episodes of NSSI will be followed by lesser level of medical care than episodes of SSI.

This study contributes to the much called for conceptual clarity of SIB. Its further contribution lies in its drawing attention to the relevance of functional assessment of SIB, in terms of its precipitants and consequences. On the basis of

such assessment more personalized treatment plans can be developed to benefit patients who self-injure.

The specific aims of Study II were (i) to design a time-limited psychological intervention, teachable to front-line workers and based on intervention targets identified in the relevant literature, namely emotional regulation and positive future thinking, and (ii) to investigate in a pilot trial, using a randomized controlled procedure, the efficacy of this brief intervention.

The contribution of this study lies in its randomized controlled nature when approaching the evidence base regarding the effectiveness of psychosocial interventions for patients who self-injure. It is one of only 55 studies included in the Cochrane 2016 review of psychosocial interventions following self injury in adults. Further contribution of this study lies in its attempt to pinpoint the mechanisms of action of psychosocial intervention examined.

In Study II, the following hypotheses were explored: (i) time-limited intervention will be followed by a statistically significant decrease in the number of self-injury episodes in the intervention group, and (ii) statistically significant changes in the scores for depression, anxiety, quality of life, emotional regulation, and the avoidance of internal experiences will be noted in the intervention group following the intervention.

Study III implemented and evaluated the effect of a structured clinical training program in evidence-based SIB assessment and treatment on psychiatric personnel's attitudes towards patients who self injure. The study's aims were the following: (i) to describe the attitudes among psychiatric personnel (especially understanding the view of the psychiatric personnel and their willingness to care) towards patients who have self-injured, (ii) to detect whether age, education, frequency of self-injurious patients contact, and work experience of the personnel are associated with existing attitudes, and (iii) to detect whether the structured clinical training program in evidence-based SIB assessment and treatment has a positive impact on psychiatric personnel's attitudes towards patients who self-injure.

In Study III, the following hypotheses were explored: (i) the attitudes of psychiatric personnel as measured by the USP questionnaire towards patients who self-injure are neither entirely positive nor entirely negative, (ii) age, education, frequency of contact with patients who self-injure, and the length of work experience are positively associated with the attitudes of psychiatric personnel as measured by the USP, and (iii) the training program in evidence-based SIB assessment and treatment will be followed by an improvement in attitudes as measured by the USP questionnaire.

While previous studies on the attitudes of psychiatric personnel towards patients who self-injure are extant, they mainly focus on the categorization of attitudes into positive and negative and the correlations between attitudes and various other variables, such as treatment outcomes, patients satisfaction with treatment, or the background variables of personnel. What the present study contributes, that was previously not examined within the context of self-injury, is highlighting the importance of broader conceptual approach to understand-

ing attitudes in all their complexity, as opposed to categorizing them as either positive or negative. In addition, while presenting a feasible training program that can lead to attitudes improvement, the current study adds to attitude improvement debate by pointing to the likely underlying processes by which the change in attitudes may be taking place.

2 METHOD

2.1 Samples and participants

Studies I and II were based on a sample gathered from patients of the Central Finland Community General Hospital. The data collection began in February 2008 and ended in February 2009. The aim of Study I was to examine the differences and similarities in NSSI and SSI with respect to (i) methods used and lethality of methods, (ii) intent and impulsivity of act, (iii) precipitating events, and (iv) consequences. The aim of Study II was to investigate, using a randomized controlled procedure, the efficacy of a brief ACT+SFBT derived four-session psychological treatment combined with treatment as usual, and compared with treatment as usual only.

Study III was based on data gathered from healthcare staff at the psychiatric polyclinic of the Eastern Finland Health Care District. The study was conducted in spring 2014. The first measurement took place in January 2014, prior to the training. The second measurement took place in June 2014, post training. The aim of Study III was to implement and evaluate the effect of a structured clinical training program in evidence-based SIB assessment and treatment on psychiatric personnel's attitudes towards patients who self injure.

2.2 Participants and procedure in Studies I and II

The eligibility criteria for the participants were as follows: (i) participants had to be of age range between 18 and 65 years, (ii) they had to be able to read and write Finnish, (iii) they had to be living within the catchment area of the Central Finland Community General Hospital, and (iv) they had to have presented with an episode of self-injury. The participants were 16 patients who presented with an episode of self injury during the time period of data collection, which began

in February 2008 and ended in February 2009. All 16 study participants were female and aged between 19 and 51 years ($M = 31$, $SD = 12$), 9 participants were single, 4 were married or living in a civil union, and 4 were divorced or separated. 2 participants reported they were able to work, 8 that their ability to work was somewhat impaired and 6 that they were totally unable to work. Self-reports indicated that their financial situation was rather bad. One third of the participants reported a history of suicide attempts in the family.

On visiting the emergency department at the Central Finland Community General Hospital, individuals who had recently engaged in self-injurious behaviour (SIB) received a leaflet with a complete description of the study. In this leaflet it was announced that the person interested in participating may voluntarily contact a member of the research team, who would provide further information on the study. Informed consent was obtained from all participants. After participants had given written consent, they were assessed at the premises of the Psychotherapy Training and Research Center at the University of Jyväskylä. The assessments were conducted by the author. All individuals who volunteered to participate were found eligible for the study and were, following the baseline assessment, randomly (by toss of coin) assigned to 4 sessions of ACT+ SFBT in addition to TAU (intervention group, $n = 9$), or to TAU only (control group, $n = 7$).

The intervention took place at the premises of the Psychotherapy Training and Research Center at the University of Jyväskylä and was conducted by Master's level psychology students. The students received 36 hours of training in the treatment in question. The training was conducted by the author. All intervention was supervised by a qualified psychotherapist. To ensure the treatment's integrity, all sessions were videotaped with the permission of the participants. The Brief Intervention elements table (Table 2) presents in detail the specific tasks of each intervention session, and the means used to accomplish each task. A common task throughout the session was creating and maintaining a collaborative and respectful attitude by means of reflective listening, empathy, and validating.

All participants were invited for a subsequent complete follow-up assessment at 4 weeks and 4 months following the baseline assessment. The 6-month follow-up assessment of incidence of SIB only was conducted by telephone. The assessor was not blind to conditions; however, all outcome measures were self-reported, and there was limited interaction between participants and the assessor. The medical ethics committee of the Central Finland Community General Hospital approved all procedures.

2.3 Participants and procedure in Study III

This study took place in the North Karelia Central Hospital Psychiatric Clinic. The hospital's catchment area comprises the North Karelia district (165 445 inhabitants in 2013). The study was conducted in spring 2014. The first measurement

TABLE 2 Brief intervention elements

	Session 1	Session 2	Session 3	Session 4
Task 1	Creating an initial therapeutic reality/brief introduction of how the intervention works, paying attention, being genuinely interested, complimenting on coming to treatment, emphasizing collaboration	Getting in touch with one's own experience moment to moment in a defused and accepting way/5-minute mindfulness exercise: just breathing	Getting in touch with one's own experience moment to moment in a defused and accepting way/5-minute mindfulness exercise: just breathing	Getting in touch with one's own experience moment to moment in a defused and accepting way/5-minute mindfulness exercise: just breathing
Task 2	Asking for goals, rehearsing preferred future/miracle method	Working on goals and rehearsing preferred future/smaller step questions, scaling exception questions, positive expectancy questions	Working on goals and rehearsing preferred future/smaller step questions, scaling exception questions, positive expectancy questions	Working on goals and rehearsing preferred future/smaller step questions, scaling exception questions, positive expectancy questions
Task 3	Getting in touch with one's own experience moment to moment in a defused and accepting way/5-minute mindfulness exercise: just breathing	Expanding tools for coping with acute negative arousal, tolerating frustration, learning to be aware of emotions and antecedents of emotions/Low frustration tolerance exercise	Assimilating statements that are positive, experiencing directly having different identities, noticing how different self-related content tends to produce different reactions/Pick an identity metaphor	Clarify the relationship between avoidance and action/physical metaphor
Task 4	Homework/5-minute breathing exercise	Homework/5-minute breathing exercise, increase in goal directed behavior	Homework/5-minute breathing exercise, increase in goal directed behavior	Review positive effects of intervention/direct questions
Task 5				Give credit for participation/compliment
Task 6				Motivate further change/motivation questions

took place in January 2014, prior to a 4-day training. The second measurement took place in June 2014 after the 4-day training. The participating staff were asked to complete the Understanding Suicidal Patients Questionnaire (USP; Samuelsson, Åsberg & Gustavsson, 1997) before and after the training. The subjects of this study were the 50 staff members of the North Karelia Central Hospital Psychiatric Clinic who took part in the suicide and self injury assessment and treatment training. Participation in the training was voluntary but attendance limited to 50 participants.

The content of the training was developed from the framework provided by Worchel and Gearing's (2010) Evidence-Based Suicide Assessment and Treatment. This framework was expanded by consulting the World Health Organization (2014) protocol for suicide prevention, recent research, and specific Finnish institutional policies. Once developed, the training program was reviewed and validated by an expert panel of professionals including two consultant psychiatrists, a mental health nurse, a psychologist, and a psychologist academic. The panel deemed the program content accurate and compatible with the standards generally accepted by medical science. The trainer was an experienced psychologist, specialized in psychotherapy training. The training was delivered over a four-month period, with the frequency of one full day per month.

The contents of the first training day included defining SIB, ethical and legal issues in SIB, communication and building positive relationships, role-playing, and reflective elaboration. The training during the second day focused on the following issues: assessment of SIB, SIB rating scales, intervention plan based on the assessment, reflective elaboration, and homework. The third training day consisted of a crisis intervention model and SIB, elements of DBT and SIB, role-playing and reflective elaboration. The final training day continued with intervention strategies with the focus on CBT elements. The training ended with the participants being asked to evaluate the training as a whole.

2.4 Outcome measures in Study I

2.4.1 Assessment of SIB

The primary outcome measure of the study was the number of episodes of SIB at follow-up. The number of episodes in the past 4 months was assessed using Suicide Attempt Self-Injury Interview (SASII; Linehan, Comtois, Brown, Heard, & Wagner, 2006), which has very good interrater reliability (Mdn = .96, range = .87 - .97) and adequate validity (Linehan, Comtois, Brown et al., 2006). The SASII is an interview designed to collect details of the topography, intent, medical severity, social context, precipitating and concurrent events, and outcomes of non-suicidal self-injury and suicidal behavior during a target time period. In this study, the target time period was 6 months prior to the baseline assessment. For the purposes of this study SASII was translated into Finnish, with the permission of the author, and back-translated. Forward translation was completed by three translators. All were health professionals familiar with the terminology of the area covered by the instrument and with interview skills.

The translators were knowledgeable of the English-speaking culture but their mother tongue was Finnish. Instructions were given in the approach to translating, emphasizing conceptual rather than literal translations, as well as the need to use natural and acceptable language for the broadest audience. A bilingual (in English and in Finnish) expert was consulted in order to identify and resolve the inadequate expressions/concepts of the translation. The instrument was translated back to English by an independent translator, whose mother tongue was English, and who had no prior knowledge of the questionnaire. Emphasis in the back-translation too was on conceptual and cultural equivalence and not linguistic equivalence.

The instrument was pre-tested by a psychiatrist, as part of her routine consulting duties at the accident and emergency with patients who present with self-injury. The 10 pre-test respondents were administered the instrument and were systematically debriefed. This debriefing asked respondents what they thought the question was asking, whether they could repeat the question in their own words, and what came to their mind when they heard a particular phrase or term.

All the interviews were conducted by a qualified psychotherapist. Below is the list of variables assessed using SASII.

2.4.2 Method and lethality of method

The primary method used to self-injure was obtained asking the following question: "Tell me again/describe exactly what method(s) you used to injure yourself?" 17 methods were listed (e.g. drugs/medication, burning, scratch/cut) and for each a code 0 = not used or 1 = used was obtained. Lethality of method was established by the interviewer who was asked to "Rate the medical risk of death based on method and on other substances present at time" using a six point scale ranging from 1 = very low to 6 = severe.

2.4.3 Intent and impulsivity

Participant's conscious intent to cause self-injury, i.e., the degree to which the behavior was initiated and performed in order to cause self-injury or in order to risk self-injury was rated by the interviewer on a 3 point scale (0 = no bodily physiological harm intended or expected, 1 = ambivalent intent to cause bodily injury or physiological harm to self and took a chance, and 2 = clear expectations of some bodily injury, physiological harm to self). The participants were asked: "Would you say that you injured yourself for any of the reasons on this list, if so, which ones?" The list in question consisted of 29 reasons, such as "to stop bad feelings", or "to gain help", and for each a code 0 = not mentioned or 1 = mentioned was obtained.

The obtained reasons were then classified using the four-factor functional model by Nock and Prinstein (2004) into four functions: automatic-negative, automatic-positive, social-negative and social-positive - all of which are described in more detail in the introduction.

The interviewer was asked to rate the participant's conscious expectation of fatal outcome on a 3-point scale (0 = no expectation, 1 = uncertain of outcome,

and 2 = clear expectations of fatal outcome). The interviewer also rated the impulsivity of the act on a seven-point scale, ranging from 1 = commitment to act, followed by very careful or elaborate plan carried out over a period of time to 7 = no active planning, occurred impulsively, with no forethought and with very strong emotion.

2.4.4 Classification of SIB into NSSI and SSI

The interviewer then, based on information obtained, rated the participant's intent to die, i.e. the seriousness or intensity of the wish to terminate his or her own life on a five-point scale (1 = obviously no intent, 2 = only minimal intent, 3 = definite intent but very ambivalent, 4 = serious intent, 5 = extreme intent). Out of this five-point intent measuring variable, a new variable was computed where values 1 and 2 were recoded into 0 (non-suicidal self-injurious behavior), and values 3 to 5 into 1 (suicidal self-injurious behavior). This newly coded variable was then used as the classifying variable of NSSI and SSI in the current research.

2.4.5 Precipitating events

The events precipitating self-injurious acts were established asking participants "Did any of the events or experiences on this list happen to you in the 24 hours before your self-injury/suicide attempt?". The list presented to the participants contained 45 events, such as "you had an argument or conflict with another person", and "someone rejected you", each of which were coded 0 = not mentioned or 1 = mentioned. The use of alcohol as well as any sleep disturbances 24 hours prior to self-injury was measured asking whether participants used alcohol or slept worse than usual (0 = no, 1 = yes). In addition, dissociation prior or during the act was assessed asking: "Were you feeling disconnected from your feelings or as if you were unreal during or prior to your self-injury/suicide attempt/overdose?" (0 = no, 1 = yes).

2.4.6 Consequences

The consequences of the self-injurious acts with respect to the participants' job, school work, housing and financial situation as well as relationships with people they care about were assessed on a six-point scale ranging from 1 = strongly improved to 6 = lost job/expelled/evicted/bankrupt/relationship ended. In addition, the level of medical attention obtained following the act was assessed. The interviewer was asked to use all appropriate information regarding treatment that had been gathered throughout the interview to code the highest applicable number from a 9 point list (0 = no medical treatment sought, 9 = admitted to intensive care unit, whether or not via emergency room or medical floor).

2.5 Outcome measures in Study II

2.5.1 Number of SIB episodes

The number of SIB episodes was measured by SASII at baseline assessment, post treatment and at 4-month and 6-month follow-ups.

2.5.2 Depression

Depression was measured with the Beck Depression Inventory (BDI; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961). BDI is a 21-item self-report inventory that evaluates the level of depression. The subject is asked to rate each item on a 3-point scale of severity. A total score is determined by aggregating the item responses and may range from 0 to 63 (normal-severe). BDI scores above the 9 cutoff may indicate the presence of depression. The test has high internal consistency, with $\alpha = .91$.

2.5.3 Anxiety

Anxiety was measured using the Beck Anxiety Inventory (BAI; Beck & Steer, 1993). On the BAI, the examinee is asked to rate 21 symptoms of anxiety on a 4-point Likert scale. BAI is a 21-item scale that showed high internal consistency ($\alpha = .92$) and test-retest reliability over 1 week, $r(81) = .75$. BAI has discriminated anxious diagnostic groups (panic disorder, generalized anxiety disorder, etc.) from nonanxious diagnostic groups (major depression, dysthymic disorder, etc.). In addition, it has been moderately correlated with the revised Hamilton Anxiety Rating Scale, $r(150) = .51$, and only mildly correlated with the revised Hamilton Depression Rating Scale, $r(153) = .25$ (Beck & Steer, 1993).

2.5.4 Quality of life

Health-related quality of life (HRQoL) was measured by the 15D (Sintonen, 2001). The 15D is a 15-dimensional, standardized generic instrument. Its 15 dimensions are moving, seeing, hearing, breathing, sleeping, eating, speech, elimination, usual activities, mental function, discomfort and symptoms, depression, distress, vitality and sexual activity. Each dimension is divided into levels. The respondent is asked to indicate the level that best describes his or her present health status on each dimension at that particular time (first level = no problems, fifth level = worst condition). On the basis of repeated measurements, the 15D has demonstrated good reliability, validity and sensitivity. A difference of larger or equal to .03 in the 15D score is clinically important in the sense that people can on average feel the difference (Sintonen, 1995).

2.5.5 Avoidance of internal experiences

The Action and Acceptance Questionnaire (AAQ; Hayes et al., 2004) is a 9-item measure of experiential avoidance. Although the AAQ was developed as a

measure of the tendency to avoid internal experiences in general, many items focus on the avoidance of emotions. For example, items include "I try hard to avoid feeling depressed and anxious" and "anxiety is bad." The AAQ has been found to have adequate internal consistency ($\alpha = .70$), as well as adequate convergent, discriminant, and concurrent validity (Hayes et al. 2004). Items were recorded so that higher scores indicated greater experiential avoidance, and a sum was calculated.

2.5.6 Emotional regulation

The Difficulties in Emotion Regulation Scale (DERS; Gratz & Roemer, 2004) was used to assess self-reported emotion regulation difficulties. Six subscale scores can be computed from the 36 items, namely nonacceptance of emotions (6 items; e.g., "When I'm upset, I feel guilty for feeling that way"), difficulties engaging in goal-directed behavior when distressed (5 items; e.g., "When I'm upset I have difficulty concentrating"), impulse control difficulties (6 items; e.g., "When I'm upset, I become out of control"), lack of emotional awareness (6 items; e.g., "I pay attention to how I feel"), limited access to emotion regulation strategies (8 items; e.g., "When I'm upset, it takes me a long time to feel better"), and lack of emotional clarity (5 items; e.g., "I am confused about how I feel"). Participants rate each item on a scale from 1 (almost never, 0-10%) to 5 (almost always, 91-100%). Items were recorded so that higher scores indicated greater emotion dysregulation, and a sum was calculated.

The authors describe good psychometric properties for all subscales, e.g. adequate to good internal consistencies (α s larger than .80) and stabilities (ϕ s larger than .69) and significant correlations with other emotion regulation measures (Gratz & Roemer, 2004). DERS was translated into Finnish with the permission of the author and back-translated in order to establish the equivalence of the English and Finnish language versions.

2.5.7 Other measures

Background information was obtained (gender, age, educational level, functioning ability, use of medication, and motivation for change), as well as information on patient satisfaction with treatment. This was measured using 5-point scale responses ranging from 1 = very dissatisfied to 5 = very satisfied.

2.6 Outcome measures in Study III

2.6.1 The Understanding Suicidal Patient Questionnaire (USP)

This questionnaire was developed from a questionnaire by Suokas and Lönnqvist (1991) and modified by Samuelsson, Åsberg, and Gustavsson (1997). The 11 items were summed to form the USP Scale, which is intended to measure understanding and willingness to care for patients who have attempted suicide.

In earlier studies (Mackay & Barrowclough, 2005; Samuelsson & Åsberg 2002; Samuelsson, Åsberg, & Gustavsson, 1997; Samuelsson, Sunbring, Winell, & Åsberg, 1997) the scale has demonstrated satisfactory internal consistency and good reliability; the mean inter-item correlation for the scale in those studies was .20, and Cronbach's α was .74. Each statement was scored on a 5-point Likert scale ranging from "I agree completely" to "I disagree completely". Both prior to and after the training the participants were presented with USP forms to answer anonymously and return.

2.6.2 The training evaluation measure

Following the training, the participants were asked one open-ended question using the paper-pencil form: "What did you find most useful?" In the same form participants could mention if they had any additional comments.

2.7 Data analysis in Study I

In Study I the data consisted of 46 self-injurious acts obtained from 16 study participants. Out of a total of 46 acts, 24 were classified as NSSI and 22 as SSI. Because the number of acts per participant ranged between 2 and 6, the data was analyzed using variables weighted by the number of acts; the values of each variable were multiplied by the reciprocal of the number of acts for each participant. If for example the participant's number of acts was 5, then each act in the analysis obtained the weight of .20, whereas if number of acts for a given participant was 2, then each act in the analysis obtained the weight of .50. This was done to minimize the accumulation brought about by the fact that some participants harmed themselves more frequently than others.

Using the data on distribution, the proportions of methods used, the reasons for SIB, precipitating events, alcohol use and dissociative symptoms as well as the proportion of medical care obtained were examined. The relationship between the designated SIB class and the methods used, the reasons behind the behavior and the events preceding it were examined using the χ^2 test. The same test was used to examine whether alcohol use and sleep disturbance relate to the classes of SIB. P-value less than .05 was considered statistically significant. Instances that yielded statistical significant associations were then analyzed by the two-tailed Fisher's exact tests and p-values adjusted by the Bonferroni method. These Bonferroni-adjusted p-values are reported in results section.

The Mann-Whitney U-test was used to determine whether SSI acts differed from NSSI acts in the seriousness of intent, the expectations pertaining to the lethality of the acts and the planning of the acts. The same test was used to determine the group differences regarding consequences of the acts pertaining to work/school attendance, living and financial arrangements and the consequences related to interpersonal relationships.

Similarly the differences between groups in medical treatment sought were determined using the same test. In measuring effect size the Cramer V test was used in place of the χ^2 independence sample test, and where the Mann-Whitney U-test was concerned, Z-value derived r-value was used. Oneway tests were used in cases where their use was justified by previous research or theory. Due to the small size of the sample, this research reports also marginally significant ($p < .10$) results. Statistical analysis was conducted using IBM SPSS statistics 21.

2.8 Data analysis in Study II

Study II statistical analyses were performed with SPSS 15 for Windows Vista. Because of the low number of subjects, non-parametric methods were used. Chi-Square Tests and Mann-Whitney U-Tests were conducted on demographic characteristics to determine equivalence across conditions. To determine change over time (pre-treatment, 4-month and 6-month follow-ups) within each group Wilcoxon signed ranks tests were used.

2.9 Data analysis in Study III

To ensure the reliability of the scale, the 11 USP items were subjected to an item analysis. The mean inter-item correlation for the scale was 0.33, and Cronbach's α was .85. Positive attitude pre-training was defined as a USP scale score under 21 and negative attitude as a score of 26 or over, based on the 25th and 75th percentiles. Positive attitude post-training was defined as a USP Scale score under 21 and negative attitude as a score of 25 or over, based on the 25th and 75th percentiles.

The mean differences before and after the training were tested by an unpaired t-test. In order to ensure anonymity, the individual answers before and after the training could not be identified. Therefore a paired t-test could not be used. To test the differences in proportions on single items, the two-tailed tests of significance were employed, and p-values less than .05 were considered to be statistically significant. Non-parametric methods (the Mann-Whitney U-test and Kruskal-Wallis test) were also used in parallel (data not shown, as the results were very similar to those obtained with the parametric methods). Two-way ANOVA was used to test the impact of background variables on USP scores.

Qualitative data regarding the participants' evaluation of the useful aspects of the training was analyzed using thematic analysis as described in Braun and Clarke (2006). The overview of the studies' outcome measures and data analysis is presented in Table 3.

TABLE 3 Overview of the studies: participants, samples, measures, and data analysis

	Participants	Units of analysis/s sample	Measures	Data analysis
Study I	16	46 self-injurious acts	<ul style="list-style-type: none"> • SASII: Number of SIB episodes + for each episode: <ul style="list-style-type: none"> - Method and lethality of method - Intent and impulsivity - Classification of SIB into NSSI and SSI - Precipitating events (thoughts, feelings, events, alcohol use, dissociation symptoms) - Consequences (work/school attendance, living and financial arrangements and the consequences related to interpersonal relationships, level of medical care obtained) 	<ul style="list-style-type: none"> • χ^2 analysis • Mann-Whitney U-test • Cramer V • Fisher's exact test • Bonferroni correction
Study II	16	16	<ul style="list-style-type: none"> • SASII: Number of SIB episodes • BDI • BAI • HRQoL • AAQ • DERS 	<ul style="list-style-type: none"> • χ^2 analysis • Mann-Whitney U-test • Wilcoxon signed ranks tests
Study III	50	50	<ul style="list-style-type: none"> • USP 	<ul style="list-style-type: none"> • t-test (unpaired) • ANOVA (two-way) • Mann-Whitney U-test and Kruskal-Wallis test (in parallel) • Correlations (Spearman r)

3 SUMMARY OF THE RESULTS

3.1 Study I

This study found several differences as well as similarities between the acts of SSI and those of NSSI (see Table 4 below). The acts of SSI differed from those of NSSI in methods used. The most common method in SSI was drugs/medication overdose, whereas for NSSI the most common method was cutting/scratching. Cutting/scratching was used as a primary method only in NSSI ($\chi^2(1) = 22.5, p < .001; V = .699, p < .001$), whereas drugs/medication overdose was used in both types of acts but significantly more so in acts of SSI (68%) as compared to NSSI (25%), ($\chi^2(1) = 8.62, p = .003; V = .433, p = .003$).

When differences between groups in lethality of the methods were examined, the results of the Mann-Whitney test showed that SSI and NSSI differed statistically significantly with respect to lethality ($U = 73.50, p < .001; Z = 4.32; r = .64$), indicating that in SSI more lethal methods were used.

The results further showed that the conscious expectations of the participants regarding lethality of their acts differed statistically significantly between types of acts ($U = 4.00, p < .001; Z = -6.24; r = .92$), so that more serious expectations of resulting lethality were related to SSI (100% of acts) than to NSSI (4% of acts).

Results pertaining to reasons behind SSI and NSSI point out that single acts are precipitated by simultaneous multiple motivations. The groups differed statistically significantly with respect to intent to die ($\chi^2(1) = 16.00, p = .001; V = .960, p = .001$), which was characteristic of SSI acts. Further differentiating reason was "to stop feeling sad", which was more prevalent for SSI acts (71% vs. 30%), ($\chi^2(1) = 5.59, p = .018; V = .346, p = .018$).

Instances where the Cramer V effect size had been small, i.e. less than .10, pointed to reasons that could not differentiate between the acts, or in other words, were common to both. These were: "to let others know how desperate I was", "to make others better off", "to get away or escape", "to stop feeling

numb or dead", "to stop feeling angry", "to distract myself from other problems", "to relieve feelings of emptiness or isolation", and "to stop feeling self-hatred, shame".

When the obtained reasons were classified using the four-factor functional model by Nock and Prinstein (2004) into four functions, automatic-negative, automatic-positive, social-negative and social-positive, the following results were obtained. The reasons given for SSI differed statistically significantly from those given for NSSI with respect to automatic-positive reinforcement, for example "to feel something even if pain", ($\chi^2 (1) = 7.4, p = .007; V = .40, p = .007$). This function was more frequent in NSSI (83.3%) as opposed to SSI (31.8%). The function that both types of acts shared was social-positive reinforcement, for example "to get help".

The results of the Goodman and Kruskal tau-test (value .015, $p = .638$) showed no statistically significant differences between the two types of acts in impulsivity.

Further, it was examined whether the presence of dissociation ("Were you feeling disconnected from your feelings or as if you were unreal during or prior to your SIB?", "Did this state of being disconnected or unreal begin after you decided to self-injure?") was more frequent for NSSI acts when compared to acts of SSI. The data showed that dissociation was statistically significantly more present for acts of NSSI ($\chi^2 (1) = 5.80, p = .016; V = .36, p = .05$).

The frequency of alcohol use and sleep disturbances prior to the acts of self-injury did not differentiate between the types of acts.

When precipitating factors were examined, the acts of SSI and those of NSSI differed in feelings of "distress/upset" ($\chi^2 (1) = 5.67, p = .018; V = .349, p = .018$) and only marginally in "conflicts in environment" ($\chi^2 (1) = 4.3, p = .038; V = .306, p = .038$). "Distress/upset" was more often related to NSSI acts, whereas "conflicts in environment" tended to be more often related to SSI acts.

Finally, the consequences of NSSI and SSI with respect to participants' level of medical care received, their employment/school work, housing situation, financial situation, and relationships with people that they care about were examined. The only statistically significant difference found was that for the level of medical care obtained. The level of medical care received differentiated statistically significantly the NSSI types of acts from those of SSI with SSI acts being followed by greater medical care ($U = 179.00, p = .04; Z = -1.90; r = .28$). The results of Study I are further summarized in Table 4.

3.2 Study II

There was no significant difference between the intervention group (ACT+SFBT+TAU, $n = 9$) and the control group (TAU, $n = 7$) on any of the background characteristics including gender, age, educational level, functioning ability, use of medication, or motivation for change. In addition, no significant

TABLE 4 NSSI and SSI: similarities and differences

	SSI specific	NSSI specific	Common to SSI and NSSI
Method	<ul style="list-style-type: none"> • Drugs/medication overdose • More lethal consequences • More serious expectations of resulting lethality 	<ul style="list-style-type: none"> • Cutting/scratching • Less lethal consequences • Less serious expectation of resulting lethality 	
Reasons	<ul style="list-style-type: none"> • To die • To stop feeling sad 	<ul style="list-style-type: none"> • To feel something even if it is pain • To prove to myself that things really were bad • To give me something, anything to do • To prevent being hurt in a worse way • Automatic-positive reinforcement 	<ul style="list-style-type: none"> • To let others know how desperate I was • To get away or escape • To stop feeling angry • To distract myself from other problems • To relieve feelings of emptiness and isolation • To relieve feelings of self-hatred • Social positive reinforcement
Precipitants	<ul style="list-style-type: none"> • Conflicts in environment • Interpersonal 	<ul style="list-style-type: none"> • Intrapersonal feelings of distressed/upset • Dissociation 	<ul style="list-style-type: none"> • Impulsivity • Alcohol use • Sleep disturbance • Negative feelings
Consequence	<ul style="list-style-type: none"> • Greater level of medical care 	<ul style="list-style-type: none"> • Lesser level of medical care 	

difference was found with regard to the presence of suicide in the family, presence of suicide attempts in the family, and a history of self-harm in the past 4 months.

A Wilcoxon signed-rank test showed that at a 4-month follow-up, the intervention group evidenced statistically significant change in the number of self-harm episodes ($Z = -2.06$, $p = .03$; pre $M = 2.29$, $SD = 1.25$; 4-month follow-up $M = .17$, $SD = .41$). At 6-month follow-up, the intervention group evidenced statistically significant change in the number of self-harm episodes ($Z = -2.23$, $p = .02$; 6-month follow-up $M = .43$, $SD = .54$). The self-harm episodes statistically significantly decreased also for the control group at 4-month follow up ($Z = -1.88$, $p = .04$; pre $M = 2.71$, $SD = .76$; 4-month follow-up $M = .86$, $SD = 1.46$) and at 6-month follow-up ($Z = -2.04$, $p = .03$; 6 month follow-up $M = 1.00$, $SD = .89$).

At the 4-month follow-up the results showed that the intervention group, including an additional 4-session intervention compared to TAU, evidenced significant changes on secondary outcome measures of depression ($Z = -2.02$, p

= .03; pre M = 31.33, SD = 9.93; 4-month follow-up M = 25.00, SD = 13.57), as well as on difficulties in emotion regulation ($Z = -2.20$, $p = .02$; pre M = 104, SD = 20.56; 4-month follow-up M = 90.00, SD = 18.49). Looking more closely at the DERS subscales we see that for the intervention group significant changes occurred on subscales of impulse dyscontrol ($Z = -2.02$, $p = .03$; pre M = 15.83, SD = 4.83; 4-month follow-up M = 12.67, SD = 3.88) and lack of clarity ($Z = -2.02$, $p = .03$; pre M = 15.7, SD = 3.77; 4-month follow-up M = 11.17, SD = 2.04). No changes for any of the outcome measures were detected in the control group. Furthermore, when examining closely the DERS subscales it is noted that a significant change for the worse occurred on the subscale of emotion clarity.

In addition, all participants who returned the treatment satisfaction form ($n = 7$) would recommend the treatment to others. The treatment satisfaction score itself was 4.6 (measured on a 5-point scale from very dissatisfied to very satisfied).

3.3 Study III

The mean score for the whole USP Scale pre-training was 24.60 ± 5.40 (range 19.00–46.00; 25th percentile 21.00, median 23.00, 75th percentile 26.00), and the mean score for the whole USP Scale post-training was 22.90 ± 2.72 (range 19.00–30.00; 25th percentile 21.00, median 22.50, 75th percentile 25.50); $t = 1.94$, $df = 98$, $p = .05$, $d = .39$. Lower scores signify more empathetic responses. The distribution of the scores on most items tended to be somewhat skewed toward the “more empathetic” end of the scale.

The training program had a statistically significant impact ($p < .01$) on the following individual items of the USP scale (the within group effect size varied from medium $d \geq .50$, to large $d \geq .80$): Patients who have tried to commit suicide are usually treated well in my work unit ($d = 1.02$); A person who has made several suicide attempts is at greater risk of committing suicide ($d = .64$); Because the patients who have tried to commit suicide have emotional problems, they need the best possible treatment ($d = .57$). Table 5 provides a comparison on all items in USP pre and post trainings.

When the impact of background variables on the total score of USP was investigated, the results of two-way ANOVA revealed statistically significant main effect for the frequency of contact, $F(1) = 4.34$, $p = .04$, $\eta^2p = .044$. This suggested that psychiatric personnel having a more frequent contact with the self-injure patients (daily or weekly) reported higher USP scores (reflecting a more negative attitude) as compared to those having a seldom contact with these patients (monthly or more seldom). However, the between group effect size indicated a small overall difference between the groups ($d = 0.42$; total USP score M = 24.80, SD = 5.66 for the daily/weekly group, and M = 22.93, SD = 2.71 for the seldom contact group).

On a further analysis it was observed that the training had significant impact on items 1 and 5 among psychiatric personnel having frequent (daily/

TABLE 5 Comparison of items in USP pre (n = 50) and post (n = 50) training

	Mean(SD) pre	Mean(SD) post	<i>t</i> (<i>df</i>)	<i>p</i>
1. Patients who have tried to commit suicide are usually treated well in my work unit	1.98 (1.22)	1.08 (.27)	5.08 (98)	.000
2. I sometimes show my irritation with a patient who has tried to commit suicide*	3.88 (1.22)	4.22 (1.05)	-1.49 (98)	.140
3. A person who has made several suicide attempts is at great risk of committing suicide	1.82 (1.04)	1.28 (.572)	3.21 (98)	.002
4. I nurse patients who have tried to commit suicide as willingly and sympathetically as I nurse other patients	1.80 (.93)	1.54 (.73)	1.56 (98)	.123
5. Because the patients who have tried to commit suicide have emotional problems, they need the best possible treatment	1.48 (.95)	1.08 (.27)	2.85 (98)	.005
6. I often find it difficult to understand a person who has tried to commit suicide*	3.82 (1.02)	4.02 (.93)	-1.02 (98)	.311
7. I like to help a person who has tried to commit suicide	1.8 (1.05)	1.72 (.95)	.40 (98)	.690
8. I try to do my best to talk with a patient who has attempted suicide about his or her personal problems	1.54 (1.01)	1.54 (.84)	.00 (98)	1.00
9. It is usually troublesome to nurse a patient who has tried to commit suicide*	2.78 (.97)	2.90 (.91)	-.64 (98)	.526
10. I am usually sympathetic and understanding towards a patient who has tried to commit suicide	2.08 (.94)	2.06 (.68)	.121 (98)	.904
11. I try to do my best to make a patient who has tried to commit suicide feel comfortable and secure	1.62 (1.01)	1.50 (.58)	.73 (98)	.467

Note 1= totally agree, 2 = agree, 3 = neutral, 4 = disagree, 5 = totally disagree

*reverse scoring

weekly) contact with the patients. The scores on item 1 ("Patients who have tried to commit suicide are treated well in my work unit") changed significantly more in a positive direction among those having frequent contact with the patients ($F(1,95) = 12.21, p = .001$; Daily/weekly: pre $M = 2.61, SD = 1.44$; post $M = 1.10, SD = .30$; Seldom: pre $M = 1.46, SD = .65$; post $M = 1.07, SD = .26$). Also, the scores on item 5 ("Because the patients who have tried to commit suicide have emotional problems, they need the best possible treatment") changed significantly more in a positive direction among those having frequent contact with the patients ($F(1,95) = 8.59, p = .004$; Daily/weekly: pre $M = 1.83, SD = 1.23$; post $M = 1.05, SD = .22$; Seldom: pre $M = 1.12, SD = .33$; post $M = 1.10, SD = .31$). Age, profession, and length of work experience, did not correlate with specific items of USP post training.

All 50 participants answered the paper-pencil question about the most useful aspects of the training. The following themes emerged as the most useful aspects of the training: (i) tools to use in the field: concrete and structured; (ii)

knowledge base: broad, up-to-date, and evidence-based; (iii) trainer: professional, and inspirational; (iv) group exercises; and (v) subject: highly relevant. The themes that emerged as suggestions to improve the training were: (i) more training days; (ii) more case examples; (iii) more intervention detail.

4 DISCUSSION

4.1 The main findings and relation to previous research

The aims of this research were as follows. First, to examine the similarities and differences between NSSI and SSI in a group of adult women who engaged in both types. Accordingly, the aims were to examine the differences and similarities in NSSI and SSI in a group of adult women with respect to (i) methods used and lethality of methods, (ii) intent and impulsivity of act, (iii) precipitating events, and (iv) consequences.

Second, the research aimed to design a brief psychological intervention, teachable to front-line workers that would be based on intervention targets identified by reviewing relevant literature, namely emotional regulation and positive future thinking. An additional aim was to investigate in a pilot study, using a randomized controlled procedure, the efficacy of this brief intervention.

Third, the research aimed to implement and evaluate the effect of a structured clinical training program in evidence-based SIB assessment and treatment on psychiatric personnel's attitudes towards patients who self injure. It addressed three research questions: (i) What attitudes towards self-injurious patients exist among psychiatric personnel at the psychiatric clinic; (ii) What background factors are associated with existing attitudes, and (iii) What are the effects of implementing a structured clinical training program in evidence-based SIB assessment and treatment on psychiatric personnel's attitudes towards patients who self-injure.

4.1.1 Similarities and differences between NSSI and SSI

The results regarding the similarities and differences between NSSI and SSI indicated the following. There were differences in the methods used: drugs/overdose were used in acts of SSI and cutting/scratching in acts of NSSI,

a finding supported by previous studies (Csorba, Dinva, Plener, Nagy, & Pali, 2009; Elnour & Harrison, 2008; Ougrin et al., 2012). The acts of SSI further involved participants' more serious expectations of resulting lethality than did acts of NSSI. The notion that cutting is less lethal and that those who cut are at very low risk of suicide has however been challenged recently by Hawton, as cited in De Leo (2011), reporting that self-cutting individuals are at a higher risk of suicide than are those who overdose with medication.

The finding that the engaging in acts of SSI was conducted using more lethal methods and with a more serious expectations of resulting lethality lends support to Klonsky and May's (2016) Three Step Theory, where the third step in particular, the progression from ideation to attempts, is influenced by variables that contribute to development to suicide capacity. Of particular importance here are practical variables, namely knowledge of how to end one's life painlessly and access to more lethal means.

Klonsky and May's (2016) rich and specific 3ST also makes it understandable that acts of self-cutting too contribute to the development of suicide capacity, by means of a separate set of contributing variables, namely acquired variables. Self-cutting habituates one to experiences associated with pain, injury, fear, and death, and can over time lead to acquired capacity for a suicide attempt.

With respect to access to lethal methods of self-injury, it is important to note that there is a compelling evidence to suggest that the reduction in access to particularly lethal methods is related to a decrease in suicide death rates (Barber & Miller, 2014). IMV model helps understand the potential mechanism behind this. Namely, because problem-solving deficits are involved in the motivational phase of suicidal behavior, many individuals may not turn to other suicide methods if their planned method is not available.

As do other studies (Claes & Vandereycken, 2007; Klonsky, 2007), this study too showed that the acts of SSI, unlike those of NSSI however, involved intent to die as a consequence of the behavior. However, as with other characteristics of SIB the picture is not perfectly clear with respect to the intent to die. A survey by Martin, Swannell, Hazell, Harrison, and Taylor (2010) reported that almost 50% of those engaging in NSSI reported also having suicidal ideation during the times they engaged in NSSI, and even in instances where their NSSI was not motivated by the intent to die.

Acts of NSSI, not SSI, involved the presence of dissociation, a finding supported by previous research (Matsumoto et al., 2004; Zlotnick, Donaldson, Spirito, & Pearlstein, 1997). According to Tolmunen and colleagues (2008) a high level of dissociation is an independent risk factor for NSSI. NSSI is considered to be an effective strategy to end an experience of alienation (Schoppmann, Schröck, Schnepf, & Büscher, 2007). Yet, dissociation has also been considered as a greatly understudied risk factor for suicide (Orbach, 2003). Paul, Tsypes, Eidlitz, Ernhout, and Whitlock (2015) find that the associations of NSSI functions regarding dissociation with suicide attempt were stronger than those with emotion relief. The authors highlight the need for future research to focus on tendencies to act on the body as opposed on the mind when facing distressing

situations. The finding is further in line with the proposed two-factor structure for the functions of NSSI (Klonsky et al., 2015), with dissociation function being representative of intrapersonal factor.

The finding that interpersonal conflict precipitated SSI and not NSSI also warrants further discussion. Interpersonal conflict was reported to be a risk factor for suicide in adults (Foster, 2011), as well as a predicting factor of suicidal ideation among both youth (You, Van Orden, & Conner, 2011) and the elderly (Harrison et al., 2010). Family discord has also been related to SSI (Duberstein et al., 2004). On the other hand, interpersonal/social relations where an individual believes he or she is cared for and valued appear to be an essential factor in prevention and treatment response to NSSI (Wichstrøm, 2009). Wichstrøm (2009) found that satisfaction with social support was a protective factor against NSSI, and Christoffersen, Mohl, DePanfilis, and Vammen (2015) further imply that increasing social support may reduce the likelihood of NSSI.

This finding that interpersonal conflict precipitated the acts of SSI can also be explained using the 3ST theoretical framework, where the second step deals with connectedness. Disrupted connectedness, in this case in the form of disrupted connection to other people may increase the strength of suicidal ideation causing a progress from passive ideation to active desire for suicide. In cases where pain and hopelessness are high the connectedness can act as a protective factor against strong suicidal ideation. However, it is important to note that social support does not automatically translate into a protective factor against NSSI, at least not in cases where a significant other engages in self-injurious behavior. Exposure to suicidal behavior (having a friend who had self-injured or attempted suicide), according to the IMV model of suicidal behavior, represents a volitional factor, which play crucial role in the transition from ideation to attempt. Dhingra et al. (2016) suggest that exposure to suicidal behavior may increase risk of suicidal behavior by imitation or social learning. As Dhingra et al. (2015) point out, it is important to understand how and when self-injury/suicide exposure becomes salient to one's suicidal behavior in order to aid practitioners in preventing death by suicide.

The finding that SSI acts were followed by a greater level of medical care than those of NSSI is supported by previous research (Reulbach & Bleich, 2008). According to Reulbach and Bleich (2008), up to 45% of people who engage in NSSI leave the accident and emergency departments without receiving adequate psychiatric assessment. The current study shows that the two behaviors, although differing in some aspects, also have much in common, co-occur and are intertwined. Due to its complexity, if anything, NSSI should, just like SSI, be assessed and treated aggressively from its very outset. Including the NSSI Disorder (NSSID) in the DSM-5 was intended to help recognize the behavior as unique and to facilitate its assessment and treatment in clinical practice (Gratz, Bardeen, Levy, Dixon-Gordon, & Tull, 2015), and not to reduce SIB to suicidal/nonsuicidal category. Yet, if this addition is misunderstood as simplifying or oversimplifying, then "the hazards of minimizing clinical pictures, and potentially suicidal processes, are significant" (De Leo, 2011, p. 235).

The acts were found to be similar in that both were impulsive. While previous research on the impulsivity of the acts has been conducted, synthesizing it and placing the current finding into such a context is problematic as the research lacks a consistent conceptual and operational definition of an “impulsive self-injurious act”. In their study on impulsive suicide attempts, May and Klonsky (2015) point out that conceptually, different characteristics of the attempt have been used to index act impulsivity. These include the degree of premeditation (Giegling et al., 2009), the combination of planning and preparation (Baca-Garcia et al., 2001), the time between deciding to attempt suicide and actually attempting (Simon et al., 2001), presence of plan (Witte et al., 2008), and time spent planning the attempt (Wojnar et al., 2009). May and Klonsky’s (2015) own research results suggest that the development of reliable and valid operational definitions when it comes to identifying impulsive suicide attempt is not at present moment complete. While they found that absence of preparation, minimal contemplation, and impulsive motivations are common, they also found that these do not all describe the same construct. Like the findings of May and Klonsky (2015), the current research findings, where impulsivity of the act is implicated in both NSSI and SSI, clinically reinforce the importance of treating all acts seriously, regardless of impulsivity.

Both NSSI and SSI acts shared the function of regulating negative emotion (automatic-negative reinforcement) and were both precipitated by negative emotion. Previous research has consistently demonstrated the association between NSSI and high levels of emotion dysregulation (Gratz & Chapman, 2007; Gratz & Roemer, 2008; Klonsky, Victor, & Saffer, 2014; Saraff, Trujillo, & Pepper, 2015). Individuals engage in NSSI in an attempt to avoid negative affect (Chapman & Dixon-Gordon, 2007; Nock & Prinstein, 2004). No such strong link has been established for SSI and emotional dysregulation. Some studies do report the association (Tamás et al., 2007), others do not find the link (Zlotnick et al., 1997). According to Klonsky, May, and Glenn (2013), NSSI was more strongly associated with a history of suicide attempts than were depression, anxiety, impulsivity, and BPD. Anestis, Bagge, Tull, and Joiner (2011) demonstrated the association between high emotional dysregulation and suicidal desire, but not between emotional dysregulation and the ability to act upon suicidal desire. Anestis, Pennings, Lavender, Tull, and Gratz (2013) further attempted to clarify this complex relationship, revealing that the association between emotional dysregulation (low distress tolerance) and SSI is indirect and takes place through NSSI frequency. This indirect effect was further strengthened in a study by Anestis, Kleiman, Lavender, Tull, and Gratz (2014), which revealed that NSSI mediated the relationship between emotion dysregulation and suicide attempts; NSSI serves the function of avoiding negative emotions, however engaging in NSSI repeatedly desensitizes individuals to the fear of death or bodily harm, and in this way contributes to suicide attempts amongst individuals who wish to die. This finding also lends support to Joiner’s (2005) interpersonal-psychological theory of suicidal behavior, according to which a person’s

ability to engage in lethal SIB is developed through planned practice aiming at death, as opposed to the avoiding of negative emotion.

In general, the findings of the current research lend support to the proposition by Klonsky and May (2014) that the “ideation-to-action” framework should guide suicide theory, research, and prevention. More work is needed to locate novel variables that robustly distinguish ideation from action. While examining risk factors is important, studying protective factors that are essential in transition from ideation to action would further increase both conceptual and clinical knowledge.

The two-factor functional framework is well suited to guiding clinical assessment as well as future research on the NSSI functions. Future studies utilizing the two-factor structure need to use longitudinal research if we are to better understand the prognostic and treatment implications of functions.

4.1.2 Developing and testing a brief psychological intervention for SIB

This research further aimed at designing a time-limited psychological intervention, teachable to front-line workers that would be based on intervention targets identified by reviewing relevant literature. The second aim was to investigate, using a randomized controlled procedure, the efficacy of this brief intervention. As a result, a manualized 4-session intervention based on targeting ER and positive future thinking with ACT and SFBT techniques was designed. Advanced level psychology students received a 36-hour training in this intervention. They also received supervision by a qualified psychotherapist throughout the implementation of the intervention. The students were found to be able to effectively implement the manualized treatment (Heino & Nygren, 2009). This is encouraging because it demonstrates that time-limited training in the intervention combined with qualified supervision brings about good enough proficiency in intervention implementation. Trainings in this intervention on a larger scale are thus possible as well as financially feasible. With more staff trained in this manualized brief intervention, larger numbers of individuals who engage in SIB can be reached and benefit accordingly.

The results regarding the usefulness of this brief intervention are also encouraging. Changes over time for the intervention group were significant on the primary outcome measure – the frequency of SIB. The frequency of SIB was reduced significantly on 4-month and 6-month follow-ups. However, the significant decrease in SIB frequency on 4-month and 6-month follow-up was noted for the treatment as usual group as well, albeit to a lesser extent. While this group did not receive the 4-session intervention, its participants did partake in a comprehensive SIB assessment at baseline and follow-up. It is highly likely that such structured, comprehensive assessment, which examines SIB, its antecedents and consequences, is valid in itself as a therapeutic intervention tool. Be it the assessment, or the treatment, or the combination of the two, the findings of this research lend further support to the already established stand that brief interventions may have positive effects on those who self-injure. Furthermore, the reduction in frequency of SIB was present even 6 months after the intervention.

With respect to change over time on secondary outcome measures, at the 4-month follow-up the intervention group fares significantly better compared to the control group. The change over time in emotional dysregulation was significant for the intervention group only. Looking more closely at the DERS subscales we saw that for the intervention group the significant changes over time occurred on the subscales of impulse dyscontrol and lack of clarity. Thus, on the 4-month follow-up the intervention group participants were clearer about their emotions, i.e. better able to identify, label, and differentiate between emotional states. They were also better able to control their impulsive behaviors. Contrary to the expectations, no change was noted for the acceptance of emotions measure.

This requires a more thorough examination. While a host of studies, including recent ones (Gratz, Tull, & Levy, 2014; Gratz, Bardeen et al., 2015) do strengthen the case for ER as a treatment target, these, as well as most of other studies, focus on the avoidance of negative emotions (Klonsky, Muehlenkamp, Lewis, & Walsh, 2011; Kerr, Muehlenkamp, & Turner, 2010). The results of this study, where there was no change noted in acceptance of emotions, beg to examine an alternative hypothesis as to *why* then following the brief treatment improvements were shown in ER and SIB.

It could be that in this research, the ER mechanisms concerned more the generation of positive emotions than avoidance of negative ones. An example of such positive emotion is the feeling of connection to one's body. Muehlenkamp (2012) suggests the need to address body-related factors in the treatment of SIB. Thus, practicing mindful breathing exercises, such as those practiced in each session of the brief intervention, functions not so much in reducing emotional arousal but rather in focusing the individual on sensations in the body and the breathing of the body when experiencing arousal – providing an alternative or a replacement behavior for SIB. In addition, by noticing physical sensations during arousal, individuals can be taught to notice the warning signs the body gives when experiencing negative affect before the affect becomes overwhelming. Teaching non-injurious strategies for generating positive affect as a treatment component is also recommended by Rallis, Deming, Glenn, and Nock (2012). They suggest that methods for decreasing dissociation (e.g. ice cubes on the skin) or methods that increase positive affect (e.g. exercise) are future directions for treatment of SIB.

It is also likely that the tentative positive emotion is generated in the feeling of connectedness to any other purposeful, meaning giving activity/person, etc. The intervention aimed at aiding participants in goal setting – this in turn could positively reflect on connectedness to one's goals. Connectedness could have been experienced also to the trainee-therapist, or to the project the participants were taking part in. Along the lines of 3ST, it could be that the intervention increased connectedness to the point where it was larger than the pain and hopelessness, thus resulting in lesser level of self-injurious acts. This would also explain how the control group too reduced the SIB, as these participants alt-

though not connected to the intervention, could have experienced connectedness to the project, or the assessor.

In the treatment group a significant change was also noted for depression. The intervention applied utilized generation of positive cognitions about the future with the help of SFBT techniques. SFBT techniques however, in addition to being helpful in increasing positive thoughts about the future, inevitably also function to increase the frequency of behaviors useful to the individuals. Depression often involves a decrease in activity and anhedonia – those suffering depression stop engaging in pleasant behaviors. The SFBT techniques utilized in the 4-session intervention helped the participants re-engage in small attainable steps in activities they deemed beneficial to themselves. This re-engagement in useful behaviors has recently gained much attention, through revitalization of the behavioral approach termed Brief Behavior Activation Treatment for Depression (BATD; Lejuez, Hopko, & Hopko, 2001, 2002). This treatment model is based on conventional behavior therapy for depression, which, much like SFBT, aims at increasing pleasant events and positive reinforcers. Unlike the conventional, or, “purely” behavioral approaches to treating depression, BATD, again similarly to SFBT, involves teaching individuals to set and accomplish their behavioral goals, without regard to possible negative states they may be experiencing. Finally, as is the case for SFBT, the BATD model acknowledges that there is a considerable controversy regarding cause-effect relations with respect to the etiology and maintenance of depression (Eifert, Beach, & Wilson, 1998; Free & Oei, 1989; Martell, Addis, & Jacobson, 2001; Plaud, 2001). Increasing the individuals’ activity is a necessary component in DBT as well, and while BATD studies show this to be useful in treating depression, DBT sees this as a necessary intervention for reducing SIB as well (Stanley, Fineran, & Brodsky, 2014).

The most recent review on psychosocial interventions for SIB in adults is that by Hawton et al. (2016), published in Cochrane Database of Systematic Reviews. It aims to assess the effects of specific psychosocial treatments versus treatment as usual (TAU), enhanced usual care or other forms of psychological therapy, in adults following SIB, and it includes RCTs comparing psychosocial treatments with TAU, enhanced usual care (EUC) or alternative treatments in adults with a recent (within six months) episode of SIB resulting in presentation to clinical services. The 4-session intervention discussed in this research is one of the 55 trials included in the review. The review states that some moderate quality evidence shows cognitive-behavioral-based (CBT-based) psychotherapy (a psychotherapy intended to change unhelpful thinking, emotions and behavior) may help prevent repetition of self-harm, although it did not reduce the overall frequency of self-harm. This is especially encouraging as the 4-session ACT+SFBT intervention was amongst the trials included under the CBT psychotherapy versus TAU form of psychosocial intervention. It also supports the assumption that this research holds that evidence-based intervention is the type of intervention best suited to assist clinician to work together with a patient to achieve the best possible outcome. As Tolin et al. (2015) point out, the debate

amongst practitioners of different theoretical persuasions needs to shift from mere assertions of theory to a consideration of empirical evidence.

4.1.3 Implementing and evaluating the effect of a training program on psychiatric personnel's attitudes towards patients who engage in SIB

Regarding the attitudes of psychiatric personnel towards individuals who self-injure the research found that dichotomizing attitudes into positive and negative does not do great service to the description of the participants' reality. The findings support Devine, Monteith, Zuwerink, and Elliot's (1991) assertion that both positive and negative attitudes can coexist within an individual. Thus, the finding that attitudes are neither positive nor negative portrays accurately the complexity of the participants' attitudinal experiences. Previous studies too have found staff attitudes towards this group of patients to be ambivalent and complicated (Palmer, 1993).

In Finland, staff attitudes towards patients who self-injure have been investigated previously within a group of staff from Jorvi Hospital in Helsinki Health Care District (Suominen, Suokas, & Lönnqvist, 2007) and using the USP questionnaire. In their study, Suominen et al. (2007) found the Jorvi Hospital staff attitudes to be somewhat negative.

Thus, though mixed and complex, the attitudes of psychiatric staff in North Karelia Health District were more positive than those of their colleagues from Jorvi Hospital. Compared to Northern Karelia, Jorvi hospital has a larger catchment area (268,709 inhabitants in 2004; nearly 100 000 more than in Northern Karelia). It could be that the pace of work in the capital region is faster, not allowing for enough time for staff to consciously observe their attitudes and thus allowing for the stereotypes to affect information processing. Also, the participants in the study by Suominen et al. (2007) were emergency room staff, whereas the current study participants were psychiatric personnel. The difference in attitudes is likely to be due to the greater amount of training and supervision provided for psychiatric staff. In Finland, it is common practice for psychiatric staff to take part in supervision, while there is no such practice for emergency room staff.

The study by Suominen et al. (2007) further found that the attitudes of those who frequently care for self-injurious patients did not differ statistically significantly from those who cared for those patients less frequently. This is in contrast to the current study's findings. Prior to the intervention, the attitudes of the psychiatric staff that frequently encounter self-injurious patients were more unfavorable than those of staff who see those patients less frequently. It is likely that the repetitive nature of self-injury, when coupled with a strong desire to help the patients, results in feelings of frustration in personnel. It may be that it is these feelings that are reflected in the unfavorable attitudes prior to the intervention. Feelings of frustration may also arise from the staff witnessing repeatedly that these patients are not receiving the type of care they need. In Northern Karelia Health Care District, inpatient hospitalization is considered standard care for patients who self-injure – a practice with questionable effec-

tiveness (Ward-Ciesielski & Linehan, 2014). The staff may be aware of these patients' need for psychosocial interventions, yet the availability of these is limited to long-term psychotherapy and long waiting lists. The implementation of easy-access, short-term structured interventions aimed at decreasing SIB is needed.

Training in assessment and treatment of SIB is also needed, as our findings show that such training is beneficial to staff who care for SIB patients. Post-training these personnel endorsed a belief that SIB patients need the best treatment possible.

4.2 Limitations

4.2.1 Reflections on the general research limitations

Like most research targeting the reduction of SIB, this research too employed a small sample size and is underpowered because of this. The research has also, to an extent, suffered from the lack of coherent nomenclature in the field. This is seen in the use of the term DSH in Study II, only to be replaced by SIB in Studies I and III. On the other hand, even though different terminology is used, the terms were operationally defined, thus helping other researchers make comparisons to present findings. Nonetheless, future studies should employ larger samples.

A more concerning weakness of this research however is the exclusion of participants. Studies I and II were designed to include all individuals who engage in SIB, provided they can read and write Finnish and are in the age range of 18–65. The expected number of participants was closer to 100, as it is known that Central Finland Community Hospital encounters approximately 200 SIB individuals per year. Most of these have other co-occurring mental health issues, alcohol dependency, and multiple suicide attempts. However, of those 200 individuals only 16 were referred to this research, despite the research team reminding the referring staff on multiple occasions that all SIB individuals are welcome. The end result was sadly that, in all probability, those whose risk of death by suicide is highest were not included in this study. Further intervention research is needed to provide guidelines on treatment of these SIB patients.

Further research on both assessment and intervention would benefit from moving beyond the focus on automatic functions (affect regulation) of SIB, to include the very present social function of the behavior. The lack of focus on the social function could be due to the fear of reinforcing the belief that those who engage in SIB do so in order to influence the behavior of others. However, the research shows that a number of SIB individuals do indeed use SIB to influence others. Because the research shows that SIB is to some extent influenced by the effect it has on others, further research needs to elucidate the processes that are at work here. In addition, to me, the fear of reinforcing the belief that people who engage in SIB behavior do so in order to influence other people's behavior is somewhat puzzling. In my opinion, in the realm of social interaction, influ-

ence is inevitable. It is not possible not to influence. The crucial matter is not even so much to acknowledge that influencing takes place, but rather that it is not a unilateral concept. Thus, it is not only the self-injurious behavior/communication of the actor that influences the recipient, but also the behavior/communication of the recipient that influences the actor. We are all in this together and all our behavior needs re-examination.

In this research alone, several different psychotherapy approaches to SIB were reviewed: DBT, ACT, BAT, ERGT, SFBT. Even when writing this, new psychotherapy approaches are being developed. Yet, it is evident in this research that the elements found useful in the treatment of SIB are largely trans-approach elements. Because of this, future research might be better off with less focus on the question which form of therapy is the best treatment for SIB. Rather, it could focus more on the elements across the approaches that have been found to help in decreasing SIB. Providing evidence for the guidelines on how to implement these elements would be more than welcome.

To sum up, RCTs with larger samples that include also individuals at greater risk of death by suicide are a clear future direction. Use of clear operational definitions and consistent terminology, as well as use of psychometrically adequate outcome measures would further strengthen the results and allow for generalization. Meanwhile, in the absence of these, clinicians still need to treat their patients. In the context of the paucity of any research regarding the interventions for SIB, the current exploration of this complex issue may prove to be just as welcome.

4.2.2 Reflections on specific limitations of Studies I, II, and III

Study I relied on retrospective self-reports. Because of this, the responses may have been affected by individual biases and inaccuracies. The sample was small, and caution should be exercised on any generalizations. However, because the studies of co-occurrence of NSSI and SSI among community samples of adult women are scarce, this study does provide valuable insights regarding a variety of implications for women who are not working, live alone, and are of low income. In addition, some of the participants committed more self-injurious acts than others. Thus, there is a risk that the observed differences between the types of acts are due to this cumulation of acts by some participants, instead of being true differences between the types. To amend this problem, the study used variables weighed using the number of acts committed by each participant. Using the weighed variables enabled the researcher to control the effect of the number of acts committed by each individual participant, but at the same time it made it more difficult to observe statistically significant differences.

In Study II, the sample was small as well, thus limiting the generalizability and validity of statistical conclusions. In addition, in Study II, inexperienced therapists (Master's level psychology students) were used to deliver the intervention. Because of this, generalizing the results to trained staff is difficult. At the same time, the results are encouraging in that even relatively inexperienced

staff can be trained in a relatively short time to conduct very brief interventions with individuals who self-injure.

Study III too has several methodological limitations. First, the attitudes were studied using a questionnaire. With this method there remains a possibility that social desirability has influenced the results. The researcher attempted to reduce this possibility through anonymity, which in turn made pair-wise comparisons not possible. Secondly, alternative explanations for the change in attitudes cannot be ruled out, as no knowledge was obtained of the potential changes in the attitudes that may have occurred in the same period among personnel who did not attend the training. To obtain this knowledge a control group and random assignment to control or the intervention group is needed. While a scientifically more precise research protocol would help rule out alternative explanations for attitudinal changes observed, it would on the other hand raise more objections from the hospital directors. A naturalistic approach aids in gaining the hospital authority's approval for the study, as well as in attracting voluntary participants. The third limitation is in that although the study does show change in attitudes following the training, it is not known if this can result in changes in behavior as a result of the training. The researcher here relied on previous studies purporting to the relationship between attitudes and practice behaviors. Finally, further research with larger samples is needed to determine whether improved attitudes are retained over time. Future research would also benefit from complementing the use of self-report questionnaires with case vignettes, and it would also be beneficial to examine the extent to which observed changes in the attitudes correspond to the actual patient improvement.

4.3 Clinical considerations and dissemination

Several clinical considerations arise from this research. First is the need for a thorough evidence-based psychosocial assessment of all self-injurious behavior. Psychosocial assessment has been found to be a protective factor in SIB (Hawton & Harriss, 2008a). Because SIB is multifunctional and changing, its assessment and treatment need to be tailored to the multiple and changing needs of the individual patients, as opposed to diagnostic tailored assessment and treatment. The research at hand demonstrates that even within a single individual self-injurious behavior at different time points is motivated by different and even multiple motives. Psychosocial treatment, unlike its biomedical counterpart, cannot afford to oversimplify, but must instead focus on the multiple, complex and changing needs of patients. Medical assessment resulting in diagnosis needs to be complemented by psychosocial assessment resulting in a careful case conceptualization that in addition to providing descriptive properties of the behavior also identifies which specific antecedents and consequences are related to behavior at specific time. Teasing out the function or overlapping functions of the behavior allows for a better conceptualization of what interven-

tion strategies are a best fit for whom. This in turn calls for a more interdisciplinary approach to SIB, with psychologists playing a greater role in its assessment and treatment.

Presently, there are no empirically supported guidelines for the assessment of SIB. The widely used Lethality Scales (Beck, Beck, & Kovacs, 1975) address the medical severity of suicide attempts, but gather very little other information. Others, such as Deliberate Self Harm Inventory (Gratz, 2001) focus predominantly on NSSI. The Columbia-Suicide Severity Rating Scale (Posner et al., 2011) attempts to address both SSI and NSSI, yet provides little contextual information. The SASII used in this research however, is a more comprehensive measure of characteristics associated with both suicidal and nonsuicidal self-injury. In addition to providing information on the topography of the suicide attempt or self-injury, this instrument also assesses variables related to the contextual characteristics of the episode, including antecedent events, preact behaviors, and states of mind and consequences. Although SASII was developed primarily as a research instrument, the high level of detail that enables the breakdown of this complex behavior into manageable problems to solve, makes it a useful clinical measure. It further allows for better identification of the intra and interpersonal functions of SIB, and this way has the potential to enrich case formulation and aid in treatment decisions. For example, those who exhibit high levels of intrapersonal functions may benefit from affect-regulation interventions, and may need more intensive treatment and risk management. On the other hand, those who exhibit high levels of interpersonal functions, may benefit from interventions that aid in development of interpersonal skills. In cases where both functions are present, they both need to be addressed. Also, with respect to SSI, healthcare professionals should be aware that the factors associated with suicidal ideation can be different from those associated with suicide attempts. Treatment then needs to target the specific factors identified. A useful strategy in prevention and intervention when it comes to suicidal behavior is to follow the 3ST which suggests specific targets for reducing suicide risk: reducing pain, increasing hope, improving connectedness, and reducing capacity. Reducing capacity by restricting means to lethal methods is also a target at the level of government policy (increased control of firearms).

Implementing structured and comprehensive protocols for SIB assessment could have an additional positive effect - increasing the rate of assessment. Motivational strategies too, such as those reflected in techniques of SFBT used in this research may be necessary not only for effective treatment but for assessment purposes as well, to prevent premature assessment termination. For those who do leave the emergency department prematurely, proactive follow up may be useful.

It also needs to be recognized that the many difficulties individuals who engage in both SSI and NSSI face are of a practical, rather than abstract, theoretical or academic nature, having to do with issues such as employment and finances. Effective intervention needs to tackle these problems as well, possibly supplementing traditional psychiatric approaches with social work, again call-

ing for a more interdisciplinary approach to SIB assessment and treatment. Because SSI is mostly precipitated by problems of an interpersonal nature, it may be useful to focus more on increasing social support for those who engage in SIB. The field of SIB in general could benefit from adopting a more social paradigm and, as Priebe, Burns, and Craig (2013) suggest, exploring what happens between people instead of what is wrong with an individual.

The results of this research further imply that treatment would benefit from a focus on teaching behavioral strategies, such as behavior activation utilized in this research, for dealing with stressful situations and negative emotions and also for setting and achieving attainable personal goals. SFBT techniques can be especially useful in setting realistic future goals and helping people see that obtaining these involves a series of small steps – big change happens through a series of small changes, and the process inevitably involves setbacks too. Attention needs to be paid in treatment to the association between dissociative symptoms and NSSI. Effective treatment needs to deal with the triggers of dissociation, such as anxiety caused by being alone. Alternative methods of reducing such distress (contacting friends, hotlines, distraction via television, changing environments, etc.) need to be explored with patients. In cases where alienation has already escalated, ending the experience with strategies that focus on physical reassurance and sensory perception can be useful (touching to demonstrate physical presence and reinforce feelings of security, physical labor, jogging).

The brief 4-session intervention for the treatment of SIB is an example of a concrete response to the Finnish managed care organizations' need for psychosocial intervention for SIB that is both time-limited and economically feasible. In designing this intervention the researcher paid special attention to making it readily transferrable to those units that are the first to engage people with SIB, such as accident and emergency departments and various acute and consultation psychiatric units. Since the completion of the intervention study, the researcher has successfully "transferred" both the 4-session intervention and the principles of comprehensive SIB assessment onto the hundreds of staff of five different Health Care Districts in Finland. The significance of the dissemination of this knowledge cannot be overstated as following the training a greater number of personnel are now able to meet the needs of a greater part of self-injurious population. Scientifically too, in a field where intervention strategies are underresearched and underdeveloped, even small pilot studies are received warmly, as is evidenced by the inclusion of this study in the recent Cochrane database review of psychosocial treatments for self injury in adults (Hawton et al., 2016).

As a sideline here, it is important to note that while this research concerns itself with the assessment and treatment of SIB, as a phenomenon that requires attention in its own right, the approach seen in this research should be implemented alongside other treatment options for any other co-morbid conditions. The message this research aims to give however is to refrain from supposing

that treating the co-morbid psychiatric conditions will automatically result in improvement in SIB behavior, as research has shown this is not the case.

A 4-session reflective and interactive training in assessment and treatment of SIB, much like the training in a 4-session manualized intervention, has the advantage of expanding the knowledge base of the participants providing them with up-to-date and evidence-based information and concrete and structured tools for use in the field. Educating staff about the relevance of psychosocial assessment, of the need for a thorough examination of antecedents and consequences of SIB may aid in re-conceptualizing the assessment to be more therapeutic and thus more engaging for the service users. This in turn could have a positive effect on how service users perceive the services offered to them. Educating staff about attitudes from Devine's (1989) perspective may be especially beneficial in two ways: first, it is not guilt-inducing – the default response for us all is a stereotype – and second, it provides us with information on what is needed to activate personal attitude – time and cognitive capacity.

Time however, much like the systematic implementation of evidence-based assessment and treatment, is limited for personnel who routinely work with SIB patients. The development, implementation, and monitoring of clinical guidelines, as well as the organization of task completion, is a managerial decision. In order for staff, fresh out of training and owning empathetic attitudes and evidence-based knowledge of methods in assessment and treatment, to do their work properly, a change must take place at a larger structural level. Empirically supported assessment and treatment guidelines regarding SIB are outlined in the United Kingdom under the National Institute of Clinical Excellence (NICE). Its equivalent in Finland is Current Care Guidelines. While containing independent and evidence based guidelines on numerous other conditions, the Finnish equivalent of NICE has yet to develop evidence based guidelines with respect to self-injurious behavior. By doing this, the Current Care Guidelines would contribute to a shift towards an empirically supported manner of dealing with self-injury, and would also result in greater protection for the public. With a clear list of empirically supported interventions those seeking treatment would be better able to learn about validated treatments. Such an increase in consumer education would also motivate clinicians who might not have practiced in an empirically supported manner to obtain the skills necessary to provide scientifically based treatment.

Table 6 presents the current research implications for clinical practice, in the form of recommendations regarding the assessment and treatment of SIB.

TABLE 6 Guidelines for working with individuals who self-injure

Domain to address	Aim
<i>Attitudes and approach</i>	
<ul style="list-style-type: none"> • Positive relationship • Own attitude to SIB • Own negative emotional reactions • Time constraints 	<ul style="list-style-type: none"> • Collaborate, validate, instill hope, listen actively, empathize • Be aware of personal beliefs and their influence • Be aware and manage own negative emotions • Set boundaries on high-risk case load; plan for achievable goals
<i>Assessment</i>	
<ul style="list-style-type: none"> • Attendance • Comprehensive assessment of both NSSI and SSI • Risk of short and long term SIB • Make and record service plan • Client's social network 	<ul style="list-style-type: none"> • Motivate using motivational interviewing, SFBT • Use structured forms C-SSRS, SASII, collateral sources • Make and record clinical judgment • Use crisis intervention principles, address acute needs, use follow-up appointment • Assess
<i>Intervention</i>	
<ul style="list-style-type: none"> • Intervention plan to prevent/lower the risk of further SIB • Pay attention to client's practical issues (employment needs) • Aim to strengthen client's social support network • Teach behavioral strategies to cope with stress • Teach realistic goal setting and goal achieving strategies • Pay attention to triggers of dissociation (being alone) • If dissociation has escalated • Treat comorbid conditions 	<ul style="list-style-type: none"> • Collaborate with client, tailor intervention tasks to client's individual competency level • Collaborate with other service providers (social workers, child protection, employment services) • Use BA • Use SFBT, ACT • Teach methods of reducing them (contacting friends, helplines) • Teach strategies that focus on sensory perception and foster physical reassurance • Use evidence-based guidelines
<i>Skill acquisition and proficiency development</i>	
<ul style="list-style-type: none"> • Continual professional development • Specific training in SIB • Supervision 	<ul style="list-style-type: none"> • Sense of mastery • Mastery of content: terminology, statistics, risk and protective factors, models for understanding SIB, tools of assessment, evidence-based intervention, legal issues in treatment of SIB patients • Reflection, self-awareness

YHTEENVETO (FINNISH SUMMARY)

Itsensä vahingoittaminen: arviointi ja hoito

Tässä tutkimuksessa pyrittiin selkiyttämään itseä vahingoittavan käyttäytymisen (self-injurious behavior, SIB) käsitettä tarkastelemalla ei-itsetuhoisen itsensä vahingoittamisen (non-suicidal self-injurious behavior, NSSI) ja itsetuhoisen itsensä vahingoittamisen (suicidal self-injurious behavior, SSI) eroavaisuuksia ja yhteneväisyyksiä otoksessa, joka koostui aikuisista suomalaisista naisista. Lisäksi pyrittiin suunnittelemaan, toteuttamaan ja tarkastelemaan lyhyttä psykologista interventiota SIB:n hoitoa varten. Lopuksi tutkimuksessa tarkasteltiin psykiatrisen henkilökunnan asenteita itsään vahingoittavia potilaita kohtaan sekä tutkimusnäyttöön perustuvan, SIB:n arviointiin ja hoitoon keskittyvän koulutuksen vaikutusta hoitohenkilökunnan asenteisiin.

Ensimmäisen ja toisen osatutkimuksen aineistot kerättiin yhteistyössä Keski-Suomen keskussairaalan kanssa. Ensimmäisen osatutkimuksen aineisto koostui 46:sta itseä vahingoittavasta teosta, joiden tekijöinä oli 16 naispuolista osallistujaa. Teot arvioitiin käyttäen luotettavaa ja pätevää, itsensä vahingoittamisen ja itsetuhoisuuden arviointiin kehitettyä mittaria. Toisessa osatutkimuksessa 16 osallistujaa jaettiin sattumanvaraisesti kahteen ryhmään, joista toista hoidettiin normaalein hoitotoimenpitein ja toista normaalien hoitotoimenpiteiden lisäksi neljän hoitokerran interventiolla. Intervention vaikutuksia tutkittiin arvioimalla kaikki osallistujat psykometrisesti luotettavilla mittareilla ennen ryhmiin jakamista sekä neljän ja kuuden kuukauden seurannoissa. Kolmas osatutkimus tehtiin yhteistyössä Pohjois-Karjalan sairaanhoitopiirin kanssa. Viisikymmentä psykiatriseen henkilöstöön kuuluvaa työntekijää osallistui neljäpäiväiseen, SIB:n arviointiin ja hoitoon keskittyneeseen koulutukseen. He täyttivät ennen koulutusta ja sen jälkeen kyselylomakkeen, joka mittasi heidän asenteitaan itseään vahingoittavia potilaita kohtaan.

Ensimmäisessä tutkimuksessa havaittiin, että NSSI:n ja SSI:n tekotavoissa on eroavaisuuksia - lääkkeiden yliannostusta käytettiin SSI:ssä ja viiltelyä ja raapimista NSSI:ssä. SSI-tekoihin liittyi vakavampi odotus teon johtamisesta kuolemaan kuin NSSI-tekoihin. SSI-tekojen, toisin kuin NSSI-tekojen, tarkoituksena oli kuolla teon seurauksena. NSSI-tekoihin, toisin kuin SSI-tekoihin, liittyi dissosiaatiota. Havaittiin myös, että ihmissuhdekonfliktit kiihdyttivät SSI:tä mutta eivät NSSI:tä ja että SSI-teot johtivat suurempaan sairaanhoidon tarpeeseen kuin NSSI-teot. SSI- ja NSSI-teot olivat samanlaisia siinä suhteessa, että molemmat olivat impulsiivisia ja molemmilla oli sama funktio kielteisten tunteiden säätelijänä (automaattinen negatiivinen vahvistaminen). Tutkimuksessa osoitettiin, että kumpaakin SIB:n tyyppiä esiintyy samoilla henkilöillä ja että niillä voi olla eri funktio eri ajankohtina. Tutkimus korostaa perinpohjaisen arvioinnin tärkeyttä kaikentyyppisen SIB:n kohdalla. Arvioinnissa tulee painottaa sosiaalisen tuen merkitystä ja sitä, miten kyseinen tekijä voidaan siirtää hoitokäytäntöihin. Tutkimus on esimerkki siitä, miten SIB:lla on monta funktiota,

jotka muuttuvat jatkuvasti. Siksi SIB:n vähentämiseen pyrkivän arvioinnin ja hoidon tulee ottaa huomioon yksittäisten potilaiden moninaiset, muuntuvat ja yksilölliset tarpeet.

Toisessa tutkimuksessa pyrittiin suunnittelemaan, toteuttamaan ja arvioimaan SIB:n hoidossa käytettävää lyhyttä psykologista interventiota. Neljä hoitokertaa kattavan, lyhyen intervention suunnittelu perustui aiempaan tutkimukseen toimivista SIB:n hoitomuodoista. Interventiosta kirjoitettiin opaskirja, ja tämän tutkimuksen tekijä koulutti opintojensa loppuvaiheessa olevia psykologian opiskelijoita sen toteutuksessa (koulutuksen kesto oli 36 tuntia). Intervention käytännön toteutuksessa opiskelija-terapeutteja ohjasi tiiviisti koulutettu psykoterapeutti. Intervention tehokkuutta tarkasteltiin neljän ja kuuden kuukauden seurannoissa, ja niissä havaittiin, että SIB:n esiintymistiheys oli vähentynyt merkittävästi osallistujien keskuudessa. Esiintymistiheys oli vähentynyt merkittävästi neljän ja kuuden kuukauden seurannoissa myös normaalein hoitotoimenpitein hoidetulla osallistujaryhmällä, mutta heillä muutos oli pienempi kuin interventoryhmällä. Neljän kuukauden seurannassa tunteiden säätelyn häiriöt olivat vähentyneet vain interventoryhmässä, jonka jäsenet kykenivät käsittelemään tunteitaan paremmin – toisin sanoen he osasivat tunnistaa, nimetä ja erotella tunnetilojaan selkeämmin. He myös kykenivät paremmin hiltsemään impulsiivista käyttäytymistään ja käyttäytymään haluttujen tavoitteiden mukaisesti kokiessaan kielteisiä tunnetiloja. Neljän kuukauden seurannassa interventoryhmässä havaittiin merkittävä muutos depression tasossa. On suositeltavaa, että tämäntyyppistä interventiota tutkitaan jatkossa suuremmilla otoksilla.

Kolmannen tutkimuksen tavoitteena oli suunnitella ja toteuttaa SIB:n arviointiin ja hoitoon keskittyvä koulutus psykiatriselle henkilökunnalle ja tarkastella koulutuksen vaikutusta heidän asenteisiinsa itseään vahingoittavia henkilöitä kohtaan. Tutkimuksen tekijä suunnitteli ja toteutti neljäpäiväisen koulutusohjelman, joka pohjautui näyttöön perustuvaan tutkimukseen. Koulutukseen sisältyi refleksiivisiä ja interaktiivisia elementtejä. Tutkimuksen tuloksena voidaan todeta, että hoitohenkilöstön asenteet itseään vahingoittavia henkilöitä kohtaan ovat monimutkaisia ja ristiriitaisia. Koulutus vaikutti asenteisiin myönteisesti koko hoitohenkilöstössä. On suositeltavaa, että tutkimus toistetaan suuremmalla otoksella hoitohenkilöstöstä.

Tämän tutkimuksen tuloksia tulee tulkita varauksella, koska osatutkimusten otokset olivat pieniä. Niiden perusteella voidaan kuitenkin antaa useita kliinisiä suosituksia. Ensinnäkin on erittäin tärkeää, että SIB:n arvioinnissa käytetään järjestelmällisiä ja kattavia menettelytapoja: niiden avulla voidaan suojata potilaita SIB:ltä, lisätä arviointien määrää ja ohjata hoitotoimenpiteitä. Toiseksi SIB:tä voidaan hoitaa lyhyillä, käyttäytymisstrategioihin keskittyvillä interventioilla, jotka auttavat potilaita käsittelemään stressitilanteita ja kielteisiä tunnetiloja sekä asettamaan realistisia tulevaisuuden tavoitteita ja auttamaan heitä niiden saavuttamisessa. Lopuksi asenne, jolla hoitohenkilökunta lähestyy itseään vahingoittavia potilaita, on merkittävä hoitosuhteen ja hoitotuloksen kannalta. Sekä hoitohenkilökuntaa että potilaita voidaan auttaa kehittämällä

henkilökunnan asenteita koulutuksella, joka sisältää refleksiivisiä elementtejä ja näyttöön perustuvia hoitokäytäntöjä.

SIB:n hoidon merkityksen korostaminen julkisessa terveydenhuollossa kansallisella tasolla auttaisi merkittävästi noudattamaan SIB:n arviointia ja hoitoa koskevia toimintaohjeita ja seuraamaan niiden toteutusta. SIB:n ennaltaehkäisy ja sen paras mahdollinen hoito eivät ole merkityksellisiä asioita ainoastaan itseään vahingoittaville henkilöille ja hoitohenkilöstölle. Myös yhteisöt ja kaikki meistä voivat antaa niihin oman osansa, koska, runoilija John Donnen sanoin, ”jokaisen ihmisen kuolema pienentää minua, koska olen osa ihmiskuntaa”.

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ORIGINAL PAPERS

I

**THE CO-OCCURRENCE OF NONSUICIDAL AND
SUICIDAL SELF-INJURIOUS ACTS IN ADULT
WOMEN: A PILOT STUDY OF SIMILARITIES AND
DIFFERENCES**

by

Vojna Tapola, Jarl Wahlström, Matti Kuittinen, & Raimo Lappalainen, 2015

Nordic Psychology ,67, 27-45

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II

BRIEF INTERVENTION FOR DELIBERATE SELF-HARM: AN EXPLORATORY STUDY

by

Vojna Tapola, Raimo Lappalainen, & Jarl Wahlström, 2010

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Original Research
**Brief intervention for deliberate self harm:
an exploratory study**

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Abstract: Objective: To develop and explore the effectiveness of a 4-session intervention that combines elements of acceptance and commitment therapy (ACT) with elements of solution focused brief therapy (SFBT) to prevent deliberate self harm (DSH) in adults. Methods: An experimental pilot study with follow-up assessments at, 4-months, and 6-months after baseline was conducted using a random sample of 16 participants. Participants were consecutively assessed at the baseline and were assigned to a control group receiving treatment as usual (TAU) or an intervention group (ACT+SFBT+TAU) receiving the intervention in addition to treatment as usual. Results: On the 4- and the 6-month follow-up both groups evidenced significant changes over time in the incidence of DSH. The intervention group further evidenced significant changes over time in depression and emotional dysregulation. Conclusion: The 4-session student-delivered intervention may have positive effects on mechanisms associated with reduction of DSH, and produce additional positive effects as compared to treatment as usual. Practice implications: It is worthwhile in the future to study this type of intervention on larger scale.

Keywords: self harm, brief intervention, ACT, SFBT

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Each year worldwide almost one million people die by suicide (World Health Organization, 2005). Prevention of suicide, as well as reduction of suicidal behavior, both fatal and non-fatal, is part of the Health for all targets of the World Health Organization (World Health Organization, 1992). One of the most important groups with a high risk of suicide consists of people who present to services following an episode of non-fatal self harm (Crawford, Thomas, Khan & Kulinskaya, 2007). High rates of suicide after deliberate self harm (DSH) have been reported throughout Europe (Hawton & Fagg, 1988; Suokas & Lönqvist, 1991) and in other parts of the world (Davis & Kosky,

1991). Indeed, it has been estimated that approximately 50% of all people who kill themselves have a history of deliberate self harm, an episode having occurred within a year before death in 20-25% (Hawton et al., 1998).

It has been suggested that enhanced treatment of those who self harm could help reduce the overall rate of suicide (Mann et al., 2005). However, there are few empirically supported treatments for self harm (Favazza, 1992; Walsh & Rosen, 1988). A systematic review of efficacy of psychosocial and pharmacological treatments in preventing repetition of deliberate self harm, concludes that there remains considerable uncertainty about which forms of psychosocial and physical treatments of patients who harm themselves are most effective (Hawton et al., 1998). However, the authors do report somewhat promising results for adapted forms of cognitive-behavioral therapy linked to problem solving. One such approach is Dialectic Behavior Therapy

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(DBT) developed by Marsha Linehan (Linehan, 1993; Linehan et al., 2006). This approach combines the need for change in behavior with acceptance of negative feelings. Despite its efficacy, this treatment has been criticized as not being easily implemented in a traditional clinical setting in its full empirically supported package and also for its long term commitment (1 year), which may be difficult for some clients (Gratz & Gunderson, 2006). Therefore, additional interventions for self harm that are more economically and clinically feasible are needed.

In addition to being less costly than long term individual therapy, treatments utilizing a time limited format have also the potential to reach a large number of clients (Gunderson, 2001). However, in order to be effective, any time limited approach must have a specific and well-defined focus. Functional analytic approaches to psychopathology suggest that effective interventions address the function of maladaptive behaviors and symptom presentations (Gratz, 2003).

A review of the evidence on the functions of DSH concludes DSH to be serving an emotion-regulating function (Klonsky, 2007; Linehan, 1993; Gratz, 2003; Briere & Gil, 1998; Brown, Comtois & Linehan, 2002). It is thus reasonable for a time limited treatment designed to reduce DSH to address this particular function. For the purposes of our study, this function is conceptualized as involving the (a) awareness and understanding of emotions, (b) acceptance of emotions, (c) ability to control impulsive behaviors and behave in accordance with desired goals when experiencing negative emotions and (d) ability to use situation-appropriate emotion regulation strategies flexibly to modulate emotional responses as desired in order to meet individual goals and situational demands (Gratz & Roemer, 2004).

Another issue that such treatment needs to address is experiential avoidance since the empirical and theoretical literature suggests that the particular way in which self-harm operates to regulate emotions is through experiential avoidance i.e. attempts to avoid unwanted internal experiences (Hayes, Wilson, Gifford, Follette & Stroschal, 1996). We thus postulated that acceptance instead of avoidance of negative feelings would lead to a decrease in DSH and tailored our intervention along the lines of Acceptance and Commitment Therapy (ACT). Acceptance-based emotion regulation group intervention has already been shown to have positive effects on self harm (Gratz & Gunderson, 2006), and there is a growing body of evidence that ACT is an effective approach, covering areas such as psychosis (Bach & Hayes, 2002), addiction (Gifford et al., 2004), GAD (Evans et al., 2008), even clients seen in general outpatient practice (Stroschal, Hayes, Bergan & Romano, 1998).

The final ingredient of our current intervention was based on another issue implicated in the outcome following repetitive self harm, namely positive future thinking. It has been noted that the lack of future thinking is particularly associated with suicide risk (MacLeod, Pankhania, Lee & Mitchell, 1997; Hunter & O'Connor, 2003). A recent study into repetitive suicidal self harm shows that patients who reported high positive future thinking following a suicidal episode exhibited the best outcome in terms of hopelessness and suicidal thinking two months later (O'Connor, Fraser, Whyte, MacHale & Mastertone, 2008). The study suggests that the implementation and evaluation of rigorous interventions which attempt to modify positive future thinking is warranted, providing rationale for our intervention targeting not only emotional dysregulation but also positive future thinking among self harming individuals.

In designing the current intervention to reduce DSH we utilized the ACT to target emotional dysregulation. We also benefited from Solution focused brief therapy (SFBT) and its ties to positive psychology (Lethem, 2002) in tackling positive future thinking. SFBT in fact has already shown promising results in the treatment of DSH (Lamprecht et al., 2007) as well as in specific other areas (Bravesmith, 2004). We thus tailored a time limited approach to reducing DSH according to that which has so far been found efficient with respect to this particular aim. Our intervention for reducing self harm therefore targets emotion dysregulation using elements of ACT as well as positive future thinking benefiting the SFBT. The purpose of this pilot study was to investigate, using a randomized controlled procedure, efficacy of this brief ACT-SFBT derived four session psychological treatment combined with treatment as usual, and compared with treatment as usual only.

Methods

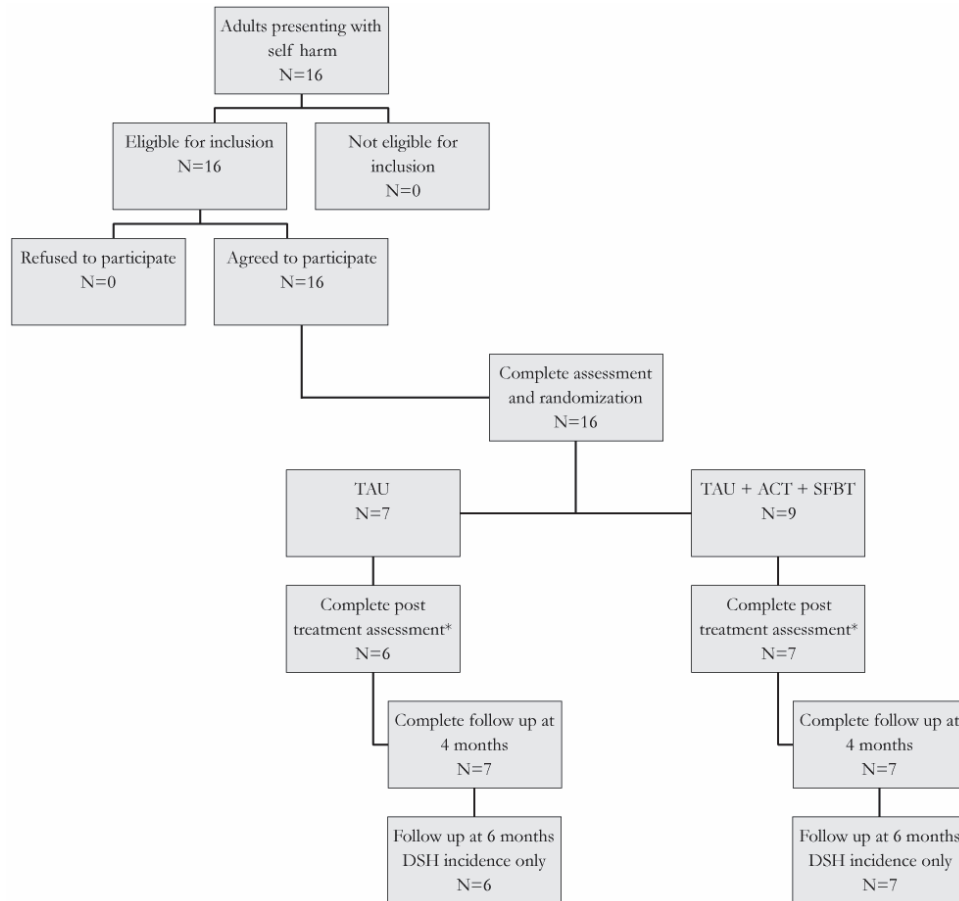
Participants

Participants were 16 patients who presented with an episode of self harm during the time period of the data collection, which began in February 2008 and ended in February 2009. Participants had to be of age range 18-65, they had to be able to read and write Finnish and be living within the catchment area of the Central Finland Community General Hospital.

Procedure

On visiting the emergency department at the Central Finland Community General Hospital, individuals who had recently engaged in DSH received a leaflet with a complete description of the study. In this leaflet it was announced that the person interested in participating may voluntarily contact the member of the research team, who

Figure 1. All adults presenting with DSH volunteering for the study.



* Data not included in this study

would provide further information on the study. Informed consent was obtained from all participants. After participants had given written consent they were assessed at the premises of the Psychotherapy Training and Research Center at the University of Jyväskylä. All individuals who volunteered to participate were found eligible for the study and were, following the baseline assessment, randomly assigned to 4 sessions of ACT+SFBT in addition to TAU (intervention group), or to TAU only (control group). See Figure 1 for all adults presenting with self harm volunteering for the study.

The intervention took place at the premises of Psychotherapy Training and Research Center at the University of Jyväskylä and was conducted by advanced level psychology students who received 36 hours of training in the treatment in question. All intervention was supervised by a qualified psychotherapist. To insure the treatments integrity,

all sessions were videotaped with the permission of the participants. All participants were invited for subsequent complete follow-up assessment at 4 weeks and 4 months following the baseline assessment. The 6-month follow-up assessment of incidence of DSH only was conducted by telephone. The assessor was not blind to conditions; however, all outcome measures were self-reported, and there was limited interaction between participants and the assessor. The medical ethics committee of the Central Finland Community General approved all procedures.

Design

All 16 individuals who contacted the research team with an intention to participate were included in the study. Participants were randomly assigned to 4 sessions intervention group (n=9) or to control group (n=7). The assessments were conducted by a member of the research team who was not the participant's therapist.

Table 1. Demographic characteristics of participants

	ACT + SFBT	TAU
Age (years)	31	36
Sex		
Female	100%	100%
Male	0%	0%
Functioning ability		
Able to work (n)	11% (1)	14% (1)
Somewhat impaired (n)	56% (5)	43% (3)
Totally unable (n)	33% (3)	43% (3)
Medication (n)	100% (9)	100% (7)
Motivation readiness* (mean)	8.0	8.7
Financial situation** (mean)	2.4	2.5
No suicide in family (n)	78% (7)	85% (6)
No suicide attempts in family (n)	67% (6)	71% (5)
DSH incidence 4-month prior to baseline (mean)	2.29	2.71

* Motivation readiness was measured using a 0-10 scale, 0 = not at all, 10 = as ready as possible.

** Financial situation was measured on a 1-4 point scale, 1=good, 2=moderate, 3=rather bad, 4=very bad.

Primary outcome: assessment of DSH

The primary outcome measure of the study was the number of episodes of self harm at follow-up. The number of episodes in the past 4 months was assessed using Suicide Attempt Self-Injury Interview (SASII) (Linehan, Comtois, Brown, Heard & Wagner, 2006), which for the purposes of this study was translated into Finnish, with the permission of the author, and backtranslated. The authors found SASII to have very good interrater reliability and adequate validity. This instrument was designed to assess the factors involved in nonfatal suicide attempts and intentional self harm. However, for the purposes of this analysis, only the data on the actual number of DSH episodes obtained using this instrument was used.

DSH was defined as including both deliberate self-poisoning (overdose) and self-injury. Patients were also asked about incidents of self-injury, which was defined as intentional irrespective of the apparent purpose of the act, and included cutting, scratching, punching, hanging, stepping into the traffic. Thus, all behavior that was self-initiated with the intent to harm the body (regardless of intent to die) was included.

Secondary outcomes

Depression

Depression was measured with the Beck Depression Inventory BDI (Beck, Ward, Mendelson, Mock & Erbaugh, 1961). The BDI is a 21 item self-report inventory that evaluates the level of depression. The subject is asked to rate each item on a 3-point scale of severity. A total score is determined by aggregating the item responses and may range from 0 to 63 (normal-

severe). BDI scores above the 9 cutoff may indicate the presence of depression. The test has high internal consistency, with $\alpha = .91$.

Anxiety

Anxiety was measured using the Beck Anxiety Inventory BAI (Beck & Steer, 1993). On the BAI, the examinee is asked to rate 21 symptoms of anxiety on a 4-point Likert scale.

Quality of life

Health-related quality of life (HRQoL) was measured by the 15D (Sintonen, 2001). A 15D is a 15dimensional, standardized generic instrument. Its 15 dimensions are moving, seeing, hearing, breathing, sleeping, eating, speech, elimination, usual activities, mental function, discomfort and symptoms, depression, distress, vitality and sexual activity. Each dimension is divided into levels. The respondent is asked to indicate the level that best describes his or her present health status on each dimension at that particular time (first level = no problems, fifth level = worst condition). On the basis of repeated measurements, the 15D has demonstrated good reliability, validity and sensitivity. A difference of larger or equal to .03 in the 15D score is clinically important in the sense that people can on average feel the difference (Sintonen, 1995).

Avoidance of internal experiences

Action and Acceptance Questionnaire AAQ (Hayes et al., 2004) is a 9-item measure of experiential avoidance. Although the AAQ was developed as a measure of the tendency to avoid internal experiences in general, many items focus on the avoidance of emotions. Example items include, "I try hard to avoid feeling depressed and anxious" and "anxiety is bad." The AAQ has been found to have adequate internal consistency ($\alpha = .70$), as well as adequate convergent, discriminant, and concurrent validity (Hayes et al., 2004). Items were recorded so that higher scores indicated greater experiential avoidance, and a sum was calculated.

Emotional regulation

The Difficulties in Emotion Regulation Scale DERS (Gratz & Roemer, 2004) was used to assess self-reported emotion regulation difficulties. Six subscale scores can be computed from the 36 items, namely nonacceptance of emotions (6 items; e.g., "When I'm upset, I feel guilty for feeling that way"), difficulties engaging in goal-directed behavior when distressed (5 items; e.g., "When I'm upset I have difficulty concentrating"), impulse control difficulties (6 items; e.g., "When I'm upset, I become out of control"), lack of emotional awareness (6 items; e.g., "I pay attention to how I feel"), limited access to emotion regulation

Table 2. Change in the primary outcome variable - Deliberate self harm (DSH)

	Pre	4-month	With-in effect	6-month	With-in effect
ACT+SFBT+TAU (n=6)	2.29 (1.25)	0.17 (0.41)	Z=-2.06, p=0.03	0.43 (0.54)	Z=-2.23, p=0.02
TAU N=(7)	2.71 (0.76)	0.86 (1.46)	Z=-1.88, p=0.04	1.00 (0.89)	Z=-2.04, p=0.03

Means, standard deviations in brackets.

strategies (8 items; e.g., "When I'm upset, it takes me a long time to feel better"), and lack of emotional clarity (5 items; e.g., "I am confused about how I feel"). Participants rate each item on a scale from '1' (almost never, 0-10%) to '5' (almost always, 91-100%). Items were recorded so that higher scores indicated greater emotion dysregulation, and a sum was calculated.

The authors describe good psychometric properties for all subscales, e.g. adequate to good internal consistencies (as larger than .80) and stabilities (ϕ s larger than .69) and significant correlations with other emotion regulation measures (Gratz & Roemer, 2004). The DERS was translated into Finnish with the permission of the author and back-translated in order to establish equivalence of the English and Finnish language versions. Significant correlations between the Finnish DERS version and similar measures of emotional regulation were found when validating the DERS in a sample of 50 clinical and non-clinical participants (Tapola, in preparation).

Other measures

Demographic information was obtained, as well as the information on patient satisfaction with treatment. This was measured using 5 point scale responses ranging from 1=very dissatisfied, to 5=very satisfied.

Treatment as usual

For ethical purposes participants in both study conditions were free to pursue any form of usual treatment they deemed warranted. We recorded three forms of TAU: psychotropic medication, psychiatric hospitalization, and outpatient sessions with a mental health worker (not a qualified psychotherapist). No treatment specific to self harm was recorded.

Intervention

The intervention was implemented by advanced level psychology students, under intense supervision of a qualified psychotherapist. Student-therapists underwent 36 hours of training in the manual based ACT+SFBT. To facilitate treatment fidelity, the ACT+SFBT manual was structured and contains in-session exercises for participants. All sessions were videotaped and treatment fidelity was

rated on all sessions. The intervention is outlined in more detail in Tables 4a-d.

Statistical analysis

Analyses were performed with SPSS 15 for windows Vista. Because of the low number of subjects, non-parametric methods were used. Chi-Square Tests and Mann-Whitney U-Tests were conducted on demographic characteristics to determine equivalence across conditions. To determine change over time (pre-treatment, 4-month and 6-month follow-ups) within each group Wilcoxon signed ranks tests were used.

Results

There was no significant difference between the intervention group (n=9) and the control group (n=7) on any of the demographic characteristics including gender, age, educational level, functioning ability, use of medication, or motivation for change. In addition, no significant difference was found with regard to presence of suicide in the family, presence of suicide attempts in the family, and the history of self harm in the past 4 months.

On the 4-month and 6-month follow-up both groups evidenced significant changes over time on the main outcome measure -deliberate self harm. Thus, self harm episodes decreased in both groups

At the 4-month follow-up the results show that the intervention group evidenced significant changes on secondary outcome measures of depression as well as on difficulties in emotion regulation (DERS). Looking more closely at the DERS subscales we see that for the intervention group significant changes occurred on subscales of impulse dyscontrol and lack of clarity, with goal directed difficulties subscale showing a trend too. A further trend in intervention group was noted on measure for quality of life and emotional non-acceptance. On the other hand, no changes for any of the outcome measures were detected in the control group. Furthermore, when examining closely the DERS subscales it is noted that a significant change for the worse occurred on subscale of emotion clarity.

In addition, all participants who returned the treatment satisfaction form (n=7) would

recommend the treatment to others. The treatment satisfaction score itself was 4.6 (measured on a 5 point scale from very dissatisfied to very satisfied).

Discussion

When drawing conclusions from this study, it must be remembered that there are several limitations mainly due to low number of subjects. However, it must also be emphasized that this study indicates low cost brief interventions may have additional positive effects on regular treatment for deliberate self harm. This study also presents an example of how a brief intervention for deliberate self harm could be conducted.

The results indicate that changes over time for the intervention group were significant on primary outcome measure, as well as on several secondary outcome measures. Primary outcome measure, DSH, was reduced significantly for both groups on 4-month follow-up. With respect to change over time on secondary outcome variables at 4-month follow-up the intervention group fares significantly better compared to control group.. Health related quality of life reached marginally significant change for the intervention group, but not for the control group. The change over time in emotional dysregulation was also significant for the intervention group only. Looking more closely at the DERS subscales we saw that for intervention group significant changes over time occurred on subscales of impulse dyscontrol and lack of clarity, with emotional nonacceptance and goal directed difficulties subscale showing a similar trend too.

This indicates that on 4-month follow-up the intervention group participants were clearer about their emotions, i.e. better able to identify, label, and differentiate between emotional states. They were also better able to control their impulsive behaviors and behave in accordance with desired goals when experiencing negative emotions. The control group participants however showed a significant change on the DERS subscale of clarity, only in the direction for the worse. In other words, on 4-month follow-up these participants were even more cloudy about their emotional states than they were at the outset of the study. In addition to the changes in quality of life, and emotional dysregulation, in the treatment group a significant change was noted also for yet another secondary variable, namely depression. We expected there to be a change in depression as a consequence of our attempts to increase positive future thinking, another mechanism of change we proposed at the outset. It could well be that the depression for the participants of the intervention group was reduced beyond the extent the trend indicates, especially when we take into account low reactivity of this

particular measure (Minami & Kircher, 2007). In each case, no such trend was evident for the control group. The results thus show potential utility of adding this short-term intervention to existing treatment as usual. Furthermore, this study indicates that time-limited training in the intervention (36 hours) combined with qualified supervision brings about good enough proficiency in intervention implementation. Students with no prior clinical experience and with limited hours of training were well able to implement the intervention under the supervision of a qualified psychotherapist and all intervention group participants were satisfied with the intervention and would recommend it.

The results must be evaluated the light of the study's limitations. Most notably, this study involved a small and homogenous sample of participants, limiting both generalizability and statistical conclusion validity of the results. The reliance on self-report measures of emotional responding and symptom severity may result in biased data. Furthermore, although the effects of positive thinking may here be indirectly reflected in measures on depression and goal clarity, to establish the potential effect of positive future thinking a more direct measure of the phenomenon, such as Future Thinking Task (MacLeod et al., 1997) would need to be used.

Further research on a large-scale is needed to evaluate this intervention. Further research is also needed to evaluate whether the emotional dysregulation and positive future thinking are indeed the potential mechanisms of change, as the results of this study indicate. Moreover, further research is needed to evaluate yet another such potential mechanism suggested to us in the spontaneous feedback of the current study participants – namely the positive attitudes of staff working with individuals who self harm. In their feedback the participants of the current study expressed satisfaction with the nonjudgmental and positive attitude of the assessor and their therapists. The literature suggests that clinical staff of the accident and emergency departments, which are often the first point for people who self harm, may be critical in addressing the needs of this vulnerable group (Mackay & Barrowclough, 2005). It is further suggested that nursing responses tend to be uniform and inflexible (McAllister, 2001) and that in general people who harm themselves are not popular with health services staff (Alston & Robinson, 1992). The clinical profession, in particular nurses and doctors in the accident and emergency are reported to be unsympathetic towards individuals who self harm (Pierce, 1986; Treloar & Pinford, 1993). These clinicians often perceive DSH as manipulative and attention

Table 4. Change in secondary outcome parameters

	ACT+SFBT+TAU (n=6)			TAU (n=7)		
	Pre	4-month	With-in effect	Pre	4-month	With-in effect
15D - Health Quality	28.67 (4.97)	24.67 (5.85)	Z=-1.83, p=0.06*	30.00 (6.53)	27.57 (4.58)	Z=-1.06, p=0.16
DERS	104.00 (20.56)	90.00 (18.49)	Z=-2.20, p=0.02**	96.14 (24.55)	91.00 (20.83)	Z=-0.68, p=0.27
Emotion non-acceptance	21.00 (4.78)	18.00 (5.51)	Z=-1.83, p=0.06*	21.00 (7.23)	18.00 (4.20)	Z=-1.36, p=0.10
Impulse dyscontrol	15.83 (4.83)	12.67 (3.88)	Z=-2.02, p=0.03**	14.14 (4.86)	14.57 (5.65)	Z=-0.42, p=0.39
Goal-directed difficulties	15.00 (3.85)	12.67 (3.67)	Z=-1.84, p=0.06*	14.43 (3.78)	13.29 (3.99)	Z=-1.06, p=0.20
Emotion non-awareness	13.33 (3.88)	13.17 (3.55)	Z=-0.28, p=0.50	14.14 (4.29)	11.43 (4.16)	Z=-1.10, p=0.16
Lack of ER strategies	23.67 (4.03)	22.33 (4.80)	Z=-0.81, p=0.25	21.57 (4.79)	20.14 (4.34)	Z=-0.59, p=0.31
Lack of clarity	15.17 (3.77)	11.17 (2.04)	Z=-2.02, p=0.03**	11.00 (4.08)	13.57 (4.24)	Z=-2.21, p=0.02**
AAQ	31.17 (12.73)	36.00 (12.33)	Z=-1.26, p=0.16	29.14 (9.10)	32.86 (8.26)	Z=-1.19, p=0.15
BDI	31.33 (9.93)	25.00 (13.57)	Z=-2.02, p=0.03**	25.43 (10.50)	24.71 (11.87)	Z=-0.09, p=0.49
BAI	23.00 (13.07)	20.00 (14.33)	Z=-0.95, p=0.20	23.29 (16.57)	22.14 (14.99)	Z=-0.42, p=0.36

Means, standard deviations in brackets.

*marginally significant $p < 0.07$; ** $p < 0.05$ (Wilcoxon Signed Ranks Test, 1-tailed)

seeking behavior (Warm, Murray & Fox, 2002). Perhaps the attitudes had also a role to play in the fact that only 16 individuals were referred to the current study, when it was clearly and repetitively outlined that all individuals engaging in self harm are to be given information on the research, and the number of all individuals presenting to Central Finland Community General Hospital for DSH during the year 2008 approached 200 (personal correspondence). There thus arises need for the future research to also investigate more closely motivational factors for seeking and accepting treatment among clients with DSH. In fact, in this study we used almost 12 months for the recruitment process, and were able to study treatment effects on a small number of participants. This indicates that there can be considerable difficulties in carrying out large scale clinical effectiveness trials.

Conclusions

The 4-session student-delivered intervention combined with the treatment as usual had broader effects on reduction of DSH than did

treatment as usual only. Positive effects were also noted for the brief intervention on depression and emotional regulation strategies. In addition, trained and supervised student therapists with no prior clinical experience were found to deliver satisfactory intervention.

Practice implications

To achieve enhanced service provision it is worthwhile in the future, provided further studies confirm the preliminary findings here, to add this intervention as a permanent part of TAU when dealing with DSH. Work also needs to be done on clinical staff education and training in brief interventions in general and their attitudes and behavior in particular in order to improve the outcome of treatment for individuals engaging in DSH. A training approach such as that used in this study with a focus on strengths, acceptance and positive future thinking, along with a shift in philosophy towards "the client as able and cooperative" may have a place in forming attitudes that contribute to improving outcome after DSH.

Table 4a. Interventions - Session 1

Task	Means	Example
<p>Task 1 Creating an initial therapeutic reality</p>	brief introduction of how the intervention works, Paying attention, being genuinely interested, complimenting on coming to treatment , emphasizing collaboration	<p>"We will meet 4 times, one time per week for about 45 minutes, during which time we will work on issues you fins important"</p> <p>"Most people wait until their cutting is very well established and frequent to seek help. How did you decide to come in while you have just started cutting"</p>
<p>Task 2 Ask for goals/rehearse preferred future</p>	miracle method	<p>The precise language of the intervention may vary, but the basic wording is: <i>I am going to ask you a rather strange question [pause]. The strange question is this: [pause] After we talk, you will go back to your work (home, school) and you will do whatever you need to do the rest of today, such as taking care of the children, cooking dinner, watching TV, giving the children a bath, and so on. It will become time to go to bed. Everybody in your household is quiet, and you are sleeping in peace. In the middle of the night, a miracle happens and the problem that prompted you to talk to me today is solved! But because this happens while you are sleeping, you have no way of knowing that there was an overnight miracle that solved the problem. [pause] So, when you wake up tomorrow morning, what might be the small change that will make you say to yourself, "Wow, something must have happened—the problem is gone!"</i></p> <p>In the Miracle Method then the barriers to reaching the goal are eliminated by a miracle while everyone is sleeping. The participants are then asked what things would be happening once the miracle had occurred. This does not involve hoping for the miracle, but freeing imagination and action from unnecessary limitations.</p>
<p>Task 3 getting in touch with one's own experience moment to moment in a defused and accepting way.</p>	5-minute mindfulness exercise : just breathing	<p>There is neither a right nor a wrong way to be mindful. Simply be who you directly experience yourself to be in the moment. If thoughts or emotions show up then observe them but do not believe or disbelieve them. As you practice, allow yourself to become more and more mindful of the sensations, thoughts, and feelings that are happening for you.</p> <p>Follow your breath. Simply watch your breath come in and go out of your body. This happens naturally. Feel the breath come in, feel the breath go out. Allow it to happen without getting in the way. If you want to, you can count your breaths, from one to ten. Once you have reached ten, go back to one. Just keep watching your breath. All kinds of content will come up when you sit. Your anger, depression, anxiety, low self-esteem – all these may surface. Just watch them come in and go out. As they appear, treat them with kindness, the way you would pat a visiting child on the head in acknowledgement of his presence.</p>
<p>Task 4 Homework – 5-minute breathing exercise</p>	Recommend homework	<p>"In between now and when we meet again, I would like you to practice the breathing exercise we just practised here together"</p>

Table 4b. Interventions - Session 2

Task	Means	Example
<p>Task 1 getting in touch with one's own experience moment to moment in a defused and accepting way.</p>	5-minute mindfulness exercise : just breathing	Same as in session 1
<p>Task 2 working on goals and rehearsing preferred future</p>		
<p>a: Scaling back client's grand ideas about their goals or progress into more achievable goals</p>	Smaller step questions	"That sounds like a big goal and dream. What kinds of things would be happening in the next week if you were headed in the direction of those big goals?"; "What is the smallest thing you can do now that will help you in the direction of the big goal?"
<p>b: Elicit descriptions of times when things went differently from the usual problem situation</p>	Exceptions questions	"Can you recall a time when you felt anxious and you thought you would cut, but instead you resisted the urge?"
<p>c: Obtain continual feedback from the client and get them realize changes or gray areas in the problem situation</p>	Scaling questions	"On a scale from one to 100, 100 being the most self harming and one being no self harming, where have you been in the past week?"
<p>d: Highlight differences and get the person to compare and contrast things about exceptions or solutions</p>	Difference questions	"What was different now from the way you usually handle the overdose?"
<p>e: Create positive expectancies</p>	Positive expectancy questions	"Before you reduce or stop harming yourself let's talk about how well you are coping with it now"; "After you reduce or stop harming yourself what else will change in your life?"

Table 4b. Interventions - Session 2 (continued)

Task	Means	Example
<p>Task 3 expanding participants' tools for handling acute negative arousal, tolerating frustration, learning to be aware of emotions and the antecedents of emotions (sensations, cognitions, motivational impulses), labelling emotions without judgement and without giving into emotion-induced action tendencies, becoming aware of one's capacity to tolerate negative emotions, realizing that emotions are not permanent.</p>	<p>Low frustration tolerance exercise (LFT)</p>	<p>FT exercise (A six part loop): being mindful of bodily sensations A six part loop (1,2,3,4,5,6,1,2,3,etc.). 1. 'Tell me a frustration you could bear' (this question alone should expose the client to mental and somatic events associated with the LFT, particularly when asked repetitively). 2. 'How does that frustration seem to you now?' 3. 'Tell me a frustration you would rather not bear?' 4. 'How would that frustration feel in your body?' (interoceptive awareness) 5. 'What part of that frustration might you be able to bear?' This question gently eases the client into imagining himself tolerating part of a frustration he feels he doesn't want to tolerate. There is usually some part of the frustration that is tolerable. If there is not, that is fine too. 6. 'How does that frustration seem to you now?' Continue to Q1.</p> <p>In this exercise it is important to acknowledge, to act predictably, and to avoid anything that could be perceived as judgement. The repetition gives the client much opportunity to exercise his perceptions; the constant movement brought about by repetition also promotes letting go attitude and foster detachment from the thoughts and sensations. It also increases opportunities for a client to experience both emotional and cognitive flexibility.</p>
<p>Task 4 Homework</p>	<p>Recommend homework: 5-minute breathing exercise and increase in goal directed behaviour</p>	<p>"In between now and when we meet again I would like you to do more of the things that we discussed today and you found working well for you"</p>

Table 4c. Interventions - Session 3

Task	Means	Example
<p>Task 1 same as in session 2</p>		
<p>Task 2 same as in session 2</p>		
<p>Task 3 assimilating statements that are positive, experiencing directly having different identities, noticing how different self-related content tends to produce different reactions</p>	<p>Pick an identity metaphor</p>	<p><i>"I want you to play a game with me. It's called the Pick an identity Exercise. Your job is to reach into that box over there and pull out one slip of paper at a time. On each slip of paper I have written down an identity statement. Some of these statements are things that you have told me here. Some of the things describe general characteristics of people. Your job is to pick any four slips of paper, and then I want you to try as hard as you can to imagine that you are the person described in those four slips of paper. Some of the slips will have messages on them that you have told yourself, or seem true of you, and you may see some slips of paper that have messages that you have not thought of. Your job is to take both kinds of messages and try as hard as you can to be that person, right here in the room with me, right now. I'm not trying to change what you believe about yourself. So this is not designed to make you stop believing in any of your ideas about who you are. I'm just interested in seeing what it feels like to actually imagine that you can become that person described by the identity statements, OK?"</i></p> <p>The therapist's job is to help the client construct the reality of being this person. Then, the therapist can ask questions like 'What does this person think about his or her career, relationships, and family upbringing?', or 'How does this person feel in intimate situations?'. Once this has been done and the therapist is satisfied that the person has really taken on the imaginary identity, the therapist may ask 'And who is noticing all these thoughts and feelings right now?' The exercise may be repeated three or four times in a session. If the client makes remarks about feeling different under different identity formations</p>

Table 4d. Interventions - Session 4

Task	Means	Example
<p>Task 1 same as sessions 2/3</p> <p>Task 2 same as sessions 2/3</p> <p>Task 3 clarify the relationship between avoidance and action quite clearly.</p>	<p>physical metaphor –Take your keys with you</p>	<p><i>Ask whether the client carries keys and whether you can borrow them. Put the keys on the table and say, 'OK, suppose these represent the things you've been avoiding. See this key here? That is your anxiety. See this key, that is your anger at your mother.'</i> (continue fitting major issues to the client's keys) <i>The keys are then placed in front of the client, and the client is asked, 'What are you going to do with the keys?' If the client says 'Leave them behind', say, 'Except that two things happen. First, you find that instead of leaving them behind, you keep coming back to make sure they are left behind, so then you can't go. And second, it's hard to live life without your keys. Some doors won't open without them. So what are you going to do with your keys?' The process continues, waiting for the client to do something. Most clients are a bit uncomfortable about actually picking them up. For one thing, it seems silly (which in itself is another 'key'), and for another, the keys are symbols of 'bad' things. In that context actually picking them up is a step forward, and the therapist should keep presenting the keys until they are picked up, without ordering them to be picked up. If the client says 'I would feel silly picking them up,' or 'What do I need to do?' point out to a key and say 'That feeling? That's this one here. So what are you going to do with the keys?' When they are finally picked up, say something like, 'OK. Now the question is, where will you go? And notice there isn't anywhere you can't go with them.' Also note that other keys will keep showing up – that is, answering the question affirmatively now does not mean that the same questions won't be asked over and over again by life. The client should also be asked in the natural environment to think about letting go of avoidance of difficult emotions, thoughts, and so on, every time he or she touches, carries, or uses the keys. Suggest that when the keys are used that the client also affirmatively choose to carry his or her experiential 'keys'.</i></p> <p>According to Hayes et al [41], in the metaphor, keys on the client's ring are said to represent different difficult emotions, memories, thoughts, and reactions. The metaphor highlights two important aspects of these keys. First, picking up the keys and carrying them does not keep us from going anywhere, and second, the keys actually open doors that might otherwise be locked to us without them.</p> <p>Doing the exercise with actual keys the client uses also gives the client a physical touchstone, or reminder of his or her goals (where the client is going), the means of going (willingness), and what the client must carry with him or her to move (the client's history and reactions it may produce). Because we use our keys many times in a day, this metaphor plants a seed that can be contacted frequently outside therapy sessions.</p>
<p>Task 4 review positive effects of treatment</p>	<p>Direct questions</p>	<p>"what are the things you found most useful and you feel you will be using in the future on your own "</p>
<p>Task 5 give credit for participation</p>	<p>Compliment</p>	<p>"In a treatment as demanding as this has been, it would have been normal to reconsider the participation, but you persisted and attended all fours sessions. How did you do that!"</p>
<p>Task 6 motivate further change</p>	<p>Motivation questions</p>	<p>"How have you benefited now that you harm yourself less?" "What positive effects has this</p>

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III

EFFECTS OF TRAINING ATTITUDES OF PSYCHIATRIC PERSONNEL TOWARDS PATIENTS WHO SELF-INJURE

by

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Research article

Effects of training on attitudes of psychiatric personnel towards patients who self-injure

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Abstract

Background

Improving attitudes of personnel towards self-injurious patients leads to better working alliance and contributes to better patient outcomes. Previous research into the improvement of these attitudes has recorded the need for specific training in evidence-based assessment and treatment of self-injurious patients.

Aim

The current study describes the attitudes towards self-injurious patients among psychiatric personnel. The study also evaluates the effect of a structured clinical training program on psychiatric personnel's attitudes towards patients who self-injure. It further examines whether age, education, frequency of self-injurious patients contact, and work experience of the personnel are associated with the existing attitudes.

Methods

Psychiatric personnel ($N = 50$) attended a four-day training program, presenting evidence-based knowledge regarding self-injury assessment and treatment, using group exercises and reflective learning principles. The personnel completed the Understanding Suicidal Patients Questionnaire (USP) anonymously PreTraining, on 17 January 2014, and PostTraining, on 20 June 2014. The mean differences as well as single USP items before and after the training were tested by unpaired t -test. Two-way ANOVA was used to test impact of background variables on the USP scores.

Results

The training program had statistically significant impact ($P < 0.01$) on the following individual items of the USP scale: Patients who have tried to commit suicide are usually treated well in my work unit ($d = 1.02$); A person who has made several suicide attempt is at greater risk of committing suicide ($d = 0.64$); Because the patients who have tried to commit suicide have emotional problems, they need the best possible treatment ($d = 0.57$). The results also suggested that the frequency of patient contact had impact on attitudes towards self-injurious patients.

Introduction

Suicide and self-injurious behavior (SIB) are substantial health problems worldwide. It has been estimated that over 800 000 people die due to suicide every year and for each adult who died of suicide there may have been more

than 20 others attempting suicide (World Health Organization 2014).

In Finland in 2012, the suicide rate per 100,000 people was 16.1 (OSF 2014). Suicide attempts are estimated to be 10-20 times more frequent. The official diagnostic system in Finland is the WHO's classification system for

diseases, the ICD-10, (<http://www.who.int/classifications/icd/en/>) in which codes X69 and X70 to X84 classify attempted or completed suicide according to the way self-injury has been inflicted. The same diagnoses are used to classify other forms of self-injury where the result is not fatal. In other words, in Finland it is not possible to separate non-suicidal self-injurious behavior (NSSI) from suicide attempts. Because the two behaviors are equated in practice, in this paper the term SIB is used to cover all self-injurious acts, irrespectively of suicide intent.

In Finland, the indirect financial cost defined as the value of lost production due to premature mortality as a result of suicide among working population, is estimated to be several hundreds of million euros per year (OECD 2014). The traumatic effects of both suicide and non-fatal self-injurious behavior further burden the friends and relatives, as well as health care staff involved in care of people who engage in self-injurious behavior.

Previous research has suggested suicide prevention to depend on the attitude of health professionals; improving attitudes and understanding of self-injurious patients should lead to better working alliance and contribute to better patient outcomes (Herron *et al.* 2001). Previous research on improving attitudes of personnel towards self-injurious patients has indicated that there is a need for training (Crawford *et al.* 2003, McCann *et al.* 2007, Conlon & O'Tuathail 2012, Artis & Smith 2013). Improvements in attitudes following brief training in intervention programs have been noted (Appleby & Green 2000, Leung & Chan 2000, Samuelsson & Åsberg 2002). In their review of studies on nurses' attitudes towards self-injury Karman *et al.* (2015) further specify that the type of education resulting in improvement of attitudes towards patients who engage in SIB is that which contains reflective and interactive elements.

Professional personnel's attitudes towards self-injurious patients

Previous research has emphasized that the personnel awareness of SIB and willingness to care for patients who injure themselves are important to the treatment process (Ramberg & Wasserman 2003). For any intervention to be successful, the importance of positive attitudes of health care personnel towards self-injurious patient cannot be overestimated (Linehan 1999, Anderson *et al.* 2005). Of equal importance to better treatment outcomes is the emphasis on the removal of obstacles that prevent patients from seeking treatment in the first place, or adhering to it. One such significant obstacle for people who engage in SIB is stigma (Sirey *et al.* 2001). In their suicide prevention report World Health Organization (2014) outline fighting stigma as one of the ways forward

in suicide prevention. Enduring stigmatization of people who engage in SIB both strengthens and is strengthened by professional attitudes to SIB, which in turn are affected by wider societal attitudes (Long *et al.* 2013).

Both assessment and follow up services may be affected by attitudes staff have towards the patients who engage in SIB (Herron *et al.* 2001, Crawford *et al.* 2003). Health care staff might be susceptible to negative stereotypes about patients who engage in self-injury, which in turn may affect their judgment (Timson *et al.* 2012). Negative attitudes towards adult patients who engage in SIB have been noted to prevent clinicians from providing effective care to their self-injurious patients (Pompili *et al.* 2005) and to negatively affect outcome of treatment (Arnold 1994).

Previous research has established that negative attitudes are reflected in personnel being less effective and less compassionate in their helping behavior (Mackay & Barrowclough 2005, Pompili *et al.* 2005, Saunders *et al.* 2012), and can also in themselves become a risk factor for suicide (Horvath & Symonds 1991, Morgan & Priest 1991). Earlier studies have found that health professionals' feelings towards suicidal patients are often ambivalent and complicated (Talseth *et al.* 2001) and that mental-health professionals are often reluctant to talk to suicidal patients (Samuelsson *et al.* 1997, Talseth *et al.* 2001), although the patients themselves view verbal contact with the personnel as essential both for the treatment process and for the desire to continue living (Samuelsson *et al.* 2000). McGaughey *et al.* (1995) argued that communication difficulties together with negative stands can reinforce the stigma associated with SIB and endanger the effectiveness of professional interventions. The high prevalence of negative attitudes among personnel caring for suicide attempters has been deemed alarming (Samuelsson *et al.* 1997).

When it was examined how patients themselves view their treatment, their reports often indicated that staff attitudes are negative, and their behavior towards patients was punitive (National Institute for Clinical Excellence (NICE) 2004). Patients and their family members further felt that they were directly stigmatized by staff, and that patients' suicide attempt was not taken seriously by the staff (Cerel *et al.* 2006). Another study found that patients who are not met with positive and empathic attitudes are less likely to remain in Emergency Department and to engage in assessment treatment (McAllister *et al.* 2002a,b). Furthermore, according to a study by Samuelsson *et al.* (2000) lack of confirmation of the self by the health care professional has been found to leave patients with a strong desire to repeat SIB.

Studies have also indicated positive attitudes among health care staff towards patients presenting with SIB

(Suokas *et al.* 2008, Conlon & O'Tuathail 2012), as well as strong desire to help such patients (Gibb *et al.* 2010). Verbal contacts with the staff were seen by patients as essential for the process of healing and for the desire to go on living (Samuelsson *et al.* 2000). Experiencing the staff as kind, respectful and nonjudgmental seemed to contribute to relief from shame in those patients (Wiklander *et al.* 2003). A respectful attitude by health care professionals towards suicidal patients has been found to ease patients' discomfort and instill hope, as well as affirm self (Wiklander *et al.* 2003, Lindgren *et al.* 2004).

To sum up, improving attitudes of personnel towards patients who engage in SIB ought to minimize avoidance by personnel and enhance their desire to work with these patients. In addition, attitude improvement should further contribute to better treatment outcomes with respect to patients who self-injure (Chan *et al.* 2009, Gibb *et al.* 2010).

Improving attitudes through training

It has been suggested that staff training in working with self-injurious patients could have the potential to increase staff attitudes and to enhance patient care (Gibb *et al.* 2010). Results have shown that training in working with self-injurious patients may be an effective means of changing negative attitudes towards self-injury (Samuelsson & Åsberg 2002, Ramberg & Wasserman 2003, Norheim *et al.* 2013), and can lead to improvement in the quality of psychosocial assessment of these patients (Crawford *et al.* 1998).

Others too have reported the improvements in attitudes following brief training in intervention programs (Gask *et al.* 2006, Botega *et al.* 2007, Perboell *et al.* 2015). A specialized training in how to care for patients who engage in SIB has been found to result in a more positive attitude towards these patients and a greater closeness with them (Karman *et al.* 2015). Results of previous studies have shown that more positive attitudes were associated with previous training in suicide risk assessment (Herron *et al.* 2001), and that nurses who had attended education on SIB had more positive attitudes than non-attendees (McCann *et al.* 2007).

In addition to improving attitudes towards SIB, training can boost confidence to work with suicidal patients and can improve clinical practice skills, thus benefiting both the nurses and the patients (Jacobson *et al.* 2012, Perboell *et al.* 2015).

The lack of training available in the institutions that prepare mental health professionals has been documented for decades (Schmitz *et al.* 2012), indicating a strong need to organize more training programs on SIB prevention, so that these professionals could be better prepared to

work with patients who self-injure (Devine 1989). The absence of formal, systematic, evidence-based training in assessing the risk and treating these patients is contributing to the low-level skills among health care personnel (Jacobson *et al.* 2012). Staff feel inadequately trained to care for self-injurious patients and would welcome the training in this area (Gibb *et al.* 2010). In addition to improving the training, there is a need to implement strategies that would enhance working alliance and inform practice (Conlon & O'Tuathail 2012). Because psychiatric personnel frequently have to deal with self-injurious patients in emergency situations, with their own skills only to rely upon, they need specific training in assessment and treatment of SIB.

To sum up, the need for training has been recognized in previous research into the improvement of attitudes of personnel towards self-injurious patients (Ramberg & Wasserman 2003, Artis & Smith 2013).

Conceptualizing attitudes and attitude change process

To understand the processes behind attitude expression and attitude-change in staff caring for patients who self-injure this study adopts Devine's (1989) definition of attitudes as acceptance of the content of a cultural stereotype. Stereotypes and attitudes are considered as distinct cognitive structures, each of which represents a part of a person's complete base of knowledge about a particular group. Stereotypes are instituted in children's memories before the development of the cognitive flexibility to critically assess the validity of a stereotype. Attitudes – propositions that are accepted as being true – however are newer cognitive structures. They can differ from what one knows about a particular group and from the affective reactions towards that group. According to Devine and Elliot (1995), stereotypes and attitudes are activated by different cognitive processes. Stereotypes, due to having a long socialization history and having been frequently activated, can be activated automatically, providing a 'default' basis for responding when presented with the attitude object. The implication here is that the 'default' response is inevitably a stereotype-based response. The 'default' response to people who engage in self-injury was well described by Walsh and Rosen (1988) more than 20 years ago '...we inevitably experience discomfort when encountering fellow human beings so intensely distressed that they cause themselves concrete physical harm' (p.3).

Because the attitudes are not as easily accessible as stereotypes, the overt non-prejudiced response involves controlled cognitive processes. These processes in turn enable both the intentional inhibition of the automatically activated stereotype and the activation of an attitude.

According to Devine and Monteith (1993), people can inhibit stereotype-based response only if they have the *time* and the cognitive *capacity* to set controlled process into motion, in order for it to bring the personal attitudes to awareness. According to this model the knowledge and information that is activated in the stereotype can influence information processing to follow. Thus, the behavior of those whose attitudes do not accept the stereotype can nonetheless be influenced by its activation provided they do not consciously observe this activation. Furthermore, this model posits that both stereotypical thoughts and non-prejudiced attitudes can co-exist within the same individual. The change from prejudice to non-prejudice is not seen as an all-or-none event, but rather as a process.

This change has been studied in terms of conditions under which people are persuaded by others. Within this context the most frequently promoted concept was that of involvement (Hovland *et al.* 1957). Johnson and Eagly (1989) specified that different types of involvement exist and they have different effects on persuasion. This study assumes that the type of involvement relevant to the persuasion of psychiatric personnel and their attitude change is outcome-relevant involvement. According to Johnson and Eagly (1989) outcome-relevant involvement is the extent to which the attitudinal matter under elaboration is personally significant to individuals' present important goals or outcomes. The same theory posits that with outcome-relevant involvement, high-involvement individuals are more persuaded by strong arguments and less by weak arguments. Those who are less involved however, tend to favor weaker arguments.

To sum up, improving psychiatric personnel's attitudes entails learning how to inhibit stereotype-based responses and replace them with personal attitude responses. This attitude change process is likely aided by strong argument persuasion of involved subjects. Thus, to facilitate attitudinal change, the training employed in this service is to be based on strong evidence-based arguments, supported by practical clinical examples, and is in its nature reflective and interactive.

Aim

This study examines attitudes towards self-injurious patients among healthcare staff at the psychiatric clinic. It evaluates the effect of a structured clinical training program in evidence-based SIB assessment and treatment on psychiatric personnel's attitudes towards patients who self-injure.

The study's aims were following: (1) to describe the attitudes among psychiatric personnel (especially understanding view of the psychiatric personnel and willingness

to care) towards patients who have self-injured; (2) to detect whether age, education, frequency of self-injurious patients contact, and work experience of the personnel are associated with existing attitudes, and (3) to detect whether the structured clinical training program in evidence-based SIB assessment and treatment has positive impact on psychiatric personnel's attitudes towards patients who self-injure.

Method

This study took place in North Karelia Central Hospital Psychiatric Clinic in Finland. The hospital's catchment area comprises the North Karelia district (165 445 inhabitants in 2013). The study was conducted in 2014. The first measurement took place in January 2014, prior to the training. The second measurement took place in June 2014 post training. Participating staff were asked to complete the Understanding Suicidal Patients Questionnaire – USP (Samuelsson *et al.* 1997) before and after the training.

Participants

The participants of this study were the 50 staff members of the North Karelia Central Hospital Psychiatric Clinic who took part in the Suicide and Self Harm Assessment and Treatment Training. The participants were a multi-professional group, reflecting clinical practice in Finland, where those who engage in SIB are often referred to a variety of different professionals, such as nurses, psychiatrists and psychologists. Internationally too, it has been noted that SIB should be considered as a multi-professional issue (Turp 1999, Timson *et al.* 2012).

Participation in the training was voluntary but the places were limited to 50 participants. The design and the aims of the study were explained to participants both face-to-face and in a letter. All 50 participants returned the questionnaire. Table 1 presents the background of participants in further detail.

The Training Program

The content of the training was developed from the framework provided by Worchel and Gearing's (2010) Evidence-Based Suicide Assessment and Treatment. This framework was expanded by consulting the World Health Organization protocol for suicide prevention, recent research into assessment and treatment of suicidal and non-suicidal self-injurious behavior, and specific Finnish institutional policies. Once developed, the training program was reviewed and validated by an expert panel of professionals including two consultant psychiatrists, a

Table 1. Background of the participants.

	N (%)
Sex	
Male	8 (16)
Female	42 (84)
Age	
<25 years	0 (0)
25-40 years	19 (38)
>40 years	31 (62)
Education	
Nurse	23 (46)
Specialist nurse	11 (22)
Doctor	1 (2)
Specialist Doctor	4 (8)
Mental Health Nurse	8 (16)
Psychologist	3 (6)
Frequency of suicidal patients contact	
Daily	10 (20)
Weekly	11 (22)
Monthly	14 (28)
Seldom	15 (30)
Work experience	
Less than 5 years	11 (23)
6-15 years	17 (34)
16-25 years	10 (20)
Over 26 years	12 (23)

mental health nurse, a psychologist and a psychologist academic. The panel deemed the program content to be accurate and compatible with the standards generally accepted by medical science. The training program was provided as continuing professional development.

The training contained strong reflective and interactive elements, as these were identified to be of particular benefit in education that aims at attitude change amongst staff towards self-injury (Karman *et al.* 2015). The training adopts Chan *et al.* (2009) definition of reflective learning as the process 'of internally examining and exploring an issue of concern triggered by an experience, which creates and clarifies meaning in terms of self and results in a changed conceptual perspective' (p.764). An example of activity that leads to reflective learning is engaging in dialogue and thereby improving one's ability to form perspectives. Case discussions and role-play result in more structured dialogue which renders itself to linking theory and practice. According to Branch and Paranjape (2002), reflection can result in deepened self-awareness, including awareness of personal values and attitudes.

The training was delivered over 4-month period, with frequency of one full day per month. The trainer was the first author, who is a psychologist specialized in psychotherapy training. Table 2 presents the training program in more detail.

Table 2. Content of the training.

Day 1	Day 2
Defining SIB	Assessment of SIB
Ethical and legal issues in suicide and self-injury	Fundamental SIB
Professional ethics	Assessment components
SIB and the law	Sociodemographic data
Communication and building a positive relationship	Symptom history
Verbal and non-verbal communication	Current SIB
Validation	SIB history
Hope and optimism	Family SIB history
Positive view of future	Risk factors
Role playing to practice building positive relationship	Protective Factors
Reflective elaboration	SIB Rating Scales: Columbia, SASII
	Intervention planning based on the assessment
	SIB and mental illness
	Reflective elaboration
	Homework: Apply rating scales at work
Day 3	Day 4
Crisis Intervention and SIB	Cognitive-Behavioral Therapy and SIB
The definition and the key factors of crisis	The theory behind CBT
Robert's Seven-Stage Crisis Intervention Model	The major components of CBT
Core Stages in crisis intervention	Core strategies used in CBT
Dialectic Behavioral Therapy and SIB	SFBT + ACT 4 session model and SIB
The theory behind DBT	Small group exercise:
The major components of DBT	Reading transcript of session where CBT was employed
Core strategies used in DBT	Evaluation of the course
Role play to practice intervention strategies	
Reflective elaboration	

Instrument

The Understanding Suicidal Patient (USP) Questionnaire was used. This questionnaire was developed from a questionnaire by Suokas and Lönnqvist (1989) and modified by Samuelsson *et al.* (1997). The 11 items were summed to form the USP Scale, which is intended to measure understanding and willingness to care for patients who have attempted suicide. A higher score on this scale indicates less favorable attitude towards self-injurious patients. In earlier studies (Samuelsson *et al.* 1997, Samuelsson & Åsberg 2002) the scale has demonstrated satisfactory internal consistency and good reliability; the mean inter-item correlation for the scale in those studies was 0.20, and Cronbach's α was 0.74. Each statement was

scored on a 5-point Likert scale ranging from 'I agree completely' - 'I disagree completely'. All USP statements are presented in Table 3. Both prior to and after the training the participants were presented with the USP forms, which they answered anonymously.

The Training Evaluation

The participants' training experiences were evaluated upon the completion of the training. Following the training, the participants were asked one open-ended question using a paper-pencil form: 'What did you find most useful in the training?'. In the same form participants were encouraged to suggest how they would improve the training.

Ethical considerations

The participants received written information about the study purpose and procedure, the voluntary nature of participation and were assured of complete confidentiality. All participants gave informed and written consent to participate in the study, which was approved by the chief physician of the psychiatric polyclinic. Data were collected anonymously. Since there were no patients involved in the research, review and approval by the Ethics Committee was not necessary according to Finnish legislation.

Data analysis

To ensure reliability of the scale, the 11 USP items were subjected to an item analysis. The mean inter-item correlation for the scale was 0.33, and Cronbach's α was 0.85. Based on the 25th and 75th percentiles, a positive attitude PreTraining was defined as a USP scale score under 21 and a negative attitude as a score of 26 or over; a positive attitude PostTraining was defined as a USP scale score under 21 and a negative attitude as a score of 25 or over.

The mean differences before and after the training were tested by unpaired *t*-test. To keep anonymity as strict as possible, the individual answers before and after the training could not be identified. Therefore, a paired *t*-test could not be used. To test the differences in proportions on single items, the two-tailed tests of significance were employed, and *P* values of <0.05 were considered to be statistically significant. Non-parametric methods (the Mann-Whitney *U*-test and Kruskal-Wallis test) were also used in parallel (data not shown, as the results were very similar to those obtained with the parametric methods). Two-way ANOVA was used to test impact of background variables on the USP scores.

For any statistically significant finding within group effect size (ES) using a Cohen's *d* was calculated to determine the magnitude of the change (in purpose to estimate the clinical significance of the change). The

Table 3. Comparison of items in USP Pre (*n* = 50) and Post (*n* = 50) training.

	Mean(sd) Pre	Mean(sd) Post	<i>t</i> (d.f.)	<i>P</i> values
1. Patients who have tried to commit suicide are usually treated well in my work unit	1.98 (1.22)	1.08 (0.27)	5.08 (98)	0.000
2. I sometimes show my irritation with a patient who has tried to commit suicide*	3.88 (1.22)	4.22 (1.05)	-1.49 (98)	0.140
3. A person who has made several suicide attempts is at great risk of committing suicide	1.82 (1.04)	1.28 (0.572)	3.21 (98)	0.002
4. I nurse patients who have tried to commit suicide as willingly and sympathetically as I nurse other patients	1.80 (0.93)	1.54 (0.73)	1.56 (98)	0.123
5. Because the patients who have tried to commit suicide have emotional problems, they need the best possible treatment	1.48 (0.95)	1.08 (0.27)	2.85 (98)	0.005
6. I often find it difficult to understand a person who has tried to commit suicide*	3.82 (1.02)	4.02 (0.93)	-1.02 (98)	0.311
7. I like to help a person who has tried to commit suicide	1.8 (1.05)	1.72 (0.95)	0.40 (98)	0.690
8. I try to do my best to talk with a patient who has attempted suicide about his or her personal problems	1.54 (1.01)	1.54 (0.84)	0.00 (98)	1.00
9. It is usually troublesome to nurse a patient who has tried to commit suicide*	2.78 (0.97)	2.90 (0.91)	-64 (98)	0.526
10. I am usually sympathetic and understanding towards a patient who has tried to commit suicide	2.08 (0.94)	2.06 (0.68)	0.121 (98)	0.904
11. I try to do my best to make a patient who has tried to commit suicide feel comfortable and secure	1.62 (1.01)	1.50 (0.58)	0.73 (98)	0.467

Note meaning of the scores: 1 = totally agree, 2 = agree, 3 = neutral, 4 = disagree, 5 = totally disagree.

*Reverse scoring.

within-group ES was calculated by dividing the mean change from pre- to post- measurement by the combined (pooled) standard deviation (SD) of the two measurements (Cohen⁶⁸; $d = M1-M2/SD$). A *within-group* ES of 0.2 was considered small, 0.5 medium and 0.8 large. Qualitative data regarding the participants' evaluation of the useful aspects of the training were analyzed using thematic analysis as described by Braun and Clarke (2006).

Results

Primary outcomes

The mean score for the whole USP Scale PreTraining was 24.60 ± 5.40 (range 19.00-46.00; 25% percentile 21.00, median 23.00, 75% percentile 26.00), and the mean score for the whole USP Scale PostTraining was 22.94 ± 2.72 (range 19.00-30.00; 25% percentile 21.00, median 22.50, 75% percentile 25.50), $t = 1.94$, d.f. = 98, $P = 0.055$, $d = 0.39$.

Lower scores signify more understanding responses, i.e. a more favorable attitude. The distribution of the scores on most items tended to be somewhat skewed toward the 'more understanding' end of the scale. Pre- and PostTraining differences in individual items of the USP Scale are presented in Table 3.

The training program had statistically significant impact ($P < 0.01$) on the following individual items of the USP scale (the within group effect size varied from medium $d \geq 0.50$, to large $d \geq 0.80$): patients who have tried to commit suicide are usually treated well in my work unit ($d = 1.02$; item number 1); a person who has made several suicide attempt is at greater risk of committing suicide ($d = 0.64$; item number 3); because the patients who have tried to commit suicide have emotional problems, they need the best possible treatment ($d = 0.57$; item number 5). Thus, the training had a positive impact on personal's attitudes on these items, and the change (based on effect size) was medium or large.

When the impact of background variables on the total score of USP was investigated, the results of two-way ANOVA revealed statistically significant main effect for the frequency of contact, $F(1) = 4.34$, $P = 0.04$, $\eta^2_p = 0.044$, as presented in Figure 1. This suggested that psychiatric personal having a more frequent contact with the self-injure patients (daily or weekly) reported higher USP scores (reflecting a more negative attitude) as compared to those having a seldom contact with these patients (monthly or more seldom). However, the between group effect size indicated a small overall difference between the groups ($d = 0.42$; total USP score $m = 24.80$, $SD = 5.66$ for the daily/weekly group, and $m = 22.93$, $SD = 2.71$ for the seldom contact group).

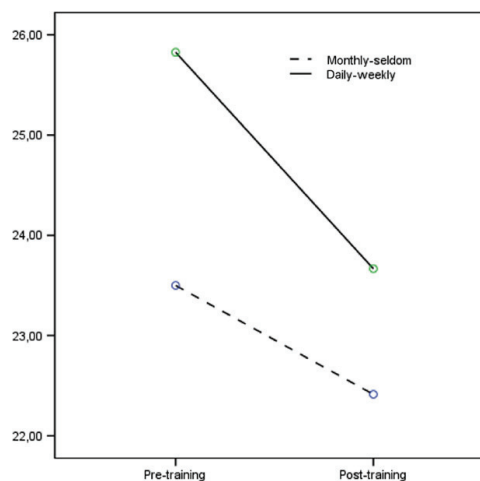


Figure 1. Frequency of contact vs. USP score Pre and PostTraining

On further analyses, it was observed that the training had significant impact on Items 1 and 5 among psychiatric personal having frequent (daily/weekly) contact with the patients. The scores on Item 1 ('Patients who have tried to commit suicide are treated well in my work unit') changed significantly more to the positive direction among those having frequent contact with the patients ($F(1,95) = 12.21$, $P = 0.001$; Daily/weekly: pre, $m = 2.61$, $SD = 1.44$, post, $m = 1.10$, $SD = 0.30$; Seldom: pre, $m = 1.46$, $SD = 0.65$; post, $m = 1.07$, $SD = 0.26$). Also, the scores on Item 5 ('Because the patients who have tried to commit suicide have emotional problems, they need the best possible treatment') changed significantly more to the positive direction among those having frequent contact with the patients ($F(1,95) = 8.59$, $P = 0.004$; Daily/weekly: pre, $m = 1.83$, $SD = 1.23$, post, $m = 1.05$, $SD = 0.22$; Seldom: pre, $m = 1.12$, $SD = 0.33$; post, $m = 1.10$, $SD = 0.31$). Age, profession and length of work experience, did not correlate with specific items of USP PostTraining.

Evaluation of the training

All 50 participants answered the paper-pencil question about the most useful aspects of the training. The following themes emerged as the most useful aspects of the training: (1) tools to use in the field: concrete and structured; (2) knowledge base: broad, up-to-date, and evidence-based; (3) trainer: professional, and inspirational; (4) group exercises and (5) subject: highly relevant. The themes that emerged as suggestion to improve the training were: (1) more training days; (2) more case examples; (3) more intervention detail.

Discussion

The results of this study find that: (1) participants' attitudes towards self-injurious patients as measured by USP PreTraining were neutral; (2) the frequency of contact with self-injurious patients was associated with the existing attitudes and (3) attitudes as measured by USP improved immediately after completing the training.

The finding that the attitudes of psychiatric personnel were neither entirely positive nor entirely negative, are in agreement with Devine and Elliot's (1995) attitude theory which cautions against viewing attitudes and their change as all-or-none event, and posits that positive and negative attitudes can coexist within the same individual (Devine *et al.* 1991). The present study sees the 'neutrality of the attitudes' result as an expression of participants' reality, where existing attitudes are mixed and complex, and thus cannot neatly fall in either all negative or all positive categories. Previous studies too have found staff attitudes towards this group of patients to be ambivalent and complicated (Palmer 1993).

The finding that at the outset the attitudes of those who frequently encounter patients engaging in SIB were less favorable when compared to the attitudes of those who encounter this group of patients less frequently warrants further discussion. As noted earlier, previous research suggests that there exists a very strong desire amongst health care staff to help patients who self-injure (Gibb *et al.* 2010). However, due to the nature of SIB as repetitive behavior, frequently encountering self-injurious patients may lead to feelings of frustration in personnel, as they may see themselves as unable to achieve their goal of 'curing' these patients. The frustration may also arise from the personnel seeing that these patients are not receiving the type of care they need. Staff that do not encounter these patients frequently are accordingly spared this frustration or feeling of failure, and this could account for their initial more favorable attitudes – it is likely to reflect portrayal of their working reality, which by being in lesser contact with of this group of patients, is also less privy of the mixed emotions related to their assessment and treatment.

In addition to emergency service, the first line of contact for patients who self-injure is psychiatric care. Both these contexts are known for their fast pace of work, time pressure, pressure for results and the consequent work stress (Suokas & Lönnqvist 1989). Under time pressure, automatic cognitive processing is activated, resulting in stereotypical, 'default' response, which is seen as 'less favorable' attitude. It is important here to bring to attention the distinction between stereotype and attitude. Attitudes of the staff frequently encountering SIB patients may well in reality be more favorable, yet, under the

given constraints they are overshadowed by more easily available stereotypical responding. On the other hand, for those less frequently encountering these patients, in the context where working pace is less quick, there is time to bring controlled cognitive processes into action and thus inhibit intentionally the automatically activated stereotype, thus resulting in expression of personal attitude, reflected here as 'more favorable'.

Finally, the third major finding of current study was the improvement in attitudes immediately following the training. In understanding this finding, the concept of outcome related involvement is essential. According to cognitively oriented persuasion researchers, it is the involvement, in this case enhanced by the training program, that increases motivation of the participants to process or engage in information discussed during the training. The more frequent the involvement then, the greater the information processing and application of material presented in the training. The findings from the qualitative data of this study regarding the most useful aspects of the training are in agreement with previous findings that with outcome-relevant involvement, high-involvement subjects are more persuaded by strong arguments. Strong arguments can be detected in the themes 'knowledge base: evidence-based' and 'trainer: professional'. The likely persuasion of highly involved participants by these strong evidence-based arguments is reflected in changes on the items 'Because the patients who have tried to commit suicide have emotional problems, they need best possible treatment' and 'I sometimes show my irritation with a patient who has tried to commit suicide'. Both the complexity of these patients' needs and the negative consequences of staff showing their irritation were discussed during the training in the light of evidence-based research. Elsewhere too, it was found that greater and more accurate knowledge of contextual issues can de-stigmatize SIB by providing health care personnel with alternative explanations for the behavior, which in turn can increase empathic attitudes and lead to changed behavioral responses (Crawford *et al.* 2003, Anderson *et al.* 2005).

The theme 'concrete tools to use in the field' on the other hand is likely to reflect both the higher need of highly involved staff for these tools, as well as their greater opportunity to apply these during the training, as opposed to staff with less frequent involvement with these patients. Higher involvement, using tools deemed helpful can help better understand the change in the item 'Patients who have tried to commit suicide are usually treated well in my work unit'. Horowitz *et al.* (2001) reported that having a screening tool is not only preferred by nurses but can also increase clinicians' confidence. The qualitative data also revealed the theme of 'more training

days' as means of improvement of the training. The same variable, further professional training in the same subject, may also have had effect on the improvement of attitudes amongst highly involved, as it was in previous research too associated with reduced stress in professionals and better care for self-harming patients (Crawford *et al.* 2003).

While availability of supervision, a standard in Finnish health care, may have positive impact on the attitudes in general, an improvement following the training implies that supervision should be supplemented with specific training in SIB – a finding raised in previous research (Ramberg & Wasserman 2003). The type of training applied in this study, where the staff were permitted to examine their own values and beliefs in a secure environment, and with a professional trainer, has been deemed especially beneficial in attitudinal change (Burrow 1994).

The type of training applied in this study has positive impact on the attitudes of personnel who frequently works with SIB patients, and should because of this in the future be offered to this group of health care staff. The positive impact is most evident in endorsement of beliefs that patients who self-injure are treated well and that these patients need best possible treatment.

Practice considerations

To improve attitudes towards, and ensure the quality of treatment of patients who self-injure, the service-providers need to train their personnel in evidence-based assessment and treatment of these patients. It is especially important to provide personnel who encounter this group of patients with educational opportunity to examine, in a reflective learning environment, and in non-judgmental way, their own attitudes towards this patient group and ways of how attitudes can influence behavior. In particular, personnel should be encouraged to reflectively examine their own negative emotional reactions to these patients, and should be educated as to how expressed negative emotion affects treatment outcome. The personnel need to be provided with an opportunity to practice using structured and psychometrically sound assessment instruments, as well as setting treatment goals that are realistic and achievable. When working under time constraints personnel need to set strict boundaries on high-risk case load.

Limitations

This study should be regarded as a pilot study, because of the limited number of participants. As the questionnaire method was used, there remains a possibility that social

desirability has influenced the results. Attempt was made to reduce this possibility through anonymity. In addition, questionnaire studies are a useful baseline measures in intervention studies that investigate the effectiveness of projects aiming at changes in attitudes (McAllister *et al.* 2002a,b). A definite strength in this study is 100% questionnaire response rate. This study should however be regarded as a pilot study, because of the limited number of participants.

Some misunderstanding may result from using the USP to study the attitudes towards all self-injurious patients, suicidal and non-suicidal. However, as previously indicated, clinical practice in Finland at present moment does not make this distinction, but rather classifies all self-injurious patients under 'attempted suicide' diagnostic, thus making the use of USP justifiable.

Another limitation is that the study does not provide knowledge of the potential changes in attitudes that may have occurred in the same period among personnel who did not attend the training. Thus, the study cannot rule out alternative explanations for the change in attitudes observed. A controlled replication study would be needed to resolve these concerns.

Although the study shows change in attitudes following the training, it is not known if this can result in changes in behavior as a result of the training. It is however known from previous research that relationship exists between attitudes and practice behaviors (Jacobson *et al.* 2012) and that attitudes toward SIB have a direct impact on the relationship staff have with these patients and the quality of care they provide (McDonough *et al.* 2004).

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Author contribution

Taking into account the instructions given and comments made by the co-authors (supervisors), the first (corresponding) author collected the data, conducted the analyses and wrote the manuscript.

All authors have agreed on the final version and meet at least one of the following criteria [recommended by the ICMJE (<http://www.icmje.org/recommendations/>)]:

- substantial contributions to conception and design, acquisition of data, or analysis and interpretation of data;

- drafting the article or revising it critically for important intellectual content.

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