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SUICIDE RESEARCH:
ADDRESSING THE MOTIVATIONAL DIFFERENCES IN SELF-INJURY

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DEDICATION

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SUICIDE RESEARCH:
ADDRESSING THE MOTIVATIONAL DIFFERENCES IN SELF-INJURY

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ABSTRACT: SUICIDE RESEARCH:
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Suicide research does not consistently differentiate between self-injuring patients who wanted to die from their injury and those who wanted to live, when defining a “suicidal act” (Silverman, Berman, Sanddal, O'Carroll P, & Joiner, 2007a). This lack of standard categorization creates significant barriers to the generalizability of findings (Silverman, et al., 2007a). In addition, the need to distinguish between various groups of self-injurers stems from the concern that patients who injure themselves without the intent to die have different reasons for the self-injurious behavior than patients who intended to die via the act (Cholbi, 2007). Thus, each group may require differing medical treatment (Freedenthal, 2007). To begin to characterize the impact of these definitional discrepancies, the current study uses a research protocol with scales for assessing intent, lethality, and motive in a U.S. population to determine motivational differences between samples of self-mutilating patients, patients attempting suicide, and those who were ambivalent about dying. The study replicated methods used during the World Health Organization Region of Europe (WHO/EURO) Multicentre Study on Suicidal Behavior as applied in the Oxford, England cohort (Hawton, Fagg, Simkin, Bale, & Bond, 1997; Hjelmeland, et al., 2002). Deliberate self-injury patients admitted to Parkland Hospital were interviewed to determine their specific motives and the level of suicidal intent present during the self-injurious behaviors. This investigation identifies an important difference between suicidal patients and self-mutilating patients in terms of their motives for self-injurious behavior. While suicidal and nonsuicidal self-injurers demonstrated no significant difference in number of motives endorsed, the nature of motives endorsed by suicidal and non-suicidal patients differed significantly. On average, those who wanted to die from the injury endorsed intrapersonal motives while those who wanted to live endorsed interpersonal motives for their self-injury.

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LIST OF DEFINITIONS

Suicide - defined in one of three ways: “a deliberate act of self-destruction that results in death, a conscious self-directed act with the intent to die, or a willful self-inflicted life-threatening act resulting in death” (Silverman, 2006). Although these three definitions differ in some ways, they contain four basic definitional criteria: (1) outcome of the behavior as death, (2) agency of the act as self-inflicted – done by oneself and to oneself, (3) intention to die in order to achieve a different status, and (4) consciousness (awareness of the outcome, including being indirect or passive) (Silverman, 2006).

Suicide attempt - an intentional act of self-inflicted bodily harm, where the outcome is not fatal. In the U.S., this usually requires that there was intent to die via the act (Skegg, 2005). In Europe, this criterion is not usually applied.

Parasuicide / Deliberate self-harm - “an act [of self injury] with nonfatal outcome, in which an individual deliberately initiates a nonhabitual behavior that, without intervention from others, will cause self-harm, or deliberately ingests a substance in excess of the prescribed or generally recognized therapeutic dosage, and which is aimed at realizing changes which the subject desired via the actual or expected physical consequences” (Hjelmeland, et al., 2002).

Self-injury - any nonfatal injury inflicted upon oneself regardless of suicidal intent (Skegg, 2005).

Self-mutilation / Non-suicidal self-injury (NSSI) - “direct, [often] repetitive, intentional injury of one’s own body tissue, without suicidal intent (Plener, Libal, Keller, Fegert, & Muehlenkamp, 2009). “Deliberate, direct destruction or alteration of body tissue without conscious suicidal intent” (Lloyd-Richardson, Perrine, Dierker, & Kelley, 2007).

Suicidal intent - “The seriousness or intensity of the wish of a patient to terminate his life” (A. Beck, Schuyler, & Herman, 1974).

Motive - the underlying reasons for suicidal behavior (Freedenthal, 2007). “a motive is a forward-looking reason for acting, i.e., that state of mind which makes a particular result attractive enough to the agent for him to want to effect it” (Hjelmeland & Knizek, 1999).

CHAPTER ONE

Introduction

Suicide is a leading cause of death around the world and one of the most important clinical problems faced by mental health professionals (Kumar, Mohan, Ranjith, & Chandrasekaran, 2006). It represents the 11th leading cause of death in the United States, and “the 7th leading cause of years of potential life lost, surpassing diabetes, liver disease, and HIV infection” (Gaynes, et al., 2004; Nock, et al., 2008). According to a 2004 U.S. Task Force, approximately one-half to two-thirds of individuals who commit suicide visit physicians within one month of taking their lives, and 10% to 40% visit in the week prior to death (Gaynes, et al., 2004). Mental health professionals often struggle to identify and prevent suicidal acts, as it is extremely difficult to determine which self-injuring individuals will go on to commit suicide (Apter, Horesh, Gothelf, Graffi, & Lepkifker, 2001). Therefore, additional suicide research is critical to helping health professionals create effective interventions and crisis treatments (Silverman, et al., 2007a).

Over the past four decades, Europe has amassed a large body of research on self-injuring patients (Hjelmeland & Ostamo, 1997). Researchers in the United States must exercise a great deal of caution in generalizing these findings to American populations, due to definitional differences inherent in the term, “suicide attempt”. Generally European research includes the terms “attempted suicide” or “suicide attempt” in the broader self-injuring category of “parasuicide” defined by the World Health Organization (WHO) as “any intentional, nonhabitual, potentially self-damaging, non-fatal act in

which the actor *may* have intended to end his or her life” (Freedenthal, 2007). Thus, European researchers generally include all self-injuring patients in the study of suicidal behavior (regardless of whether there was intent to die via the act), while researchers in the U.S generally only include in their studies those who evidenced intent to die from the self-inflicted injury (Wright & Adam, 1986).

Kelley et al. stated that “until recently, in scientific literature, distinctions between self-harm which is intended to be fatal and self-harm which serves other purposes have not been delineated consistently” (Kelly, Jorm, Kitchener, & Langlands, 2008). The concept that self-injury can be broken into distinct subtypes is reiterated by Silverman in claiming that the ability to assess, predict, treat, prevent, or understand suicide and suicidal behaviors is contingent upon the ability to “accurately specify and define the types and subtypes of suicide and suicidal behaviors (nomenclature), and clearly categorize the different clinical presentations into distinct groups (classification)” (2006). This need to distinguish between suicidal and non-suicidal self-injuring (NSSI) populations was supported by De Leo et al. who stated, “Intent to die or stop living is a characteristic that distinguishes suicide from habitual and manipulative behaviors” (2006). Furthermore, among self-injuring patients themselves, those who “have made suicide attempts in the past and have also engaged in other forms of NSSI describe the two behaviors as separate from one another” (Kelly, et al., 2008). These arguments highlight the need for more specific categories than “parasuicide” alone (De Leo, Burgis, Bertolote, Kerkhof, & Bille-Brahe, 2006). “Its overly-inclusive character has generated misleading interpretations and erroneous utilizations in different settings, nationally and

internationally” (De Leo, et al., 2006). U.S. researchers, among many others, generally consider a patient’s level of suicidal intent to be a crucial component of distinguishing between types of self-injuring patients (Bille-Brahe, et al., 1995).

The European approach was used in the World Health Organization Region of Europe (WHO/EURO) Multicentre Study on Parasuicide, a study of nonfatal self-injuring behavior spanning fourteen nations including Austria, Belgium, Denmark, Estonia, Finland, Germany, Ireland, Israel, Latvia, Lithuania, Norway, United Kingdom, Slovenia, Sweden, Switzerland, The Netherlands, Turkey, Ukraine, and Yugoslavia (Hjelmeland & Ostamo, 1997). This series of studies used a standard protocol to examine the level of suicidal intent and motivations for self-injuring acts among patients seeking medical attention during the 1980’s and 1990’s (Hjelmeland & Ostamo, 1997). Although they examined patients’ level of suicidal intent, they evaluated all data collectively without regard to level of suicidality (Bille-Brahe, et al., 1995). The current study used this same protocol, which included the Oxford Reasons for Parasuicide Interview (ORPI), with an American population of self-injuring patients (Hawton, et al., 1997). Unlike the WHO/EURO Multicentre Study on Parasuicide, we used the information collected on level of suicidality to separately evaluate suicide attempters, non-suicidal self-injurers, and ambivalent self-injurers on the basis of motivation for injury.

In summary, the purpose of the present study was to apply the protocol used in the early WHO/EURO Multicentre Study on Parasuicide to an American population to identify self-injuring patients in terms of their level of suicidal intent and motivations for self-injuring behavior. The study was designed to detect significant differences in

motivations between patient groups who attempted suicide and those who self-mutilated (NSSI). A third category of patients, those who were ambivalent in their wish to die, were also evaluated. This study may help to determine whether these are distinctly different populations requiring specialized treatments, and whether findings from a host of European studies using the broader definition of “suicidal” behavior can be generalized to an American population.

CHAPTER TWO

Review of the Literature

Suicide is “an enormous public health problem in the United States and around the world” (Nock, et al., 2008), with an annual toll of over 30,000 American lives and approximately one million lives worldwide (“Suicide Prevention (SUPRE),” 2010; Web-based Injury Statistics Query and Reporting System (WISQARS),” 2010). While it represents a serious problem for health professionals, suicide attempts and non-suicidal self-injury represent an even greater public health burden, both worldwide, and in the United States (De Leo, et al., 2006). Each year, “approximately 500,000 individuals require emergency department treatment in U.S. medical centers following attempted suicide” (Gaynes, et al., 2004). Research evidence on the clinically important differences among self-injurers is converging from many sources, “yet it is not unusual to read research studies or media accounts where suicide-related terms are not defined, used interchangeably, or have different meanings depending on the author(s)” (Silverman, 2006). This “lack of consistent definitions contributes to a lack of comparability between studies” (De Leo, et al., 2006).

Most physicians are aware that not all patients who commit an act of deliberate self-injury are “truly suicidal, yet the differentiation of those at serious risk from those at low risk is often not a simple matter” (Wright & Adam, 1986). Researchers need to be clear about who they are studying, as self-injuring patients and suicidal patients differ in their levels of suicidal intent and may therefore differ in their motivations for making a deliberate self-injurious act (Lloyd-Richardson, et al., 2007). “A lack of clinical

nomenclature is, therefore, detrimental to clinical practice in the application of studies on treatment effectiveness and risk assessment” (De Leo, et al., 2006).

Suicide Attempters

“Strictly speaking, a ‘true’ suicide attempt should refer only to acts where self-injurers fail to die after trying to kill themselves” (De Leo, et al., 2006). Prior suicide attempts are the single most powerful predictor of subsequent suicide (Gaynes, et al., 2004). However, “suicide attempts remain substantially more common than completed suicides by a factor between 10 and 20” (Gaynes, et al., 2004). At present, it is extremely difficult to determine which attempters are at highest risk of killing themselves (Apter, et al., 2001). To address issues of suicide risk among attempters, socio-demographic profiling has been used to identify the high-risk patients (Kumar, et al., 2006).

Among those who self-injure, suicide attempters “have distinct socio-demographic and clinical profiles” (Kumar, et al., 2006). Specifically, men have higher levels of suicidal intent than women as measured by the Suicide Intent Scale (SIS) (Hjelmeland, et al., 2002). This finding is consistent with studies showing that “men have a higher rate of completion, whereas women have a higher rate of attempts” (Gaynes, et al., 2004). Additionally, men “tended to carry out riskier acts” and “also do things in a slightly less rescuable context” (Weisman & Worden, 1972).

Age is also a factor in understanding self-injuring patients’ level of suicidal intent (Weisman & Worden, 1972). Weisman and Worden found that “older subjects carried

out riskier attempts” (1972). Being over the age of 55 was “independently associated with high suicidal intent scores” for both men and women (Harriss, Hawton, & Zahl, 2005). Apter et al. found that serious suicidal behavior was most common among Caucasians (2001). Similarly, the U.S. Preventative Services Task Force found that “individuals aged 65 and older are at the highest risk for completed suicide; white men aged 85 and older have an especially high rate” (Gaynes, et al., 2004). However, “suicide also affects adolescent and young adults; it is the third leading cause of death among persons aged 15 to 24” (Gaynes, et al., 2004).

The relationship status of “being widowed, divorced or separated” was found to relate to high suicide intent scores (Harriss, et al., 2005). Gaynes et al. identified that living alone is a risk factor for completed suicide (2004) and Kumar et al. found that “a significantly higher proportion of single persons in the high intent suicide-attempting group in comparison to the low intent group” (2006). Similarly, “living in lonely household conditions” was found to correlate with high levels of suicidality in women (Harriss, et al., 2005). Barriers to the ability of a suicidal person to disclose their ideation under such circumstances include loneliness, isolation, and other suffering (Apter, et al., 2001). Apter et al. found that “The severe suicide attempters had the lowest self-disclosure scores” (2001). Patients who limit their disclosure to others are less likely to have someone notice that they are suicidal, thus reducing the likelihood of intervention (Apter, et al., 2001). “The completed suicide prepares secretly; the attempted suicide prepares openly” (A. T. Beck & Lester, 1976). Other lifestyle factors such as “having a recent harmful event (such as job loss or death of a loved one)” are associated with

completed suicide (Gaynes, et al., 2004). Furthermore, the “mean number of life events in the past month was significantly more” in the suicidal intent group “and they also had higher stress scores” (Kumar, et al., 2006).

“More than 90% of those who complete suicide have a diagnosable psychiatric illness at the time of death, usually depression, alcohol abuse, or both” (Gaynes, et al., 2004). In contrast, Harriss et al. found an absence of alcohol abuse among subjects who made nonfatal suicide attempts with high levels of suicidal intent and that “low [suicidal intent] scores in this group were associated with alcohol misuse” (2005). In one study, 41% of self-injuring people reported high intent to kill themselves, while 59% reported low intent (Kumar, et al., 2006). A defining characteristic of the high intent group was that 81% had a mental disorder, most commonly depressive disorder (Kumar, et al., 2006). “In addition, the presence of psychiatric diseases, including affective disorders, schizophrenia, and substance abuse, seems to place patients at high risk of completed suicide” (Apter, et al., 2001).

These socio-demographic statistics may help to identify patients who could be at risk of suicidal behavior (Skegg, 2005). However, circumstantial indicators of self-injurious acts can also provide information about the patients’ level of suicidality (Freedenthal, 2007). “Objective markers of intent include timing the attempt so that rescue is not likely, taking precautions against discovery, not acting to get help after the attempt occurred, making final preparations in anticipation of death, and leaving a suicide note” (Freedenthal, 2007). Similarly, patients at highest risk for suicide after an attempt are those who had a high level of suicidal intent, avoided discovery at the time of self-

injury, experienced repeated episodes of self-injury, had a psychiatric disorder, or past psychiatric care (Skegg, 2005). In another study, psychiatrists considered self-injury patients to be at highest risk for later suicide when they evidenced “intent to repeat the attempt, plan to use a lethal method, low psychosocial functioning before the attempt, previous psychiatric hospitalization, suicide attempt in the past year, and planning that nobody would try to save their life” (Baca-Garcia, et al., 2004). “Taken together, the arguments supporting the inclusion of [suicidal] intent in a definition of suicide are strong and the problems of operationalization are outweighed by the importance of the concept” (De Leo, et al., 2006).

Non-suicidal Self-injurers

Self-mutilation is an act that typically lacks suicidal intent and has been described as “a means of averting suicide, as a morbid form of self-help, and as addictive” (Skegg, 2005). Many – if not most- people who made self-injurious acts have no intention of dying (Skegg, 2005). In a nationwide American epidemiological survey, 48% reported that their “attempt” was actually a cry for help (Freedenthal, 2007). Skegg concluded that “most people admitted to a hospital after an overdose neither want nor expect to die” (2005).

Freedenthal identified several motives for self-injury in the absence of suicidal intent, such as the effort to cope with unbearable feelings, to obtain help from others, to make another person act differently, to convey one’s sense of desperation to others, to

learn that others really care, to hurt others, to punish oneself, or to temporarily escape a painful situation (2007). By contrast, communicating hostility and influencing others were the two motives most frequently chosen by psychiatrists when ascribing the reasons behind patients' self-injurious acts (J. Bancroft, et al., 1979). Nock et al. (2008) noted that self-mutilation may be a social means of eliciting care-giving by signaling distress, or a way of demonstrating strength to ward off predators, or of bonding with peers. Self-mutilation may also serve as an intrapersonal means of affect regulation by reducing physiological reactivity (Nock, et al., 2008). "Such behaviors do not have the intentions of suicidal behaviors and, thus, are qualitatively different [from suicidal behavior]." (De Leo, et al., 2006).

"Self-harmers seem to have a different demographic profile to people who commit suicide" (Skegg, 2005). Women who committed a self-injury generally evidenced lower SIS scores than men (Hjelmeland, et al., 2002). "In contrast to suicide mortality, rates of nonfatal self-injury are consistently higher among females" (Nock, et al., 2008). Hjelmeland et al. also found that men have higher rates of suicide while women have higher rates of nonfatal self-injury (2002). Skegg further supported that while "being male is an important risk factor for suicide, presentations of self-harm to health agencies are generally more common in women" (2005). Additionally, "Patients who engaged in self-cutting had the lowest [suicidal] intent scores" when compared to other methods of self-injury (Harriss, et al., 2005).

Nonfatal self-injury is most common among the young and middle aged and usually decreases as people age (Hjelmeland, et al., 2002). Nock et al. noted that "there

is a significant increase in risk of nonfatal self-injury during adolescence and young adulthood which then decreases monotonically throughout adulthood” (2008). Skegg stated that “the most common age for first onset” was at about age 16 and that “self-mutilating actions are not uncommon in non-clinical samples of adolescents” (2005). Notably, researchers found that 46% of adolescents and 38% of college students reported making a non-suicidal self-injury in their lifetime (Lloyd-Richardson, et al., 2007). Other studies have placed U.S. rates of self-mutilation as ranging between 23% and 38% among adolescents and young adults (Plener, et al., 2009).

Suicidal and non-suicidal self-injurers may differ based on communication style (Apter, et al., 2001). Thus, while people who limit their disclosure have more lethal suicide attempts, those who easily disclose personal information are often prone to more frequent, but less lethal, self-injury (Apter, et al., 2001). Beck et al. determined that a patient who “times the suicidal act in such a way that intervention is highly likely, who carries out his act in the presence of others likely to rescue him, or who notifies others after making an attempt acknowledges less serious intent” than a person who made efforts to prevent interruption of the self-injuring act (Beck et al., 1974). A study found that when emergency room psychiatrists were considering hospitalization they were more inclined to release a patient to go home when he or she demonstrated a realistic perspective about the future after the injury, relief that the injury was not fatal, availability of a lethal method of injury that was not used, belief that the injury would influence others, and family support (Baca-Garcia, et al., 2004).

Nock proposed that self-mutilation may be an escalated means of expressing distress to others when less intense forms of communication, such as talking, yelling, and crying, are ineffective (2008). This concept is supported by findings that adolescents who engage in NSSI (non-suicidal self-injury) were not different from others in respect to general intelligence, problem-solving, or design fluency, but “they have significantly poorer verbal fluency than non-injurers (i.e., poorer ability for word generation) and they report being less mindful of their emotions and having greater difficulty expressing emotions” (Nock, et al., 2008). Karila et al. found that self-mutilation is often seen as a means of reducing distress or tension, expressing anger or shame, or manipulating another person and is associated with childhood, trauma, personality disorders, and amphetamine use (2007). Many non-suicidal self-injurers had eating-disorders, substance-abuse problems, post-traumatic stress disorder, schizophrenia, or other psychiatric disorders (Skegg, 2005). “Most of those who self-mutilate, however, are women with borderline personality disorder” (Karila, et al., 2007). Furthermore, self-injurers were “particularly more likely to select maladaptive and potentially harmful social responses” to conflict (Nock, et al., 2008).

Definition of Suicidal Intent

“Previous studies have shown that the terms motives, reasons, and intentions are employed somewhat inconsistently and confusingly in the literature on suicidal behavior” (Hjelmeland & Knizek, 1999). “A standard set of terms and definitions are greatly

needed to advance the science of suicidology and understanding of the field” (Silverman, et al., 2007a). Suicidal intent can be defined as “the seriousness or intensity of the wish of a patient to terminate his life” (Beck et al., 1974). Researchers have distinguished intent from any given motive for a self-injuring act by indicating that intent applies to the desired outcome of the act, while motives are the reasons underlying the act (Hjelmeland & Knizek, 1999). Thus, intent refers to what is wanted and motive refers to why it is wanted (Hjelmeland & Knizek, 1999). In order to accurately classify patients, “the crucial factor in ascertaining whether a person’s death should count as suicide is not whether the person caused his or her death but whether it was intended that the actions would cause the death” (Cholbi, 2007). This distinction helps to separate suicide from self-mutilation or accidental self-inflicted death, in which “the agents acted in a situation in which the prospect of their own death played no part” (Cholbi, 2007).

In their studies in Oxford, England, Hawton et al. include intent to die as one of many possible motivations for self-injury (1983). In other work, the term “intention” is used interchangeably with motive to mean “something the persons wanted to achieve by their behavior” and without differentiation of motive for injury from intent of the act (Hjelmeland, et al., 2002). However, in some of these European studies, researchers additionally evaluate the participants’ level of suicidal intent and investigate whether the frequency with which the intent to die is indicated by participants is related to local rates of suicide and / or parasuicide (Hjelmeland, et al., 2002)., thereby indirectly acknowledging suicidal intent to be both a possible motive for, and an independent component of, patients’ self-injurious actions.

Researchers, in the current study, evaluated the participants' level of suicidal intent, defined as the degree to which the individual wished to die by asking the patient to select from three forced-choice options in describing their recent self-injuring act: "I wanted to die", "I did not mind if I lived or died", or "I did not want to die" (Harriss, et al., 2005; Hawton, et al., 1997). Intent to die was also included as a potential motive in another forced-choice question, which provided 14 possible motivations for self-injury chosen from common spontaneous explanations for self-harm behavior in previous studies (Hawton, et al., 1997; Hjelmeland, et al., 2002). The Suicide Intent Scale (SIS) was used to obtain a quantitative score of each patient's level of suicidality (Beck et al., 1974).

Definition of Motive

Hjelmeland and Knizek describe motivation for self-harm as a quality that is different from intent (2002). They believe that a person may have many motives during an act of self-injury that vary independently from that person's intent to die (Hjelmeland & Knizek, 1999). Therefore, several motives might be related to a self-injury but they are not indicative of suicidal intent, as patients "are often ambivalent in the question of whether they want to live or to die" (Hjelmeland & Knizek, 1999). Their belief that "intentional acts satisfy motives, i.e., motives gain active expression by intentions" makes clear that many motives may underlie a self-injury, but will not be acted upon unless the person has an adequate level of intent (Hjelmeland & Knizek, 1999).

After a series of early studies designed to identify the reasons for deliberate self-injury, Bancroft and Hawton concluded that these acts are generally multi-determined and viewed suicidal intent as one of many possible motives (1983). They concurred with earlier findings that there was always more than one reason that likely contributed to self-injury (J. Bancroft & Hawton, 1983). The current study includes “I wanted to die” as one of 14 possible forced-choice motives on the Oxford Reasons for Parasuicide Interview (Hawton, et al., 1997), a semi-structured interview protocol similar to that used in the WHO/EURO Multicentre Study on Parasuicide study described above (Appendix A). This study also evaluated the relationship between number of motives endorsed and patients’ level of suicidality.

For the purposes of this study, motives have been further separated into the two categories of interpersonal motives, which are aimed at affecting someone else, and intrapersonal motives, which are aimed at affecting the self. The interpersonal motives presented were: “I wanted to get help from someone”, “I wanted to know if someone really cared about me”, “I wanted to make someone feel guilty”, “I wanted to make things easier for others”, “I wanted to persuade someone to change his/her mind”, “I wanted to show someone how much I loved him/her”, “I wanted others to know how desperate I felt”, and “I wanted others to pay for the way they treated me”. The intrapersonal motives presented were: “I wanted to die”, “I wanted to get away for awhile from an unacceptable situation”, “I wanted to sleep for awhile”, “It seemed that I lost control of myself, and I do not know why”, “My thoughts were so unbearable, I could not endure them any longer”, and “The situation was so unbearable that I could not think of any

other alternative”. The goal of making this distinction is to determine whether participants of varying levels of suicidality select motives of an interpersonal nature or motives of an intrapersonal nature.

Previous Research on the Nature of Motives in Relation to Suicidal Intent

Self-Mutilation

Nock researched the interpersonal or “social” motives for self-mutilation (2008), but his research did not extend to assessment of the role of interpersonal motives for suicide attempts. However, he noted that, “It is important to bear in mind that virtually every study that has included an examination of the social functions of NSSI [non-suicidal self-injury] has found that a substantial minority of self-injurers report using NSSI to influence others” (Nock, et al., 2008).

General Self-injury

One study used the ORPI to evaluate the possible motives people had for engaging in parasuicide (Hjelmeland, et al., 2002). However, they grouped all self-injurers together under the definition of parasuicide and made no distinction between patients based upon level of suicidality (Hjelmeland, et al., 2002). Thus, the finding that “parasuicide patients in different countries tend to indicate similar intentions for their acts for parasuicide” only informs us about motives for self-injury as a whole, and does not illuminate how patients differ based upon their level of suicidal intent (Hjelmeland, et al.,

2002). Similarly, Michael et al. examined the endorsement of interpersonal and intrapersonal motives by self-injuring patients (Michel, Valach, & Waeber, 1994). Although researchers used the same motives as found on the ORPI, the finding that the motives chosen most often were of an intrapersonal nature, only describes self-injurers as a whole, and does not take into account motivational differences based upon differing levels of suicidal intent (Michel, et al., 1994).

A study was conducted to determine how the suicide intent levels of self-injuring patients differed across regions in regard to age and gender, but not motivation (Hjelmeland, et al., 2000). Researchers found that “although statistically reliable, the effects of region and gender on SIS [Suicide Intent Scale scores] were so small that they have neither theoretical nor practical significance” (Hjelmeland, et al., 2000). The current study is based on the hypothesis that level of suicidal intent may significantly distinguish self-injurers in regard to their motivations regardless of age or gender. Thus, grouping patients by level of suicidal intent to evaluate their motivations may glean more insight into the differences among self-injurers than demographic information alone.

Harris et al. divided patients into high intent and low intent groups based on their median SIS scores and then compared the samples in terms of method of self-injury and repetition of self-injury (2005). Researchers determined that “scores were lowest among those who engaged in self-cutting and highest among those who used other methods of self-injury (e.g. jumping from a height or in front of a vehicle, hanging, gunshot)” (Harriss, et al., 2005). They also found that while high and low intent groups showed no significant differences in repetition of self-injury, when the groups were separated by

gender, “a contrasting pattern of association between repetition of self-harm and SIS scores emerged” (Harriss, et al., 2005). Thus, in the 12 months following a self-injurious act, male patients with high SIS scores had fewer instances of self-injury, while women with low SIS scores had more frequent self-injuries (Harriss, et al., 2005). This research demonstrated the utility of using suicidal intent to understand differences among self-injuring patients, but does not provide information about the motives related to the self-injuring act.

As part of the WHO/EURO Multicentre Study on Suicidal Behavior researchers in Ireland evaluated patients’ motivations for self-injury and took into account their level of suicidality (McAuliffe, Arensman, Keeley, Corcoran, & Fitzgerald, 2007). They found that patients reporting high suicidal intent were more motivated to escape from their problem and patients claiming low suicidal intent were more motivated to appeal to others or get a temporary break from their problem (McAuliffe, et al., 2007). However, when categorizing the motives endorsed by patients, they did not specifically look at interpersonal and intrapersonal motives, but instead divided patients’ responses into the categories of “care seeking”, “influencing others”, “temporary escape”, “final exit”, and the single item “loss of control” (McAuliffe, et al., 2007).

Suicide Attempters

In a study which evaluated suicide notes from the United States and Mexico, researchers found that “when the two main meta-frames (intrapsychic and interpersonal) are considered, the two samples did not show any significant differences” (Chavez-

Hernandez, Leenaars, Chavez-de Sanchez, & Leenaars, 2009). However, this study evaluated only notes from completed suicides and thus takes into account only one cohort (McAuliffe, et al., 2007). It is therefore imperative, if we are to understand why some people injure themselves with intent to die while others injure themselves without any suicidal intent, that we not only separate patients based upon their level of intent, but also survey self-harming patients across the spectrum of possible injury outcomes using standardized research instruments and definitions.

Suicide Intent Scale

The Suicidal Intent Scale (SIS) “is immensely popular among suicide prevention researchers” (Freedenthal, 2007). The SIS is a “questionnaire designed to assess the severity of suicidal intention associated with an episode of self-harm” (Harriss, et al., 2005). It evaluates both objective circumstances related to the self-injury and subjective self-reported indicators of intent to die from a self-injury (Harriss, et al., 2005).

Specifically, the SIS gauges a person’s level of suicidality by accounting for both statements related to suicidal intent and actions they took to prevent being discovered (J. Bancroft, et al., 1979). When combined, this creates a “suicide intent score” which has shown to be predictive of suicide attempts (J. Bancroft, et al., 1979). Researchers note that when the SIS was used with other known risk factors it can sometimes identify those who might repeat such acts (Kaimal & Nair, 2005).

Beck et al. supported suicidal intent as a good predictor of attempt lethality (A. T. Beck, Beck, & Kovacs, 1975). Their research found that suicidal intention correlated with the expectation of death even when the person did not have a good understanding of the lethality of the method of self-injury used (A. T. Beck, et al., 1975). Understandably, Beck et al. found that suicide attempters with the highest completion rates are those who not only had a strong intent to die but also a good understanding of the lethality of their actions (1975). In this study, each patient's self-reported level of suicidality was compared to his or her SIS score to determine if self-report was a reliable means of categorizing patients.

Challenges of Using the Suicide Intent Scale

As shown by Hawton et al., (2003) scores on the SIS are relatively more predictive of future suicidal behavior primarily among attempters who plan their attempt and are less useful among “impulsive” attempters, who commit the act almost immediately after ideation onset (Hawton, Zahl, & Weatherall, 2003). Furthermore, the intent to commit suicide is believed to be stronger just before self-injury and weaker as time passes following the act (De Leo, et al., 2006). Thus, self-reported level of suicidality may be most accurately reported directly after the act (De Leo, et al., 2006). To address these challenges, the current study interviewed patients within 48 hours after the injury.

Patients with Ambivalent Suicidal Intent

“A balance between suicidal wishes and life preservative wishes may lead to an ‘ambivalent suicide attempt’” (Beck et al., 1974). “Classificatory schemes that force self-inflicted deaths into the binary categories of suicide or accidental death (or leave hard cases as ‘undetermined’) do little to lift the veil on the complex intentions and rationales that lie behind suicidal behavior” (Cholbi, 2007).

Researchers found that a number of self-injurers were “prepared to accept death as an outcome even if it was not their sole intention” (J. Bancroft, et al., 1979). “No matter what the exact source of the ambivalence, [these individuals, when] engaging in life-threatening self-directed behavior despite this ambivalence, seem not to unconditionally desire their own deaths” (Cholbi, 2007). Deaths such as these are neither coincidence or bad luck, nor are they intended or accidental (2007). For the patients who “in spite of their stated suicidal intent, acted in a way to ensure survival, the significance of the ‘suicidal’ message remains unclear” (J. Bancroft, et al., 1979). “The distinguished suicidologist Edwin Shneidman separates ‘death seekers’, who clearly intend to end their lives, from ‘death darers’, whose life-threatening behavior occurs against a background of mixed feeling or ambivalence” (Cholbi, 2007).

As part of the WHO/EURO Study on Suicidal Behavior, researchers presented self-injuring patients in Ireland with the same 14 motivations used in this study and asked them to indicate whether or not each influenced their self-injury (McAuliffe, et al., 2007). Researchers found that patients “who reported a wish to die always reported at least one other Nondeath motive [which] can be taken as evidence of considerable ambivalence”

(McAuliffe, et al., 2007). Furthermore, patients “who expressed a wish to die reported significantly more motives, showing evidence of ambivalence” (McAuliffe, et al., 2007). In one study, “suicidal intent was usually rated as ambivalent and there was always more than one reason regarded as [a likely precipitant of the act]” (J. Bancroft & Hawton, 1983). One patient “articulated this ambivalence while recalling his overdose of sleeping pills: ‘It was like in the back of my heart, you know, Somebody help me! But in the front of my heart, I can’t bear this pain anymore!’” (Pescosolido, Gardner, & Lubell, 1998).

Suicidal ambivalence in self-injury is widespread (Silverman, Berman, Sanddal, O’Carroll P, & Joiner, 2007b). However, it is more commonly noted among women, children, and adolescents than in the elderly (Cholbi, 2007). Recognizing a patient’s ambivalence “associated with self-manslaughter is an important insight, if only to understand the motivations of many of those we now misleadingly term suicidal: by coming to understand these ambivalent motives, we improve our chances of successfully intervening in life-threatening behaviors” (Cholbi, 2007).

Challenges in Obtaining an Accurate Level of Suicidality

There are several challenges in retrospectively assessing a patient’s level of suicidal intent regarding a self-injurious act. Patients will often lie about why they injured themselves in an effort to make the act seem more socially acceptable (J. H. Bancroft, Skrimshire, & Simkin, 1976). As Bancroft et al. state, “it is likely in many cases that the patient’s account [of why he committed the act] will be largely determined

by his need to justify or excuse his behavior.” (J. H. Bancroft, et al., 1976). Patients’ stated reasons for an attempt in one study conflicted with the motives identified by psychiatric judges after clinical evaluation (J. Bancroft, et al., 1979). As noted above, the judges’ four most commonly cited reasons for the patient’s self-injury in this study were: communicating hostility, influencing others, relieving a state of mind, and suicidal intent (J. Bancroft, et al., 1979). The first three of these were the motives least frequently given by study subjects personally for their self-injuries (J. Bancroft, et al., 1979). Although 56% of patients claimed to have had suicidal intent during the act, only 29% were judged to be actually suicidal by psychiatrists when interviewed shortly after the act (J. Bancroft, et al., 1979).

Suicidal intent may be more accurately assessed when researchers are able to “identify ‘spontaneous’ as well as ‘prescribed’ self-reported reasons,” for self-injury (J. Bancroft, et al., 1979). This allows for free expression and initially avoids the potential contamination caused by posed questions or listed options (Hjelmeland, et al., 2002). However, while spontaneous reasons may be helpful, if the patient is uncertain about why they attempted suicide, a list of intentions may facilitate explanation (J. Bancroft & Hawton, 1983). In addition, many suicide attempters demonstrate difficulty thinking clearly immediately after a suicidal act, and structured choices provide a way for them to begin to describe their pre-injury state of mind.

In determining a patient’s level of intent to die, it is important to err on the side of caution (Freedenthal, 2007). Freedenthal argued that a lack of discrimination between non-suicidal and suicidal self-injuring subjects may endanger lives (2007). From this

clinical perspective, believing patients who falsely deny having further intent, could allow them to bypass appropriate intervention and result in their death (Freedenthal, 2007). However, believing patients who falsely claim suicidal intent misappropriates scarce mental health resources, likewise resulting in treatment approaches that may not adequately address self-mutilation (Freedenthal, 2007). It is therefore essential to discriminate between intentions in order to determine appropriate allocation of resources and assure the safety of patients.

Purpose of Study

The present study is a preliminary investigation aimed at increasing our understanding of how motivations for self-injury differ across samples of self-injuring American patients with distinct levels of suicidal intent. The objective is to determine how internationally applied interview materials and methodology assessing suicidal intent and motivations, perform among American suicidal, ambivalent, and self-mutilating patients. These findings may help determine whether suicide attempters and non-suicidal self-injurers are significantly different populations which could benefit from distinct crisis interventions, treatment procedures, and research techniques.

The purpose of the study is to evaluate whether patients differ significantly in the number of motives given for a self-injurious act, or in the nature of those motives, based on their self-reported level of suicidal intent. Specifically, researchers acquired a clear statement of how recent suicide attempters understood their level of suicidal intent. To

assure the reliability to self-report, patients' self-reported level of suicidality was then compared to interviewer ratings on the SIS. As described earlier, suicidal intent is considered a critical factor in distinguishing between self-mutilating, ambivalent self-injuring, and suicide attempting patients (Silverman, et al., 2007b).

Specifically; we seek to test the following hypotheses:

- a) The self-reported level of suicidal intent on the Oxford Reasons for Parasuicide Interview will be significantly correlated with level of suicidal intent as described via the interviewer-rated Suicide Intent Scale.
- b) Among self-injuring patients, the level of suicidal intent will be positively correlated with the number of motives endorsed for the self-harming act on the Oxford Reasons for Parasuicide Interview (ORPI).
- c) Compared to patients who report some level of suicidal intent, self-injuring patients who deny suicidal intent on the ORPI will be more likely to select an interpersonal forced-choice ORPI motivation as the most important reason for self-injury.

CHAPTER THREE
Methodology
STUDY DESIGN

Subjects

English speaking patients at least 18 years of age, whose intentional (non-recreational) self-injury required hospitalization for medical treatment and observation, were included in this study.

Only patients who reported that they deliberately injured themselves were interviewed and the deliberate self-harming nature of each enrolled subject's injury was confirmed with emergency room or inpatient psychiatric staff who had interviewed the patient prior to study recruitment. Study patients had to be capable of understanding spoken and written English at a sixth grade level or higher, and all were interviewed within 48 hours of the self-injurious act.

Enrolled patients were capable of providing informed consent and agreed to allow interviewers to access their medical records. Patients who were psychotic, intoxicated, cognitively impaired due to head injury, or who otherwise demonstrated an altered mental state upon examination, were excluded.

Procedures

A convenience sample of self-injury patients admitted to the medical or psychiatric emergency services of Parkland Hospital between April 19, 2009 and October 30, 2009 and who both qualified and consented were interviewed for the study. Potential

participants were identified by reviewing the electronic hospital records of patients in the psychiatric and medical emergency services during hours of study recruitment. Study candidates who were identified by their treating clinicians as being interested in participation and stable enough to approach were asked by a researcher if they would spend 20 to 40 minutes in an interview. As a part of the consenting process, each patient was screened to make sure he or she met eligibility criteria. Those who qualified were then walked through the consent form as well as a Health Insurance Portability and Accountability Act (HIPAA) form. A patient advocate witnessed and signed the consent form to assure that the patient understood the agreement and was acting freely. Next, patients were interviewed using the semi-structured Oxford Reasons for Parasuicide Interview and other study instrumentation.

Instruments

This study utilized the semi-structured *Oxford Reasons for Parasuicide Interview (ORPI)* to compare reasons for deliberate self-injury among a cohort of very recent self-injury patients treated on an inpatient basis at Parkland Hospital (J. Bancroft, et al., 1979; Hawton, Cole, O'Grady, & Osborn, 1982). The Oxford Reasons for Parasuicide Interview (see Appendix A) has been used in many European studies of suicide (J. Bancroft, et al., 1979). A slightly adapted version of the instrument was used in a 15 country parasuicide study by the World Health Organization (Hjelmeland, et al., 2002). Thus, this instrument provides the opportunity for comparison to a variety of study samples. Validity and reliability have not been formally established for this interview; (J.

Bancroft & Hawton, 1983). The ORPI collects information both spontaneously offered and through forced-choice options about the self-injurious act. Specifically, it focuses on motivations for, feelings surrounding, and suicidal intent before the patient's self-injury. For the purposes of this study, post-injury reaction to the fact that the subject didn't die via the act was also queried.

The *Suicide Intent Scale* (SIS) is a widely used, comprehensive measure of suicidal intent (A. T. Beck, et al., 1975). This two-part schedule has a high degree of inter-rater reliability and construct validity in discriminating between attempted and completed suicides (A. T. Beck, et al., 1975). In a sample of 45 consecutive self-injury patients, the SIS yielded an inter-rater reliability coefficient of 0.95 (Beck et al., 1974). Internal consistency of the SIS ($r = 0.70$) was initially measured using an odd-even computation corrected for attenuation, and producing a correlation coefficient of 0.82 (Beck et al., 1974). In terms of validity, when the SIS was retrospectively scored for 31 fatal self-injurers and compared to 49 nonfatal self-injurers the t statistic for comparison of SIS means was 5.45, $p < 0.001$ (Beck et al., 1974). The SIS uses nine, zero to two point, questions to address circumstances related to the suicide attempt and six, zero to two point, questions to address self-reported intent of the self-injuring act (A. T. Beck, et al., 1975). The resulting score between zero and 30 is considered to be a measure the patient's level of intent to die via the self-harm act (A. T. Beck, et al., 1975).

The Risk Rescue Rating Scale (RRRS) primarily measures the medical lethality of the suicide attempt (Weisman & Worden, 1972), as well as rescue potential. In the original validation sample, the risk-rescue rating scores of 25 suicide attempting patients

admitted to the psychiatric ward had a correlation coefficient of 0.66 with independent clinical judgment of suicidal intent by a psychiatrist and 0.60 with Beck's Medical Lethality scale. The inter-rater reliability coefficient for the RRRS was 0.93 (Weisman & Worden, 1972). Total item reliability for risk factors was 0.91 and 0.80 for rescue factors (Weisman & Worden, 1972). The RRRS uses five, one to three point, questions to create risk score and five, one to three point, questions to compose a rescue score.

Statistics

The sample consists of 60 American deliberate self-injury patients. Descriptive statistics such as mean, counts, and percentages were used to characterize the samples. Demographic variables such as age, gender, method of self-injury, and number of previous self-injuries were compared between groups of patients based on self-reported level of suicidal intent as defined by the ORPI. Chi-square Contingency table analysis, Kruskal-Wallis Analysis of Variance, and multiple pairwise comparison procedures were used to compare groups. Participants were categorized based on their self-reported level of suicidal intent and the number of motives endorsed. Researchers further evaluated the self-reported motives influencing the decision to commit a self-injurious act based upon whether the motive selected as most important was intended to affect the self (intrapersonal) or to affect another person (interpersonal).

Specifically, the hypothesis and the test for each hypothesis follows:

a) The self-reported level of suicidal intent on the Oxford Reasons for Parasuicide Interview will increase with the level of suicidal intent as measured by the Suicide Intent Scale.

Statistical analysis: patients were divided into three groups: suicide attempters, ambivalent self-injurers, and non-suicidal self-injurers based on their responses to the Oxford Reasons for Parasuicide Interview (Appendix A, pg 58). A Kruskal-Wallis one-way Analysis of Variance was conducted to compare the Suicide Intent Scale scores of groups of patients who claimed suicidal intent, patients who were ambivalent about intent, and patients who denied suicidal intent. Statistically significant comparisons were examined further using a Tukey Multiple Comparison procedure.

b) Among self-injuring patients, the level of suicidal intent (both self-reported and SIS score) will be positively correlated with the number of motives endorsed for the self-harming act on the Oxford Reasons for Parasuicide Interview.

Statistical analysis: A Kruskal-Wallis One-way ANOVA was conducted to compare the number of motives endorsed by patients who claimed suicidal intent, patients who were ambivalent about intent, and patients who denied suicidal intent.

c) Compared to patients who report some level of suicidal intent, self-injuring patients who denied suicidal intent on the ORPI will be more likely to select an interpersonal forced-choice ORPI motivation as the most important reason for self-injury.

Statistical analysis: A Pearson's Chi-square Contingency table analysis was conducted to evaluate whether patients in each intent category reported an interpersonal motive or an intrapersonal motive as being the most important reason for self-injury.

CHAPTER FOUR

Results

STATISTICAL ANALYSES

Descriptive Statistics

The 60 participants in the study were a convenience sample of patients treated at Parkland hospital in Dallas, Texas (Figure Six). When compared to the 370 self-injurers present at the hospital, but not included in the study, no significant differences were revealed. The missed population was 46% female (n= 170) and 54% male (n=200), with an average age of 34, and an age range between 13 and 87. The sample was 47% Caucasian (n=174), 19% Hispanic (n=71), 21% African American (n=78), 4% other ethnicity (n=14), and information on ethnicity was unavailable for 9% of patients (n=33). In regard to the mechanism of self-injury, 53% overdosed (n=196), 25% used cutting (n=91), 5% sustained a gunshot (n=5), 18% used other methods (n=69), and 2% used a combination of self-injury methods (n=9). The missed population's Other category contained more patients than the interviewed sample. Some of the methods included in this category were hanging (n=22), asphyxiation/suffocation (n=10), walking into traffic (n=9), car crash (n=8), jumping off a height or out of a moving vehicle (n=7), and ingesting objects or non-medication substances (n=6). Finally, 78% of patients (n=287) reported having a major medical or psychological problem.

Of the 60 patients interviewed for this study, 55% were female (n=33) and 45% were male (n= 27) (Figure One). Participants averaged 36 years of age, with an age range of 18 to 74. The sample was 57% Caucasian (n=34), 22% Hispanic (n=13), 18%

African American (n=11), and 4% other ethnicity (n=2) (Table One). Information on risk factors such as previous self-injury, substance use, and medical or mental problems was also collected. Risk factors were not mutually exclusive and participants were asked to report all that applied to their self-injury. Specifically, 63% of patients reported also injuring themselves on a previous occasion (n=38), 47% were intoxicated at the time of the self-injury (n=28), and 48% of patients reported having a major medical or psychological problem (n=29) (Table One).

Of the total sample, 27% stated that they injured themselves with no intent to die (n=16), 42% were ambivalent in their intent to die (n=25), and 32% claimed that they intended to die from their self-injury (n=19). When asked about their feelings after having survived their self-injuring act, 60% of patients claimed that they were relieved to be alive (n=36), 32% said they were having mixed emotions (n=19), and 8% stated that they were disappointed to be alive (n=5) (Table Two). In regard to the mechanism of self-injury, 55% overdosed (n=34), 28% used cutting (n=17), 5% sustained a gunshot (n=3), 2% used self-immolation (n=1), 3% used other methods (n=2), and 5% used a combination of self-injury methods (n=3) (Table Two). Overall, an average of 26 hours elapsed between the time that subjects made a decision to injure-themselves and the occurrence of their suicidal behavior (Table Two). However, most patients injured themselves shortly after having the idea. Specifically, 33% of patients spent less than five minutes thinking before acting (n=19), 31% waited between five and 30 minutes (n=18), 18% waited between 31 minutes and two hours (n=10), 4% waited between six

and 12 hours (n=2), and 11% waited one day or longer before acting on the decision to injure themselves (n=8).

Non-suicidal Self-injurers

As noted above, sixteen patients denied intent to die from their self-injury. Of this sample 75% were female (n=12) and 25% were male (n= 4). Participants' average age was 34 with range of 18 to 58. The sample was 44% Caucasian (n=7), 25% Hispanic (n=4), 25% African American (n=4), and 6% other ethnicity (n=1). In this group 56% of patients reported a previous self-injury (n=9), 31% were intoxicated at the time of the self-injury (n=5), and 44% of patients reported having a major medical or psychological problem (n=7).

In this sample of participants who reported to have no intent to die from their self-injury, 94% claimed that they were relieved to be alive (n=15) and 6% said they were having mixed emotions about living through the experience (n=1). No patients claimed to be disappointed to still be alive. In regard to the mechanism of self-injury, 75% overdosed (n=12), 6% used cutting (n=1), 13% sustained a gunshot (n=2), and 6% used other methods of self-injury (n=1). Overall, patients with no intent to die waited an average of 7 hours after they made a decision to injure themselves before taking action. However, 67% of patients spent less than five minutes thinking before acting (n=10), 13% waited between five and 30 minutes (n=2), 13% waited between 31 minutes and two hours (n=2), and 7% waited one day or longer before acting on the decision to injure themselves (n=1).

Ambivalent Self-injurers

Twenty-five patients were ambivalent in their intent to die from their self-injury. Of this sample, 60% were female (n=15) and 40% were male (n= 10). Participants' average age was 35 with a range of 18 to 74. The sample was 56% Caucasian (n=14), 28% Hispanic (n=7), 12% African American (n=3), and 4% other (n=1). In this group 76% of patients reported a previous self-injury (n=19), 52% were intoxicated at the time of the self-injury (n=13), and 48% of patients reported having a major medical or psychological problem (n=12).

In this sample of participants who were ambivalent in their intent to die via their self-injury, 52% claimed that they were relieved to be alive (n=13), 40% said they were having mixed emotions about living through the experience (n=10), and 8% claimed to be disappointed that they were still alive (n=2). In regard to the mechanism of self-injury, 44% overdosed (n=11), 40% used cutting (n=10), 4% used self-immolation (n=1), 4% used other methods of self-injury (n=1), and 8% used a combination of methods (n=2). Overall, patients who were ambivalent about the intent of their self-injury waited an average of 30 hours after they made a decision to injure-themselves before taking action. However, 29% of patients spent less than five minutes thinking before acting (n=7), 38% waited between five and 30 minutes (n=9), 13% waited between 31 minutes and two hours (n=3), 8% waited between six and 12 hours (n=2), and 12% waited one day or longer before acting on the decision to injure themselves (n=3).

Suicidal Self-injurers

Nineteen patients claimed intent to die from their self-injury. Of this sample 32% were female (n=6) and 68% were male (n= 13). Participants' average age was 41 with a range of 18 to 69. The sample was 68% Caucasian (n=13), 11% Hispanic (n=2), and 21% African American (n=4). In this group 53% of patients reported a previous self-injury (n=10), 53% were intoxicated at the time of the self-injury (n=10), and 53% of patients reported having a major medical or psychological problem (n=10).

In this sample of patients who claimed that they intended to die from their self-injury, 42% claimed that they were relieved to be alive (n=8), 42% said they were having mixed emotions about living through the experience (n=8), and 16% claimed to be disappointed that they were still alive (n=3). In regard to the mechanism of self-injury, 58% overdosed (n=11), 32% used cutting (n=6), 5% sustained a gunshot (n=1), and 5% used a combination of methods (n=1). Overall, suicidal patients waited an average of 41 hours after they made a decision to injure-themselves before taking action. However, 11% of patients spent less than five minutes thinking before acting (n=2), 39% waited between five and 30 minutes (n=7), 28% waited between 31 minutes and two hours (n=5), and 23% waited one day or longer before acting on the decision to injure themselves (n=4).

Table One: Demographic Characteristics of Sample by Level of Suicidal Intent

Characteristic	Non-suicidal (N) (n=16)	Ambivalent (A) (n=25)	Suicidal (S) (n=19)	Pearson Chi-Square Contingency Table Analysis p-value	Kruskal- Wallis One-way Analysis of Variance p-value
Female	75% (n=12)	60% (n=15)	32% (n=6)	$\chi^2 = 7.049$ (2) p= 0.029	
Average Age (yrs), Age Range	34, (18-58)	35, (18-74)	41, (18- 69)		p= 0.994
Ethnicity				$\chi^2 = 2.161$ (2) p= 0.339	
Caucasian	44% (n=7)	56% (n=14)	68% (n=13)		
Hispanic	25% (n=4)	28% (n=7)	11% (n=2)		
African American	25% (n=4)	12% (n=3)	21% (n=4)		
Other	6% (n=1)	4% (n=1)	0% (n=0)		
Previous Self Injury	56% (n=9)	76% (n=19)	53% (n=10)	$\chi^2 = 3.010$ (2) p= 0.222	
Intoxication	31% (n=5)	52% (n=13)	53% (n=10)	$\chi^2 = 1.299$ (2) p= 0.522	
Major Medical or Psyc Problem	44% (n=7)	48% (n=12)	53% (n=10)	$\chi^2 = 0.276$ (2) p= 0.871	

Table Two: Characteristics of Sample by Level of Suicidal Intent

Characteristic	Non-suicidal (n=16)	Ambivalent (n=25)	Suicidal (n=19)	Pearson Chi-Square Contingency Table Analysis p-value	Kruskal- Wallis One-way Analysis of Variance p-value
Feeling After Self-injury				$\chi^2 = 11.388$ (4) p= 0.023	
Relieved to be Alive	94% (n=15)	52% (n=13)	42% (n=8)		
Having Mixed Emotions	6% (n=1)	40% (n=10)	42% (n=8)		
Disappointed to be Alive	0% (n=0)	8% (n=2)	16% (n=3)		
Method of Injury				$\chi^2 = 6.108$ (4) p= 0.191	
Overdosed	75% (n=12)	44% (n=11)	58% (n=11)		
Used Cutting	6% (n=1)	40% (n=10)	32% (n=6)		
Sustained a Gunshot	13% (n=2)	0% (n=0)	5% (n=1)		
Used Self-immolation	0% (n=0)	4% (n=1)	0% (n=0)		
Other Methods	6% (n=1)	4% (n=1)	0% (n=0)		
Combination	0% (n=0)	8% (n=2)	5% (n=1)		
Duration of Suicidal Ideation (hrs), Time Range	7, (0.04- 24)	30, (0.04- 144)	41, (0.04- 144)		p= 0.091

Differences Among Self-injurers

A Pearson Chi-square Contingency table analysis was conducted to evaluate the relationship between characteristics for each intent level group. The independent variable, intent level, included three levels: suicidal intent, ambivalent intent, and no intent. The dependent variable was the number of patients that exemplified each

characteristic. The Chi-square test revealed significant differences among suicidal patients and patients who denied suicidal intent on the characteristics of gender and response to injury survival. Specifically, non-suicidal patients were more often female ($p=0.028$) while suicidal patients were more often male ($p=0.028$). Significantly more non-suicidal patients were happy to be alive after the self-injury than both suicidal patients and patients with ambivalent intent ($p=0.004$). Additionally, significantly more suicidal patients experienced mixed emotions after the injury than patients who denied suicidal intent ($p=0.038$).

Study Hypotheses

Hypothesis A: The self-reported level of suicidal intent on the Oxford Reasons for Parasuicide Interview (ORPI) will increase with the level of suicidal intent as measured by the Suicide Intent Scale (SIS).

A Kruskal-Wallis One-way Analysis of Variance was conducted to evaluate the differences in SIS scores among the three intent level groups: patients who claimed suicidal intent, patients who were ambivalent about intent, and patients who denied suicidal intent. The test indicated that there was a statistically significant difference between the differing intent groups $KW \chi^2 (2) = 31.62, p < 0.001$.

A Tukey Multiple Comparison procedure was conducted at a 0.05 significance level to evaluate pairwise differences among the three groups. The results indicated that the distribution of SIS scores for the intent to die sample was significantly higher than

that of the ambivalent intent sample which was significantly higher than that of the sample with no intent to die. Thus, SIS scores increased positively with self-reported level of intent (Figure Three).

Hypothesis B: Among self-injuring patients, the level of suicidal intent (both self-reported and SIS score) will be positively correlated with the number of motives endorsed for the self-injuring act.

A correlation between the patients' SIS score and the number of motives endorsed was conducted. No significant relationship was found ($r = 0.036$).

To further investigate the expectation that the number of motives would increase with the strength of suicidal intent, a Kruskal-Wallis one-way Analysis of Variance was performed to compare the number of motives among each intent level group as operationally defined in the Oxford Reasons for Parasuicide Interview. The independent variable, level of suicidal intent, included three levels: patients who claimed suicidal intent, patients who were ambivalent about intent, and patients who denied suicidal intent. The dependent variable was number of motives endorsed. The comparison of number of motives endorsed indicated that there was not a statistically significant difference in the number of motives by intent level of the groups $KW \chi^2 (2) = 1.08, p = 0.346$. The average number of motives endorsed in each group was similar: 5.06 in the no intent group, 6.20 in the ambivalent intent group, and 5.05 in the suicidal intent group (Figure Four).

Hypothesis C: Compared to patients who report some level of suicidal intent, self-injuring patients who denied suicidal intent on the ORPI will be more likely to select an interpersonal forced-choice ORPI motivation as the most important reason for self-injury.

A Pearson's Chi-square Contingency table analysis was conducted to evaluate whether patients in each intent category reported an interpersonal motive or an intrapersonal motive as being the most important reason for self-injury. The two variables were level of suicidal intent (no intent, ambivalent intent, and suicidal intent) and nature of the most important motive (intrapersonal or interpersonal). Suicidal intent and motive type were found to be significantly related, $\chi^2 (2, N = 60) = 12.48, p = 0.002$. The proportions of each group that endorsed interpersonal motives were as follows: patients who denied suicidal intent: 63%, those who were ambivalent about suicidal intent: 32%, and those who claimed suicidal intent: 16% (Figure Five).

CHAPTER FIVE

Discussion

Purpose of the Study

This study utilized the WHO/EURO Multicentre Study on Parasuicide methodology and research materials, as applied in the Oxford, England cohort, with an American self-injuring population (Hawton, et al., 1997) to identify significant differences between non-suicidal self-injurers, suicide attempters and patients with ambivalent intent to die in terms of motivations for self-injuring acts. It is assumed that patients who desire different outcomes from their self-injurious acts are motivated to perform these acts for differing reasons and may also require differing crisis interventions and treatments (Kumar, et al., 2006). In order to create distinct categories of self-injurers, patients were separated into three groups defined by their self-reported level of suicidal intent. To validate these categories, patients' self-reported suicidal intent was compared to objective scores obtained on the Suicide Intent Scale (SIS). The hypothesis that patients' self-reported level of suicidal intent on the Oxford Reasons for Parasuicide Interview (ORPI) would positively correlate with their scores on the Suicide Intent Scale (SIS) was confirmed. Participants who claimed suicidal intent had the highest SIS scores, patients who denied suicidal intent had the lowest SIS scores, and ambivalent self-injurers' scores fell in between. Thus, participants' self-reported suicidality was confirmed to be a reliable means of measuring their level of suicidal intent.

Findings of the Study

Our hypothesis that level of suicidal intent would directly relate to the number of motives for the act was not supported. However, our hypothesis that the type of motivation viewed as most contributory to the self harm act would differ between suicidal and non-suicidal patients was supported, and a trend in the nature of motives chosen as most important was revealed across intent levels. The majority (63%) of non-suicidal self-injurers chose interpersonal motives as most important. Ambivalent self-injurers chose fewer interpersonal motives (32%) and more intrapersonal motives (68%). Suicide attempters seldom chose interpersonal motives (16%) and the majority selected an intrapersonal motive as most important (84%). Forced-choice interpersonal motives used in this study included a desire to get help from someone, make someone feel guilty, or make things easier for others (Hawton, et al., 1997), while intrapersonal motives included a desire to sleep for awhile, a loss of control without knowledge as to why, or thoughts so unbearable they could no longer be endured (Hawton, et al., 1997). These results support the American practice of viewing suicide attempters and non-suicidal self-injurers as distinct populations and researching them separately.

Previous researchers have examined patients' various motivations for self-injuring acts. Hjelmeland et al. examined the motives endorsed by self-injurers, as a broad category, and found neither a significant difference in the motives endorsed by patients in different countries nor a difference in motives by gender or age (Hjelmeland, et al., 2002). Other studies have explored interpersonal and intrapersonal motives to better understand the nature of motivations underlying self-injuring acts. Michel et al. studied

self-injurers as a whole when comparing the nature of patients' selected motives and his results suggested that intrapersonal motives were the most frequently reported for patients' self-injury while interpersonal motives were infrequently endorsed (1994). Nock researched the nature of motives only among self-mutilating patients and commented that the substantial minority of self-injurers who endorsed interpersonal motivations may be using self-injury as a behavioral means of communicating distress (2008). Lloyd-Richardson et al. also studied the motivations of self-mutilating patients and concluded that interpersonal and intrapersonal motives were endorsed with equal frequency (Kelly, et al., 2008; Lloyd-Richardson, et al., 2007). Finally, Chavez-Hernandez et al. studied the differences in the nature of motivations only among suicide completers and discovered no significant difference in the frequency of intrapsychic or interpersonal motivations reported in American and Mexican suicide notes (2009). However, while some investigators have studied the motives of non-suicidal self-injurers and suicide attempters separately or have examined the self-injuring group as a whole, none have compared the motives between groups with differing intent levels.

Our findings stand in contrast to this prior body of work in suggesting that the reasons for self-injury may be connected with the level of intent to die via the act. This is important for two reasons. First, if the motivation of a self-harming act is primarily interpersonal, the treatment for that act is likely to be radically different from treatment offered to an individual whose suicide attempt is motivated primarily by intrapsychic variables such as pain or major mental illness. Second, understanding how motives differ

among self-injurers “might contribute to a better understanding of the relation between nonfatal suicidal behavior and suicide” (Andriessen, 2006).

In addition, no previous empirical work has investigated whether American patients’ level of suicidality is related to their motives for self-injury. The closest published study came from McAuliffe et al. who examined the relationship between self-injuring patients’ level of suicidality and the motives endorsed for the acts using a population of 146 Irish patients (2007). While researchers studied the different motives provided by high and low intent groups, they made no distinction as to whether they were of an interpersonal or intrapersonal nature (McAuliffe, et al., 2007). The current study aimed to determine whether non-suicidal self-injurers tend to endorse motives of an interpersonal nature and thus whether low suicidal intent is related to the desire to affect others. Furthermore, the present investigations measured the frequency with which suicide attempters endorse motives of an intrapersonal nature. Distinguishing the general nature of motives given by high and low suicidal intent groups could lead to better understanding of and treatment for various groups of self-injuring patients.

In contrast to expectations, patients’ level of suicidality was not found to correlate with the number of motives given for the injury. Neither participants’ SIS scores nor their self-reported level of suicidal intent related to the overall number of reasons endorsed for the act. Therefore, the hypothesis that patients who claimed suicidal intent would also report more motives was rejected and no relationship between suicidality and the quantity of motives was established. This negative finding may lend support to the view that suicidal intent is more highly correlated to the act of self-injury than are the

motives behind the act (Andriessen, 2006). In other words, the behavioral expression of a desire for self-injury is not merely due to the build-up of larger and larger numbers of reasons for such an act. A person may have many or few reasons for self-injury, but unless there is a sufficient level of intent to act upon those motives, no injury will take place (Andriessen, 2006).

Further analysis of the data revealed additional notable findings. Consistent with our predictions that low intent would relate to interpersonal motives and high intent would relate to intrapersonal motives, we found that the most frequently selected motive in the self-mutilating group was “I wanted to get help from someone.” In contrast, suicide attempters most often endorsed the motive “I wanted to die” as the most important motive for self-injury. In the ambivalent self-injuring group the most common motives chosen were “The situation was so unbearable, I could not think of an alternative” and “My thoughts were so unbearable, I could not endure them.” These divergent motivations reflect core differences among distinct levels of suicidal intent in this sample.

Another trend observed in this study was that the time patients spent contemplating self-injury before acting increased with their level of suicidal intent, which is consistent with previous studies (Gaynes, et al., 2004; Hjelmeland, et al., 2002; Nock, et al., 2008).

Study Limitations and Generalizability

This study's generalizability is limited by a small sample size of 60 patients. This provided fewer than 30 participants for each group based on level of suicidality. The sample would have been more representative if researchers had been able to interview a consecutive sample of patients from the hospital. Researcher availability to conduct interviews and patient intoxication, psychosis, and refusal to participate in interviews, however, all precluded collection of a consecutive sample of patients. All patients were interviewed using the same protocol used in studies of self-injuring patients in the 14 country WHO/EURO Multicentre Study on Parasuicide (Bille-Brahe, et al., 1995; Hawton, et al., 1997). Therefore, some additional work could be done to establish similarity to other samples because the collected data could be used to further investigate differences between American self-injuring patients and those from other locations.

Study Implications and Recommendations for Future Directions

The finding that American non-suicidal self-injurers and suicide attempters differ in terms of the nature of important motives for their self-injurious act raises the question as to whether this may also be true of European suicide attempters and non-suicidal self-injurers. As the information already collected in 14 countries as part of the WHO/EURO Multicentre Study on Parasuicide contains the data necessary to assess these differences (Bille-Brahe, et al., 1995; Hawton, et al., 1997), an important potential study would be to retrospectively identify the motivational differences among patients of each intent level. Discovering whether self-injurers around the world differ in motivation based on level of

suicidal intent might help to pave the way toward creating a universally-applied classification system to define groups of self-injuring patients.

Furthermore, the ability to identify a patient's level of suicidal intent may assist healthcare professionals in understanding a patient's potential motivations for the injury and their risk of future injury. This, in turn, may help professionals to implement more suitable treatment and crisis management techniques. Future studies might focus on effective treatment strategies to apply with patients dependent upon their level of suicidal intent.

Finally, due to the large number of patients who claimed "I did not mind whether I lived or died" it may not be prudent to separate self-injurers into the polar categories of non-suicidal self-injurers and suicide attempters. Instead, the inclusion of an "ambivalent intent to die" group may provide health care professionals with additional information to inform assessment of the patients' specific risk of future self-injury or suicide (Silverman, et al., 2007b).

In summary, improving our ability to identify patients at risk for self-injury will enable health care providers to more accurately predict suicides and repeated self-injuries and implement preventative precautions to help patients before they endanger their lives through self-injury. Furthermore, an increased understanding of the unique traits that distinguish self-injuring patients from one another will help health care providers to implement the most effective treatments for each individual's needs. This study contributes to efforts to increase understanding by identifying a relationship between American patients' level of suicidality and the nature of their motives for self-injury and

by identifying that patients' level of suicidality does not clearly relate to the number of motives endorsed for a self-injuring act.

FIGURE ONE
Demographic Information

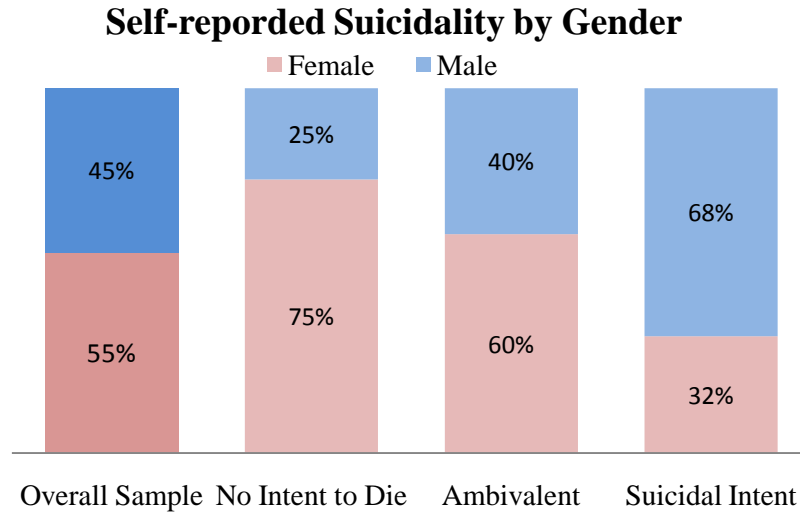


Fig 1. Self-reported Suicidality by Gender. While overall, males and females are approximately equally represented in the total population of self-injuring patients, females predominate in the “No Intent to Die” group, whereas males predominate in the “Suicidal Intent” group.

FIGURE TWO
Time Elapsed Before Making Self-injury

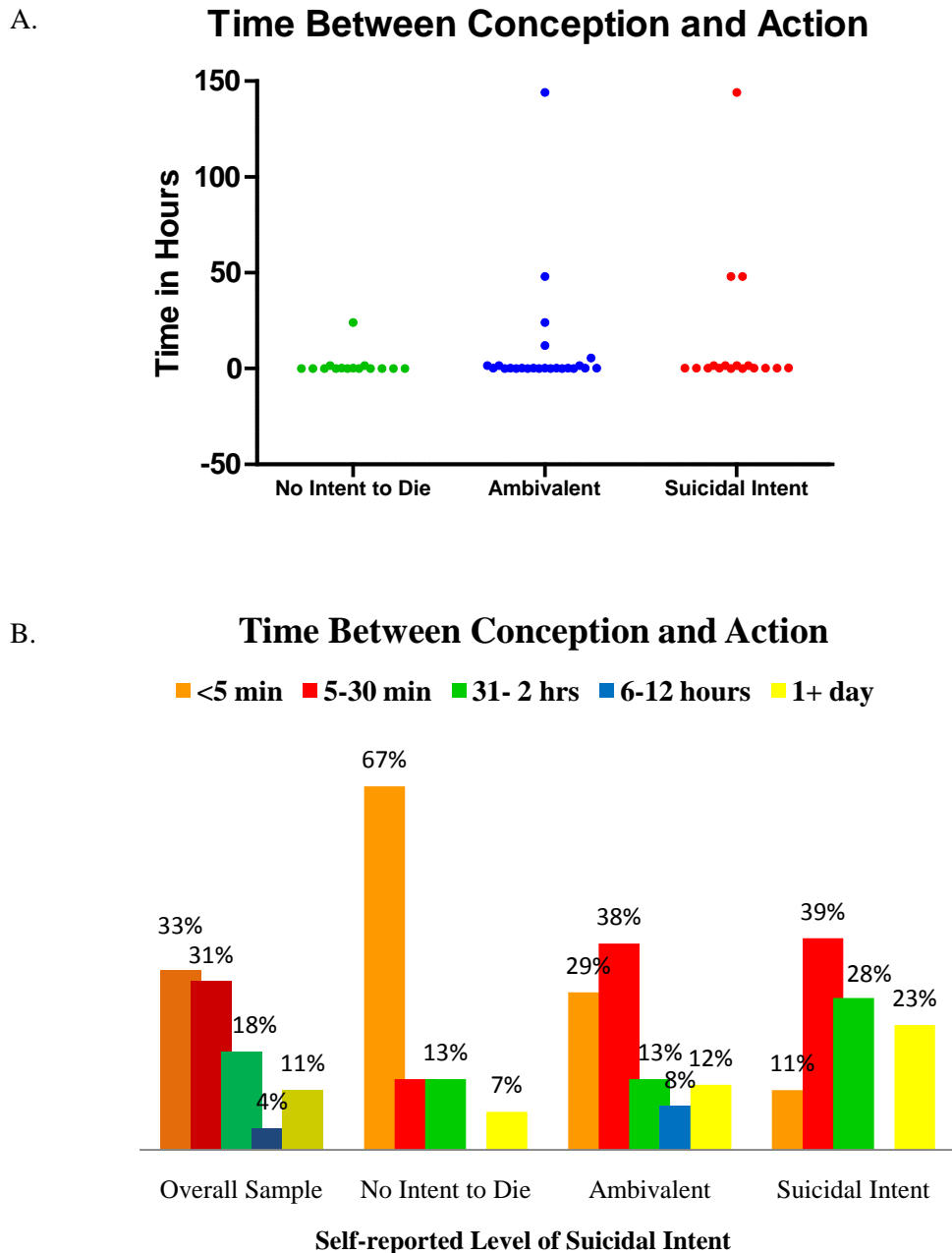


Fig 2. Time Elapsed Between Conception of Self-injury and Action. A. The time spent contemplating self-injury increased with level of suicidality. B. Most self-injurers who denied suicidal intent contemplated the injury for less than five minutes before taking action. Most ambivalent self-injurers waited five to thirty minutes or took action in under five minutes from the time of conception. Suicide attempters generally took action within five to thirty minutes of conception, but almost a third waited half an hour to two hours.

FIGURE THREE
Suicide Intent Scale Scores and Self-reported Level of Suicidal Intent



Fig 3. Suicide Intent Scale Score by Self-reported Level of Suicidal Intent. Suicide Intent Scale scores increased with level of suicidality, such that patients who reported “No Intent to Die” scored the lowest on the SIS, whereas patients who reported “Suicidal Intent” had the highest SIS scores.

FIGURE FOUR
Number of Motives Endorsed and Self-reported Level of Suicidal Intent

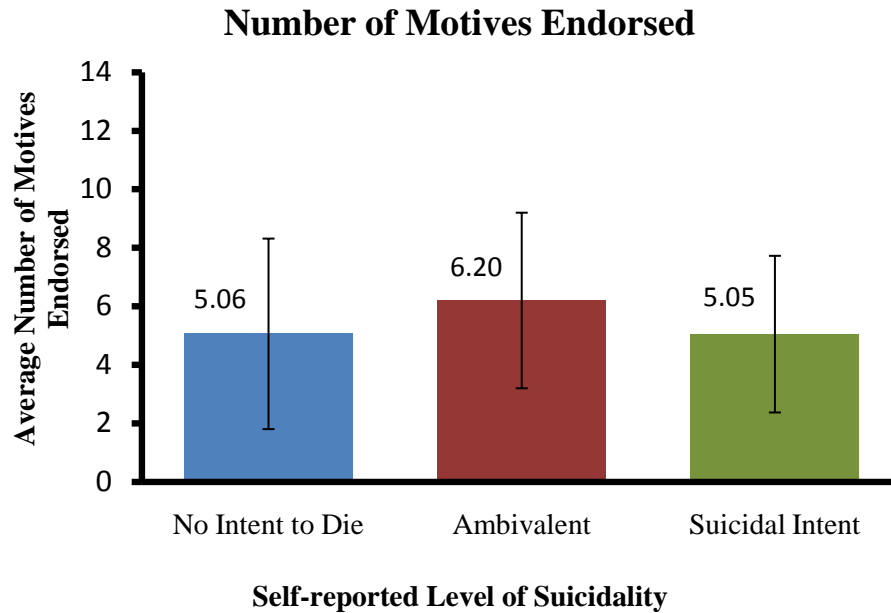


Fig 4. Number of Motives Endorsed by Self-reported Level of Suicidal Intent. The number of motives endorsed for self-injury did not differ significantly across intent level groups. Of 14 possible motives, an average of only five or six were endorsed by each group, with no group endorsing significantly more motives for self-injury than another. Data are displayed as mean number of motives endorsed plus standard deviation of the mean for each group.

FIGURE FIVE
Motives Endorsed as Most Important and Self-reported Level of Suicidal Intent

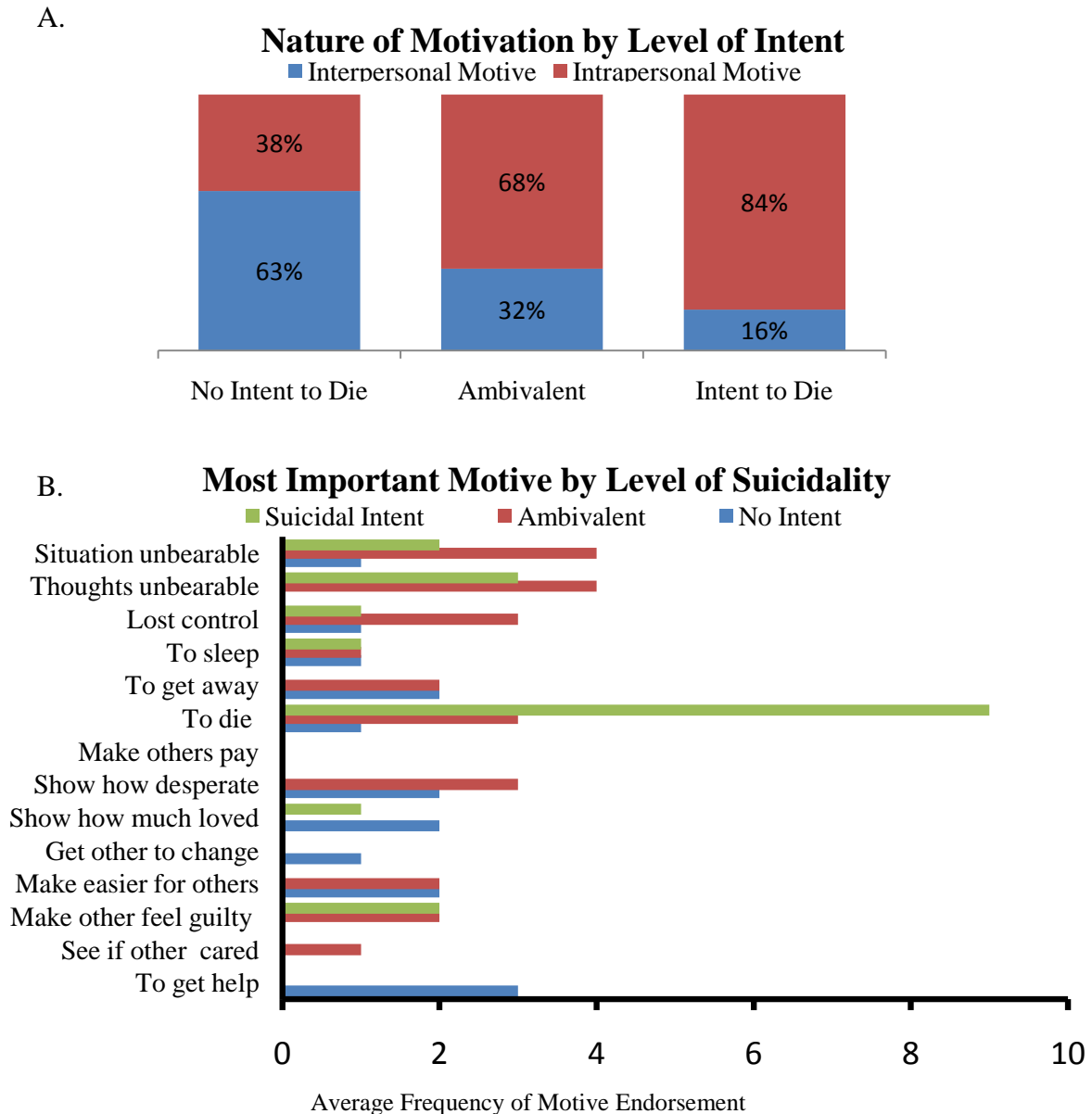
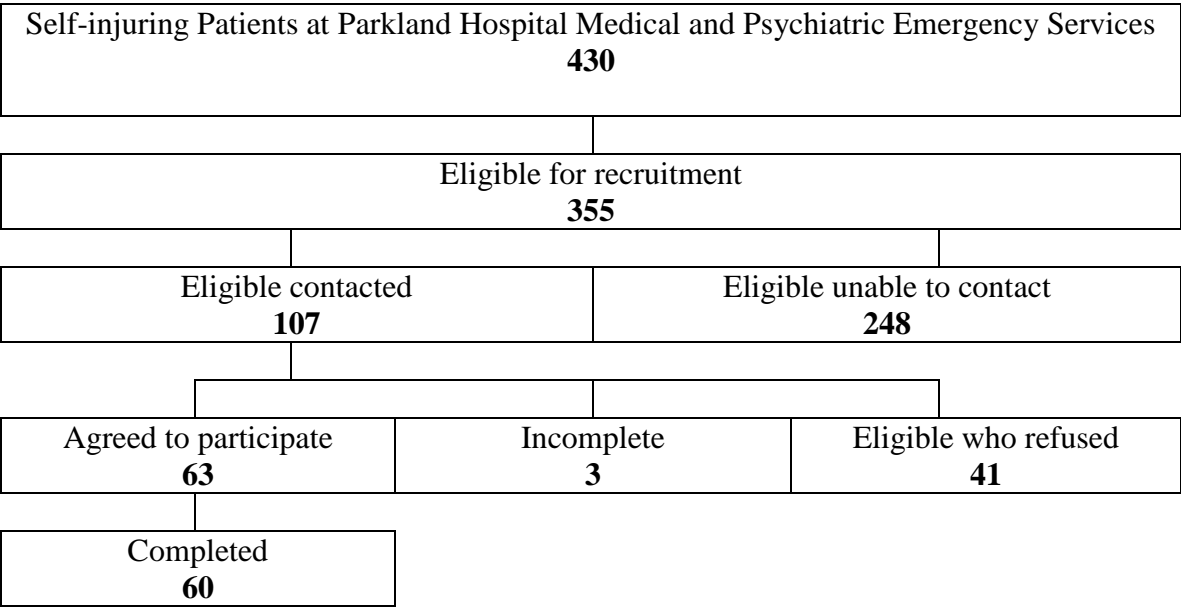


Fig 5. Frequency and Nature of Motives Endorsed by Self-reported Level of Suicidal Intent.

A. The nature of the motivation chosen as the most important reason for self-injury was directly related to level of suicidality. Suicidal patients chose motives of an intrapersonal nature while self-mutilating patients chose motives of an interpersonal nature. B. Most suicide attempters chose “I wanted to die” as the most important motivation for self-injury. Ambivalent self-injurers selected “The situation was so unbearable, I could not think of an alternative” or “My thoughts were so unbearable, I could not endure them” while most non-suicidal self-injurers endorsed “I wanted to get help from others”.

FIGURE SIX
Patient Consort Diagram



APPENDIX A

Oxford Reasons for Parasuicide Interview

Section One: Spontaneous Account

- 1.1 “Can you tell me what happened in the day or two before you came into the hospital?”

Section Two: Detailed Account of Reasons and Feelings

- 2.1 When did you commit the act?
- 2.2 Can you explain why you ended up committing the act?
- 2.3 Just before committing the act, how were you feeling?
- 2.4 What did you expect the effect would be on other people? Specify in addition to the effect on anyone already mentioned.
- 2.5 Did you think there would be a change in your situation in any way after the act? If so, how?

Section Three: Circumstances of the Act

- 3.1 When did the idea of committing the act occur to you?
- 3.2 So how long was it between having the idea and committing the act?
- 3.3 Did you tell anyone what you were going to do?
- If so: Who did you tell? & How did you tell that person?
- 3.4 Did you make any arrangements for after you had committed the act?
- 3.5 Did you leave a note or letter to be read after you committed the act?
- 3.6 Where were you when you committed the act? Why there?
- 3.7 What did you expect the self-harming act to do to you?
- 3.8 Did you expect to die?
- 3.9 What did you think would happen to you if you were found and taken to the hospital?
- 3.10(if wanted to die) Did you have any plans if this attempt failed?

Section Four: Previous Experiences of Self-harm

4.1 Apart from this time, have there been any other occasions when you have tried to harm yourself?

Self-Injury:

Last Occasion		
No. in last year	Reported	
	Admitted to hospital	
Total no.	Reported	
	Admitted to hospital	

4.2 Do you know anyone else who has ever taken an overdose or tried to harm themselves?

Self-Injury:

Last Occasion		
No. in last year	Reported	
	Admitted to hospital	
Total no.	Reported	
	Admitted to hospital	

Section Five: Choices of Feelings and Reasons

5.1 I would like to ask you some questions about how you were feeling at the time of the act. I'll show you some cards, which have different feelings on them, and ask if you felt any of them at the time. You might have felt one, more than one of them, or none of them?

- Feeling worried about the future**
- Feeling sorry or ashamed of something**
- Feeling you had failed in life**
- Feeling lonely or unwanted**
- Feeling angry with yourself**

Choices	Most Important

5.2 Can you choose the one which felt the most important?

5.3 There are various reasons why people take overdoses. I have some common reasons here on cards. Looking back on what happened to you, which of them do you think applied to you?

It may be one or more or none of them.

When you committed the act did you want to?

I wanted to die

I wanted to get away from an unacceptable situation

I wanted to get help from someone

I wanted to know if someone really cared about me

I wanted to make someone feel guilty

I wanted to make things easier for others

I wanted to persuade someone to change his/her mind

I wanted to show someone how much I loved him/her

I wanted to sleep for a while

I wanted others to know how desperate I felt

I wanted others to pay for the way they treated me

It seemed I lost control of myself, and I do not know why

My thoughts were so unbearable, I could not endure them

The situation was so unbearable, I could not think of an alternative

Choices	Most Important

5.4 Of those you have chosen, which was the most important?

5.5 Now I want to ask you some questions about the possibility of dying. I will show you three cards and I want you to choose the one which describes how you were feeling when you committed the act.

I did not want to die

I did not mind whether I lived or died

I wanted to die

APPENDIX B
Suicide Intent Scale

Circumstances Related to Suicide Attempt

1. Isolation
 0. Somebody present
 1. Somebody nearby or in contact (as by phone)
 2. No one nearby or in contact
2. Timing
 - () Does not apply
 0. Timed so that intervention is probable
 1. Timed so that intervention is not likely
 2. Timed so that intervention is highly unlikely
3. Precautions Against Discovery and/or Intervention
 0. No precautions
 1. Passive precautions, such as avoiding others but doing nothing to prevent their intervention (alone in room with unlocked door)
 2. Active precautions (locked door)
4. Acting to Gain Help During/After Attempt
 - () Does not apply
 0. Notified potential helper regarding attempt
 1. Contacted but did not specifically notify potential helper regarding attempt
 2. Did not contact or notify potential helper
5. Final Acts in Anticipation of Death
 0. None
 1. Patient thought about making or made some arrangements in anticipation of death
 2. Definite plans made (changes in will, giving gifts, taking out insurance)
6. Degree of Planning for Suicide Attempt
 0. No preparation
 1. Minimal or moderate preparation
 2. Extensive preparation
7. Suicide Note
 0. Absence of note
 1. Note written, but torn up or note thought about
 2. Presence of note

8. Overt Communication of Intent Before Act
 0. None
 1. Equivocal communication
 2. Unequivocal communication
9. Purpose of Attempt
 0. Mainly to change or manipulate environment
 1. Components of “0” and “2”
 2. Mainly to remove self from environment

Self-Report

10. Expectations Regarding Fatality of Act
 0. Patient thought that death was unlikely or didn't think about it
 1. Patient thought that death was possible but not probable
 2. Patient thought that death was probable or certain
11. Conception of Method's Lethality
 0. Patient did less to himself than he thought would be lethal, or patient didn't think about it
 1. Patient wasn't sure or thought what he did might be lethal
 2. Act exceeded or equaled what patient thought was lethal
12. Seriousness of Attempt
 0. Patient did not consider act to be a serious attempt to end his life
 1. Patient was uncertain whether act was a serious attempt to end his life
 2. Patient considered act to be a serious attempt to end his life
13. Ambivalence Toward Living
 0. Patient did not want to die
 1. Patient did not care whether he lived or died
 2. Patient wanted to die
14. Conception of Reversibility
 0. Patient thought that death would be unlikely if he received medical attention
 1. Patient was uncertain whether death could be averted by medical attention
 2. Patient was certain of death even if he received medical attention
15. Degree of Premeditation
 0. None – impulsive
 1. Suicide contemplated for three hours or less prior to attempt
 2. Suicide contemplated for more than three hours prior to attempt

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