Exploring mindfulness in self-injuring adolescents in a

psychiatric setting

R. KOK

12429252

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Supervisor: Dr. D.K. Kirsten

Co-supervisor: Prof. K.F.H. Botha

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Letter of Consent

We, the co-authors, hereby give consent for Rümando Kok to submit the following manuscript for purposes of a dissertation (article format): **Exploring mindfulness in self-injuring adolescents in a psychiatric setting.**

It may also be submitted to *Journal of Psychology in Africa* for publication.

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Dr. D.K. Kirsten   Prof. K.F.H. Botha

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Anna-Mart Bonthuys* (D Litt et Phil – SA)

Independent Contractor

TEL: (012) 997- 6373 / 082 214 5934

annamart@xsinet.co.za

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TO WHOM IT MAY CONCERN

I hereby declare that I am a fully qualified and experienced language practitioner, and that I have edited and proofread the research article of Rümando Kok, entitled "Exploring mindfulness in self-injuring adolescents in a psychiatric setting", to the best of my ability.

2 September 2010

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Summary

Exploring mindfulness in self-injuring adolescents in a psychiatric setting

(Keywords: Adolescents; Five Facets of Mindfulness; Five-Facet Mindfulness

Questionnaire (FFMQ); Mindfulness; Psychiatric context; Self-injury)

This study explored mindfulness in eight self-injuring psychiatric adolescents. A concurrent triangulation mixed-method design was used. In-depth semi-structured clinical interviews and clinical records constituted the qualitative data, while quantitative data was gathered using the Five-Facet Mindfulness Questionnaire (FFMQ). Thematic analysis was used to generate themes and subthemes for both self-injury and mindfulness. Findings regarding self-injury were in line with the literature. In terms of mindfulness, two groups emerged: one sometimes acting mindfully and the other often acting mindfully. Both similarities and differences were found between the groups. Similarities in self-injuring behaviour can be explained by their similar scores on Observe and Nonreact, while the differences can be explained by the differences in their scores on Describe, Act with Awareness and Nonjudge. Those who sometimes act mindfully tend to be more self-critical, report more severe and lethal self-injuring episodes and more often use self-injury for self-punishment. Although those who often act mindfully self-injure more often, they show more self-compassion and report less severe injuries and less lethal methods. Future research should explore the usefulness of mindfulness-based interventions, especially teaching Nonjudge and Nonreact skills, to not only increase mindfulness, but to decrease self-injuring behaviour. Seeing that this is an exploratory study on a small sample, the results presented here should be considered to be preliminary until replicated with a larger clinical sample.

Opsomming

Die verkenning van *mindfulness* in self-beserende adolessente in 'n psigiatriese opset

(Sleutelwoorde: Adolessente; Vyf Fasette van *Mindfulness*; *Five-Facet Mindfulness Questionnaire (FFMQ)*; *Mindfulness*; Psigiatriese konteks; Self-besering)

Hierdie studie het *mindfulness* in agt psigiatriese adolessente wat self-beseer, ondersoek. 'n Gemengde-metode-ontwerp vir gelyktydige triangulering is gebruik. In-diepte semi-gestruktureerde kliniese onderhoude en kliniese rekords het die kwalitatiewe data uitgemaak, terwyl kwantitatiewe data ingesamel is deur van die *Five Facet Mindfulness Questionnaire (FFMQ)* gebruik te maak. Tematiese ontleding is aangewend om temas en subtemas vir sowel self-besering as *mindfulness* te genereer. Die bevindinge aangaande self-besering was in ooreenstemming met die literatuur. Wat *mindfulness* betref, kon twee groepe onderskei word: een wat soms *mindful* optree, en die ander wat dikwels *mindful* optree. Beide ooreenkomste en verskille het tussen die groepe voorgekom ten opsigte van self-beseringsgedrag. Ooreenkomste in self-beseringsgedrag kan verduidelik word aan die hand van hul eenderse tellings in die fasette van *Observe* en *Nonreact*, terwyl die verskille saamhang met die verskille in hul tellings in *Describe*, *Act with Awareness* en *Nonjudge*. Diegene wat soms *mindful* optree, is geneig om meer self-krities te wees, rapporteer meer ernstige en dodelike self-beseringsepisodes en gebruik meer dikwels self-besering vir self-straf. Hoewel diegene wat dikwels *mindful* optree, meer dikwels self-beseer, toon hulle meer deernis met die self, en rapporteer hulle minder ernstige beserings asook minder dodelike self-beseringsmetodes. Toekomstige navorsing behoort die nut van *mindfulness*-gebaseerde ingrype te verken, veral ten opsigte van

die aanleer van *Nonjudge* en *Nonreact* vaardighede, ten einde nie alleen *mindfulness* te verhoog nie, maar ook self-beserende gedrag te verminder. Aangesien dit 'n verkennende ondersoek van 'n klein steekproef was, moet die resultate wat hier aangebied word as voorlopig beskou word, totdat dit met 'n groter steekproef gerepliseer word.

Manuscript: Exploring mindfulness in self-injuring adolescents in a

psychiatric setting

Rümando Kok[1], *Doret K. Kirsten[1] and Karel F.H. Botha[2]

1 – Institute for Psychotherapy and Counselling
2 – Department of Psychology

North-West University (Potchefstroom Campus), Private Bag X 6001,
Internal Box 70, Potchefstroom, 2520, South Africa

rumandokok@gmail.com

*Doret.Kirsten@nwu.ac.za

Karel.Botha@nwu.ac.za

* Corresponding author

Abstract

This study explored mindfulness amongst eight self-injuring psychiatric adolescents. A mixed-method design was used. Interviews and clinical records comprised the qualitative data, while quantitative data was gathered using the Five-Facet Mindfulness Questionnaire (FFMQ). Thematic analysis was used to generate themes and subthemes. Findings regarding self-injury were in line with the literature. In terms of mindfulness, two groups emerged: one sometimes acting mindfully and the other often acting mindfully. Those who sometimes act mindfully tend to be more self-critical, report more severe injuries and more often self-punishes. Although those who often act mindfully self-injure more often, they show more self-compassion and report less severe injuries and less lethal methods. Mindfulness-based interventions might be useful in increasing mindfulness and decreasing self-injuring behaviour.

Word count: 120 words

(Keywords: Adolescents; Five Facets of Mindfulness; Five-Facet Mindfulness Questionnaire (FFMQ); Mindfulness; Psychiatric context; Self-injury)

Introduction

Self-injury is a serious problem amongst adolescent populations which health professionals cannot ignore, yet are often hesitant to fully explore. Self-injury refers to the intentional destruction of body tissue without suicidal intent and for purposes not socially sanctioned (Klonsky, 2007). Efforts to clarify the scope and nature of self-injuring behaviour increased in the 1970s (Carr, 1977; Lester, 1972), and in the 1980s, self-injury was included in the *Diagnostic and Statistical Manual of Mental Disorders, Third Edition* (*DSM-III*) (American Psychiatric Association [APA], 1980) as a symptom of Borderline Personality Disorder (BPD). Almost 30 years later, the status of self-injury in the official psychiatric nosology has not changed: DSM-IV-TR *(*APA, 2000) regards self-injury as a symptom of BPD. Although research findings are consistent with the notion that self-injury is an important symptom of BPD (Simeon, Stanley, Frances, Mann, Winchel & Stanley, 1992; Zlotnick, Mattia & Zimmerman, 1999), self-injury can be found in many other diagnoses as well, including substance disorders, eating disorders, post-traumatic stress disorder, major depression, and anxiety disorders (Klonsky, 2007).

The most common forms of self-injury consist of cutting, scratching, carving, self-hitting, self-burning, excoriation of wounds, picking, and abrading (Simeon & Hollander, 2001; Walsh, 2007). Common instruments used include razors, knives, scissors, glass, paper clips, sharp fingernails, or any other sharp object (Dyl, 2008). Acts of self-injury vary greatly and are limited only by the means and imagination of the self-injurer (Zila & Kiselica, 2001). The areas of the body most likely to be injured include the arms, hands, wrists, thighs and stomach (Klonsky, 2007). Although suicide may be seen as the ultimate form of deliberate self-harm, there may

be pragmatic reasons for reserving the term *self-injury* for non-fatal forms of deliberate self-harm (Lundh, Karim & Quilisch, 2007).

In both the United States and Canada, 14–15% of non-psychiatric adolescent populations report at least one instance of self-injury (Laye-Gindhu & Schonert-Reichl, 2005; Ross & Heath, 2002). The age of onset in the United States is typically around age 13 or 14 (Klonsky & Muehlenkamp, 2007). Not surprisingly, higher rates are apparent in individuals receiving mental health treatment. Self-injury occurs in about 20% of adult psychiatric patients (Briere & Gil, 1998) and in 40–80% of adolescent psychiatric patients (Darche, 1990; DiClemente, Ponton & Hartley, 1991; Nock & Prinstein, 2004), which indicates that adolescents are at greater risk for self-injury than other developmental groups (Klonsky & Muehlenkamp, 2007). Although prevalence rates for South Africa are unavailable at present, self-injury is the most common reason for liaison psychiatric assessment (Fainman, 2003).

The outcomes of self-injury are associated with a wide range of negative interpersonal and intrapersonal consequences, including shame, guilt, regret, social isolation or rejection (Gratz, 2007). Despite its negative consequences, self-injury appears to serve some positive or "therapeutic" purpose for its participants. Therefore, it is important to note that understanding self-injury requires clinicians to consider both intrapersonal and interpersonal functions (Walsh, 2007). The most common intrapersonal functions of self-injuring behaviour include attempts at affect regulation such as self-soothing and alleviating negative emotionality, compensation for deficits in emotion skills, sensation seeking such as reaffirming the ability to feel, self-derogation and self-punishment by expiating the sense of being "bad", efforts at anti-dissociation and anti-suicide (APA, 2000; Klonsky & Muehlenkamp, 2007). On an interpersonal level, self-injury might serve the purpose of interpersonal influence,

namely efforts to avoid abandonment or to obtain caring and nurturing, and also for setting interpersonal boundaries (Klonsky & Muehlenkamp, 2007).

The emotion-regulatory functions of self-injury have received some special attention in the literature. After self-injury, individuals reported feeling better, less confused and more real, normal and in touch (Zila & Kiselica, 2001). Other researchers have likewise conceptualised self-injury as an emotion regulation strategy (Gratz, 2003; Klonsky, 2007). Self-injury may impede normative socio-emotional problem-solving and the development of healthy coping and self-soothing skills, but is still a way to regulate emotions and an attempt to solve interpersonal problems. Treatments such as Dialectical Behaviour Therapy (DBT) (Linehan, 1993a) have been developed to explicitly focus on increasing emotional regulation. DBT is based on the premise that the reduction of emotional dysregulation will decrease the need for maladaptive behaviours that function to regulate emotions, such as self-injury. According to Linehan (1993a), mindfulness skills are the core skills in DBT, and increasing mindfulness, among other things, serves to reduce impulsiveness and to tolerate emotional distress, and improves emotional regulation. As it is generally assumed that self-injury often represents a dysfunctional form of emotional regulation (Favazza, 1998; Gratz, 2003; Gratz & Roemer, 2004; Linehan, 1993b; Nock & Prinstein, 2005), an increased mindfulness may serve to reduce self-injuring behaviour and may increase the ability to tolerate emotional distress and regulate overwhelming affect.

In mindfulness training, two sets of skills are distinguished: (a) "what" skills (i.e., what to do) and (b) "how" skills (i.e., how to do it) (Robins, 2002). The three *what* skills are observing, describing, and participating, while the *how* skills are being non-judgemental, one-mindful, and effective (Linehan, 1993a). Broadly

conceptualised, mindfulness has been described as a kind of non-elaborative, non-judgemental, present-centred awareness in which each thought, feeling, or sensation that arises in the attentional field is acknowledged and accepted as it is (Kabat-Zinn, 1998; Segal, Williams & Teasdale, 2002; Shapiro & Schwartz, 2000; Teasdale, 1999). In a state of mindfulness, thoughts and feelings are observed as events in the mind, without over-identifying with them and without reacting to them in an automatic, habitual pattern of reactivity. This dispassionate state of self-observation is thought to introduce a "space" between one's perception and response. Thus mindfulness is thought to enable one to respond to situations more reflectively, as opposed to reflexively (Bishop, Lau, Shapiro, Carlson, Anderson, Carmody, Segal, Abbey, Speca, Velting, & Devins, 2004). Mindfulness skills promote a non-judgemental awareness of one's internal experiences (including one's emotions), the ability to observe internal experiences as they occur in the moment, and being able to label these experiences objectively (Gratz, 2007).

In this study, mindfulness was operationalised by the Five-Facet Mindfulness Questionnaire (FFMQ) (Baer, Smith, Hopkins, Krietemeyer & Toney, 2006). The five facets of mindfulness are: Observe, Describe, Act with Awareness, Nonjudge and Nonreact. *Observe* includes noticing or attending to internal and external experiences, such as sensations, cognitions, emotions, sights, sound and smells. *Describe* refers to labelling observed experiences with words. *Act with Awareness* includes attending to the activities of the moment and can be contrasted with "automatic pilot" or behaving mechanically, without awareness of one's actions. *Nonjudge* refers to taking a non-evaluative stance towards cognitions and emotions. *Nonreact* means to allow thoughts and feelings to come and go, without getting carried away by them, caught up in them and reacting on them (Lykins & Baer, 2009).

In the mindfulness model, psychopathology is argued to result from narrow and rigid repertoires of responding – that is, from psychological inflexibility (Fletcher, Schoendorff & Hayes, 2010). The target of mindfulness is psychological flexibility, that is the ability to respond in a flexible way to one's own history and the thoughts, feelings and sensations it produces in a range of situations. As one's thoughts and feelings are evaluated, entanglement leads one to seek to get rid of unpleasant internal experiences. These experiences can become overwhelming to the extent that loss of contact with the present moment occurs, and entrapment in a context in which thoughts and emotions are fought against, forms the psychopathological processes that can manifest as self-injury (Fletcher, Schoendorff & Hayes, 2010).

Mindfulness is currently applied widely in the field of Clinical Psychology, and both its popularity as a clinical intervention and evidence for its effectiveness are growing. The number of scientific reports related to mindfulness has been estimated to have risen from 90 in 1996 to 200 in 2006 (Brown, Ryan & Cresswell, 2007). For systematic literature reviews of mindfulness as a clinical intervention, the reader is referred to Grossman, Niemann, Schmidt and Walach (2004), Baer (2003) and Coelho, Canter and Ernst (2007).

In the absence of research examining the mechanisms of change in DBT and/or the specific treatment components associated with reduction in self-injury, it is unclear exactly what skills are effective in decreasing self-injury (Gratz, 2007). There is a growing body of literature suggesting the utility of acceptance- and mindfulness-based approaches to treat emotional dysregulation in self-injuring patients (Gratz, 2007), but evidence-based studies are lacking. Although current research addresses self-injuring behaviour with specific focus on adolescent self-injury, and numerous relevant articles address mindfulness, there is a lack of current research exploring

mindfulness amongst self-injuring populations. No studies were found in which mindfulness amongst self-injuring adolescents in particular was explored, and – to add to this lack of research – there is also no international or South African research currently available specifically exploring mindfulness amongst self-injuring psychiatric adolescents.

In the light of the aforementioned, the aim of this study was to explore mindfulness in self-injuring adolescents in a psychiatric setting. Given the predominant qualitative drive of this study, no hypothesis was formulated.

Method

Research Design. A concurrent triangulation mixed-method research design was used, during which both quantitative and qualitative research methods were employed to elicit meaningful interpretive and descriptive complementary data on self-injury and mindfulness (Tashakkori & Teddlie, 2003). The purpose of this form of research is that the combination of both qualitative and quantitative research provides a better understanding of a research problem or issue, than either research approach alone (Tashakkori & Teddlie, 2003). The following research aims were formulated: a) Exploring the nature and functions of self-injury amongst psychiatric adolescents, and b) Exploring the qualitative differences in the nature and function of self-injury between participants regarding their levels of mindfulness.

Participants and Setting. An availability and purposeful sample was used. The population of adolescent in-patients at a government psychiatric hospital were considered for the research (Mertens, 2005; Fraenkel, 2008). The following inclusion criteria applied: Self-injury with any Axis I diagnosis (excluding psychosis) and personality traits on Axis II (APA, 2000). The following exclusion criteria applied:

Non-self-injury, a diagnosis of psychosis on Axis I and a diagnosis of mental retardation on Axis II (APA, 2000). Data gathering took place in a one-month period, during which eight participants were identified who met the criteria. These participants have a mean age of 14.5 years, with an age range between 13 and 17 years. They are all white Afrikaans-speaking learners who are currently in Grades 7 to 11 in both primary and secondary schools. There are three male and five female participants with Axis I diagnosis ranging from Attention Deficit Hyperactivity Disorder (ADHD), Major Depressive Disorder (MDD), Bipolar Mood Disorder, Disruptive Behaviour Disorder, Oppositional Defiant Disorder (ODD), Conduct Disorder, Substance Abuse and Borderline Personality traits, as well as Anti-Social Personality traits on Axis II (APA, 2000). All the participants have, at least, a diagnosis of a depressive disorder in common on Axis I, with most of the participants having an additional Axis I diagnosis. Most of the participants also have a diagnosis of Borderline Personality Traits in common on Axis II (APA, 2000).

Procedure. Ethical approval was obtained for the research (see *Ethical Considerations*), after which screening and selection of participants took place. Individual in-depth, semi-structured clinical interviews were then conducted, followed by the administration of the FFMQ (Baer et al., 2006). The clinical interviews were audio-taped, transcribed verbatim, and thematic analysis was then conducted. Original data were obtained in Afrikaans and translated into English by an accredited language editor, being careful to preserve the original meanings.

Data Collection

Qualitative Data Collection. Eight individual in-depth, audio-taped, semi-structured clinical interviews were conducted to explore the nature of self-injury and of mindfulness. The questions covered four broad areas of self-injury, namely history,

details, antecedents and consequences. Examples of questions include: *What does self-injury do for you? When do you usually self-injure? How do you feel before and after self-injuring?* The five facets of mindfulness mentioned earlier were explored by questions such as: *Would you say that your senses influence your thoughts/emotions/behaviour? Are you able to talk about your feelings? How do you ensure that you pay attention to what you are doing? Do you judge yourself differently from how other people judge you? Do you sometimes get lost in your feelings or thoughts?* These questions allowed participants to fully convey their experience of self-injury and the nature of their mindfulness, but at the same time left the interviewer free to follow up with appropriate questions to obtain deeper meaning and understanding. The interviews were supported by documentation from the participants' clinical records, thus providing in-depth, contextual background information. The researcher also kept a reflective field journal.

Quantitative Data Collection. The FFMQ (Baer et al., 2006) was used to measure the level of mindfulness of the participants. The FFMQ (Baer et al., 2006) is a self-report measure consisting of 39 items, all measured on a Likert scale ranging from 1 (never or very rarely true) to 5 (very often or always true), which was developed from a factor analysis using a sample of 613 university students. This resulted in five subscales based on the five facets of mindfulness discussed earlier. The five facet subscales demonstrated adequate to excellent internal consistency, with alphas ranging from 0.75 to 0.91 (Didonna, 2009). Since this study makes use of a small sample, no Cronbach alphas were determined.

Data Analysis

Qualitative Data Analysis. The following model was used to guide the process of thematic analysis (Braun & Clarke, 2006):

Phase	Description of the process
1. Familiarising self with the data	Transcribing data, reading and re-reading the data, noting down initial ideas.
2. Generating initial codes	Coding interesting features of the data in a systematic fashion across the entire data set, collating data relevant to each code.
3. Searching for themes	Collating codes into potential themes, gathering all data relevant to each potential theme.
4. Reviewing themes	Checking whether the theme works in relation to the coded extracts and to the entire data set, generating a thematic "map" or visual representation of the analysis.
5. Defining and naming themes	Ongoing analysis to refine the specifics at each theme and the overall story the analysis tells, generating clear definitions and names for each theme.
6. Producing the report	The final opportunity for analysis. Selection of vivid, compelling extracts examples, final analysis of selected extracts, relating back to the research question and literature, producing a report of the analysis.

A semantic theoretical analysis was conducted from an essentialist approach, which tends to be driven by the researcher's theoretical or analytic interest in the area and provides a less rich description of the data overall and a more detailed analysis of some aspects of the data. Coding was done with a computer software programme, Atlas.ti™ 5.2.0, by tagging and naming selections of text within each data item. Initially coding was done inclusively, so as not to lose the context, and for as many potential themes as possible (time permitting). Individual extracts of data were coded according to as many different themes as they fit into – so an extract may be uncoded, coded once or coded as many times as relevant.

Each interview was read and re-read and coded and re-coded an average of ten times per interview, to ensure that the researcher was satisfied with the thematic analysis. Initial coding was modified after the researcher compared the initial coding of the first interviews to the subsequent interviews. The researcher initially coded two separate parts: the first part of the interview dealing with self-injury and the second part of the interview dealing with mindfulness. A decision was made to code both mindfulness and self-injury throughout both parts of the interviews, as a better

understanding of the participants' mindfulness seemed to emerge when coding for mindfulness was done in sections where mindfulness-related questions were not specifically asked. The process for coding for self-injury was completed first, before the coding for mindfulness commenced.

The structure of the interview was used to generate the following five themes, related to the first objective, self-injury: *Precipitating factors to self-injury* (history and antecedents); *nature and setting of self-injury* (details); *function of self-injury* (history and details); *effectiveness of self-injury and alternatives to self-injury* (history and details); and *consequences of self-injury* (consequences). Most of these themes are divided into subthemes (see *Results*). For mindfulness, the five facets of the FFMQ (Baer et al., 2006), namely Observe, Describe, Act with Awareness, Nonjudge, and Nonreact, were used as predetermined themes. Coding was done by assigning a [+] when characteristics of a specific facet was evident, or a [−] when absent. Each interview was completed for all five facets before moving on to the next interview.

Trustworthiness. The strategies proposed by Shenton (2004) were followed to ensure that Guba's (1981) criteria for a trustworthy qualitative study are met. Credibility, concerned with how congruent the findings are with reality, was met by adopting well established research methods i.e. purposive sampling to ensure that the appropriate sample was identified; using thematic analysis for qualitative data analysis; triangulation involving the use of different methods i.e. clinical interviews, questionnaires, clinical files of participants and by having coding and themes peer-reviewed by another researcher (co-supervisor); by providing a thick description of the phenomenon under study; and examination of previous research findings to relate findings to an existing body of knowledge. Transferability, concerned with the extent to which findings can be applied to other situations, was met by ensuring that

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sufficient contextual information about the fieldwork and a detailed description of the phenomenon were provided to enable readers to transfer the findings to other situations. Dependability was ensured by employing "overlapping methods" such as clinical interviews, questionnaires and clinical files of participants. Furthermore, the processes within the study were reported in detail in a reflective journal, which could enable future researchers to repeat the work, i.e. the research design and its implementation, the operational detail of data gathering and data-analysis. Confirmability was met by ensuring that the findings were, as far as possible, the results of the experiences and ideas of the participants, rather than the characteristics and preferences of the researcher (Shenton, 2004).

Quantitative Data Analysis. Results generated from the FFMQ (Baer et al., 2006) were used to triangulate the qualitative data gathered from the interviews. Scores obtained for each participant are included by means of numerical scores obtained, as well as the meaning thereof according to the FFMQ norm scale (Baer et al., 2006). A mean score for each participant and for each facet was also calculated (see Table 1).

Ethical Considerations. This research was conducted with ethical permission granted from the Ethics Committee of the North-West University (*06K20–The nature, dynamics and application of Self-Regulation in South-African health contexts*). Permission to use adolescent psychiatric in-patients as research participants was also granted from the Faculty of Health Sciences at the University of Pretoria (*201/2009– Exploring mindfulness in self-injuring and non-self-injuring psychiatric adolescents*) and from Weskoppies Psychiatric Hospital (*permission to access clinical records*). Research participation was voluntary and no participant was allowed to participate without completing an assent form. Written informed consent was also obtained from

the legal guardians. All data was treated as confidential and it is not possible to identify any participant as anonymity was assured. Participants were free to withdraw from the research at any given time and the research was conducted in such a manner that the psychological and physical well-being of the participants was preserved.

Results

Themes were predetermined and are presented, in the case of mindfulness, according to the structure provided by the FFMQ (Baer et al., 2006), and in the case of self-injury, according to the time frame and process of self-injury. The strengths of the subthemes are, due to the small sample, determined by their intensity and not necessarily in terms of their frequency. The intensity of subthemes was guided by their meaningfulness in the context of the data set and by their relatedness to the themes as verified by consulting the literature.

Mindfulness

<Insert Table 1 approximately here>

In Table 1, self-injuring participants were divided into two groups, based on their Total Mindfulness scores. Half of the participants obtained an average Total Mindfulness score (Group 1, with an average mean score of 20), and the other half obtained an above average Total Mindfulness score (Group 2, with an above average mean score of 27). Those with average scores only sometimes act mindfully, and those who scored above average often act mindfully. Furthermore, Group 1 and Group 2 obtained similar mean scores on Observe and Nonreact, with Observe falling in the above average range (mean scores of 29 for Group 1 and 28 for Group 2), which means that both groups are often equally attentive to internal and external experiences, such as sensations, cognitions, emotions, sights, sounds, and smells.

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Regarding Nonreact, both groups fell within the average range (mean scores of 19 for both groups), implying that they are more often overwhelmed by their intense thoughts and feelings and only sometimes able to allow their thoughts and feelings to come and go, without getting carried away by them, caught up in them or reacting on them. Group 1 clearly scored lower than Group 2 on Describe, implying that Group 1 can only sometimes label their internal experiences with words (mean score of 18), whereas Group 2 can more often label their internal experiences by using words (mean score of 30). Group 1 rarely attend to the activities of the moment and often behave mechanically (as if on automatic pilot), as indicated by their below average mean score of 17 on Act with Awareness. In contrast, Group 2 often attend to the activities of the moment (with awareness of their actions), as evident from their above average mean score of 27 on Act with Awareness. Lastly, with regard to Nonjudge, Group 2 scored more than twice as high on Nonjudge (above average mean score of 31), hence they often take a non-evaluative stance towards their cognitions and emotions, whereas Group 1 rarely does so, as evident from their below average mean score of 15 on Nonjudge.

Self-Injuring Behaviour

<Insert Figure 1 approximately here>

Precipitating Factors to Self-Injury. Three subthemes were identified, namely: invalidating interpersonal relationships, poor self-concept and dysregulation of emotional pain. Similar precipitating factors to self-injury were reported by Groups 1 and 2.

Invalidating interpersonal relationships. This was the most prominent precipitating factor, with all eight participants indicating invalidating relationships with parents, mostly with one parent, while only one participant emphasised an

invalidating relationship with both parents. Most participants reported very strained relationships with fathers or mothers, characterised by physical confrontations, intense conflict and lack of attention. Examples include: *"... my dad is the major reason why I am like I am ..."/ "my dad began paying so little attention to us, that we felt like dirt ..."/ "My mom and I argued about this ... and she said I was eating too much and she said I was fat, and that really destroyed me ..."*

Most of the participants also reported interpersonal conflict with non-familial others, mostly in the form of being involved in or witnessing fighting, for example: *"... I was scared of my brother and them, and my mom's boyfriend used to hit her ... and so on ... so I just had to cut myself ..."/ "When the children fight with me ..."*

Being teased also resulted in a need to self-injure for some participants. They were teased by fellow learners, teachers, parents, siblings and family members both at home and at school, as evident from the following response: *"I was usually teased by my grandmother and grandfather because I always cried ... for I cried easily – when I got angry, or sad, or something ... I just cried ... and then I decided I wanted to express my emotion in another way ... so I cut myself once, and I found that it helped ..."*

Finally, it comes as no surprise that two of the participants specifically report a lack of meaningful interpersonal relationships which leaves them with no one to talk to about their problems, feeling isolated and insignificant – as illustrated by the following: *"When I sit alone and nobody wants to speak to me ..."/ "At the moment not one, for I cannot trust anyone!"/ "Nobody wants to play with me ... since first grade ..."*

Poor self-concept. Poor self-concept was identified as the second strongest precipitating factor as indicated by seven of the participants who personalised their

negative experiences and feelings. They were self-critical and indicated feeling worthless and dissatisfied with themselves. Furthermore, they experienced themselves as different and were full of self-doubt: *"... like a floor rag ... let's put it this way ... for everything that happened feels as if it is my fault ..."/ "Yes, I was too stupid to understand anything"/ "I really felt totally worthless again"/ "Is there something wrong with me?"*

One participant reported a good self-concept. However, when perusing her clinical file, evidence could be found that she probably reported an elevated sense of self in an effort to overcompensate for her feelings of worthlessness. Her idealised view of herself is evident from the following: *"... how I feel about myself ... I am gorgeous! ... (sounds convincing!) ..."/ "Because I am the best ..."*

Dysregulation of emotional pain. Lastly, half of the participants self-injure due to emotional pain associated with thoughts and emotions about unpleasant past and present experiences and perceptions. These participants also reported a need to cry, but an inability to do so, and feeling depressed as a result of experiences in interpersonal relationships – as is clear from the following: *"I don't know ... it feels as if my 'tears dry up' ... it feels like I don't have ... uhm ... how shall I put it ... uhm ... the ability to cry anymore ... for I have already cried so much in my life ..."*

Most of the participants also reported having suicidal ideation, with three participants reporting previous suicide attempts. Participants perceived their suicidal ideation as overwhelming, and coupled with their inability to tolerate distress, this caused almost unbearable emotional pain: *"No ... it comes from that ... mostly ... I was 11 years old and had depression ... but not so bad that I had to cut myself and everything ... but as I get older, I don't cry anymore ... I began cutting myself ... I began thinking of suicide ..."*

Nature and Setting of Self-Injury

Nature of Self-Injury

Onset. In this sample, the age of onset of self-injury varied between 11 and 16 years. A similar age of onset was found for those with an average and above average Total Mindfulness score.

Instruments used. Most participants in Groups 1 and 2 used two or more instruments for self-injury, while only a few participants used only one instrument for self-injury. However, Group 1 used a greater number of and also more lethal instruments for self-injury than Group 2. Instruments included: razor blades, scissors, broken glass, pencil sharpener blades, knives and fluorescent tubes.

Number of self-injury episodes. Interestingly, Group 1 reported fewer self-injuring episodes (an estimated two to ten times) than those participants with an above average score on Total Mindfulness (an estimated two to 100 times). Most participants in both groups reported ten or more episodes, with only a few participants from both groups reporting fewer than ten episodes.

Physical damage. This refers to body areas targeted, the number of wounds per self-injuring episode and the extent of physical damage suffered. Participants in Group 1 reportedly targeted a greater number of body areas as well as more unusual body areas for self-injury, whereas those in Group 2 targeted fewer body areas and more usual body areas for self-injury. Body areas targeted in Group 1 were: arms, shoulders, elbows, wrists, hands, legs, buttocks, inner-thigh, groin, feet and heels. Group 1 reported fewer wounds per episode (an estimated one to ten) than Group 2 (an estimated four to 40), but their extent of physical damage was more severe. Participants in Group 1 reported more severe and deeper wounds that required medical intervention such as stitches and hospitalisation, and which left permanent

marks or scars. They also enhanced their pain sensation by, for example, pouring alcohol over their wounds. In contrast, Group 2 inflicted less severe wounds, but they were also the only ones excoriating their wounds. These differences were illustrated by the following comments. A Group 1 participant said: *"I prefer longer and deeper marks ... and pouring alcohol over it."*

A Group 2 participant said: *"I begin at one end and stop at the other end ... as you can see ... everywhere there are cut marks ... I start right at the top and I only stop below my watch."*

Treatment of wounds. Those participants with average Total Mindfulness scores reported neglect and no treatment of wounds, whereas those with above average scores reported both self-treatment and reliance on others for the treatment of wounds. Group 2 participants reported either going to hospital for stitches or relying on significant others such as friends or parents to treat their wounds. One boy in Group 2, who self-treats, reported: *"I get into the shower and I have a shower and everything ... then I would clean it with Savlon or Dettol ... then I wrap a bandage around it for the night ... then the next morning I remove the bandage again so that it can dry out ..."*

Setting of Self-Injury. No differences were noted between the settings of self-injury for Groups 1 and 2. Self-injury took place in a variety of settings, including bathrooms, bedrooms, kitchens, classrooms, school bathrooms, school grounds, friends' rooms, outdoors and parents' rooms. All eight participants self-injured in two or more settings, while one self-injured in four different settings. The majority of the participants indicated that they were alone during most of their self-injuring episodes. Only two participants from Group 2 were involved in group self-injury with friends and fellow learners.

Function of Self-Injury. It appears that in both groups self-injury was mainly used as an emotional regulation strategy and interpersonal influence mechanism, but also for self-punishment or instead of suicide.

Emotional regulation. The most significant function of self-injury was that of emotional regulation, seeing that most participants' could only sometimes let thoughts and feelings come and go without reacting to it (see Table 1: average Nonreact mean scores). Hence, they experienced emotional dysregulation, with their emotions fluctuating between intense positive and negative emotions, and they felt compelled to react to it. Their heightened experience of frequent and intense emotions (see Table 1: above average Observe mean scores) caused emotional distress and consequently became the normal state of being for all of the participants. One participant said: *"... I only cut to make the pain go away ... like when I feel sad or so ..."*

In general, participants from both groups used self-injury to replace their emotional pain with physical pain, or in an attempt to experience a different kind of pain or feeling. The displacement of pain was illustrated by the following: *"Yes ... it is an emotional pain ... then it turns into a physical pain ..."/ "Well, to let that moment pass so that I can feel a different pain. It is not the same feeling ..."*

Group 1 participants, however, deliberately attempted to release stress and emotional discomfort through self-injury. Emotions such as anger, anxiety and frustration tend to be present before self-injury, followed by feelings of relief after self-injury. A Group 1 participant indicated: *"It helps to bring the pressure down ..."/ "I don't know, people will say I am mad, but it is a good feeling ... it is so relieving ..."/ "It relaxes me ... so that I don't get so angry or so sad ..."*

Interpersonal influence. This theme, reflecting the second strongest function, refers to efforts made by participants to influence or manipulate other people's

responses or behaviour. Subthemes were identified as attention-seeking behaviour as well as the setting of interpersonal boundaries. Half of the participants self-injured in an attempt to seek attention and affection from significant others, particularly from their parents or primary caregivers. Those with average Total Mindfulness scores made more use of self-injury for attention-seeking purposes, as opposed to those with above average scores. They mentioned that they wanted to prove a point, and communicated through their self-injuring behaviour what they could not verbalise: *"... I feel that they have gotten the message ... otherwise I would still have been at home cutting myself and so on ..."*

Setting interpersonal boundaries was reported by most of the participants as an effort to either create closeness or distance between themselves and others. Group 1 participants tended to use self-injury to create distance in interpersonal relationships, as is evident from the following: *"With one cut, she was there with me, but then she went to the bathroom, for she got cross with me and tried to stop me, but then I went and locked myself in the bathroom, so that she couldn't stop me"/ "Yes ... they mocked me and so on ... then I sat under the table and continued cutting my arm ..."*

In contrast, Group 2 participants used self-injury to create closeness in interpersonal relationships and as an attempt to seek help. One participant said: *"They don't take things seriously ... now I want to show them ... look, I have problems ... please help me! ... it's no good if I walk right up to them and tell them ... for they just don't listen ..."*

Self-punishment. Next to emotional regulation and interpersonal influence, self-punishment is the most prevalent reason for self-injury, with all of the participants using self-injury as a form of self-directed anger. All the participants self-injured in an attempt to punish themselves, thus illustrating their tendency to react to emotional

distress, but also their inability to tolerate distress. However, those in Group 1 punished themselves more severely, as is clear from the following: *"It feels that everything that has happened is my fault ... then I get angry with myself ... one wants to feel pain, all the time."*

Anti-suicide.   Finally, some of the participants used self-injury to prevent and resist suicidal urges. Those in Group 2 reported this function more often, as one girl said: *"Yes ... for two days afterwards I don't think of suicide at all ..."*

Effectiveness of Self-Injury and Alternatives to Self-Injury

Effectiveness of self-injury.   This theme refers to whether self-injury fulfils the intended function. Although Group 2 did not find self-injury to be effective at all, Group 1 found self-injury to be very effective initially, but losing its effectiveness over time. The effectiveness experienced seems to be associated with the severity and lethality of self-injury, for example: cutting deeper, using sharper instruments and intensifying pain by pouring alcohol over the wounds. The short-lived effect of self-injury was apparent from the following responses: *"Usually I felt much better and felt relief ... while I am cutting I feel better and happy and good ... but when I stop I feel the same as before ..."*

All the participants expressed a desire to stop self-injury, because they realised the ineffectiveness thereof, but reported an inability to do so.

Alternatives to self-injury.

Group 1 reported more destructive alternatives to self-injury that seem to be more reactive in nature, for example smoking cigarettes, drinking alcohol, sniffing deodorant, fisting the wall, swearing, shouting and throwing things around. In contrast, Group 2 reported more constructive alternatives that, however, seemed to be more passive or nonreactive in nature. They were able to generate alternative emotion-

focused coping strategies and more constructive behaviours such as exercise, sport, enjoying nature, seeking out meaningful relationships, introspection, relaxation exercises, playing computer games and even crying. Interestingly, no problem-focused coping strategies were reported in either group.

Consequences of Self-Injury.

Emotional consequences. Both Groups 1 and 2 reported emotional consequences as a result of self-injury. All eight participants experienced remorse and shame as a result of their self-injuring behaviour. It does, however seem that Group 1 experienced more shame and regret than Group 2. The following trends were observed: feeling guilty for hurting others; having regret for not being role models; blaming themselves; looking for flaws within themselves; questioning themselves constantly; asking God for forgiveness and guidance to stop their self-injuring behaviour; feeling sad for disappointing others and being upset with themselves for continuing with their self-injuring behaviour. The emotional consequences are evident from the following: *"... I realised if I cut myself, then I am hurting my mother deep inside ... my mother hates it ... hey ... I am hurting her ... for she hates it ... and uhm ... actually I hate it too ... for my eyes have opened now more than ever ..."*

Physical consequences. Participants in both groups reported physical consequences as a result of self-injuring behaviour, indicating that self-injury left permanent marks or scars, with Group 1 reporting more severe physical consequences. A Group 1 participant reported nerve damage and temporary loss of the use of his hand as a result of a self-injuring episode: *"No, my nerve was severed. My hand hung like this"*. Other physical consequences can further be illustrated by the following response: *"And when one feels cold, then all the cuts show up and then my arm looks hectically terrible."*

Discussion

This study explored mindfulness among self-injuring adolescents in a psychiatric setting. Findings regarding self-injuring behaviour were, in general, in line with the literature, as supported by Klonsky and Muehlenkamp (2007). Regarding mindfulness, two groups emerged, one sometimes acting mindfully (Group 1), and the other often acting mindfully (Group 2). In this study, both similarities and differences were found among the two groups in terms of mindfulness and self-injuring behaviour. It appears that similarities in self-injuring behaviour can best be explained by their similar scores on Observe and Nonreact, whereas differences in self-injuring behaviour can best be explained by their differences in scores on Describe, Act with Awareness and Nonjudge.

Groups 1 and 2 reported similar precipitating factors to self-injury, including invalidating interpersonal relationships and poor self-concept. This finding is in line with Skegg (2005), who found that few self-injuring adolescents have well functioning relationships. This is further supported by Linehan's (1993a) explanation of the pathogenic role that invalidating environments and relationships play in the development of self-injury, emotional dysregulation and poor self-concept. According to Linehan (1993a), children exposed to invalidating environments do not acquire the capacity to self-regulate emotions in appropriate ways, are not able to tolerate some emotionally painful stimuli and have difficulty with the normal expression of emotions. In this regard, Skegg (2005) mentions that self-injuring adolescents experience severe interpersonal difficulties due to a lack of the social skills needed for healthy relationships, and consequently find it difficult to develop a healthy sense of self. In support of this finding, the literature consistently links self-injury to a poor self-concept (Lundh et al., 2007) and to self-derogation as a result thereof (Herpertz,

Sass & Favazza, 1997; Klonsky, Oltmans & Turkheimer, 2003; Soloff, Lis, Kelly, Cornelius & Ulrich, 1994).

Both groups also reported that dysregulation of emotional pain precipitated self-injury, as supported by similarities in their above average mean scores on Observe and their average mean scores on Nonreact. This implies that they are often aware of painful, intense and intolerable thoughts, emotions and senses; however, they are only sometimes able to let these distressing thoughts and feelings come and go without feeling overwhelmed and compulsively reacting to it. A possible explanation is that participants observe thoughts and emotions with attachment and judgement, resulting in decreased emotional acceptance (Hopwood, Keeling, Long, Pool, Evans & Howell, 1998), unwillingness to tolerate uncomfortable emotions and sensations (Lerman & Schwartz, 1993), and increased reactivity and time needed to recover from negative emotional experiences (Bishop et al., 2004). This is also supported by Linehan's (1993a) theory on the pathogenesis of emotional dysregulation, which indicates that the absence of the ability to regulate experience and to express emotions, leads to disruptive and destructive behaviour. Linehan (1993a) further states that self-injury is then used to reduce the painful emotions by providing a compelling distraction. This leaves self-injurers feeling empty and consequently experiencing a numbing of emotions due to their tendency to inhibit emotional responses, which also contributes to their absence of a strong sense of identity (Linehan, 1993a).

Despite having self-injury and precipitating factors in common, Groups 1 and 2 differed regarding the intensity, severity and frequency of self-injuring behaviour and the "how" facets of mindfulness identified by Linehan (1993a), namely Act with Awareness and Nonjudge. Members of Group 1 report less self-injuring episodes and fewer wounds per self-injuring episode than those of Group 2. However, they use a

greater number of and more lethal self-injuring instruments, sustain more severe physical damage, leave their wounds unattended or neglect the treatment thereof, mentioned more destructive alternatives to self-injury and consequently experienced more shame and regret than Group 2. This is in line with their tendency to often behave mechanically (below average mean scores on Act with Awareness), and to be seemingly unaware of the serious and compulsive nature of their self-injuring behaviour. In this regard, Simeon et al. (1992) found that self-injurers reported greater impulsiveness and that greater impulsiveness is correlated with the increased severity of self-injury. Furthermore, Braid and Cahusac (2006) found that when a painful stimulus was self-inflicted it resulted in significantly less pain and a greater ability to tolerate pain, compared to when the same stimulus was applied by another person. Linking this with Linehan's (1993a) finding that self-injurers are unable to tolerate their unbearable and intense emotions, it appears that they display a higher threshold for physical pain, than for emotional pain. As self-injury serves to express and externalise intolerable and overwhelming emotions (Allen, 1995; Chowanec, Josephson, Coleman & Davis, 1991; Darche, 1990; Herpertz, 1995), it seems to be used to regulate the overwhelming affect by creating a sense of control, turning the passive emotional pain into an active physical pain that can be controlled (Darche, 1990; Reine, 1982). Although self-injurers view their behaviour as a form of self-help and self-protection, they gradually need to injure themselves more severely and to use more lethal methods to experience any positive effects (Bywaters & Rolfe, 2002; Himber, 1994). Furthermore, after the self-injury they are freed from the overwhelming emotions and unbearable tension, even if only temporarily (Bywaters & Rolfe, 2002; Claes, Klonsky, Muehlenkamp, Kuppens & Vandereycken, 2010;

Huband & Tantam, 2004; Kocalevent, Fliege, Rose, Walter, Danzer & Klapp, 2005), and will use self-injury as often as required to again experience that feeling of release.

In addition, below average mean scores on Nonjudge can also explain the above-mentioned findings further, since Group 1 participants are rarely self-compassionate and often act self-critically. They consequently take an evaluative stance towards their cognitions and emotions, upon which they often react in extreme ways. Thus they reported punishing themselves more severely, hence demonstrating a lack of self-compassion and self-kindness. This is supported by Klonsky (2007) and Skegg (2005), who found that self-punishment and self-directed anger are frequently cited as motivations for self-injury. Gratz (2000) also describes self-injury as a way to express feelings of self-hatred. In line with this finding, Neff (2003a) found that negative self-judgements are strongly implicated in the high incidence of self-injury among adolescents, by explaining that even though self-compassion is likely to be especially needed by adolescents, it is especially lacking during this development phase. In support of this finding, Jopling (2000) found that the non-judgemental stance of mindfulness lessens self-criticism, increases self-understanding and directly enhances self-kindness. This probably explains why Group 1 participants, in contrast to Group 2 participants, tend to be more self-critical, thus displaying a lack of both self-compassion and self-kindness.

The fact that Group 1 participants mainly used self-injury to create distance in interpersonal relationships, and to communicate a point, in contrast to Group 2 who use self-injury to create closeness, could possibly be explained by the difference in their mean Describe scores. Group 1 participants are only sometimes able to label their internal experiences with words and describe them accurately, whereas Group 2 participants are often able to do so. This is supported by Suyemoto (1998) who

mentions that self-injurers are unable to use language to create distance in interpersonal relationships, thus they use self-injury as a substitute. He also mentions that self-injurers have difficulties with verbal expression, and therefore self-injury may serve not only to validate their internal experiences, but also to express the depth of their feelings towards others; through self-injury they seek closeness with others (Suyemoto, 1998).

With regard to the treatment of wounds, Group 2 participants reported better wound care than Group 1 participants, but they were the only ones excoriating wounds. Their better wound care can be explained by the above average mean score on Nonjudge, with Group 2 scoring twice as high as Group 1. Hence, Group 2 participants show themselves more self-compassion and self-kindness, as also illustrated by their less severe physical damage sustained. This is also supported by Neff (2003b), who found that self-compassion is amongst others negatively associated with self-criticism, and positively associated with social connectedness. The excoriation of wounds reported by Group 2 is an interesting finding as one would expect lower Total Mindfulness scores to be associated with excoriation of wounds. Although Group 2 clearly scored higher on the mindfulness "how" skills (Linehan, 1993a), it appears that their Nonreact scores possibly predispose them to self-injury and to excoriate their wounds. It can be hypothesised that they are only sometimes able to use Nonreact skills in combination with Act with Awareness and Nonjudge to buffer emotional distress. This illustrates the importance of Nonreact skills in the prevention of self-injury. However, further research is needed to better understand this finding, especially regarding the excoriation of wounds.

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Limitations and Recommendations

Aside from constraints on generalisability, another limitation of this study was its relatively small sample size which limits the possibility of statistical procedures. Nevertheless, in-depth qualitative interviews, comprehensive thematic analysis and perusal of patient files do ensure the trustworthiness of the current findings. The results presented here should be considered preliminary until replicated with a larger clinical sample. Furthermore, other age groups and settings could possibly yield different results. Another limitation of the study is that, due to the reliance on self-report, there is an inability to discern whether results are true or whether they reflect social desirability. This was, however, addressed by collecting both quantitative and qualitative data on mindfulness and self-injury. Lastly, the researcher did not transcribe the interviews, but did check the transcriptions against the audio-taped interviews and modified them where necessary in order to obtain a good fit.

It is recommended that future research on larger samples reach definite conclusions about the relationship between specific facets of mindfulness and self-injury, and such research should assess the ability of specific mindfulness facets to predict self-injury which may inform how mindfulness can be targeted clinically. It is also recommended that further research explore the viability of mindfulness-based interventions to not only increase self-injurers' levels of mindfulness, but also to decrease their self-injuring behaviour due to the improvement in their emotional regulation abilities. It appears that Nonreact, Nonjudge and Act with Awareness, in particular, are the facets of mindfulness that should receive more attention during mindfulness interventions. Furthermore, the data obtained from this study can be used to stimulate further research into a conceptual model using mindfulness as a

preventative measure to address self-injuring behaviour and increase emotional regulation and distress tolerance abilities.

Conclusion

To the researcher's knowledge, this is the first South African study to explore mindfulness amongst self-injuring psychiatric adolescents and, as such, should be considered an exploratory study. The results of this study suggest that the clinical use of mindfulness should emphasise developing the ability to accept, rather than judge, the thoughts, emotions and bodily sensations that arise in the cause of daily activities. In light of the findings regarding Act with Awareness, Nonjudge and Nonreact, loving-kindness meditation and other mindfulness interventions might benefit self-injuring adolescents, since they need skills to tolerate distress, regulate their emotions and develop self-kindness.

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APPENDIX

Table 1: Results of the FFMQ*

FACETS OF MINDFULNESS	GROUP 1					GROUP 2				
	PARTICIPANTS (P)					PARTICIPANTS (P)				
	P2	**P5**	**P7**	**P8**	**MEAN**	**P1**	**P3**	**P4**	**P6**	**MEAN**
OBSERVE	35 High	28 Above Average	29 Above Average	23 Average	**29 Above Average**	33 High	30 Above Average	27 Above Average	22 Average	**28 Above Average**
DESCRIBE	12 Below Average	29 Above Average	13 Below Average	17 Average	**18 Average**	33 High	22 Average	39 High	25 Above Average	**30 Above Average**
ACT WITH AWARENESS	15 Below Average	20 Average	11 Below Average	20 Average	**17 Below Average**	32 High	28 Above Average	24 Average	25 Above Average	**27 Above Average**
NONJUDGE	15 Below Average	16 Below Average	15 Below Average	15 Below Average	**15 Below Average**	23 Average	35 High	40 High	26 Above Average	**31 Above Average**
NONREACT	16 Below Average	26 Above Average	19 Average	15 Below Average	**19 Average**	22 Average	11 Below Average	12 Below Average	32 Above Average	**19 Average**
TOTAL MINDFULNESS	**19 Average**	**24 Average**	**17 Average**	**18 Average**	**20 Average**	**29 Above Average**	**25 Above Average**	**28 Above Average**	**26 Above Average**	**27 Above Average**

Note:
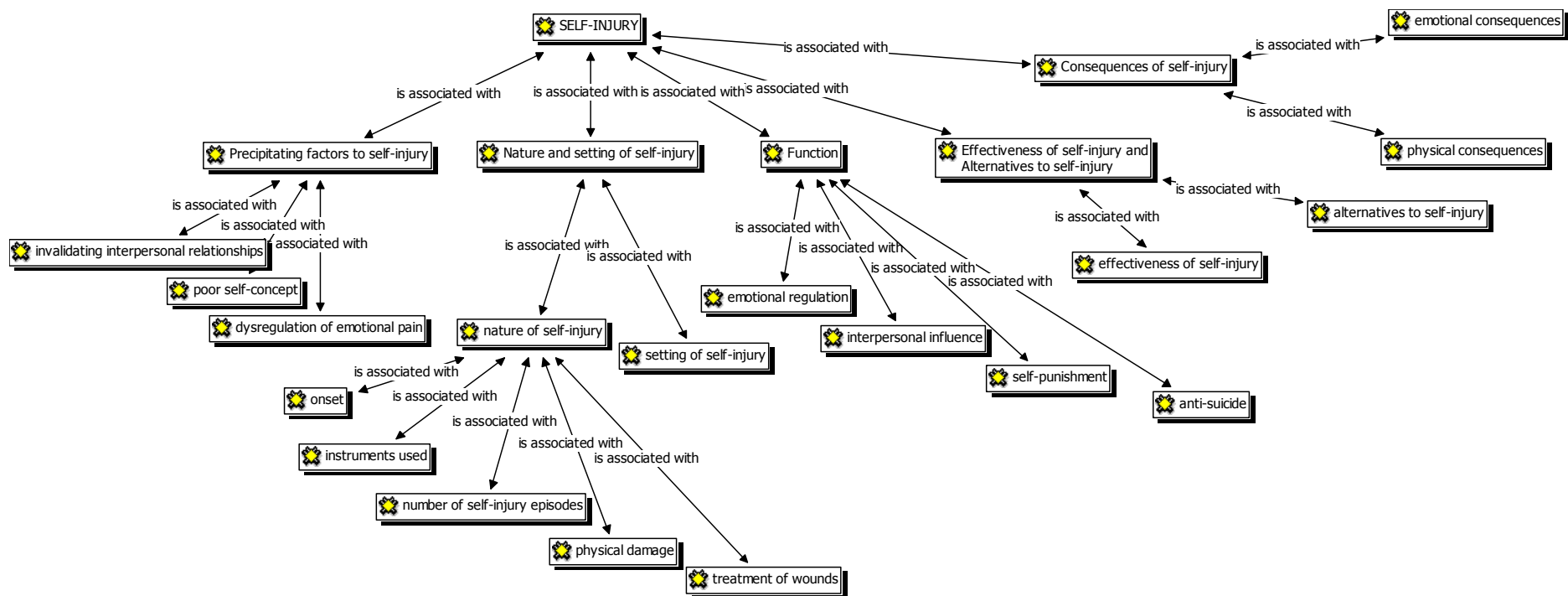*** Interpretation of scores: 1-8 = low; 9-16 = below average; 17-24 = average; 25-32 = above average; 33-40 = high**

Figure 1: Themes and subthemes for self-injury

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