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Lethality of Self-Destructive Methods: Establishing the  
Extent of Accurate Conception in an At-Risk Population

by

Annette Susan Crisanti

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**FACULTY OF GRADUATE STUDIES**

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies for acceptance, a thesis entitled, "Lethality of Self-Destructive Methods: Establishing the Extent of Accurate Conception in an At-Risk Population" submitted by Annette Susan Crisanti in partial fulfillment of the requirements for the degree of Master of Science.

B L Tanney

Supervisor, Dr. B. L. Tanney  
Psychiatry

C. Bagley

Dr. C. Bagley, Social Work

R. Ramsay

Mr. R. Ramsay, Social Work

R. Hall

Mr. R. Hall, Counselling Services

April 8/91

Date

## ABSTRACT

Previous deliberate self-harm (DSH) has been established as being of significant importance for predicting both attempted and completed suicide. Because "previous DSH" is a crude criterion, however, this variable is not a valid or a reliable predictor. Due to the inadequacy of previous DSH as an indicator of future suicidal behaviour, there have been attempts at refining this variable.

The refinement of the variable "previous DSH" has proven to be a lengthy process. This study is intended as a continuing step in this process.

The primary purpose of this research was to establish a baseline reflecting the extent of accurate conception of lethality of self-destructive methods in an at-risk population. The relationship(s) among experiences with attitudes towards and conception of lethality regarding the deadliness of self-destructive methods were also investigated.

A survey packet was administered to 561 post-secondary students. The survey collected information on 1) demographic characteristics and experiences with suicidal behaviour 2) attitudes towards the two methods most frequently used in episodes of deliberate self-harm, firearm and overdose and 3) conception of lethality regarding self-destructive methods. The "Conception of Lethality" instrument was specifically designed for the purpose of this study.

With the highest possible score on the conception of lethality survey being 79, the average score for this sample was 46.7. Total experience scores were related to total knowledge scores,  $r(560) = .11$ ,  $p < .01$ . Attitudes and accurate conception of lethality were not significantly related. Experience scores were related to the way respondents saw the method of firearm as a whole ( $r(560) = .12$ ,  $p < .01$ ) and to attitudes towards firearms ( $r(519) = .13$ ,  $p < .01$ ). In contrast, experience scores

were not related to the way respondents saw the method of overdose as a whole or to attitudes towards the method of overdose.

This study has established a baseline reflecting the extent of conception regarding the lethality of methods among an at-risk sample of college age youth. The low baseline and large variance among the conception of lethality scores suggests that conception of lethality may be a valuable discriminator for identifying who is at risk of future DSH and more specifically, future DSH which is more likely to be fatal.

The study should be regarded as being exploratory and investigative with the purpose of bringing a new focus to an unexplored issue.

Further research on this topic should continue to examine the extent of accurate conception of lethality among various at-risk groups, such as Native peoples, adolescents, the bereaved, the elderly, or those with mental disorders. The data resulting from this study provides a baseline so that comparisons can be made.

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## CHAPTER I

### INTRODUCTION

#### A. Magnitude of the Problem

Suicidal behaviours among Canadian university students have increased and remain problematic, with deliberate self-harm (DSH) occurring much more frequently than completed suicide (Sims & Ball, 1973; Joffe & Offord, 1983).

The widespread frequency of suicidal behaviour implies that self-destructive thoughts and behaviours exist as a potential coping alternative (Pettifor et al., 1983). The magnitude of the problem of such life-threatening acts leads to the need for establishing strategies for prevention to curb the incidence of suicidal behaviour.

#### B. Prevention

A salient aim of any serious attempt to avert suicide is to increase the accuracy with which those who are about to kill themselves can be recognized. (Pallis et al., 1984, p. 139)

Identifying those at high risk of future life-threatening behaviour has been a key task of both prevention and intervention strategies. According to Buglass and McCulloch, (1970) "Any simple method of identifying those people with a high probability of future suicidal behaviour and therefore in particular need of help is of value" (p. 493). This challenge however, has proven to be far from simple (Maris, 1981). As Diggory (1986) has stated:

To be seriously concerned with suicide prevention entails a task that is more challenging than any which most psychologists have undertaken, that is, the task of predicting which persons will exhibit a highly specific, very infrequently occurring behaviour. (p. 59)

Thus far, epidemiological information (Tuckman & Youngman, 1968), knowledge of common clinical predictors, (Miskimins et al., 1967), psychological tests (Neuringer, 1968), suicide rating scales (Beck et al., 1986) and even biological

information (Asberg, 1976) have been utilized in an attempt to predict future suicidal behaviour (Dean et al., 1967; Miskimins & Wilson, 1969; Braucht & Wilson, 1970; Lettieri, 1986; Litman, 1974; Zung, 1986).

In Canada, the Report of the National Task Force on suicide has identified particular groups within the population as being of "high risk" for future episodes of DSH (National Health and Welfare, 1987). According to the Task Force those with mental disorders, alcoholics, certain age groups, Native peoples, persons-in-custody and the bereaved appear to be particularly predisposed to suicide .

Because people who have engaged in DSH are also a group at risk of subsequent suicidal behaviours, "previous DSH" is one clinical predictor that has been demonstrated to be an important prognostic indicator for evaluating suicide risk (Ettlinger, 1964; Udsen 1966; Paerregaard, 1975; Lonnqvist, 1983; Tanney & Motto, 1990; Dorpat & Ripley, 1967; Pfeffer, 1989; Shaffer, 1974; Solomon & Hellon, 1980). As detailed by Kreitman (1982), however, there are problems with using crude criteria, to predict suicide. Because of the low base rate of suicide, even among those at greatest risk, and the poor sensitivity and specificity of general predictive factors, "false positives" (incorrectly diagnosing someone to be at high risk of future suicidal behaviour), often result (Pokorny, 1983; Kreitman, 1982). A high rate of "false positives" not only makes it difficult to assess the effectiveness of any intervention, but also curtails the cost effectiveness of suicide prevention programs in a time of scarce human service resources (Stengel, 1968).

In an attempt to enhance the accuracy of predictions using "previous DSH" to identify high risk, research efforts have turned to refining this variable.

Of many aspects, the person at risk's intent, (the purpose of the behaviour) has been identified as being an important property of the previous DSH. Because

intent is a psychological variable, manifest indicators have to be identified from which intent can be inferred.

The medical lethality resulting from the DSH behaviour has been identified as one of the most valid and reliable indicators of intent primarily because it is the most objective indicator. The hypothesized relationship between lethal consequences and psychological intent is that the higher the intent to die, the higher the medical lethality of the DSH (Eyman & Smith, 1986b). The null hypothesis claims no direct relationship between high intent and high medical lethality. The relationship between lethality and intent has been supported, although not conclusively, in the literature.

In an attempt to eliminate the apparent contradiction among the studies investigating the lethality and intent relationship, Beck and his coworkers (1975) investigated 227 cases of DSH. The authors found that identifying a moderating variable; the subject's preconceptions about the lethality of the act, solved the puzzle of the low correlations which they observed between lethality and intent. From their data the authors concluded that "suicidal intent correlates highly with medical lethality when the attempter has sufficient knowledge to assess properly the probable outcome of his attempt" (p. 285). In regards to implications for the assessment and management of suicidal behaviours, Beck et al. have suggested that:

A patient with high intent and accurate conception would generally be at highest risk, low intent and accurate conception would be at lowest risk, and high intent and inaccurate conception at intermediate risk. (p. 287)

The thesis here to be proposed is that the value of using "conception of lethality" as a qualifier of risk or therefore as a moderating variable in the lethality and intent relationship can only remain at the level of speculation, until there is conclusive data on the extent of accurate conception. This premise is based upon the

logic that accurate conception of the lethality of the act could not be used to classify suicidal behaviour if people at risk of DSH were not aware of each method's potential for deadliness. At present the extent of accurate conception regarding the awareness of the potential deadliness of self-destructive methods has not been established. There has been a contradiction among the five studies that have attempted to assess the level of awareness.

In addition to establishing whether or not conception of lethality can be used to classify suicide risk, assessing the extent of accurate conception of lethality regarding self-destructive methods would have further implications for those working in the field of suicide prevention.

If for example, the data revealed that those at risk were ignorant of the deadliness associated with self-destructive methods this finding could be generalized to those engaging in DSH. This would imply that perhaps in those cases of DSH where lethality and intent were related those individuals took the time and trouble to learn about the deadliness of methods prior to the attempt.

If on the other hand, people were aware of the potential deadliness associated with self-destructive methods, this would indicate that those in an at-risk population all have sufficient knowledge to assess properly the probable outcome of the attempt. Those in an at-risk population would be at higher risk of completed suicide than originally expected because if individuals at risk have sufficient knowledge to choose a method that may have a lethal effect, there is a greater probability of a completed suicide occurring (Pettifor et al., 1983).

Based on the argument above, the primary objective of this study is to establish a baseline reflecting the extent of accurate conception concerning the deadliness of self-destructive methods in an at-risk population.



Because the intention of self-destructive behaviour is often unknown, for the purpose of this study, the term deliberate self-harm (DSH), (Kahan & Pattison, 1984) will be used whenever possible in lieu of the terms attempted suicide ("deliberate harm with a clear intention of self-killing", Bagley & Ramsay, 1989, p. 81) and parasuicide (deliberate harm without a clear intention of self-killing, Kreitman et al., 1969). Where the definitions of "attempted suicide" and "parasuicide" are more discriminating, the deliberate self-harm definition disregards the intentionality factor.

"Deadliness" refers to the degree to which a method is likely or capable of producing death, and is used synonymously with lethality. Conception of lethality is used synonymously with knowledge regarding the deadliness of self-destructive methods.

This research is intended as an initial step in refining the DSH variable. Providing a baseline reflecting the extent of accurate conception concerning the lethality of self-destructive methods among an at-risk population will provide a foundation for future research assessing the role of conception of lethality as a moderating variable in the lethality and intent relationship. More information regarding this relationship will be valuable to the refinement of the variable previous DSH.

If clinical practitioners have high probability indicators to identify those who might and might not undertake a further episode of DSH behaviour they will be able to focus their evaluation of specific intervention and prevention strategies on subgroups of high risk populations. As Worden and Sterling-Smith (1973) have stated:

If we can improve our predictions as to who will engage in subsequent

DSH and the relative lethal level this subsequent behaviour will assume, then we will have taken an important step in providing better management for those who will never kill themselves and perhaps prevent some from becoming completed suicide. (p. 104)

## **CHAPTER II**

### **LITERATURE REVIEW**

#### **A. Previous Deliberate Self-Harm**

The relationship between episodes of DSH and future suicide has been repeatedly validated (Davis, 1967; Sainsbury, 1956; Dorpat & Boswell, 1963; Moss & Hamilton, 1956; Pierce, 1977; Dorpat & Ripley, 1967; Buglass & Horton, 1974; Buglass & McCulloch, 1970; Hawton & Faag, 1988; Reynolds & Eaton, 1986). Prospective studies, which involve the follow-up of DSH cases, should be distinguished from retrospective studies investigating the occurrence of previous DSH among completed suicides.

##### **i) Prospective Studies**

Depending upon the follow-up period, the percentage of those who go on to complete suicide fluctuates anywhere between .3% and 50%. One study, (Ovenstone, 1973) reported that only a small number (.3% to 22%) of DSH cases later killed themselves. In one Canadian study (Johnson et al., 1975) of 1902 episodes of DSH, 1456 persons repeated at a rate of 15% over the two year data-collection period. Almost 6% of these repeated three or more times. Furthermore, 55% of this sample had injured themselves in the past. Other reports, such as Morgan and his associates (1975), Kreitman (1977) and the World Health Organization (1968) claim that repetition of DSH is common, with 16-30% undertaking similar behaviour within one year. The time factor of follow-up is critical as most repeat attempts at self-injury (which may result in completed

suicide) have been documented to occur within the first three months (Bancroft & Marsack, 1977; Kessel, 1966; McIntire et al., 1977).

## ii) Retrospective Studies

Retrospective studies on completed suicides showed that approximately 8.6% to 33.3% had a history of DSH (Dorpat & Ripley, 1967; Tuckman & Youngman, 1963; Bancroft & Marsack, 1977). Still higher estimates, 35-50%, are accounted by Morgan et al. (1975) and Barraclough et al. (1974). In one study (Peck, 1985) 55% of subjects who committed suicide had a previous episode of DSH. According to Grollman (1971) 4 out of 5 people who kill themselves have such a history.

## iii) Summary

Even though the estimates of the rate of repetition among those who engage in DSH and of the occurrence of such behaviour among completed suicides vary among the studies, the consensus still exists that history of DSH is positively associated with a subsequent episode of DSH or eventual suicide. According to Bagley (1982) "the best single prediction of both completed suicide and attempted suicide is a person's previous suicidal attempt or gesture" (cited in Ramsay and Bagley, 1985, p.162). As Teft and associates (1977) have shown, such a history increases the risk of death by suicide to 10 to 20 times the risk to the general population. Tuckman and Youngman (1963) reported the risk of completed suicide was 140 times greater for the population engaging in DSH than for the general population.

## **B. Refining the Previous Deliberate Self-Harm Variable**

Even though previous DSH is one of the best indicators available, there are still difficulties with using this variable as a predictor (Hengeveld et al. 1988). The estimates reported on the strength of the relationship between previous DSH and subsequent life-threatening behaviour or completed suicide are inconsistent.

Part of the inconsistency in the literature can be accounted for by the fact that factors such as the age and sex of the patient, history of psychiatric treatment and social class influence the occurrence of repeat episodes of DSH (Maris, 1981). The strength of the relationship between DSH and subsequent episodes of self-injury will therefore vary among the studies if different sample populations are used. A second reason for the inconsistency in the literature is that the "previous DSH" variable is a "crude criterion". As Pallis et al. (1984) have stated:

From his knowledge that persons who poison or injure themselves have a suicide rate 100 times greater than the population at large, a clinician may decide to treat every attempter as being at high risk. The cost of doing so (i.e. of using no scales at all) is that for each attempter who is correctly identified as a prospective suicide (true positive) he will have to treat another 104 as being at risk of killing themselves despite the fact that, in the end, none of them will do so (false positives). (p. 147)

### **i) Intention of the Previous Deliberate Self-Harm**

Because research has shown that the previous DSH variable alone is an inadequate indicator of high-risk of subsequent DSH, efforts have turned to refining this variable (Hengeveld et al., 1988). Studies have focused on identifying specific aspects of the previous DSH that makes an individual more likely to repeat the

episode, which increases the likelihood of completion (Ettlinger, 1964).

According to Freeman and his associates (1974) "the one single factor necessary for the understanding of a suicide attempt is the intention to die on the part of the attempter" (p. 23). The importance of this one aspect is supported by Hawton (1986) and Pierce (1984) who both claim the understanding of motivation is crucial if effective methods of prevention are to be devised.

Consider, for example, two separate cases of DSH. Where the intention was to die in the first case, the motivation of the second individual was to influence a significant other. Knowing this would be valuable to a clinician who has to decide where to focus preventive efforts, since the probability of subsequent DSH would likely be higher in the first case where the intent was to die compared to the case in which the intent was to effect or change the environment. According to Pallis and his associates (1984):

Because intent draws upon a reliable assessment of the person's behaviour during the suicidal act it should reflect more directly the essential similarity between a genuine but unsuccessful attempter on the one hand, and a successful suicide on the other. (p. 140)

The hypothesis that the more serious the intent in one episode of DSH the higher the likelihood of subsequent DSH has been supported although not conclusively, in the literature. Beck et al. (1974), Lester et al. (1978), Otto (1972), Pierce (1981), Tuckman & Youngman (1963), (1968), Weiss & Scott (1974), Pallis & Barraclough (1977), Philippe et al. (1988), Brent (1987) and Eyman and Smith (1986a) found an association between measures of the seriousness of DSH and

subsequent episodes or eventual suicide.

One follow-up study (Rosen, 1970) for example, showed that "the suicide rate of the persons who made serious attempts was 2.3 times that of the persons with nonserious attempts" (p. 768). Schmidt and associates (1954) claimed the difference between the number of eventual completed suicides in their serious group (2%) and those in their nonserious group (none) was statistically significant. Motto's (1965) study revealed suicide rates for people who engaged in serious and nonserious DSH at 10.2 percent and 5.7 percent respectively.

Dingman and McGlashan (1988) attempted to identify characteristics that would discriminate those cases of DSH which eventually result in completed suicide from those cases which did not. Their data revealed that the most significant discriminator of the completed suicide group was a history of a serious suicide threat or effort.

Greer and Bagley (1971), investigated the association between psychiatric treatment and subsequent suicidal attempts in 204 cases of parasuicide. They found that "subsequent suicidal attempts occurred significantly more often among untreated than among treated patients" (p. 310). Compared to the untreated group, in which 39% had repeated an attempt, only 26% of the group which were treated briefly, and 20% of those who had more prolonged psychiatric treatment repeated an attempt. Worden and Sterling-Smith (1973) compared those who have multiple episodes of DSH and those with only single episodes. In their study, psychotherapy did not have an effect in terms of preventing a subsequent attempt,

but for both groups, psychiatric treatment following the first instance lowered the lethality of subsequent DSH. The authors concluded that these findings suggested that "if the first attempt is not taken as seriously as the patient wishes, as evidenced by the fact that treatment is not offered, the patient will make a more serious attempt in his second effort" (p. 100). Buglass and Horton (1974) on the other hand, found no evidence that in-patient care prevents subsequent repetition in their investigation comparing repeaters and nonrepeaters.

Eisenthal et al. (1966), Card (1974), Abruzzi (1985), Cohen et al. (1966) and Kessel and McCulloch (1966) have not found an association between measures of the seriousness of DSH and subsequent episodes or eventual suicide. Greer and Lee (1967) have stated, "Contrary to expectations, the long-term suicidal risk in patients who make potentially lethal attempts appears to be no higher than that reported among attempted suicides in general" (pp. 367-368).

## **ii) Summary**

There is a body of data which indicates that the risk of subsequent suicide is greater among individuals who engage in DSH with serious intent compared to cases of DSH in which the intent is less serious. As Pokorny's (1983) data showed, a history of serious suicide intent may increase the suicide rate by more than 70 fold.

## **C. Psychological Intent**

The purpose of focusing on the degree of seriousness of the past behaviour was to eliminate or at least decrease the inconsistency among the studies



investigating the use of the variable previous DSH as an indicator of high risk. Ideally recognizing the purpose of the past DSH should increase the predictive power of the variable previous DSH. Practically however, this has not been the case. According to Brown and Sheran (1972) "in light of the differing classification schemes used to rate seriousness, it is not surprising that such conflicting results have been found" (p. 72).

Perhaps efforts to enhance the predictive power of the previous DSH variable by focusing on intent have been futile, because in the majority of the studies an estimate of intent was obtained from the medical lethality of the attempt and it is debatable whether or not this lethality measure is a reliable or valid indicator of intent (Greer & Lee, 1967). Prior to discussing the validity of the lethality and intent relationship, further consideration should be given to the intent variable and its measurement.

#### **i) Measurement of Intent**

Intent must be considered an hypothetical concept that bridges the gap between the death wish and its successful fulfillment. This assumption is made recognizing that intent may be a matter of degree among some attempters. (Peck, 1985, p. 312)

Obtaining accurate measures of motivation for any human behaviour has always proven challenging (Franken, 1982), primarily because motivations are directly unobservable. In attempting to obtain a measure of the intent of the previous DSH, there are additional difficulties because 1) there are usually multiple motives for DSH (Stengel, 1960) 2) psychological intent is a multidimensional

concept (Peck, 1985) and 3) the behaviour is part of the past, (which requires the assumption that nothing changed from time A to time B), (Pallis et al., 1982).

Because psychological intent is a mental activity, valid and reliable manifest indicator(s), assumed to reflect the variable need to be identified from which the intent can then be inferred (Freeman et al. 1974). Although the classification of intention has varied in different investigations, intention has usually been inferred from: 1) the method used for DSH - risk factor (Brent, 1987) 2) the likelihood of discovery - rescue factor (Atkinson, 1978) or 3) the statements of the attempting concerning his or her wish to die (Brown & Sheran, 1972; Birtchnell & Alarcon, 1971). The "Risk-Rescue Scale" (Weisman & Worden, 1972) and the "Beck Suicide Intent Scale" (Beck et al., 1986) are two examples of instruments combining all three techniques in an attempt to yield a more valid and reliable measure.

There are difficulties with using the rescue factor and the statement of the patient as measures of intent. Not only are they subjective estimates but these indicators are also susceptible to other biasing factors, such as the desire for social acceptability after the attempt (Bancroft et al., 1976). There is also the possibility that evidence may be discarded, i.e., a note (Tuckman et al., 1968; Atkinson, 1978). Because of these problems and because it is the most objective measure available, much research has focused on the risk indicator (referring to the actual damages that occurred and the level of treatment required, Weisman & Worden, 1972) as a measure of intent.

The medical lethality of the attempt is one piece of information that is

recorded and that has been demonstrated to provide a compelling clue to the psychological intention of the suicidal person (Freeman et al. 1974). The relationship hypothesized between lethal consequences and intent is that the higher the psychological intent to die, the higher the medical lethality of the DSH (Eyman & Smith, 1986b).

#### **D. Medical Lethality and Psychological Intent Relationship**

##### **i) Studies from Adult Populations**

"The argument that intent to suicide is related to choice of method used in the attempt infers a direct relationship between intent and seriousness of suicidal action" (Peck, 1985, p. 311). This view is shared by Eyman & Smith (1986b), Pierce (1977, 1981), Schmidt et al. (1954), Weiss et al. (1961), Dorpat & Boswell (1963), Worden (1976), Michalowski (1976), Beck et al. (1975), Pallis & Sainsbury (1976), Heyse et al. (1969), Weisman & Worden (1972), Pallis & Barraclough (1977), Lester & Beck (1980). Goldney's (1981) data for example, revealed a significant relationship between the number of tablets/capsules ingested (the lethality of the suicide attempt) and scores from the Beck Suicide Intent Scale.

Challenging the lethality and intent relationship, Dublin (1963), Marks & Stokes (1976), Taylor & Wicks (1980), Peck (1985), Card (1974), Rosen (1970), Kessel (1965), Batchelor (1955), Stengel & Cook (1958), Lester & Beck (1975), Plutchik et al. (1989), Marks (1973), Marks & Abernathy (1974), Sainsbury (1956), Birtchnell & Alarcon (1971), Fox & Weissman (1975), and Kathol & Henn (1983) maintain the medical lethality of DSH is misleading with regards to suicidal intent.

Kessel (1966) for example, investigated cases of self-poisoning and concluded that "their intention was not related to the need for psychiatric care, nor was the degree of physical resuscitation that they had required" (p. 29).

## **ii) Studies from Adolescent Populations**

Similar to the literature on adult populations, research using adolescent samples is also equivocal.

Using the Risk-Rescue Scale developed by Weisman & Worden (1972), Brent (1987) found that medical lethality was correlated with suicidal intent both prior to ( $r = 0.51$ ,  $p < 0.0001$ ) and subsequent to the DSH behaviour ( $t = 2.57$   $df = 123$   $p = 0.01$ ). Kotila & Lonnqvist (1987) examined 422 adolescent suicide attempts. In their study, 67% of the suicide attempts which were estimated mild for lethality, were also estimated to be mild for intent.

Kowalski et al. (1986), Peck (1984) and McIntire & Angle (1970) on the other hand, fail to support the existence of a relationship.

## **iii) Refining the Lethality and Intent Relationship**

There have been numerous attempts to account for the difference in the findings of various studies concerning the lethality and intent relationship.

Peck (1985) and Plutchik et al. (1989) have suggested that the strength of the relationship between lethality and intent is diminished in some studies because no assessment of high lethality occurs. Because the samples' populations are often limited to hospitalized patients, those people who have completed suicide are not included in the population, and their intent scores are unknown.

According to Plutchik et al. (1989) if the drug overdoses are accidental and occur in connection with drug use or abuse, then the correlation between intent and lethality of the attempt could be attenuated.

A third explanation is that a clear distinction has not always been made between the intent to die and the medical lethality of the DSH (Schmidt et al., 1954; Motto, 1965). Confounding the degree of an individual's intent to kill himself with the medical lethality of the suicidal act would diminish the possibility of obtaining a high correlation between these variables.

Determined to unravel the inconsistency that exists in the literature, Beck and his coworkers (1975) attempted to quantify the relationship between suicidal intent and medical lethality. "By identifying a moderating variable, namely, the attempter's preconceptions about the lethality of his act, the authors were able to solve the puzzle of the low correlations between intent and lethality" (p. 285). A measure of the accuracy of their preconception of the deadliness of the attempt was obtained by comparing the patient's expectation of lethality just before or during the attempt with the actual lethality. Responses were taken from item #11, "conception of lethality" on Beck's Suicide Intent Scale (Beck et al. 1986). While the correlation between suicidal intent and medical lethality for the entire sample was low ( $r = .19$ ), there was a high positive correlation ( $r = .73$ ) between intent and lethality in the subgroup of people who accurately predicted the outcome of their DSH. More specifically, lethality and intent were related only in those cases where the lethality of the method was known. Given this finding, Beck and his

coworkers speculated that:

The patient's expectation of the lethality of his suicidal act would be expected to correlate highly with intent irrespective of his accuracy in forecasting the outcome. This hypothesis was confirmed by Pearsons product-moment correlations between intent and expectation of .76 and .64 in the accurate and inaccurate groups, respectively, and an overall correlation of .69. (p. 287)

From their findings, they concluded that:

The dimensions of intent and accuracy of conception of the lethality of the act have important implications for the assessment and management of suicidal behaviours. A patient with high intent and accurate conception would generally be at highest risk, low intent and accurate conception would be at lowest risk, and high intent and inaccurate conception at intermediate risk. (p. 287)

Despite Beck et al.'s study, the value of "conception of lethality" as a qualifier of DSH among those at risk and its role as a moderating variable in the lethality and intent relationship can only remain at the level of speculation because there is a lack of information concerning this variable. A baseline reflecting the extent of accurate conception regarding the lethality of methods among those at risk for example has yet to be established. At present there are only five studies referring to awareness of the potential deadliness of self-destructive methods and there is a contradiction among the few that do exist.

#### **E. Conception of Lethality**

Few studies have attempted to assess awareness of the deadliness associated with the methods used for self-destruction. Of the five studies documented, Beck et al. (1975), Gazzard et al. (1976), Weiss (1957) and Sale et al. (1975) reported that the majority of attempters did not know the probability of death associated

with the various methods. In Card's (1974) study however, the conclusion was reversed. She claimed that people did know the probability of death associated with various suicidal methods. Because of the different results from the few existing studies, each investigation deserves further scrutiny and elaboration.

In the study which claimed to identify a moderating variable between the lethality and intent relationship, Beck et al. documented that of 227 patients, 135 (59%) were not able to accurately predict the lethality of the act. There are two criticisms of this study. Since the assessment of knowledge was derived from only one item, there is not enough information to generate valid and reliable conclusions on the actual level of knowledge. Furthermore, because the respondents were interviewed following a suicide attempt, their reflections of the attempt should be interpreted with caution as the respondents' judgement may be impaired in times of crisis (Bancroft et al., 1976).

Gazzard et al. interviewed patients admitted after an overdose of the drug paracetamol. None of the 48 patients would have chosen paracetamol had they known that there would be an interval of two to three days before the onset of serious symptoms. One criticism of this study is that investigating only the method of overdose by paracetamol precludes generalizations to other methods of self-destruction.

Weiss interviewed a number of persons shortly after they had made an attempt and found that the majority stated they did not know whether they would live or die. The author concluded the majority of attempters are quite literally, by

their suicide acts, gambling with death. Weiss's findings must also be interpreted with caution because the desire to gain social acceptability after the attempt might be influencing the subjects' responses.

Sale and his coworkers also found that the respondents' perception of the deadliness associated with overdosing was incorrect. Unlike the other studies however, the prevailing belief in this particular sample was that drug overdose is lethal, but that medical attention will almost always lead to safe recovery. The authors reported that: "The respondents' opinions of drug toxicities differed widely from those medically accepted, with a general tendency toward an overestimation of toxicity" (p. 162). A criticism of the study is that the sample was biased as only females were interviewed.

Card investigated knowledge of the lethality of methods by assessing the correspondence between peoples' subjective estimate of lethality and objective measures. To obtain subjective estimates of lethality, a questionnaire was distributed to 14 graduate students or faculty members at two area universities. They were asked to rank 11 suicidal methods according to the probability of death resulting from use of the method in a suicide attempt. Card compared these estimates of lethality with the objective probability of death associated with each method. Because of the correspondence between the subjective and objective estimates of lethality, she concluded that people did know the probability of death associated with the various suicidal methods. The small sample size of 14 graduate students or faculty members limits the generalizability and representativeness of the



research findings. The task in the study requested subjects to rank the methods. When the items to be ranked may overlap or be viewed as similar, a ranking procedure is often difficult. The frustration associated with completing a questionnaire such as this, often leads inadvertently to increased measurement error.

In addition to the five studies, there have been occasional comments referring to the extent of knowledge among those engaging in suicidal behaviours. The majority of statements reflect a theme of uncertainty about the outcome of suicidal acts (Pillay, 1988; Seiden, 1977; Kessel, 1966; Kathol & Henn, 1983; Plutchik et al., 1989). Gibson & Lott (1972) for example, have stated that:

The vast ignorance among the public regarding drugs and their actions is a contributing factor to this (referring to the use of available drugs). There will always be the simple souls who take 24 multivitamin capsules and wait to be relieved of their worldly problems. Just as there will be unexplained illnesses among the suicidal prone who have ingested a variety of drugs in quantity. (p. 460)

Fox and Weissman (1975) have also concluded that:

The contradictions between serious consequences of pill ingestion as contrasted with the low intent of pill ingestors to kill themselves reflects an ignorance of the potential lethality of medications in these young attempters. (p. 36)

## **i) Discussion**

The lethality and intent relationship suggests that a person engaging in DSH selects a method to yield a level of harm proportional to his or her intent. There has been much debate on the lethality and intent relationship. Thus far,

"conceptions about the lethality of the act" has been identified as the moderating variable between the lethality and intent relationship. Because of the inconclusive results regarding accurate conception however, conclusions regarding this variable can only remain at the level of speculation.

#### **F. Why that Method?: Explaining the Selection of a Self-Destructive Method**

The lethality and intent relationship is a "psychological perspective" - a perspective suggesting that the difference in choice of method solely reflects a difference in intent to die. Other theories have been offered to explain how a method is selected for DSH. All but two of the theories, "availability" and "disfigurement", can be classified as: i) Psychological ii) Sociological or iii) Biological. The following is a review of some of the theories. Because the purpose of this section is to provide a "flavour" of the various approaches and not an exhaustive review, only a few examples will be referred to in each section.

##### **i) Psychological**

"A tradition in psychological literature suggests that the method an individual chooses with which to end his life is personally meaningful and potentially revealing of hidden motivations" (Lester et al., 1976, p. 70).

In a footnote to his 1920 paper, "The Psychogenesis of a Case of Homosexuality in a Woman," Freud wrote that "the various means of suicide can represent sexual wish fulfilments...to poison oneself = to become pregnant; to drown = to bear a child; to throw oneself from a height = to be delivered of a child" (Freud 1920/1955 p. 162).

Pommereau & Penouil (1988); Furst & Ostow, (1979), and Dublin (1963) have also suggested that a particular method of suicide is sometimes decided by the necessity to satisfy a "psychological need". According to Capstick (1961), "in a psychotic depression when the severely depressed and guilt ridden person believes he/she deserves punishment, aggressive and punitive methods are commonly used" (p. 35).

Hirsh (1960) provides the following account to explain why someone may suicide by firearm or by cutting:

If the elimination of current, regional or topical pain is the immediate goal, this may express itself in the use of a gun to commit suicide. Such suicides shoot themselves in the tables of the forehead and temples, the sites where headache pain is felt most keenly. People who are 'all tied up in knots', viscerally speaking, attempt to relieve this immediate pain, as well as the total pain, by opening their chest or abdominal cavities. (p. 5)

According to Hendin (1982) "for many suicidal individuals, choosing the means of their suicide is integral to their use of suicide as a form of control" (p. 148).

Jacobson and associates (1987) have argued that obstetric procedures are related to eventual self-destructive behaviour. After reviewing birth records belonging to 412 forensic victims the authors concluded that there was evidence of a link between perinatal origin and the method an adult selects for self-destructive behaviour. Suicides involving asphyxiation were closely associated with asphyxia at birth whereas suicides by violent mechanical means were associated with mechanical birth trauma.

According to Seiden and Spence (1982), the tendency for some individuals to go to great lengths to kill him or herself in a particular manner suggests that a method was selected to satisfy some personal or symbolic requirement. The authors found that:

Although the Bay bridge is equally feasible/accessible for suicide, only about half of the jumpers used it for this purpose; the other half continued several more miles to reach the Golden Gate Bridge and their eventual demise. (p. 37)

They found it intriguing that half of the group had to drive over the Bay Bridge to get to the Golden Gate Bridge. After interviewing a number of people who had survived their suicide attempt, Rosen (1975) characterized the Golden Gate Bridge as a "suicide shrine" which had a unique meaning to the jumpers.

According to Lester & Beck (1980) "the method that an individual chooses to kill himself would seem to be an important clue as to the psychodynamics of the suicidal act and the personality of the suicidal person" (p. 271).

In one study comparing completed suicides who used active versus passive methods no differences in the MMPI protocols were found (Lester, 1970a). In a similar type of study but with a group of attempted suicides, males were compared for their fantasy aggression on responses to the TAT. No differences were found (Lester, 1970b).

## **ii) Sociological**

A more sociological perspective on how a method is selected emphasizes "social and cultural availability as well as assessment of the various means of self-

destruction" (Marks & Stokes, 1976, p. 622). A socio-cultural perspective stresses the evaluation, familiarity and knowledge of various methods, as well as their social, cultural and physical availability (Marks, 1973; Marks & Abernathy, 1974).

Diggory & Rothman (1961), Dublin (1963), Goss & Reed (1971), Lester (1972), and Maris (1969) have referred to the issue of cultural influences upon methods of self-destruction and agree that the selection of a method is dependent upon a constellation of sociological factors. McIntosh & Santos (1982a) for example, have suggested that generalizations about the process involved in selecting a method cannot be made without more closely examining the various socio-cultural influences on these young men and women and how these influences might differ by age, sex, social position, cultural background, geographical location and personal history.

Marks & Abernathy (1974) have identified "anticipatory socialization" to be a factor influencing gender preferences for suicide methods. According to this theory, the greater incidence of firearm use by males results from the fact that traditionally boys have been exposed to and encouraged to participate in violent games and activities to a greater degree than their female counterparts. The influence of anticipatory socialization on the selection of a method has also been used to explain the increase in suicides by firearms among females. According to this theory, the increase in suicide by firearms is a result of the emergence of more masculine role definitions for women (McIntosh & Santos 1981, 1982b; Adler, 1975; Simon, 1975).

Hersh (1975) is also an advocate of the sociological view. He has stated that the differences in the methods chosen may be the result of culturally established differences in male and female responses to stress. Linehan's (1973) view is similar as she has suggested that sex role expectations shape sex differences in suicidal behaviour.

Acculturation is the "cultural modification of an individual, group, or people by adapting to or borrowing traits from another culture" (Webster's Dictionary). According to McIntosh & Santos (1982a) this process is often seen in suicidal behaviour among immigrants in which "beliefs and customs of the group are significantly altered or dropped...and shift in the direction of the group toward which acculturation is taking place" (p. 230). Burvill et al. (1973) compared the methods for suicide used by suicides in England and Wales to those used by immigrants from those countries when they arrived in Australia. They suggested that the switch from the British pattern to the Australian pattern among the immigrants supported the process of acculturation.

Schmidtke and Hafner (1988) has argued that "imitation" may also be a determinant in the selection process, since newspaper reports of suicides by certain methods seem to encourage the use of those methods.

### **iii) Biological**

Lester (1969) suggested that anatomical differences may in part explain the differences among males and females in their choice of method. Lester & Lester (1971) assert that because females are in general smaller than males, physically

weaker, and muscularly less well developed, they have less physical strength and mechanical competence for methods which include firing a gun or kicking a chair away. They conclude "the lack of physical strength lead women to choose suicide methods that require little exertion, like barbiturates and poisons" (p. 90).

According to DeCatanzaro (1981) suicide is linked to a capacity to use tools. He proposes that suicide is difficult to show in animals because humans are one of the few species clearly able to use tools.

The tendency for males to use more lethal methods compared to females has been offered as a general explanation to account for the differences in the male/female, attempted and completed suicide rates (Seiden, 1977; Lester, 1984). According to Rich et al. (1988) males commit suicide more frequently than females, and females attempt suicide more frequently because males use methods in which the point of no return is reached almost immediately, whereas females use more gradual methods, or those which leave a lot of time for rescue.

#### **iv) Availability**

Although referred to in sociological explanations of choice of method, the availability of the method has been offered as a single theory hypothesized to account for the selection of a method. The "availability theory", maintains that the difference in the methods chosen may be determined by an individual's access to drugs, firearms, or other harmful materials (Finch & Poznanski, 1971). The availability hypothesis has been used, especially in explaining urban versus rural differences, to account for why one method would be selected over another

(Clendenin & Murphy, 1971). The theory implies that the suicide rate by a particular method should parallel the availability of that method (Oliver & Hetzel, 1972; Whitlock, 1975; Hassall & Trethowan, 1972; Johns, 1977; Sievers et al., 1975; Farmer, 1979; Farmer & Rohde, 1980; Brown, 1979; Farberow & Simon, 1969; Boor, 1981; Schlebusch, 1985; Pillay, 1988; Gold, 1965; Hetzel, 1971; Aitken et al., 1969; Weissman, 1974; Odejide et al., 1985; Ferrence, 1978; Goldney & Katsikitis, 1983; Fox & Weissman, 1975; Clarke & Mayhew, 1988; Lester, 1990a).

Clarke & Lester (1986) found that a decrease in suicide by car exhaust coincided with a decrease in the carbon monoxide content due to emission controls in the United States. A similar pattern became apparent in England where the detoxification of domestic gas accounted for a thirty percent reduction in the British suicide rate (Kreitman, 1976). Other authors have implicated the availability of guns in a community as a contributing factor to suicide attempts with firearms (Boyd, 1983; Seiden & Freitas, 1980; Baker, 1985; Sloan et al., 1990; Markush et al., 1984).

Evidence is accumulating that the less available firearms are, the lower the suicide rate by firearms (Lester & Murrell, 1980, 1982; Frierson, 1989; Lester, 1987, 1990b). Scarf (1983) showed that the percentage of suicides by firearms in all four Canadian cities investigated was lower during the post-legislation period, which restricted the availability of firearms, than before. McIntosh & Santos (1982b) and Frazier (1985), have suggested that the rising incidence of self-inflicted gunshot wounds by women can be attributed to their greater accessibility to guns.



#### **v) Disfigurement**

Research into sex differences in attitudes toward the consequences of death (Diggory & Rothman, 1961) revealed that females were more concerned with the effects on their attractiveness, whereas males were more concerned with the effects on dependents. This finding led to the generation of the "disfigurement theory". It argues that women are less inclined to use methods which are disfiguring because of a greater concern over their physical appearance (Seiden, 1977). According to Lester & Lester (1971) this concern may be a protective factor since the "less disfiguring possibilities are almost always less lethal as well" (p. 90).

#### **vi) Discussion**

All of these explanations by themselves, are inadequate in explaining why one method would be chosen over another because individually none of them fully account for the variability in the selection process.

According to Capstick (1961), "Despite the compelling argument of particular cases,...it is doubtful how far the psychoanalytic interpretation of methods, even in the broadest way...can be applied to suicides in general" (p. 36). It also appears that choice of method for suicide seems unrelated to most personality variables studied.

If the lethality and intent hypothesis was thought to be the single explanation accounting for the selection of a method, this would imply that because males commit suicide more often than females, males are more intent to die (Rich et al., 1988; Seiden, 1977). The increase in the use of firearms as the method of choice

in female suicides (Rogers, 1988) would also suggest that more females are now intending to die. According to Marks & Stokes (1976), such a position is clearly untenable.

Sociological explanations such as "differential socialization" (Marks & Stokes, 1976) do not provide the complete answer to explaining differences in the selection process (Taylor & Wicks, 1980). Because of the change in traditional roles, there should almost be an equal proportion of males and females using firearms, this however is not the case. In Canada, for example, 1007 and 61, males and females respectively, committed suicide by firearm in 1988 (Statistics Canada, 1988).

Biological explanations are inadequate because in several countries the method for the majority of suicides for both sexes require no such mechanical competence, eg., overdosing. The general explanation, which argued the difference in parasuicide and suicide rates between men (more completed suicide) and women (more parasuicide and attempted suicide) to be an artifact of the methods the sexes used, is also inadequate. First, as Lester (1969) pointed out, even if the method is held constant, the sex difference in suicidal behaviour remains. Second, "where sex differences in suicide and attempted suicide may hold up cross-culturally, methods of suicide and attempted suicide are not necessarily more violent for males than for females in all countries" (Linehan, 1971, p. 94). Stengel (1964) referred to the third problem with using the "different methods theory" to account for the difference is suicidal behaviour among males and females:

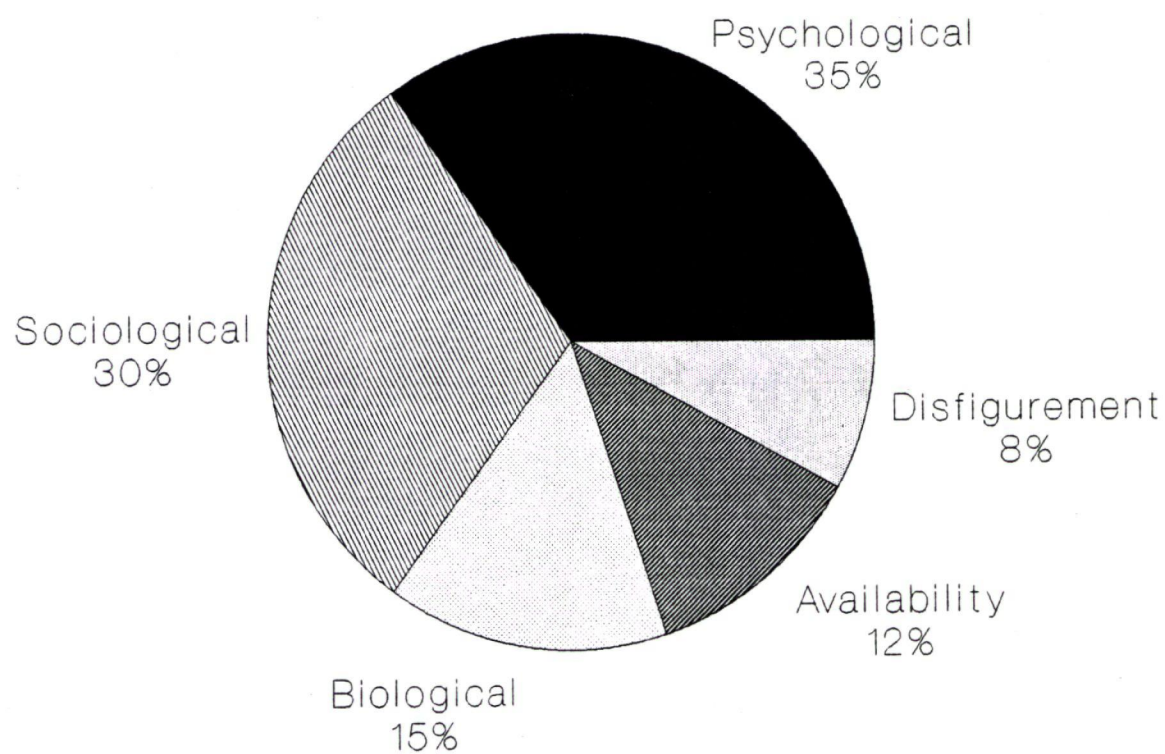
If this was the whole explanation, one would expect the total number

of suicidal acts to be approximately the same in both sexes, after corrections for the size and age composition of the two populations have been made. However, the available evidence indicates that the total number of female suicidal acts exceeds that of the male. (p. 134)

According to Marks & Abernathy (1974), because the available methods are not used most frequently, "any explanation of differential methods of suicide, by sex, cannot be based solely on the logic of the physical presence (availability) of any given method for self-destruction" (p. 7). For example, rope with which to hang oneself is more readily available than firearms, yet firearms are more frequently used. In Seiden & Spence's study (1982) the data revealed that differences in the choice of bridge from which to jump persisted even once factors of availability were controlled. Availability alone does not decide the choice of method, because if it were the only determinant, drowning or jumping from high places would be at the top of the list of methods almost everywhere (Stengel, 1964).

Because firearms are used as a method of suicide in a substantial percentage of female suicides (Frierson, 1989), the disfigurement hypothesis is questionable.

Since there are usually many factors influencing "a decision", no single theory should be expected to fully explain the selection of a method. To account for more of the variance in the selection process it would seem sensible to combine a number of individual theories (see Figure 1). Access to lethal means of injuring oneself for example, would be just one determinant among many, hypothesized to explain why one method would be selected over another. Dublin's theory (1963)



**Figure 1. Explaining the Selection of a Method: A Hypothetical Model Based on Combining Single Theories to Provide a More Complete Explanation**

is one example in which 1) Availability 2) Suggestion and 3) Psychological factors are combined in attempt to explain how a method is selected.

Thus far, the efforts at combining explanations to account for the selection of a method have also been inadequate because there has not been a significant increase in the proportion of variance explained when combinations are made. It is plausible that the attempts to combine explanations to increase explanatory power have failed because there are still problems with the single explanations.

It would be logical therefore to first focus on individual explanations, and demonstrate their explanatory power prior to combining them into a larger theory. Only those explanations accounting for a significant proportion of the selection process variance would become a component of the larger theory. The word "component" is meant to imply that each explanation makes some contribution to the process involved in selecting a method. Each explanation plays a role, each has an influence and each is influenced by the presence of the other explanations.

#### **G. Experiences With, Attitudes Towards and Conception of Lethality Regarding Self-Destructive Methods: A Hypothetical Dynamic Relationship**

In Beck et al.'s study (1975), 135 of the attempters had inaccurate conceptions regarding the lethality of their attempt. Ninety-two of the attempters had accurate conceptions of the lethality of their attempt. Why were only some attempters able to predict accurately? Where did the knowledge of the accurate predictors come from?

Of many factors effecting the accumulation of knowledge, research has

shown that experiences (Durocher et al., 1988) and attitudes (Domino & Swain, 1985) exert a strong influence. The influence is reciprocal in that attitudes and experiences are also effected by knowledge. There is also evidence of an interdependent relationship between experiences and attitudes (Holzman, 1988). Marks (1988) for example, showed that younger people, because of more experiences with suicide, were more accepting of suicide than older people.

Feifel & Schag (1980) and Minear & Brush (1981), have also supported the relationship between experiences and attitudes. Their data revealed that individuals were more accepting of suicide the more seriously they, themselves, had considered or attempted suicide. Limbacher & Domino (1986) found the degree of association made a difference. They showed that suicide attempters and suicide contemplators were more accepting of suicide than nonattempters, yet the attitudes of those familiar with suicide did not significantly differ from each other, or from others having no association with suicide. Mere association with suicide through a relative, friend or acquaintance did not relate to one's acceptance.

It has been argued that the role of conception of lethality in the selection of a method can only remain at the level of speculation because the extent of accurate conception has yet to be established. There is evidence however, suggesting that both experiences with and attitudes towards self-destructive methods influence the selection of a method.

#### **i) Experiences and Self-Destructive Methods**

Research on the relationship between experiences with means of self-

destruction and choice of method has occurred at the indirect/direct and suicidal/nonsuicidal level.

Marks & Stokes (1976) compared undergraduate students in Georgia and in Wisconsin. For Georgia students, both male and female, more students owned a gun, were more likely to have had parents who owned guns and to have fired a gun as a child. Having a parent or relative who owned a gun was also positively associated with having fired a gun. Because southerners had more experience with guns from childhood on, Marks & Abernathy, (1974) used "southernness" in the U.S.A., as an index and found that the more southern a region was geographically, the higher was the proportion of suicides using guns. Thus, indirect, nonsuicidal experience with guns appeared to lead to their increased use for suicide.

The increase in firearm injuries and fatalities in women (Adler, 1975) has been attributed to various factors, one being that women are becoming more familiar with the use of firearms. In one study (Frierson, 1989) which showed an increasing number of females using firearms in suicide attempts also showed that "the percentage of women who owned the firearm at least one year before the attempt increased by more than 50 percent from 1976 to 1987, and 55% of the women had fired the weapon previously" (p. 842).

Direct suicidal experiences with a particular method, such as previous suicidal behaviour, have been shown to influence the choice of method used in a subsequent attempt. The research in this area however, is equivocal. Where some research has revealed a relationship between methods used in repeated attempts,

for example using the same method or one which is more lethal (Capstick, 1961), other studies have failed to reveal any relationship among the methods used in successive attempts (Eisenthal et al., 1966). The authors of a Canadian study (Johnson et al., 1975) have stated that:

Generally, methods used in second or subsequent attempts could not be readily predicted from previous attempts...The only clear exception was that males who had previously cut themselves were three times as likely to use the same method on subsequent self-injuries. (p. 312)

Indirect experiences with suicidal methods have shown to be influential in selecting one's own method to self-destruct. In some cases, those at risk of life threatening behaviour have modelled the method of significant others who have suicided (Klein, 1977). Rounsaville & Weissman (1980) related four cases, out of a sample of 62, in which a relative or intimate friend made a suicide attempt within a month of a significant other's suicide, usually using a similar method.

## **ii) Attitudes and Self-Destructive Methods**

Because of the difficulties associated with assessing a psychological construct such as attitudes, there are few studies investigating attitudes towards the various self-destructive methods. Lester (1988) explored how people who preferred either guns or overdose of pills for suicide viewed each of these methods. The findings revealed that the methods of suicide were perceived very differently and these perceptions were not affected by the sex of the respondent or by the method that the respondent would choose for suicide. However, since perceptions towards only gun or overdose by pills were investigated, the findings are not representative or



10% of the female suicide population completed with firearms.

### **iii) Discussion**

Research has shown that both attitudes and experiences can influence the selection of a self-destructive method. It cannot be determined whether or not knowledge of the potential deadliness of a particular method influences the selection of a method because the extent of accurate conception regarding the lethality of self-destructive methods has yet to be established. Studies have indicated relationships between: 1) attitudes and knowledge 2) experiences and knowledge and 3) attitudes and experiences. At the present time the interrelationships between all three variables (experiences, attitudes and knowledge) have not been assessed. Furthermore, those studies investigating the relationship among experiences and knowledge, and attitudes and knowledge, were referring to knowledge about suicidal behaviour. There has not been research on the relationships between experiences, attitudes and knowledge of the deadliness associated with self-destructive methods per se.

generalizable to other self-destructive methods.

Marks (1977) investigated sex differences and their effect upon cultural evaluations of suicide methods. Students were asked to rank the means of self-destruction by their acceptability. Males rated active methods as more acceptable (because they were masculine, quick and efficient) whereas females rated passive methods as more acceptable (because they were painless, quick and efficient).

In another study (Marks, 1973), subjects were asked to select from a list of 10 methods of suicide, the two most preferred methods and the two least preferred methods. In the college sample, the preferred method for both males and females were drugs and poison. As for the methods least preferred, differences by sex existed. "Females did not like the idea of jumping while males shared a common dislike with females for explosives and cutting" (p. 7). Reasons for selection of a particular method were similar to those listed in other studies. The author stated that:

Females frequently mention the avoidance of pain and the desire not to mess up or disfigure the body or the environment vis a vis a bloody method. Males also mention avoiding pain but seldom refer to the effects of a method on bodily appearance. (p. 7)

In the same study which investigated "southernness", Marks & Abernathy (1974), also compared regional attitudes towards firearms. It was shown that in the South, the region most tolerant of firearms, 71% of the male and 46% of the female suicide population completed suicide with firearms. This was compared to the Northeast region, with the least tolerant attitudes, where 34% of the male and

### CHAPTER III

#### RESEARCH OBJECTIVES

##### A. Primary Objective

The primary objective of this study is to establish a baseline reflecting the extent of accurate conception concerning the deadliness of self-destructive methods in an at-risk population.

##### i) Rationale

Identification of those who are at high-risk of completed suicide is a key task in suicide prevention. One variable established as being of significant importance for predicting completed suicide is previous DSH. Because this variable is a crude criterion however, it is an inaccurate indicator.

The refinement of the previous DSH variable is a lengthy process (see Figure 2). This study is warranted because establishing some baseline information on the extent of knowledge among an at-risk population regarding the potential deadliness of various self-destructive methods is a necessary initial step in this process. Establishing a baseline reflecting the extent of accurate conception of lethality in an at-risk population will determine whether or not conception of lethality could be used to qualify suicidal risk or as a moderating variable in the lethality and intent relationship. Knowing more about the dynamics of the lethality and intent relationship will in turn be valuable to the refinement of the variable previous DSH.

The lethality and intent relationship is a "psychological perspective" - a

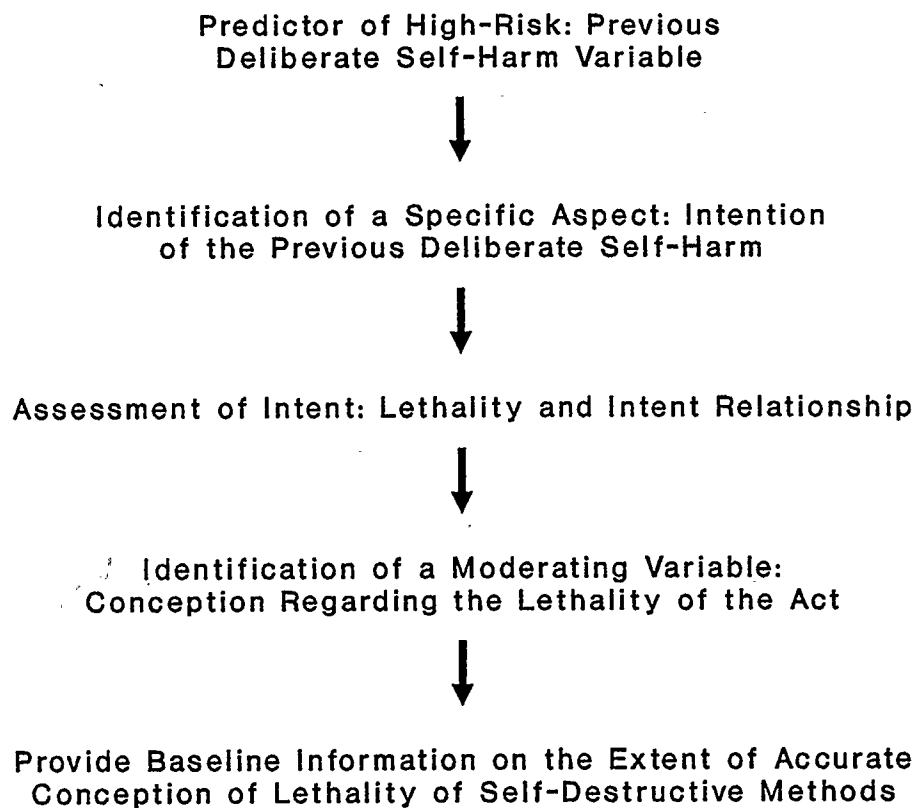


Figure 2. Refinement of the Variable Previous Deliberate Self-Harm: A Lengthy Process

perspective suggesting that the difference in choice of method solely reflects a difference in intent to die. There has been much debate regarding the ability of this explanation to account for the selection of a method. Before the lethality and intent hypothesis can become a component of any larger theory hypothesized to explain the selection of a method, there must be evidence of its explanatory power.

Because this research is intended to contribute information to understanding the dynamics of the lethality and intent relationship, this study will also add to the body of literature which will be referred to when deciding whether or not to include the lethality and intent relationship into a larger theory.

## **B. Secondary Objective**

Once an index of the extent of knowledge is obtained, the secondary objective of this study is to assess the relationship(s) among experiences, attitudes and knowledge concerning self-destructive methods in a young adult population.

### **i) Rationale**

There is evidence supporting the presence of relationships among the variables, attitudes and experiences, attitudes and knowledge and experiences and knowledge. The nature and extent of the relationships among all three variables however, have not been assessed. Furthermore, all of these studies were referring to knowledge about suicidal behaviour. Researchers have not investigated the relationship(s) between attitudes, experiences and knowledge regarding the deadliness of self-destructive methods. By surveying experiences and attitudes, the degree to which these variables relate to the level of knowledge regarding the

deadliness of self-destructive methods can be assessed.

### **C. Hypotheses**

#### **i) Primary Hypotheses**

There are two primary hypotheses for this study. It is hypothesized that:

- 1) There will be a lack of knowledge regarding the deadliness of various self-destructive methods.
- 2) Experiences with, attitudes towards and knowledge of self-destructive methods will interrelate (see Figure 3).

a) There will be a positive relationship between experiences and knowledge.

b) There will be an inverse relationship between experiences and attitudes.

- 3) The relationships among the three components will not be equal. More specifically, it is hypothesized that experiences with self-destructive behaviour and with self-destructive methods will have a stronger influence on knowledge than will attitudes.

#### **ii) Additional Hypotheses**

There are a number of additional hypotheses for this study. It is hypothesized that:

- 1) The extent of knowledge will be different for males and females. It is expected that males will be more knowledgeable.
- 2) Completing this survey will not produce high levels of distress.
- 3) Higher levels of distress will be:
  - a) Positively related to total experience scores.

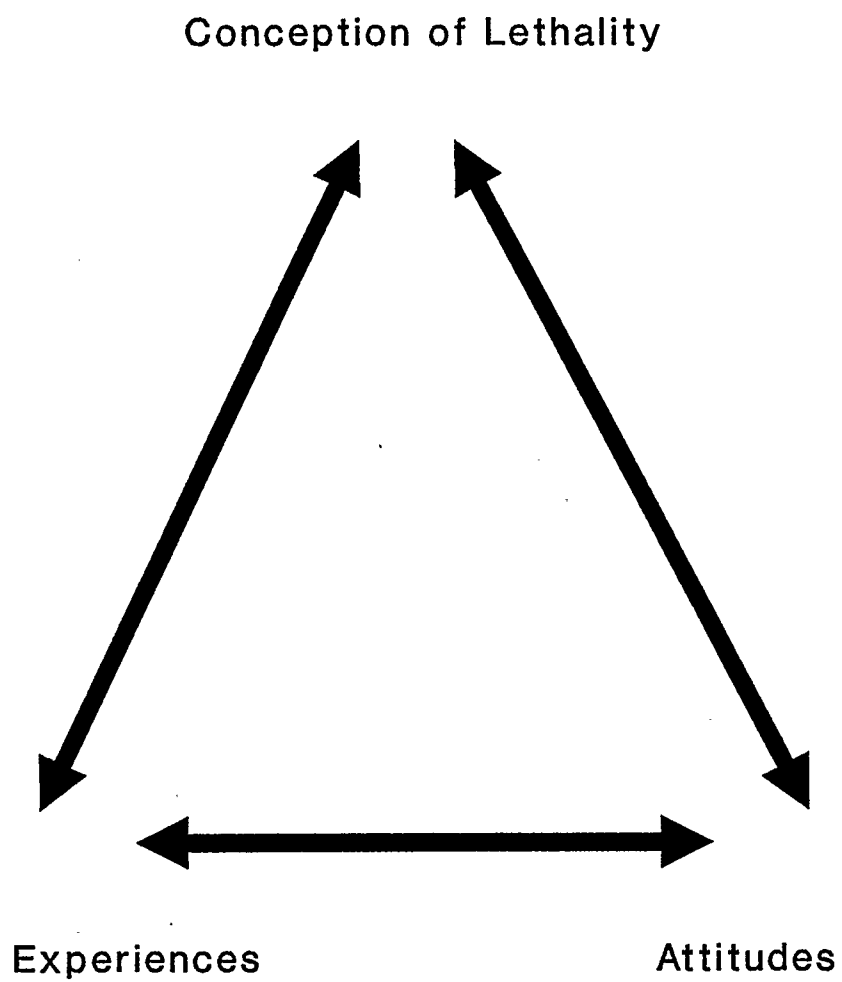


Figure 3. Experiences With, Attitudes Towards and Conception of Lethality Regarding Self-Destructive Methods: A Hypothetical Relationship

b) Inversely related to attitudes toward the methods, firearm and overdose.

It is expected that more unfavourable attitudes will correspond to higher levels of distress.

c) Inversely related to total knowledge scores.

4) The methods firearm and overdose will be perceived differently. More specifically, attitudes will be more favourable towards the method of overdose compared to the method of firearm as rated by the Semantic Differential.



## **CHAPTER IV**

### **METHODOLOGY**

#### **A. Research Design**

The present study used a cross-sectional survey research design. Surveys are used in studies that have individual people as the unit of analysis. The survey design not only allows for the collection of original data for describing a population too large to observe but a standardized survey provides data in the same form from all respondents (Babbie, 1986). The quasi-experimental design eliminates the requirement of controls as data will be collected on one diversified group.

#### **B. Subjects**

Subjects for this study were 561 post-secondary students. They were enrolled in The University of Calgary and Mount Royal College. Because the focus was on post-secondary students in general, a distinction was not made between university students (total = 515) and college students (total = 46). There were 145 males and 416 females.

#### **C. Procedure**

The subjects were selected using a non-probability sampling technique known as "accidental" sampling. Due to ethical considerations, subjects were collected from classes orientated towards preparing students for "health care-giving roles". Professors were approached and asked to participate in the study.

Prior to distributing the survey packet, a five to ten minute orientation to the study was provided to each class. During this time, sufficient information about

the study was provided in a simplistic and straight-forward manner. The consent form was reviewed along with the conditions of their agreement to participate in the study. All the members of the class were informed that their participation was completely voluntary and would not affect their grades. They were also informed that their participation did not make them eligible to obtain the answers to the knowledge survey. Answers to the knowledge survey may be obtained by contacting the principal investigator at the Calgary General Hospital, Bow Valley Centre. The components of the survey packet were reviewed and questions were addressed. The survey packet was then distributed to all pupils in the class. Along with the survey packet each participant was given a consent form which included a summary of the oral discussion and a reference sheet with various telephone numbers such as the distress line. The survey packet was completed and returned to the researcher during the class. On the average, students took approximately 30 minutes to complete the survey packet.

Institutional counselling services were notified of the study to increase counsellors' awareness and sensitivity to the need of students to discuss issues relating to self-destructive behaviours.

Each survey was scored and the data was entered into a data entry program. A statistical program developed for the social sciences (SPSS, Nie et al., 1975) was used for data analysis.

#### **D. Survey Instrument**

All subjects were given a survey packet containing the following measures

(see Appendix A).

**i) The Assessment of Experiences**

The first section of the survey packet, labelled "Experiences" was developed for the survey. In addition to collecting basic demographic information about the sample, the purpose of the experience section was to assess the subjects' direct and indirect experiences with suicidal behaviour and self-destructive methods.

**ii) The Assessment of Attitudes**

The Semantic Differential was used to assess attitudes towards two self-destructive methods, firearm and overdose. This rating scale procedure, introduced by Osgood, Suci and Tannenbaum (1957) was devised for evaluating the connotative meanings that selected concepts have for a person. Each subject is provided with a concept to be differentiated and a set of bipolar adjectival scales. The task is to indicate the direction of his or her association and its intensity on a seven-point scale. The intensity is a function of the distance from the middle point on the scale. Because of time limitations, only two concepts could be selected.

Osgood et al. offered two recommendations to guide the selection of concepts. They suggest selecting concepts for the meanings of which considerable individual differences could be expected. The purpose of this being to augment the amount of information gained from a limited number of concepts. They also advise selecting concepts which are familiar to all of the subjects, since unfamiliar concepts for some subjects could produce a "spurious" regression toward the middle of the scale.

Following Osgood et al.'s guidelines for selecting concepts, and because they are the most common frequencies of death by committed suicide and suicidal behaviour (Statistics Canada, 1988), the self-destructive methods, firearm and overdose, were chosen for the Semantic Differential component of the survey.

Intercorrelations and factorial analyses of the original set of 50 scales developed by Osgood et al. revealed four major connotative factors: evaluation, potency, stability and activity. For the purpose of this study, fourteen adjective pairs representing the four factors, were selected for each concept (see Table 1). The same 14 adjectives pairs were used for both concepts. The adjectives were selected from Osgood et al.'s book and from Lester's (1988) study in which a similar procedure was used to assess perceptions of different methods of suicide.

### **iii) The Assessment of Conception of Lethality**

An important consideration of this preliminary research was to develop an instrument which would yield an index of the amount of knowledge people possess in regard to their awareness of the deadliness of self-destructive methods. Fink and Kosecoff's (1985) book on "How to Conduct Surveys: A Step by Step Guide" was a valuable resource for this process. Because of the ethical concerns of testing a sensitive subject, the format of the test was carefully chosen with much external guidance. Because of other concerns such as cost and time limitations, the survey format appeared to be the best method to obtain an index of the knowledge regarding the deadliness of various self-destructive methods.

The survey included open ended questions which required long answers (one

Table 1

Factor Categorization of the Adjective Pairs Used in the Semantic Differential

---

**ACTIVITY**

Slow-Quick  
Difficult-Easy  
Nonviolent-Violent  
Planned-Impulsive  
Passive-Active

**EVALUATION**

Painful-Painless  
Messy-Tidy  
Unfair-Fair  
Ineffective-Effective

**POTENCY**

Cowardly-Courageous  
Feminine-Masculine

**STABILITY**

Disrespectful-Respectful  
Insane-Sane  
Careless-Careful

to two sentences), fill in the blank questions, multiple choice questions, and variations of the true/false/don't know type questions.

Questions relating to eight methods of self-destruction were developed. The methods of interest were: firearm, jumping, cutting, carbon monoxide, overdose, hanging, drowning and single vehicle motor vehicle accidents. The questions referring to a particular method were grouped together. Questions were selected to assess not only factual knowledge but beliefs regarding the deadliness of self-destructive methods. Not all of the questions developed were included in the final instrument. Because of time constraints only those questions that would yield valuable information in regards to the subject's awareness of deadliness were selected.

To obtain an index of how the sample compared the methods in regards to deadliness without using the standard ranking procedure, the question "Of every 100 suicide attempts by (insert method), what percentage results in completed suicide?" was included for each method. The percentages were ordered and compared to the order that resulted from the standard ranking procedure which was also included in the survey. The standard ranking procedure required each subject to rank the methods on a line from least to most deadly. After this task, the respondents were asked to identify which of several mental processes were used to rank the methods.

Research protocols proposing to investigate suicide related issues are often rejected due to the taboo associated with self-destructive behaviour and the ethical

concerns that often result from the taboo. A common believe is that research on suicide should not be conducted because it may make the subject feel uneasy or it may give him or her the idea to engage in DSH (Smith, 1976). To obtain an index of the "level of distress" associated with participating in a study concerning "suicide", the last question asked the repondents to indicate how distressed they were by completing the survey.

## **E. Data Management**

### **i) Scoring Experiences**

A total experience score was derived by scoring and summing responses to the individual items. Each question was designated a number of marks. The highest possible experience score was sixteen.

There were a number of different scoring keys developed to assess the experience section. However, the "strictest" scoring key was used for the final analysis so that the experience score would not be erroneously inflated. Questions yielding redundant information for example, were not included.

The question referring to formal learning experiences was the first item included in the score. It was possible to get three marks for this question. The next item asked about experiences with attempted suicide among other individuals known to the respondent. It was possible to get 5 marks in this section. There were five categories describing various degrees of relationships to the attempter. Each category was worth one mark. For example, if there was a checkmark for "member of the immediate family", for "other" and for "close friend" the total score

for that section was three. The general question "Has anyone you know attempted suicide?" is an example of a question that was not scored. The information that resulted from this question was redundant of the information that resulted from scoring the five categories. The next section referring to committed suicide among other individuals known to the respondent was scored in the same way. Once again, it was possible to get five marks.

The respondent was given one mark if the answer was "yes" to the question "Have you ever thought about deliberately harming yourself?". Because the information was redundant the question: "If yes, how often", was not scored. If the answer to the question "Have you thought about the method that would be used to self-destruct?" was "yes", the subject was given one mark. The last question scored was "Have you ever deliberately harmed yourself?". "Yes" equalled to one mark. Since the responses to the question: "How medically serious was the attempt, if there was one?", were subjective, this item was not scored.

## **ii) Scoring Attitudes**

In their discussion of attitude measurement, Osgood et al. (1958) stated that attitudes are "predispositions to respond, but are distinguished from other such states of readiness in that they predispose toward an evaluative response" (p. 189). Referring to attitudes as "tendencies of approach or avoidance," or as "favourable or unfavourable," they concluded that "it seems reasonable to identify attitude,...with the evaluative dimension of the total semantic space" (p. 190).

Following Osgood et al.'s definition and rationale, only the evaluative ratings



were summed to obtain an attitude score, even though fourteen adjective pairs were rated for each method. "Scales representing other factors are included to obscure somewhat the purpose of the measurement and to provide additional information on the meaning of the concept as a whole, aside from the attitude toward it" (Osgood et al. p. 191). Each rating was assigned a value between 1 and 7 depending upon its location on the seven point scale. For the purposes of scoring consistency, the unfavourable poles of the evaluative scales were assigned the score 1 and the favourable poles the score 7. According to Osgood et al.:

If the score falls more toward the favourable poles, then the attitude is taken to be favourable, and vice versa. A score that falls at the origin, defined by 4 on the scales, is taken as an index of neutrality of attitude. (p. 192)

Since four evaluative scales were used, the possible range of scores was from 0 (most unfavourable), through 16 (exactly neutral), to 28 (most favourable). An index of the meaning of each method as a whole was obtained by summing all of the ratings for the 14 adjective pairs. The highest possible total overall meaning score was 98.

Total scores for the three remaining factors; stability, activity and potency were also computed by summing the ratings which pertained to each factor. The possible highest scores for the stability, activity and potency factor were 21, 35 and 14 respectively.

In summary, four scores were derived to reflect attitudes towards two self-destructive methods. There were two scores for each method, a total evaluative

score (TE), reflecting attitudes per se and an overall meaning score (OM).

### **iii) Scoring Conception of Lethality**

Only the questions regarding factual knowledge were marked to yield a total knowledge score. One mark was given to the subject if the question was correct. Marks were not subtracted from the total score for incorrect answers. The highest possible knowledge score was 79. Item 3 C under the Firearm section and 1 C under the Jumping section were assigned two marks because of the differential value assigned to knowing the correct answers for these items. Because of the overlapping categories, there was more than one correct answer for questions 1 and 2 under the carbon monoxide section. Partial marks based on the degree of similarity to the correct answer, were assigned to the long answer questions if the responses were considered appropriate.

### **F. Data Analysis**

Analysis of the data was restricted to simple descriptive statistics. T-tests (two-tailed) were used to determine the existence of statistical differences. The Chi-square and Pearson correlation coefficient were used to assess the relationships among dichotomous and continuous variables respectively. The critical level of statistical significance for this study was set at  $p < .05$ . In order for a correlation coefficient to be accepted as significant it also had to be one that explained at least 1% of the mutual variance in the two variables correlated. This is because even though a correlation coefficient of 0.08, for example, may be statistically significant, it is meaningless in terms of variance explained.

## CHAPTER V

### RESULTS

#### A. Demographic Information

The majority of the subjects (39%) were between the ages of 20-24. Twenty-five percent were under age 20. Sixteen percent were between the ages of 25-29. In the 30-39 and 40-49 age categories, there were 15% and 5% respectively. Seventy-two percent of the sample were single and 19% were married. The remaining 9% included those who were separated, divorced, widowed or other. Additional demographic characteristics are presented in Table 2.

#### B. Experiences

Approximately half of the sample (54%) had some type of formal learning experience about suicide. The most common type of experience was a lecture, (34%) followed by a workshop, (15%) and a course (7%).

Seventy-two percent knew of someone who had attempted suicide and 56% knew of someone who had committed suicide. In regard to the relationships to the victims, "acquaintance" was the category identified most often for both attempted and committed suicide, 225 and 186 respectively. For attempted suicide, "friend" was second (107) then "other" (84), "immediate family" (57) and "other family" (55). For completed suicide, the results were slightly different. The "other" category was second (72), then "other family" (48), "friend" (38) and "immediate family" (16) (see Figure 4).

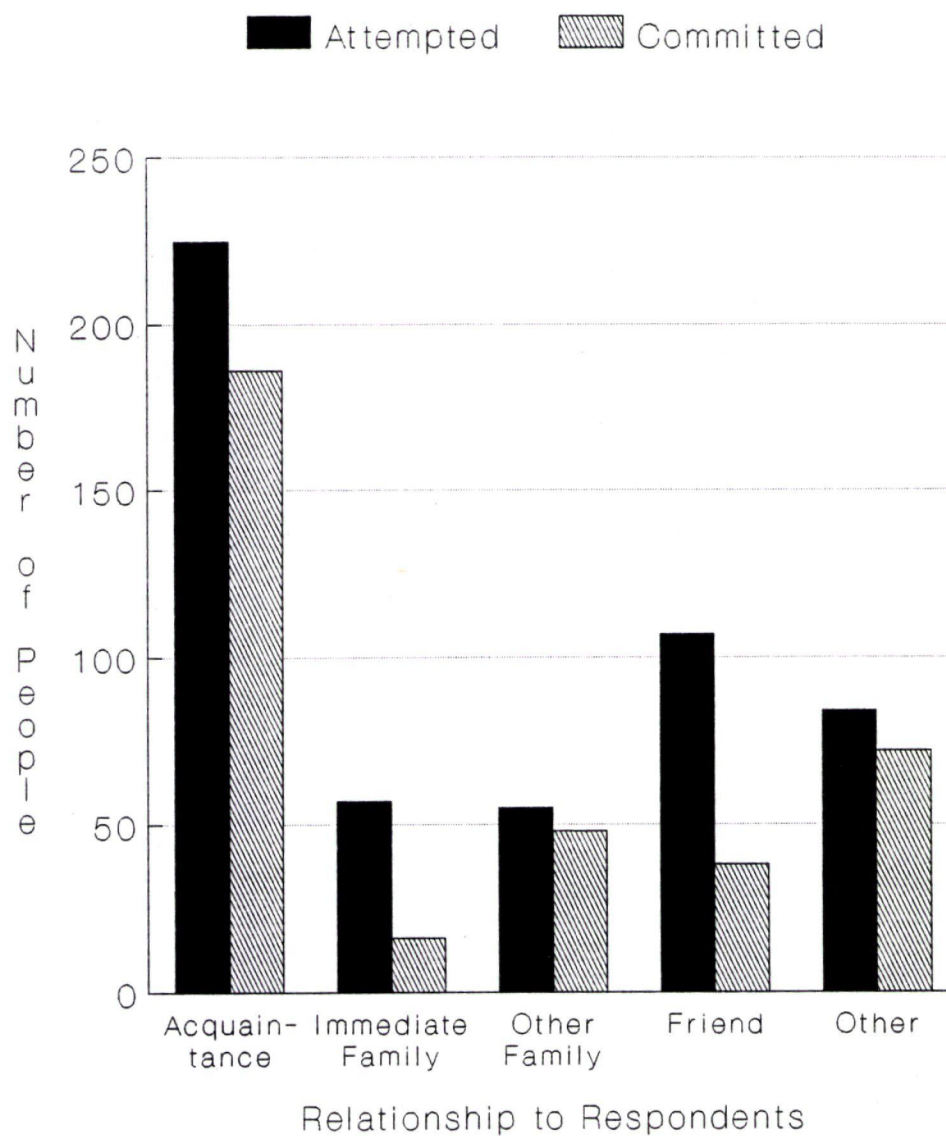
Overdose was the method most often used by the attempters familiar to the

Table 2

## Demographic Profile of Participants

---

	Number	Percent
Sex		
Male	145	26%
Female	416	74%
Age		
>20	139	25%
20-24	219	39%
25-29	89	16%
30-39	84	15%
40-49	29	5%
Missing Cases	1	
Marital Status		
Single	401	71%
Married	105	19%
Separated	10	2%
Divorced	28	5%
Widowed	2	.5%
Other	12	2%
Missing Cases	3	
Faculty		
Science	8	1%
Social Science	73	13%
General	144	26%
Medicine	30	5%
Humanities	6	1%
Education	150	27%
Social Work	143	25%
Other	7	1%
Missing Cases	1	
Course		
Education	283	50%
Social Work	143	26%
Medical	29	5%
Sociology	106	19%



**Figure 4. Indirect Experiences with Suicidal Behaviours: Respondents' Relationship to Suicide Attempters and Completers**

respondents (188). Cutting was the second most common method (123), followed by firearm (91), carbon monoxide (65), hanging (65) jumping (31), other (31), and drowning (5). In regards to the methods used to commit suicide, firearm was the most common (124). Carbon monoxide was the second most frequently used method (85) then hanging (72), overdose (45), other (26), jumping (22), drowning (8) and cutting (7) (see Figure 5).

Seventeen percent of the sample have thought about deliberately harming themselves over the past 12 months. Twenty-two percent of the sample have thought about which method to use for self-injury. The most common method thought about was overdose (11%). The second most frequently thought about method was carbon monoxide (4%). The methods, other (2.7%), cutting (2.3%), jumping (2.3%), firearm (1%) and hanging (.2%) were also thought about. The only method not thought about was drowning.

Ten percent of the sample reported an episode of previous deliberate self-harm over a lifetime. Of those 55 respondents, 53 identified the medical seriousness of the attempt. Thirty-five indicated that there was a low probability of death. Thirteen claimed that there was a moderate probability of death associated with the attempt. Five indicated that there was a high probability of death associated with the attempt. Of those who reported the method used for the previous attempt, overdose was used by 4% of the sample, cutting 3% and other 3%.

With the highest possible total experience score being 16, the average score

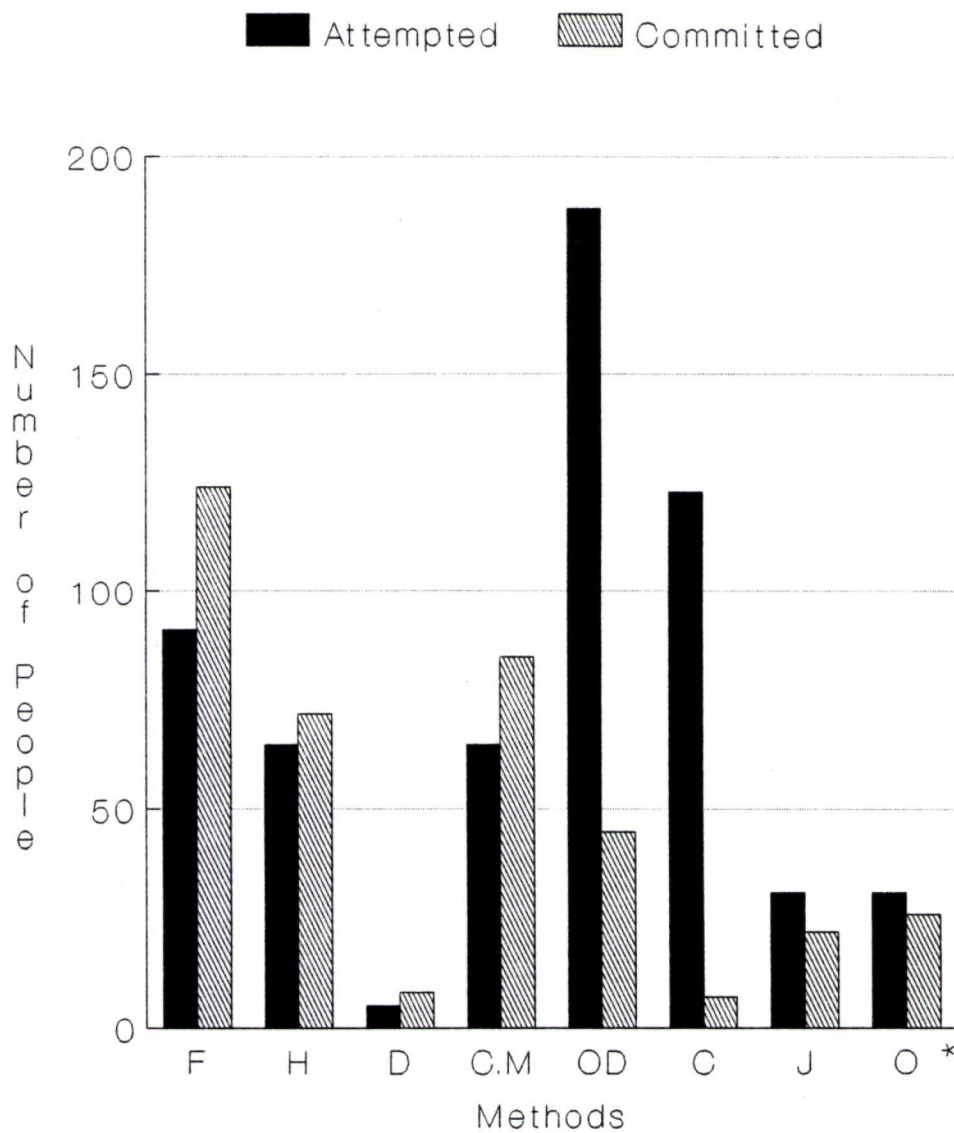


Figure 5. Indirect Experiences with Means of Self-Destruction: Methods used by Suicide Attempters and Completers Known to the Respondent

\* Key: F = Firearm H = Hanging D = Drowning C.M = Carbon Monoxide  
OD = Overdose C = Cutting J = Jumping O = Other

for this sample was 2.6 (see Figure 6). The maximum score was 10 and the minimum score was 0. The variance was 3.3 and the standard deviation was 1.8.

### C. Attitudes

The respondents viewed suicide by firearm and overdose as different on 12 of the 14 pairs of adjectives (two-tailed  $p < .05$  or better for all 12). Careless-careful and impulsive-planned did not differentiate the methods. Suicide by firearm was seen as quick (mean score 1.6 on a scale of 1-7), painful (2.9), difficult (2.9), masculine (2.6), effective (2.1), violent (1.4), messy (1.4), active (2), disrespectful (2.9), insane (3), and unfair (3.2). The ratings for courageous-cowardly (4.5), impulsive-planned, (4.5), and careless-careful (4) were neutral (see Figure 7). In contrast, suicide by overdose was seen as painless (mean score 5.5), easy (5.3), nonviolent (5.5), tidy (5.6), cowardly (5.2), and effective (3.8). There were more neutral ratings for the method of overdose compared to ratings for the firearm method. For the method of overdose, the ratings for planned-impulsive (4.6), slow-quick (4.8), respectful-disrespectful (4.7), fair-unfair (4.6), feminine-masculine (4.9), sane-insane (4.4), careless-careful (4.2) and active-passive (4) were neutral (see Figure 8).

Males and females differed on four of their ratings referring to overdose. Males perceived overdose to be more difficult than did females. The means for males and females were 5.1 and 5.4, respectively,  $t(556) = -2.00$ ,  $p < .05$ . The males also saw overdose as more careless than did females, (mean scores 3.9 and 4.3 respectively,  $t(553) = -2.48$ ,  $p < .01$ ). Females saw overdose as more feminine



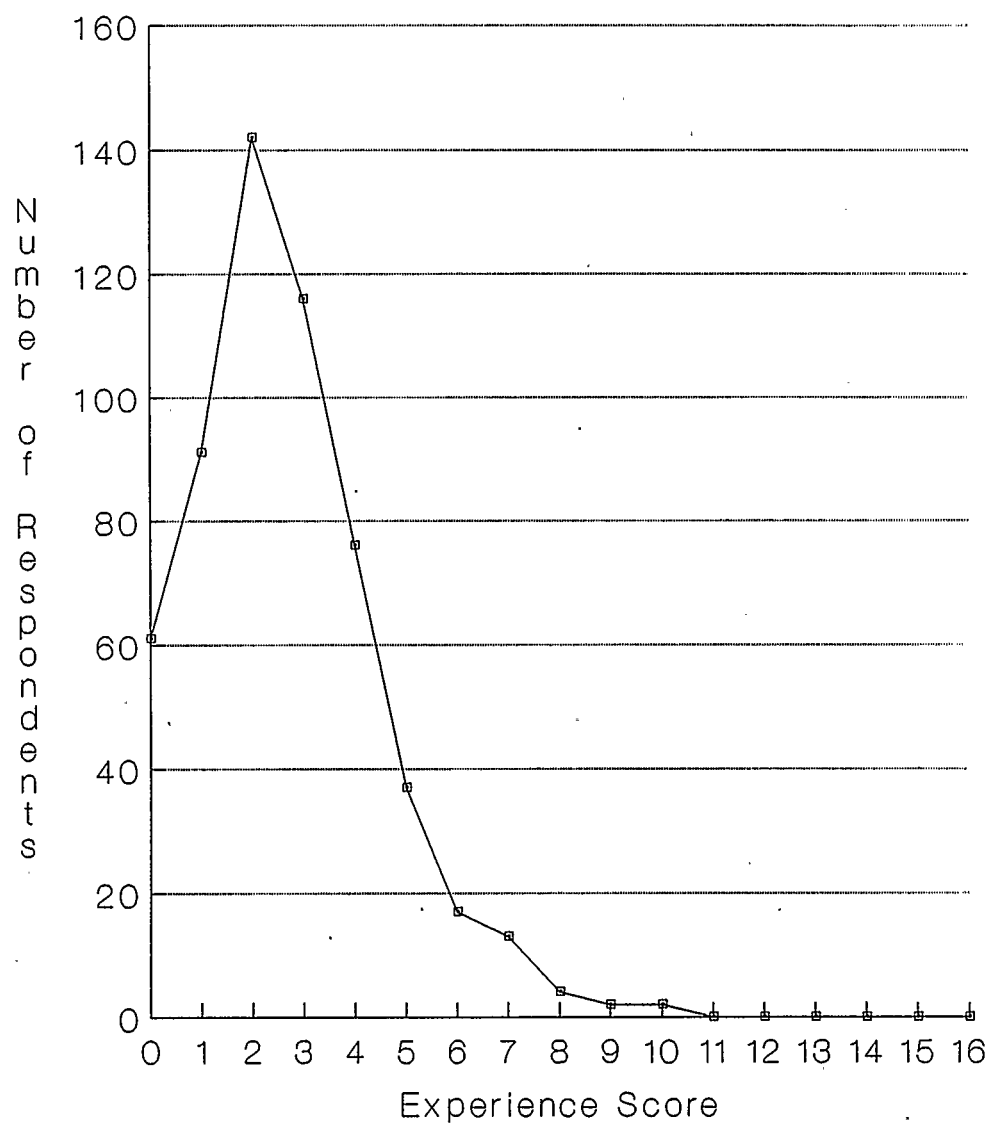


Figure 6. Distribution of Experience Scores: As Measured by the Section of the Survey Labelled "Experiences"

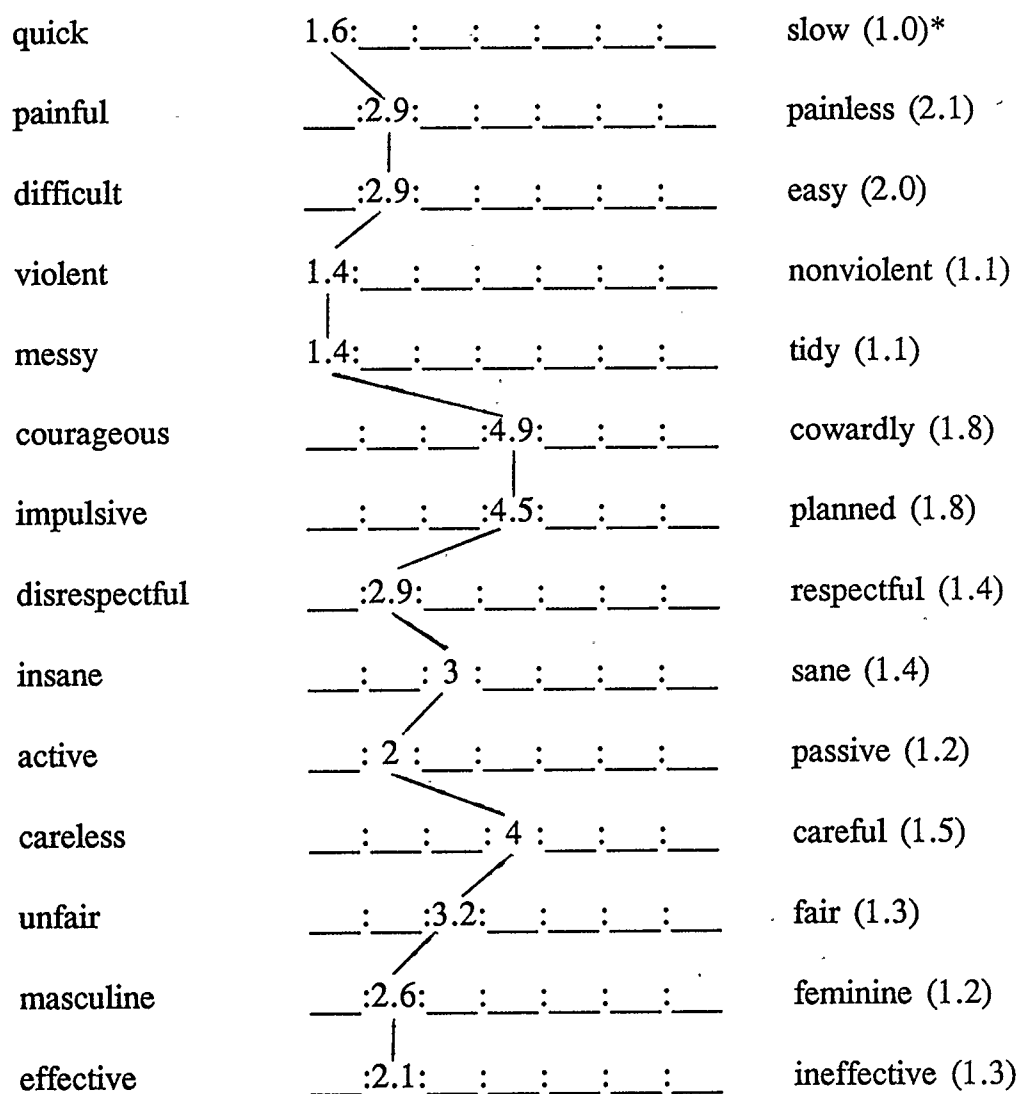


Figure 7. Means and Standard Deviations of Responses to the Semantic Differential: Firearm

\*Standard Deviations are in brackets

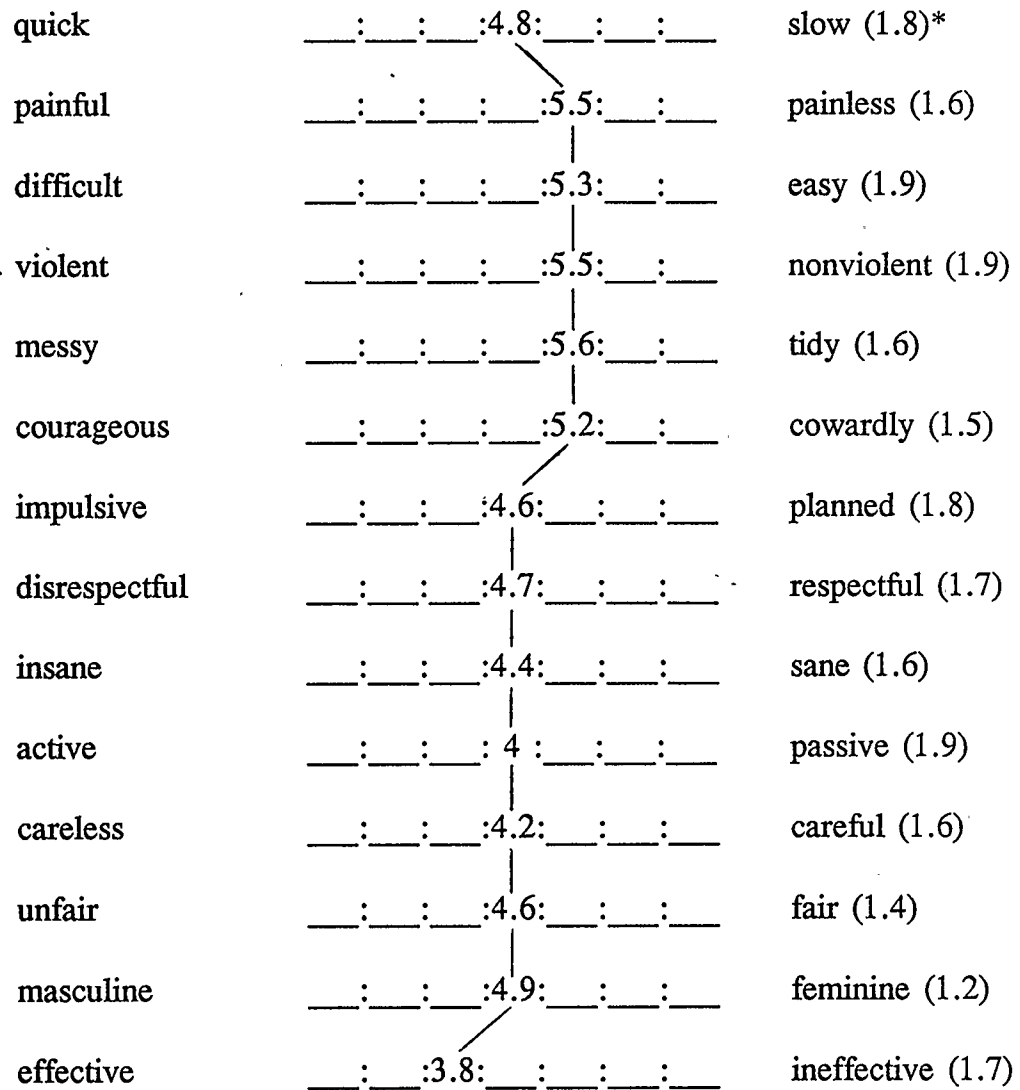


Figure 8. Means and Standard Deviations of Responses to the Semantic Differential: Overdose

\*Standard Deviations are in brackets

than males (mean scores 4.6 and 5 respectively,  $t(556) = -3.96$ ,  $p < .001$ ). The fourth difference was on the adjective pair "fair-unfair" (mean score 4.4 for males and 4.7 for females,  $t(551) = -1.91$ ,  $p < .05$ ).

In their ratings of firearm as a method for suicide, males and females differed on three of the 14 scales. Females saw firearms as significantly more painful (mean for females was 2.5 and for males 3.9,  $t(221.46) = 6.22$ ,  $p < .001$ ). Females also perceived firearm as more difficult than the males did (mean scores 2.7 and 3.4 respectively,  $t(222.18) = 3.21$ ,  $p < .01$ ). The third difference was on the adjective pair, "fair-unfair" (mean score 4.5 for males and 4.9 for females,  $t(553) = -3.20$ ,  $p < .001$ ).

#### **i) Evaluative Factor Scores**

To review, an index representing attitudes toward each method was derived by summing the responses to the scales representing the evaluative factor (see Figure 9 and 10). A score of 28 represents the most favourable attitude, a score of 16 indicates a neutral attitude, and a score of zero reflects the most unfavourable attitude. The average total evaluative (TE) score for the method firearm, for this sample was 13.3. This low average indicates a slightly unfavourable attitude toward the method of firearm. The variance of the scores was 11.6 and the standard deviation was 3.4. In contrast, the data revealed a slightly favourable attitude toward the method of overdose. The average TE score for the method of overdose was 18.6. The variance and standard deviation were, 16.3 and 4 respectively. The means of the TE overdose and TE firearm scores

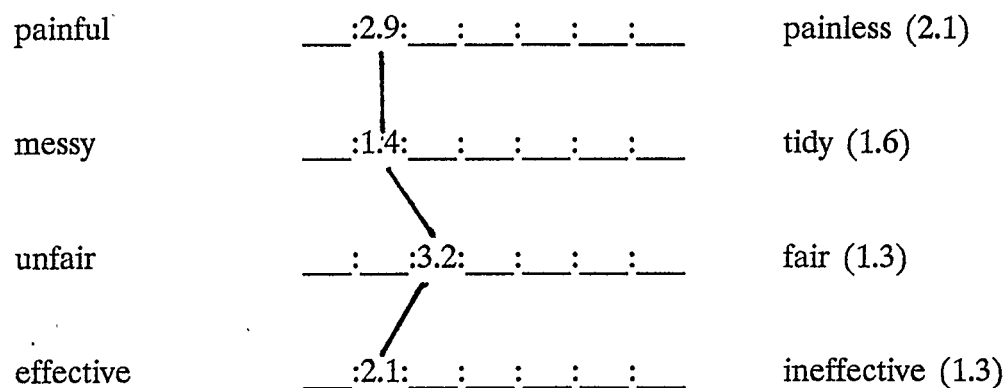


Figure 9. Means and Standard Deviations of Responses to the Semantic Differential: Firearm (Evaluative Factor Only)

\*Standard deviations are in brackets

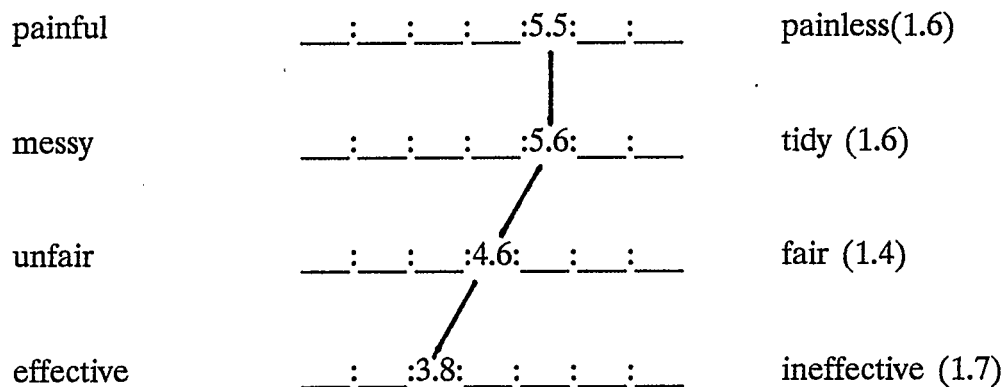


Figure 10. Means and Standard Deviations of Responses to the Semantic Differential: Overdose (Evaluative Factor Only)

\*Standard deviations are in brackets

were significantly different,  $t(560) = -26.30$ ,  $p < .001$  (see Figure 11). There was a significant difference between the TE firearm scores for males and females,  $t(220.84) = 5.48$ ,  $p < .001$ . Males perceived the method of firearm as more favourable than did females. TE overdose scores for males and females did not differ significantly.

## ii) Overall Perception of the Methods

The scores representing how the two methods were perceived overall (OM) differed significantly,  $t(560) = -9.56$ ,  $p < .001$ . With the highest possible OM score being 98, the higher the OM score, the more stable, active, potent and favourable, the method is perceived. The average OM scores for overdose and firearm for this sample were 53.6 and 57.3 respectively (see Figure 12). The variance and standard deviation for the OM scores for the firearm method were 54.8 and 7.4 respectively. The variance and standard deviation for the OM scores for the overdose method were 83.6 and 9.1 respectively. The average for the OM firearm scores was higher than the average OM overdose score because the respondents saw the method of firearm as significantly more active and potent than overdose. With the possible highest score being 28, the average total activity factor scores for firearm and overdose were significantly different, (mean scores of 25.3 and 18.3 respectively,  $t(560) = -29.66$ ,  $p < .001$ ). With the possible highest score being 14, the average total potency factor scores for firearm and overdose also differed significantly, (mean scores of 8.8 and 5.8 respectively,  $t(560) = -24.77$ ,  $p < .001$ ). Overdose, was perceived to be a more stable method than was the method of firearm. With

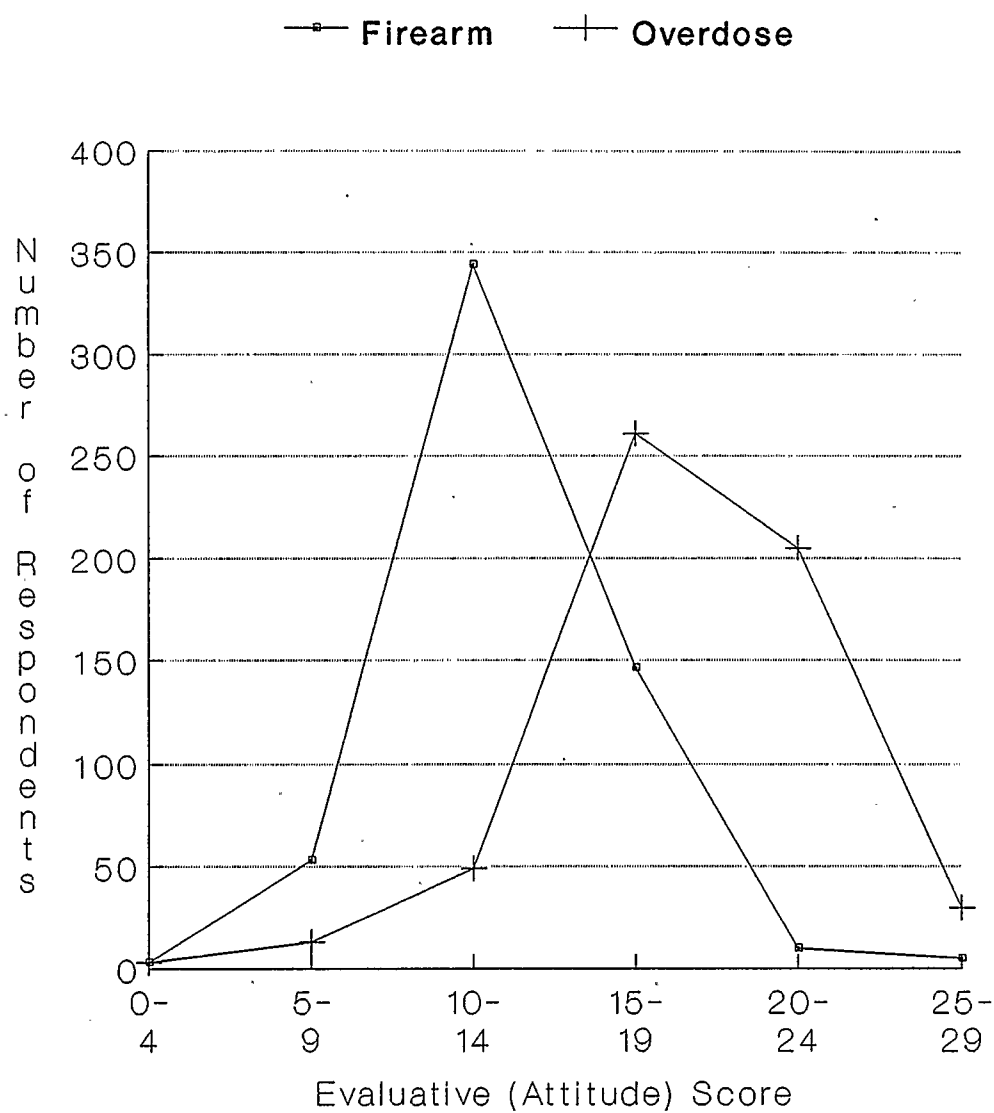


Figure 11. Distribution of Evaluative (Attitude) Scores for the Methods, Firearm and Overdose: As Measured by the Semantic Differential

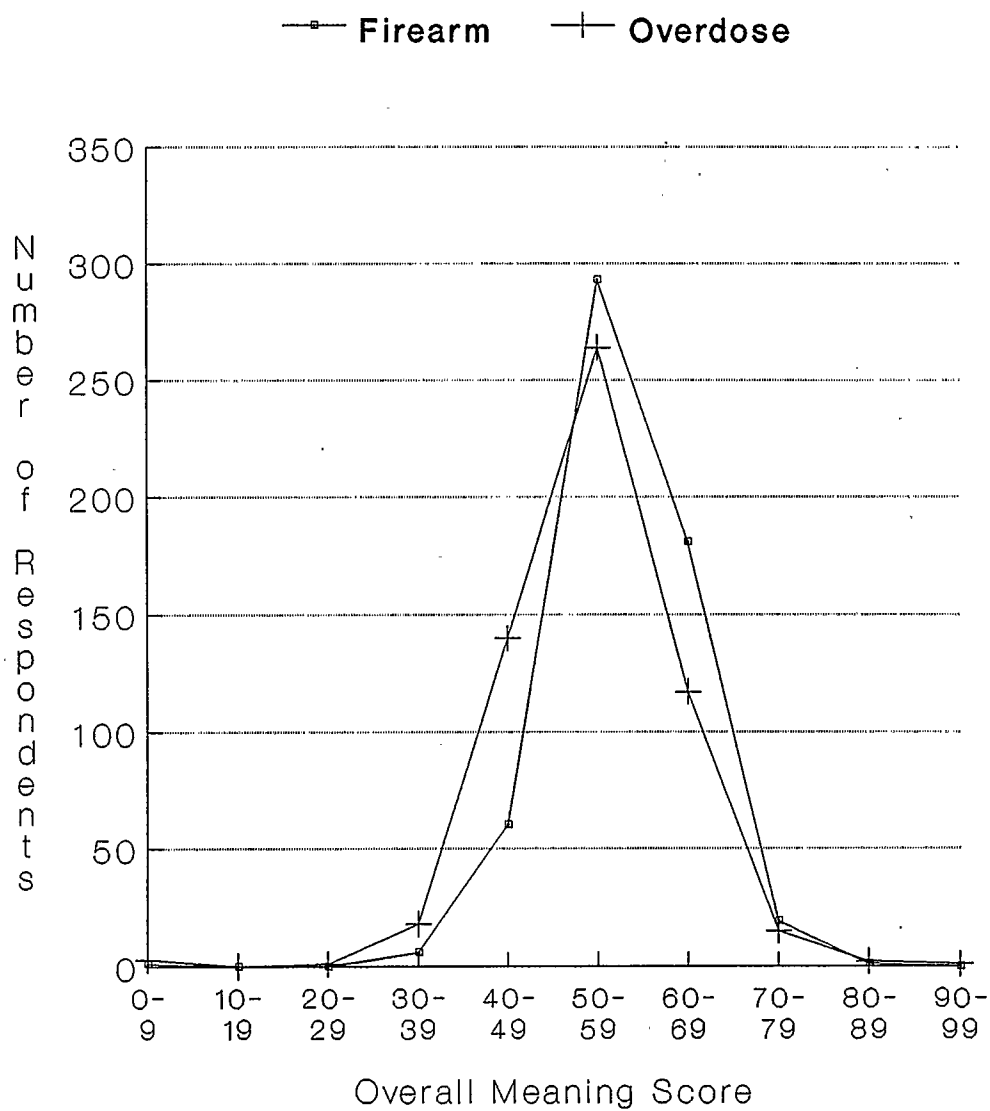


Figure 12. Distribution of Overall Meaning Scores for the Methods, Firearm and Overdose: As Measured by the Semantic Differential



the highest possible score being 21, the average total stability scores for overdose and firearm were significantly different, (mean scores of 10.9 and 9.9 respectively,  $t(560) = 7.55$ ,  $p < .001$ , see Table 3). Males and females did not differ on how they perceived the method of overdose as a whole, but did differ on how they perceived the method of firearm,  $t(559) = 3.51$ ,  $p < .001$ . The average OM firearm score for males was 59.2 whereas for females it was 56.7.

#### **D. Conception of Lethality**

With the highest possible conception of lethality score being 79, the average knowledge score for this sample was 46.7 (see Figure 13). The range for the scores was 61 with the highest score being 65 and the lowest score being 4. The variance for the distribution of scores was 65.54 with a standard deviation of 7.9.

The total knowledge scores for males and females differed significantly,  $t(559) = 3.21$ ,  $p < .001$ . The average total knowledge score for males was 48.5 and for females it was 46.1.

##### **i) Analysis of Specific Sections**

Investigation of specific sections of the knowledge survey revealed that male/female differences resulted primarily from the firearm section. In this section, the responses of males and females differed significantly on three items relating to specific features of firearms: 1) Speed of Bullet ( $t(291.03) = -2.74$ ,  $p < .01$ ) 2) Size of Bullet ( $t(349.58) = -4.67$ ,  $p < .001$  and 3) Type of Gun ( $t(440.25) = -5.02$ ,  $p < .001$ ). It appeared that more males than females knew that specific qualities of a firearm such as the speed and size of the bullet and the type of

Table 3

Summary Table: Mean Factor Scores and Standard Deviations Derived from the Semantic Differential for the Methods Firearm and Overdose

	Method				P
	Firearm		Overdose		
Factor (Highest Possible Score)	Mean	SD	Mean	SD	
Activity (35)	25.3	3.6	18.3	4.2	.000*
Evaluation (28)	13.3	3.4	18.5	4.4	.000*
Potency (14)	8.8	2.3	5.8	2.1	.000*
Stability (21)	9.9	3.2	10.9	3.6	.000*

\* Significant at the level of  $p < .05$  or greater

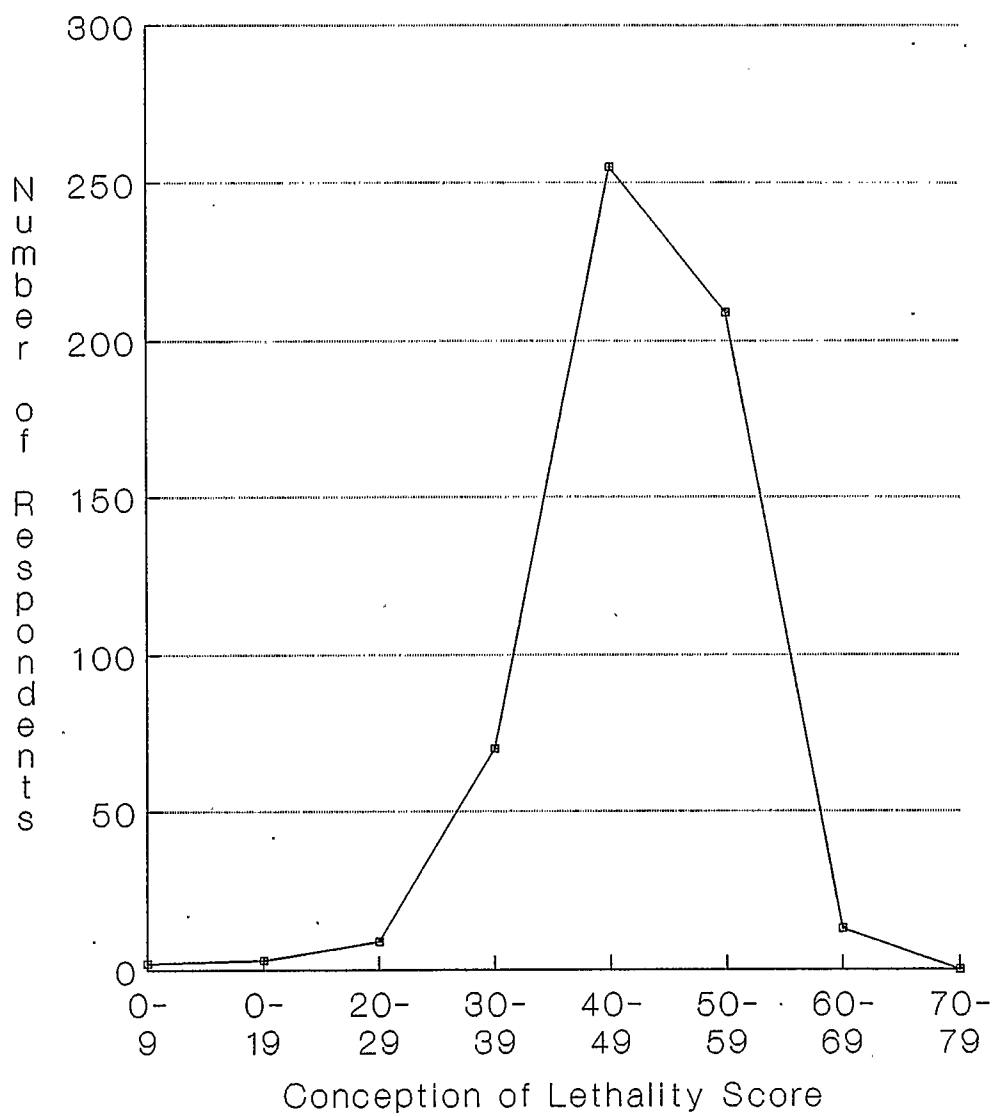


Figure 13. Distribution of Conception of Lethality Scores: As Measured by the Section of the Survey Labelled "Methods of Self-Injury"

firearm influenced the deadliness of the firearm method. Significantly more males than females also knew that shooting oneself in the neck would not necessarily result in death,  $t(558) = 2.36, p < .05$ . One interesting finding was that significantly more males indicated that shooting oneself in the heart would result in death,  $t(558) = 2.07, p < .05$ .

There were only two significant differences in the section referring to the method of jumping. In both instances, the data revealed females to be more knowledgeable. More females than males indicated that jumping was a lethal method of suicide because there was no turning back,  $t(187.03) = 3.58, p < .001$ . More females than males indicated that a height of 30ft/10m or more was not required for an episode of DSH using the method of jumping to result in death,  $t(295.93) = -2.13, p < .05$ .

There were three significant differences in the section labelled "cutting". More females than males indicated that a sharp weapon was needed in order to be sure that cutting would result in death,  $t(558) = 2.33, p < .05$ . Males were more knowledgeable in regards to the areas of the body most vulnerable to cutting. More males knew that the jugular vein was a vulnerable area,  $t(557) = -2.85, p < .01$  and that the neck was not one of the most vulnerable areas,  $t(557) = 2.86, p < .01$ .

There were two significant differences in the section referring to the method of carbon monoxide. More males than females knew that a closed in garage or leaded gas were not necessary for an episode of DSH using carbon monoxide to

result in death,  $t(212.14) = 2.65$ ,  $p < .01$  and  $t(289.39) = -3.98$ ,  $p < .001$  respectively.

Males and females differed on only one question in the overdose section. More males than females knew that regular use of a drug decreases the deadliness of an episode of DSH by overdose,  $t(543) = -2.17$ ,  $p < .05$ .

Males and females differed in their estimates of what percent of single vehicle motor vehicle accidents were accidents in disguise. The percentages from females were significantly higher,  $t(532) = -2.61$ ,  $p < .01$ .

## ii) Analysis of Specific Questions

To shorten this section, the following is a summary of only the most interesting findings.

The most frequent response to the question "If a firearm was used as a means of suicide, what physically happens to the body to cause death?", was you would bleed to death or damage a vital organ (29.8% of the samples' response). To obtain full marks for this question, all three key words "shock", "bleed to death" and "damage a vital organ" must have been included. Seven percent of the sample received full marks for this question. Answers from 17% of the sample, the second largest group, were wrong. Fifty-two percent of the sample did not know that between the eyes was one of the areas most vulnerable to death by firearm.

Seventy-five percent of the sample were incorrect by indicating that a hard surface was necessary in order to be sure that jumping would result in death. Sixty percent were also wrong in thinking that a height of 30ft/10m or more was needed.

Sixty-two percent of the sample did not know that the neck was not one of the areas most vulnerable to death by cutting.

Seventy-eight percent of the sample were incorrect in stating that a closed in garage would be needed to be sure that DSH by carbon monoxide would result in death. Even though the majority of the sample (48%) stated that leaded gas was not needed to be sure death resulted, (which was correct), a large percentage (39%) indicated that they did not know.

Twenty-nine percent of the sample did not know what physically happens to the body to cause death when the method of overdose is used as a means of suicide. Correct response were those which referred to key words such as "respiratory failure" or "cardiac arrest". Only 8% of the sample received full marks for this question.

Less than fifty percent of the sample knew that a rope was not needed to complete suicide by hanging.

The most common response to cause of death by hanging was asphyxiation (39.6%). In order to obtain full marks, the respondent had to indicate broken neck in addition to asphyxiation. Thirty-two percent of the sample received full marks.

### **iii) Overall Perception of the Lethality of Methods**

The percentage technique was used to reflect how the sample compared the methods in regards to deadliness. The methods were ranked by ordering the average percentage reported for the question "Of 100 attempts by this method, what percent would result in completed suicide?". In descending order of lethality,

the following order resulted: firearm (mean was 65.9%), hanging (60.3%), jumping (57.5%), carbon monoxide (54.6%), drowning (48.5%), overdose-prescription medications (46.4%), overdose-nonprescription medications (38.8%), and cutting (35.8%) (see Table 4).

When male/female differences were investigated, the data revealed the same rank order of methods for females but for males, the methods of hanging and jumping were reversed. Males estimated more completed suicides from the method of jumping compared to hanging. Females' estimates of the percent of completed suicide by each method were higher for 7 of the 8 methods. Males indicated that more suicide attempts by jumping would result in completed suicide than did females, (mean scores 59.8 and 56.6 respectively). The means were significantly different for the methods carbon monoxide ( $t(516) = -2.75, p < .01$ ), drowning ( $t(495) = -2.06, p < .05$ ), overdose with both prescription and nonprescription medication ( $t(521) = -3.85, p < .001$  and  $t(519) = -3.01, p < .01$ , respectively) and cutting ( $t(286.15) = -3.76, p < .001$ ). Estimates for the methods firearm, hanging and jumping did not differ significantly (see Table 5).

The order resulting from the standard ranking procedure was slightly different (see Table 6). To review, the line was labelled one to eight, which represented least to most deadly. Forty-six percent of the sample recorded the method plastic-bag/pillow in position one. Drowning was the method most frequently listed in position two (24%). Piercing/cutting was the method recorded most often in positions 3 and 4 (14.6% and 14.1%, respectively). Eighteen percent

Table 4

Order of Lethality: Based on Ranking the Mean Estimated Percent of Completed Deaths out of 100 Attempts

Method	Mean Estimated % of Completed Deaths out of 100 Attempts	
		SD
Firearm	65.9%	23.4
Hanging	60.3%	25.1
Jumping	57.5%	23.8
Carbon Monoxide	54.6%	24.7
Drowning	48.5%	27.1
Overdose - Prescription Medications	46.4%	22.2
Overdose - Nonprescription Medications	38.8%	22.9
Cutting	35.8%	19



Table 5

Order of Lethality: Based on Ranking the Mean Estimated Percent of Completed Deaths out of 100 Attempts - (Comparison of Males and Females)

Method	Males		Female		P
		SD		SD	
Firearm	63.4%	22.6	66.8%	23.6	0.14
Hanging	58.8%	25.3	60.9%	25.1	0.40
Jumping	59.8%	22.1	56.6%	24.4	0.18
Carbon Monoxide	49.7%	24.6	56.4%	24.5	0.006*
Drowning	44.4%	28.2	50%	26.5	0.04*
Overdose - Prescription Medications	40.2%	20.7	48.6%	22.3	0.000*
Overdose - Nonprescription Medications	33.8%	21.7	40.6%	23.1	0.003*
Cutting	31.1%	16.7	37.6%	19.5	0.000*

\* Significant at the level of  $p < .05$  or greater

Table 6

Order of Lethality: Based on Identification of the Method Listed Most Frequently in Each Position - (Standard Ranking Procedure)

Position	Method Listed Most Frequently	
		Number of Respondents
1 (Least Deadly)	Plastic Bag/Pillow	260 (46%)
2	Drowning	132 (23%)
3	Piercing/Cutting	82 (15%)
4	Piercing/Cutting	79 (14%)
5	Carbon Monoxide	101 (18%)
6	Hanging	117 (21%)
7	Hanging	109 (19%)
8 (Most Deadly)	Firearm	335 (60%)

of the sample listed carbon monoxide in position five. Hanging was the most frequent method recorded in positions 6 and 7 (20.9% and 19.4% respectively). Firearm occupied the most deadly position, as sixty percent of the sample recorded this method in position eight. Jumping and overdose did not surface in any of the positions. The responses of males and females did not differ significantly.

In deciding the location of each method on the line, the majority of the respondents (43%) indicated that they used the process which involved selecting one method and using it as an anchor to determine the deadliness of the others. Firearm was the method most frequently used as the anchor (29%). The comparison process was the second technique used most often (30%). In this technique, the location of the method on the line was determined by comparing it to other methods already positioned on the line. The technique of randomly selecting the methods was used 7% of the time. The last technique listed referred to the process of going in order from A (hanging) thru to H (plastic-bag/pillow). Three percent of the sample recorded that they used this technique.

## **E. Experiences, Attitudes and Conception of Lethality**

### **i) Experiences and Attitudes**

A Pearson product-moment correlation revealed a significant relationship between total experience scores and the way respondents perceived firearm as a whole,  $r(560) = .12$ ,  $p < .01$ . This indicates that 1.4% of the variance of the overall meaning firearm score is accounted for by the experience score. Total experience scores and overall meaning scores (OM) for overdose were not

significantly related.

A Pearson product-moment correlation revealed a significant relation between total experience scores and total evaluative (TE) firearm scores,  $r(519) = .13$ ,  $p < .01$ . This indicates that 1.7% of the variance of the TE firearm score is explained by the experience score. The relationship between total experience scores and TE overdose scores was not significant.

Investigation of the individual components constituting the experience score revealed that respondents who knew someone who attempted suicide differed from those respondents who didn't know someone who attempted suicide on their rating of overdose as a method for suicide on only one of the 14 scales. Those who didn't know someone who attempted suicide thought the method of overdose was more quick than those who knew someone who attempted suicide (means scores 4.5 and 4.9 respectively,  $t(555) = 2.02$ ,  $p < .05$ ). On their ratings of firearm as a method of suicide, there were two significant differences. Respondents who didn't know someone who attempted suicide also thought the method of firearm was more quick than those who knew someone who attempted suicide (mean scores 1.5 and 1.7 respectively,  $t(557) = 2.11$ ,  $p < .05$ ). Those who knew someone who attempted suicide thought the method of firearm was slightly more impulsive than those who did not know anyone who attempted suicide (mean scores 4.4 and 4.7 respectively,  $t(555) = -2.05$ ,  $p < .05$ ).

Those who knew someone who committed suicide did not differ from those who did not know someone who committed suicide on their ratings of firearm as

a method for suicide on any of the 14 scales and differed on only two of their ratings for the method of overdose. Those who did not know someone who committed suicide thought the method of overdose was slightly more courageous than those who knew someone (mean scores 5.1 and 5.3 respectively,  $t(549) = 2.0$ ,  $p < .05$ ). Those who knew someone who committed suicide thought the method of overdose was more impulsive than those who didn't know anyone (mean scores 4.4 and 4.8 respectively,  $t(551) = -2.09$ ,  $p < .05$ ).

Those who thought about attempting suicide did not differ from those who have not thought about attempting suicide on any of the ratings for the method of firearm. In regards to the method of overdose there was only one difference. Those who thought about attempting suicide in the past 12 months thought the overdose method was more passive than those who have not thought about attempting suicide in last 12 months (mean scores 3.3 and 4.1 respectively,  $t(144.92) = -3.94$ ,  $p < .001$ ).

Those who have attempted suicide in the past did not differ from those who have not previously attempted suicide on any of the ratings for the method of firearm but did differ on two ratings relating to the overdose method. Those who have not attempted suicide thought the method of overdose was more careless than those who have attempted (mean scores 4.1 and 4.6 respectively,  $t(552) = 2.20$ ,  $p < .05$ ). Those who have not attempted suicide also saw the method of overdose as more masculine than those who have attempted (mean scores 4.7 and 5.3 respectively,  $t(555) = 2.69$ ,  $p < .01$ ).

Respondents who knew someone who attempted suicide by firearm differed from those students who did not know someone who attempted suicide by firearm in their perception of the method of firearm on one scale. Those who did not know someone who attempted suicide by firearm thought the method was more fair than those students who knew someone who attempted by firearm (mean scores 4.7 and 5.1 respectively,  $t(551) = 2.41, p < .05$ ).

The data revealed the same difference between those who knew someone who committed suicide by firearm and those who did not know someone who committed suicide by firearm. The method of firearm was rated as more fair by those who did not know someone who committed suicide by firearm compared to those who knew someone (mean scores 4.7 and 5.1 respectively,  $t(548) = 2.71, p < .01$ ).

Those who knew someone who committed suicide by overdose differed from those who did not know someone who committed suicide by overdose on their perception of overdose for one scale. Those who knew someone saw the method as more painful than those who didn't (mean scores 4.8 and 5.5 respectively,  $t(48.68) = -2.43, p < .05$ ).

Those who thought about using overdose as a method of suicide differed from those who didn't think about using overdose as a method of suicide on their perception of overdose on six scales. Those who didn't think about using the method saw it as more painful than those who thought about using the method (mean scores 5.4 and 5.8 respectively,  $t(552) = 2.00, p < .05$ ). Those who didn't

think about attempting by overdose saw it as more difficult than those who did (mean scores 5.3 and 5.8 respectively,  $t(92.66) = 2.66$ ,  $p < .01$ ). Those who didn't think about using the method saw it as more careless than those who thought about using the method (mean scores 4.1 and 4.8 respectively,  $t(549) = 3.41$ ,  $p < .001$ ). Those who thought about attempting by overdose saw it as more quick than those who didn't think about using the method (mean scores 4.4 and 4.8 respectively,  $t(552) = -1.96$ ,  $p < .05$ ). Those who thought about using the method saw it as more sane than those who have not thought about using the method (mean scores 4 and 4.5 respectively,  $t(552) = -2.61$ ,  $p < .01$ ). Those who thought about attempting suicide by overdose thought the method was more effective than those who had not thought about the method (mean scores 3.3 and 3.8 respectively,  $t(91.51) = -2.81$ ,  $p < .01$ ).

Those who actually used the method of overdose in an attempt of suicide differed from those who had not used the method in their perception of an overdose on three scales. Those who have attempted suicide by overdose saw the method of overdose as more quick than those who have not attempted by overdose (means scores 3.9 and 4.8 respectively,  $t(556) = -2.48$ ,  $p < .01$ ). This group also saw the method of overdose as more effective, (mean scores 3 and 3.8 respectively,  $t(555) = -2.41$ ,  $p < .05$ ). Those who have not attempted suicide by overdose thought the method was more careless than those who have implemented the method (mean scores 4.1 and 4.9 respectively,  $t(553) = 2.09$ ,  $p < .05$ ).

There was a significant difference between OM firearm scores for those who

indicated they had participated in a workshop and those who did have not participated in a workshop,  $t(548) = 1.96, p < .05$ . The average score OM firearm score for those who had participated in a workshop was 58.8. For those who had not participated in a workshop, the average OM score was 57.1.

Compared to those who have not thought about which method to use for a suicide attempt, those who have thought about a method had higher OM firearm scores (mean scores 56.9 and 58.7 respectively). These mean scores were significantly different,  $t(288.70) = 2.75, p < .01$ . Those who have thought about a method also had significantly higher TE overdose scores compared to those respondents who have not thought about a method (mean scores 19.4 and 18.4 respectively,  $t(239.24) = 2.63, p < .01$ ). Those who have thought about a method had significantly higher OM overdose scored compared to those respondents who have not thought about a method (mean scores 55.6 and 53 respectively,  $t(488) = 2.81, p < .01$ ).

## **ii) Experiences and Conception of Lethality**

There was a significant relationship between total experience scores and total knowledge scores ( $r(560) = .11, p < .01$ ). This indicates that 1.2% of the variance of the knowledge score is accounted for by the number of experiences with suicidal behaviours.

Investigation of the individual items that were included in the experience score revealed only two differences. Those who knew someone who attempted suicide had significantly higher knowledge scores than those who did not know



someone who attempted suicide (mean scores 47.5 and 44.6 respectively,  $t(240.75) = 3.63$ ,  $p < .001$ ).

Those who knew someone that committed suicide also had significantly higher knowledge scores than those respondents who did not know someone who committed suicide (mean scores 47.4 and 45.7 respectively,  $t(461.12) = 2.37$ ,  $p < .05$ ).

### **iii) Attitudes and Conception of Lethality**

Data analysis failed to reveal a significant relationship between TE firearm scores and total knowledge scores. Similarly, the relationship between TE overdose scores and total knowledge scores was also not significant.

The overall meaning scores for both methods, firearm and overdose were not significantly related to the total knowledge scores.

All the relationships between knowledge scores and attitude scores were positive except the relationship between OM overdose scores and total knowledge scores. This relationship was negative.

### **F. The Level of Distress**

Forty-two percent of the sample replied that they were "somewhat" distressed by completing the survey. Thirty-eight percent said they were "not at all" distressed by completing the survey. The remaining 13% consisted of those who were "moderately" distressed (10%) and "very much" distressed (3%) (see Figure 14).

There was a significant difference between the average level of distress

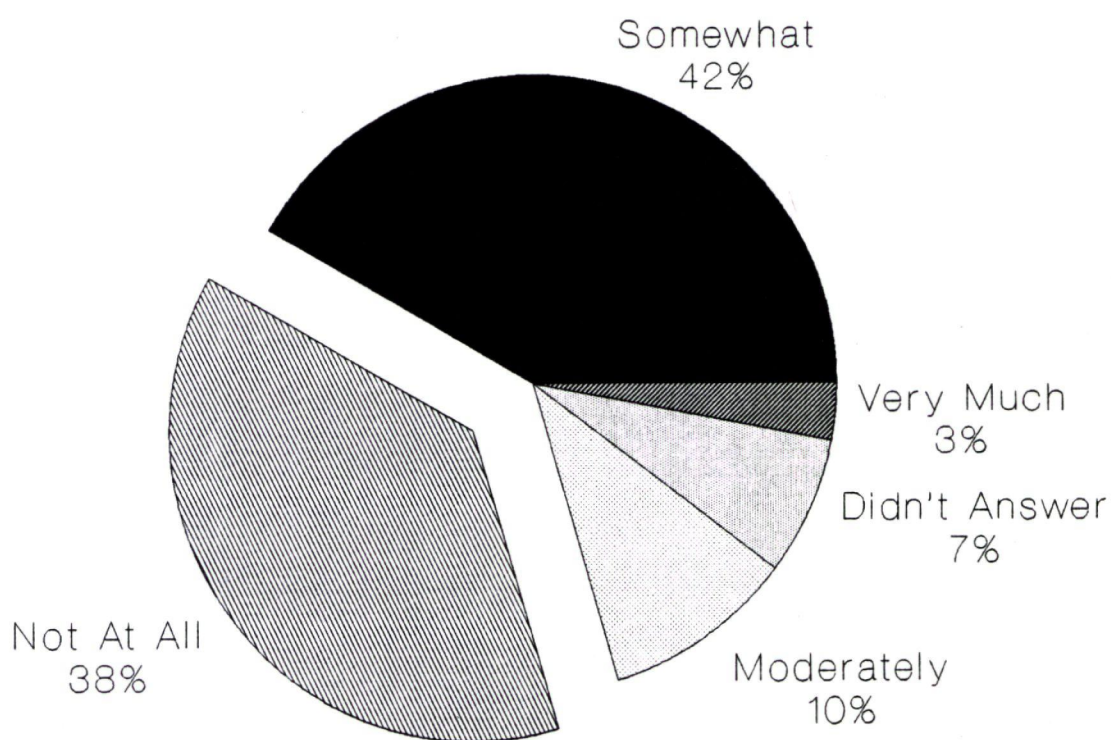


Figure 14. Recorded Levels of Distress Associated with Completing the Survey

indicated by males and females. On the average, females were more distressed by completing the survey than were males,  $t(518) = -3.04$ ,  $p < .01$ .

**i) The Level of Distress and Experiences**

The relationship between the level of distress indicated by the respondent in completing the survey and total experience scores was not significant. The direction of the relationship however was positive, indicating that as experiences with suicidal behaviour increased, the level of distress resulting from completing the survey also increased.

**ii) The Level of Distress and Attitudes**

There was a significant negative relationship between levels of distress and perceptions of firearm as a whole,  $r(519) = -.10$ ,  $p < .05$ . One percent of the variance of the indicated levels of distress is accounted for by the way respondents perceive firearm as a whole. There was also evidence of a negative relationship between TO overdose scores and levels of distress, however this relationship was not significant.

A Pearson product-moment correlation revealed a significant inverse relationship between TE firearm scores and levels of distress  $r(519) = -.13$ ,  $p < .01$ . This indicates that 1.7% of the resulting level of distress is explained by respondents' attitudes toward firearm.

Where TE overdose scores was not significantly related to levels of distress, the relationship was inverse indicating that unfavourable attitudes correlated to higher levels of distress.

**iii) The Level of Distress and Conception of Lethality**

The relationship between total knowledge scores and levels of distress was not significant. The negative correlation coefficient however, indicates that lower knowledge scores relate to higher level of distress associated with completing the survey.

## CHAPTER VI

### DISCUSSION

#### A. Conception of Lethality

The primary objective of this study was to establish a baseline reflecting the extent of accurate conception regarding the deadliness of self-destructive methods in an at-risk population. This was accomplished by administering a survey to 561 post-secondary students. With the highest possible score being 79, the average total knowledge score was 46.7.

It was originally hypothesized that there would be a lack of knowledge regarding the lethality of self-destructive methods. However, further consideration of the survey instrument and the data it provided brought forward the realization that conclusions regarding the extent of knowledge are not valid. The knowledge score cannot be used to conclude if the sample's conception of lethality was highly accurate or inaccurate because the validity of the test has not been established. That is, it is difficult to interpret what the conception of lethality score actually means. Does a low score for example, indicate that the respondents are not aware of the lethality associated with various methods? Or does a low score reflect that the respondents have not studied anatomy, (which would influence the answers to questions 5 and 3, firearm and cutting sections respectively) or that they have not learned about pharmacological effects of drugs (which would influence the answers in the overdose section)?

There is one interpretation of the average knowledge score which is valid.

The low baseline suggests that conception of lethality can be used as a discriminator of high risk not only of future DSH but future DSH which is more likely to be fatal. Because the probability of completed suicide is greater when there is sufficient knowledge to choose a method that may have a lethal effect, knowing which subgroups have a more accurate conception of lethality among large at-risk groups, would help to focus preventive efforts.

In this sample, those who knew of someone who attempted or committed suicide had significantly higher knowledge scores than those who did not know of someone. Even though the difference was not significant, those who have engaged in DSH had more accurate conceptions of lethality compared to those who have not engaged in DSH. Presumably, this difference was not significant because the number of respondents who reported a previous episode of DSH was too small to surface a discriminatory effect. Males compared to females also had higher total knowledge scores. This implies that those who have experiences with suicidal behaviours (attempted or completed) and males are at particularly higher risk of future, fatal DSH because these groups appear to be more aware of the deadliness associated with self-destructive methods.

Those who have indirect experiences with suicidal behaviour and males have already been identified as high risk groups. Because of the possibility of modelling the behaviour, those who know people who have attempted suicide have been identified as at-risk (Douglas, 1967; Frederick & Resnik, 1971; Diekstra, 1973). The bereaved have also been identified as a high risk group because of feelings of

guilt (Warner, 1985; Prior, 1981) or the desire for reunification with the dead (Gossner, 1975). Males, compared to females have been identified as high risk. Rich et al. (1988), for example, have suggested that males are at higher risk, because compared to females they are subjected to more psychological stressors.

The findings from the present study are valuable because in addition to confirming what has been reported in the literature (which is one of the reasons to conduct research), the results suggest another reason to recognize these groups as high risk.

Hengeveld et al. (1988) have suggested that to aid prediction of suicide risk, it would "be of interest to select a group of patients with a very high risk of suicidal behaviour and then to try to estimate the suicide risk for each patient in this group" (p. 189). The large variance in the knowledge scores implies that conception of lethality may be used to discriminate particular individuals within at-risk subgroups. From an all-inclusive male group for example, those who have more accurate conceptions regarding the potential deadliness associated with various self-destructive methods would be inferred to be at higher risk.

It is important to clarify that this study is not asserting that knowledge of lethality determines the selection of a method. In theory, similar to the availability of the method, conception of lethality would be expected to influence the selection process. In practice however, it is difficult to determine exactly which factor or factors, conscious or unconscious, influence the final selection. Until there is more information regarding conception of lethality, the role of this variable in the

selection of a method can only remain at the level of speculation. The lethality and intent hypothesis originated from the attempt to refine the variable previous DSH. According to Hengeveld et al. (1988) refinement of the previous DSH variable is warranted because "even in a population of patients having attempted suicide, the risk of suicide is still low for predictive purposes" (p. 189). An assumption of the refinement process is that if the intent was to die in a previous episode of DSH then the likelihood of a repeat attempt would be higher compared to episodes of previous DSH in which the intent was not to die. Because intent is a psychological variable however, it cannot be measured directly. The medical lethality of the attempt was offered as a valid and reliable indicator of intent.

The lethality and intent relationship suggests that the difference in choice of method solely reflects a difference in intent to die. The conception that a method is selected to reflect the intended level of harm implies an awareness of the potential deadliness associated with various self-destructive methods. This study was undertaken because the conclusions regarding the extent of awareness were equivocal. A baseline reflecting conception of lethality did not exist.

#### **B. Experiences With, Attitudes Towards and Conception of Lethality Regarding Self-Destructive Methods: The Observed Relationship(s)**

The secondary objective assessed the relationships among: experiences with, attitudes towards and conception of lethality regarding self-destructive methods. It was hypothesized that the variables would interrelate and that the relationships would not be equivalent. Experience scores were expected to relate positively to



knowledge scores but negatively to attitude scores. Experiences were expected to have a stronger influence on conception of lethality than attitudes.

As expected, there was a significant positive relationship between total experience scores and total knowledge scores. Even though "number of experiences" explains only a small proportion of the knowledge score variance (1.2%), this finding suggests that experiences with suicidal behaviour increases a person's awareness of the lethality associated with self-destructive methods. Research has shown that experiences with suicidal behaviour increases the risk of future suicide (Shneidman, 1969; Dunne et al. 1987; Cain, & Fast, 1972). It appears that experience with suicidal behaviour increases risk of suicide because it also increases awareness of the lethality associated with self-destructive methods.

Experience scores were related to the way the respondents saw the method of firearm as a whole, and to attitudes towards firearm. Contrary to expectation however, the relationships were positive. With more experiences with firearm, the respondents saw the method of firearm as more stable, potent, active and favourable. This suggests that experience with suicidal behaviour not only increases risk of future DSH because it raises awareness regarding the lethality, but also augments the risk of future DSH since attitudes toward an extremely lethal method appear to become more favourable. The way respondents saw overdose as a whole or their attitude toward the method of overdose was not related to experiences. This finding probably results from the respondents's tendency to rate the majority of the scales for the overdose method as neutral.

The hypothesis that experiences would have a stronger influence on conception of lethality than would attitudes was supported. There were no significant relationships between attitudes and conception of lethality. The relationships among the variables are summarized in Figure 15.

As expected, attitudes were more favourable towards the method of overdose than toward the method of firearm. Compared to the overdose method, the respondents appeared to have more extreme opinions toward the method of firearm.

Ratings which fall at the origin (4) are difficult to interpret. Where Osgood et al. suggest to interpret scores which fall at the origin as neutral, Lester (1988) offers a more qualitative interpretation. According to Lester, a rating of 4 represents a "moderate" attitude. There is a problem with this type of interpretation. Because it is highly subjective the findings can be easily manipulated to reflect ones biases. If for example, the scale is active-passive, does a rating of 4 indicate moderately active or moderately passive? To decrease the possibility of biasing the result, in this study a score of 4 was interpreted as reflecting a neutral attitude.

Similar to Lester's (1988) findings, firearms were perceived as quick, painful, difficult, masculine and messy. Where Lester claimed that the method of firearm was perceived as moderately courageous and moderately impulsive (since the mean scores which resulted for these two adjectives were 4.5 and 4.10 respectively), the respondents' ratings for these adjectives in this study were neutral.

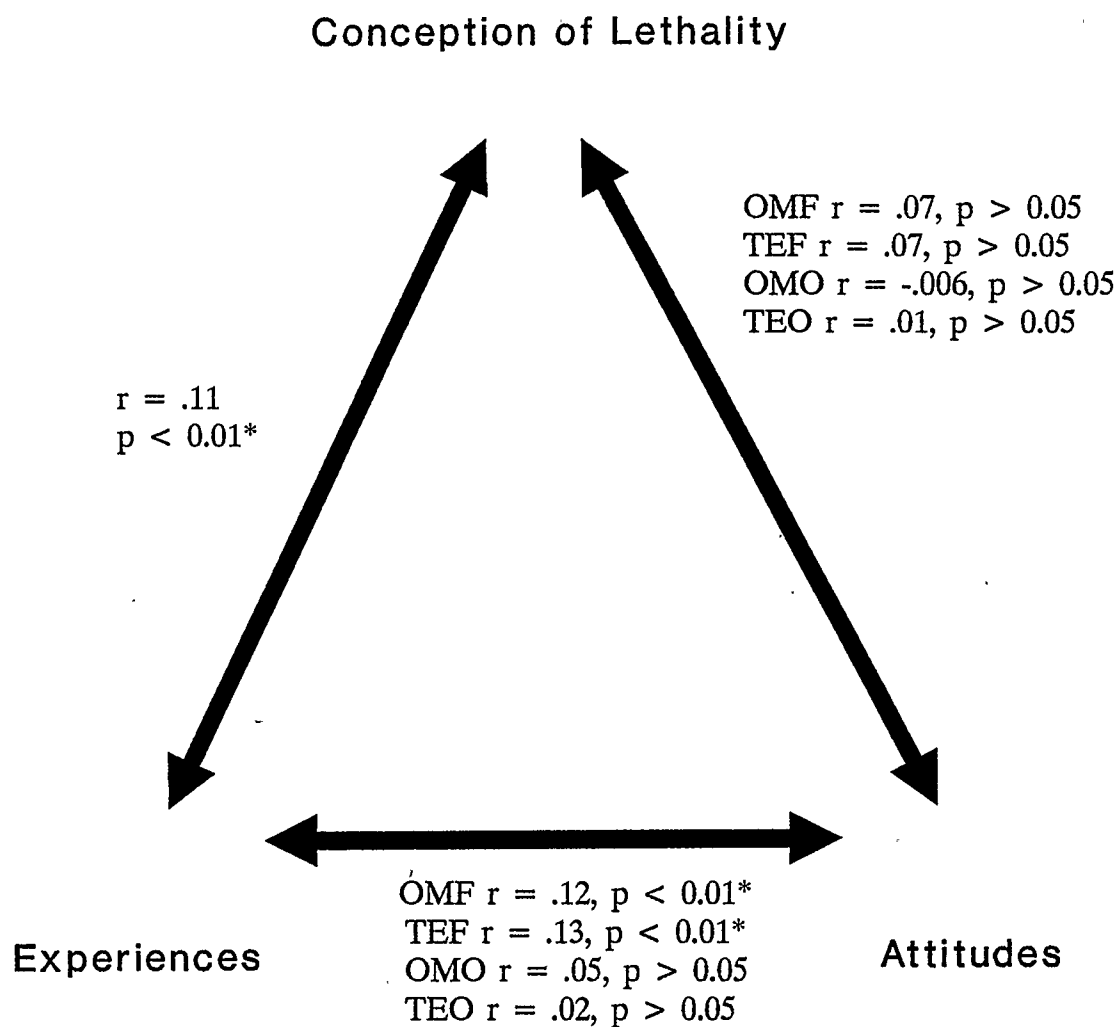


Figure 15. Experiences With, Attitudes Towards and Conception of Lethality Regarding Self-Destructive Methods: The Observed Relationship(s)

\* Significant

Key: OMF = Overall Meaning of Firearm OMO = Overall Meaning of Overdose  
 TEF = Attitude Towards Firearm TEO = Attitude Towards Overdose

Similar to Lester's findings, the method of overdose was perceived as painless, easy, tidy and cowardly. Where Lester's sample rated the method of overdose as planned, slow and feminine, the respondents' attitudes towards these adjectives were neutral.

Osgood et al.'s interpretation is also not error-free. It is difficult to interpret what a neutral rating means. Does a rating of 4 indicate that the respondent did not have an opinion or does it mean for example that the respondent thought the method of firearm was neither fair or unfair? It is questionable whether a rating of 4 reflects a neutral attitude or if it is an artifact of a response set. Response sets are regarded as irrelevant or error variance of test scores (Anastasi, 1982). One example of a response set is "Acquiescence" or the tendency to answer "True" or "Yes". In regards to responses on the Semantic Differential, the tendency to select the origin (4), might be reflective of a response set in which respondents place their ratings down the center of the scale without much thought.

An interesting finding was that compared to females, males saw the method of firearm as more favourable. This implies that differential attitudes may in part explain males' inclination to select a firearm when engaging in DSH (Centers for Disease Control, 1985).

If different attitudes towards the method of firearm were considered as the sole explanation of why more males compared to females commit suicide by firearm, then one would expect that as firearms become more acceptable to females, the male-female ratio of completed suicide by firearm would decline

steadily. Frierson (1989), found that even though an increasing number of females were using firearms in suicide attempts and despite the fact that the ratio of male-female gunshot wounds declined steadily, "the male-female ratio of completed suicides by firearms remained constant at about 6 to 1" (p. 842). According to Frierson, his data suggested that "although more women chose guns as a method, they were much more likely than men to survive the attempt" (p. 842). Perhaps males are more likely to complete suicide by firearm because, as shown in this study, compared to females they know more about this method. This implies that females' lack of knowledge regarding the lethality of self-destructive methods, especially firearms, may be a protective factor.

The tendency for males to have favourable attitudes toward the method of firearm is distressing since it may encourage the selection of firearm when engaging in DSH. However, favourable attitudes towards firearms may be even more perilous when combined with the finding that males have more accurate conceptions of lethality, especially regarding the method of firearm. These two factors - increased amount of knowledge regarding firearms and more favourable attitudes towards firearms - might well be interacting factors which could be a partial explanation for males' inclination to select and use firearms effectively to complete suicide.

According to Card (1974), rankings of methods can be interpreted as subjective estimates of lethality. Card used a standard ranking procedure which involved ordering methods according to the probability of death resulting from use

of the method in a suicide attempt. The standard ranking procedure was criticized because of the problem associated with using this technique. If some of the methods are recognized as equal in regards to deadliness, the task may be difficult for some respondents. The frustration that results from the task causes measurement error. The difficulties associated with the standard ranking procedure became evident in this study. Each subject was asked to order eight suicide methods in regards to their potential for deadliness on a line representing least to most deadly. The use of eight methods produced eight possible locations reflecting various degrees of deadliness. The most frequently listed method in each location determined which method occupied one of the eight positions. It appeared that the respondents did not have any difficulty in deciding which methods occupied the least and most deadly positions. The method which appeared most frequently in the first location (least deadly) was plastic-bag/pillow. The method which appeared in the most deadly position was firearm. Where the respondents appeared to have a clear notion of what is least and most deadly, distinguishing the deadliness of the methods for which the lethality is not so obvious appeared to be more of a challenge. The method piercing/cutting surfaced at both positions 3 and 4, whereas hanging surfaced at both positions 5 and 6. Jumping and overdose did not appear in any of the positions. The finding that a method appeared at more than one location in two instances reflects that methods are often perceived as being equal in regards to deadliness. Because methods of suicide may be perceived as equal in this regard, the task of ordering them, may for some respondents, prove to be

frustrating.

A goal of this study was to develop a less frustrating and thereby more valid technique to reflect how the methods were ranked in terms of deadliness. In each section of the conception of lethality survey, the respondents were asked "Of every 100 suicide attempts by (method), what percentage result in completed suicide?". To yield a reflection of how the method were compared in regards to lethality, the average percent for each method were ordered from highest to lowest, most to least deadly. In descending order of lethality, the following order resulted: firearm, hanging, jumping, carbon monoxide, drowning, overdose (prescription and then nonprescription), and piercing/cutting.

This study has illustrated an alternate technique of obtaining respondents ranking of methods in terms of deadliness for suicide. Since this task does not produce the frustration associated with the task of ranking items that may be perceived as equal in regards to lethality, this technique yields a more valid and reliable reflection of subjective estimates of lethality. This technique decreases the likelihood of obtaining identical rankings.

Studies proposing to talk about suicide are often deemed unethical because suicide is considered to be a sensitive subject and sensitive subjects are thought to be distressing for people to talk about. To validate or refute this view, the last question of the survey asked the subject to record how distressed they were by participating in the study. A large percent, (38%) indicated that they were "not at all" distressed by completing the survey. Even though 42% indicated that they were

somewhat distressed, it is important to distinguish between a stressful experience and a harmful experience. There was no evidence to suggest that completing the survey was a harmful experience.

It was hypothesized that higher levels of distress would be related to other factors such as test anxiety, experiences with suicide, unfavourable attitudes towards the methods or the frustration associated with not knowing the answers to the conception of lethality survey.

Even though some of the relationships were not significant, higher distress levels were associated with higher experience scores (not significant) and more unfavourable attitudes toward firearms and overdose (the relationship to firearms was significant, the relationship to overdose was not significant). Of particular interest was that higher distress levels were also related to lower knowledge scores (not significant). These trends suggest that distress does not result from talking about a sensitive issue per se, but perhaps from factors related to the issue.

The belief that talking about a sensitive issue would cause distress was not supported in this study. Contrary to the prevalent opinion, which seems to reinforce the notion that suicide is a "taboo topic" (Haim, 1974), the relationship between lack of knowledge and higher distress levels implies that people should learn about suicide, such as facts and clues since it would probably make them more at ease with the topic of suicide. Programs, such as those aimed towards increasing knowledge of how to recognize clues to those who are about to engage in DSH would be encouraged.



### **C. Limitations of the Study**

As a consequence of the sampling design one must be extremely cautious as to the type of generalizing statements one can legitimately make. Since the population from which this sample was taken is highly homogeneous any variation that was obtained should be considered as a conservative estimation of the true variation that would exist given a probability sample of those living in the province of Alberta of university age.

Furthermore, a study which depends on the generosity of volunteer subjects is often at the mercy of many outside forces. Perhaps for example, those with a high number of experiences (direct or indirect) may have chosen not to participate and their omission would undoubtedly bias the results.

Another limitation of this study is the fact that two of the survey instruments; "Experiences" and "Methods of Self-Injury" (assessing conception of lethality) had to be constructed specifically for this study. The validity of the conception of the lethality survey was not established. There may have been difficulties with particular items, such as the diagrams of the bodies, that may have been a source of measurement error. In the summary section of the survey designed to assess conception of lethality, the respondents were asked to order 8 methods of suicide in regards to their potential for deadliness. Plastic bag/pillow was one of the eight methods. These two methods were combined because if either of these methods were used for DSH, "suffocation" would be the cause of death. Because the methods are not equal in regards to lethality however (using

a plastic bag is more lethal than the use of a pillow), the respondents may have had difficulty with ranking plastic bag/pillow as one item. This difficulty may have been a source of measurement error.

This study should therefore be regarded as being exploratory and investigative with the purpose of bringing a new focus to an unexplored issue.

#### **D. Implications for Clinical Practice**

Because of the tentative nature of the findings of this research project, connections between the results and actual clinical practice must be viewed with caution. The findings do however, suggest that conception of lethality can be used to discriminate who is at high risk.

In addition to reinforcing previous findings, the data provides one other reason to consider those who have experiences with suicidal behaviour (either direct or indirect) and males at high risk of future DSH. The data showed that these groups have higher knowledge scores. It was suggested that males were at higher risk of committing suicide by firearm because compared to females, males were not only more accurate in their conceptions of lethality but they also had more favourable attitudes towards firearms.

A goal for those working in the field of suicide prevention would be to prevent people from becoming aware of the lethality associated with self-destructive methods because the probability of completed suicide is greater when there is sufficient knowledge to choose a method that may have a lethal effect (Pettifor et al, 1984). The positive relationship between experiences with suicidal

behaviours and accurate conceptions of lethality suggests that accumulation of knowledge could be contained if experiences with suicidal behaviours were restricted. In practice, most experiences, especially the types surveyed in this study, are difficult to control. Experiences gained through the media are difficult to regulate, but compared to other types of experiences, they are more susceptible to manipulation.

Because firearms are typically the methods used in stories about completed suicide, people learn that firearms are extremely deadly. To curb awareness of the lethality associated with firearms, the media should refrain from showing a firearm being used to complete suicide. If a firearm is the method selected for DSH, then the media should portray other outcomes, such as severe disfiguration of the face, which is a possible result but seldom thought about.

The data showed that males compared to females had more accurate conceptions of lethality, especially regarding the method of firearm. Compared to females, males also saw the method of firearm as more favourable. The finding that males and females did not differ in regards to the experiences surveyed in this study however, suggests that other types of experiences are responsible for males acquiring their extra knowledge. Because of the demonstrated relationship between experiences and attitudes these other experiences would also be expected to partially account for males' favourable attitudes towards firearms. Where did these other experiences come from? Differential socialization is one answer.

The media may also be reinforcing males' tendency to perceive the method

of firearm as favourable. When fatal DSH is portrayed in the media, the character is usually a male and the method used is typically a firearm. Because of the same-sex identification, there would be a more profound effect on male attitudes towards firearms compared to female attitudes.

Hence the media provides an opportunity to manipulate conceptions regarding the lethality of self-destructive methods.

The finding that thinking about harm was significantly related to harming oneself, (Corrected Chi-square with 1 degree of freedom, equalled 7.53,  $p < .01$ ) reinforces the predictive value of an episode of previous DSH. This finding corresponds with Bagley and Ramsay's (1989) report that suicidal ideas relate significantly to suicidal actions in an individual's lifetime (0.44).

Clinicians consider "thinking about self-harm" to be a diagnostic criterion (Lettieri, 1974; Beck & Weishaar, 1990). Where 17% of the sample recorded that they had thought about deliberately harming themselves over the past 12 months, 22% admitted that they have thought about the method they would use for self-injury. These findings appear contradictory.

Because of the taboo associated with suicidal behaviour people are often hesitant to admit such thoughts. More respondents may answer the question "Have you thought about a method?" because it is a less intimidating question compared to the question "Have you thought about harming yourself?". Similar to clinical assessments, the question "Have you thought about what method you would use?" followed the question "Have you thought about harming yourself?". If the first

question does not elicit true responses from the respondent but initiates thinking about the topic of suicide, then more people may report thinking about a method.

The data showed that thinking about what method to use for DSH was significantly related to harming oneself (Corrected Chi-square with 1 degree of freedom, equalled 6.6,  $p < 0.01$ ). In regards to implications for clinicians, this contradiction suggests that perhaps more emphasis should be placed on the question, "Have you thought about a method?", as the resulting information may provide a more accurate assessment of risk.

#### **E. Recommendations for Future Research**

Further research on this topic should continue to examine the extent of accurate conception of lethality among various at-risk groups, such as Native peoples, adolescents, the bereaved, the elderly, or those with mental disorders. The data resulting from this study provides a baseline so that comparisons can be made.

Once there is more information on the extent of accurate conception in various at-risk groups, future research should investigate the role of conception of lethality in the selection of a method. Conception of lethality should be assessed among groups of people who have engaged in DSH. It would be ideal to assess the extent of accurate conception of lethality among those who have committed suicide, but unfortunately this is an impossible task. Only with more reliable information on the extent of accurate conception of lethality among groups who have engaged in DSH can researchers begin to unveil the role of conception of

lethality in the selection of a method.

The conception of lethality survey was generated for this study. Future research could focus on modifying the survey and establishing the validity and reliability of the instrument.

The study of the relationship among attitudes, behaviour and experiences is intriguing and apparently very complex. In their study of attitudes towards suicide, Bagley and Ramsay (1989) found that:

People with suicidal ideas but no history of suicidal behaviours tend to have higher scores on the Acceptance of Suicide factor, but, in contrast, those with past suicidal ideas and a history of suicidal actions have attitudes in the opposite direction-they tend to find suicide an unacceptable answer to stress. (p. 87)

The finding that direct personal experience with suicide (either suicidal ideas or history of suicidal actions) relates to the perception that suicide is an unacceptable answer to stress suggests that direct personal suicide experience may deter future DSH. In contrast, it appears that indirect experiences with suicide may foster future DSH. The data showed a significant relationship between knowing someone who has attempted suicide and personally engaging in DSH (Corrected Chi square with 1 degree of freedom, equalled 5.1,  $p < .05$ ). This finding is distressing but even more disturbing when combined with the finding that 71.5% of the respondents reported knowing someone who has attempted suicide. In addition to programs orientated towards helping the bereaved, counselling programs for those who come into contact with non-fatal DSH behaviours should also be developed.

The data showed that higher experience scores were related to the way respondents saw the method of firearm as a whole. Experiences were also related to attitudes towards the method of firearm. The more experiences the more favourable the attitude.

Suicidal ideas, such as thinking about which method would be used in a episode of DSH were positively related to how the respondents perceived the methods of firearm and overdose as a whole. For example, in comparing the respondents who have thought about using the method of overdose and those who have not, those individuals who have, saw the method as more passive, painless, easy, sane, effective and quick.

Relationships between personal direct experiences with suicidal behaviour and attitudes towards the methods were not significant, but this is probably a result of the low number of people who reported the occurrence of a previous attempt.

Future research should focus on the relationship between personal direct experiences and attitudes towards self-destructive methods. It would be interesting to see if the relationship between personal direct experiences and attitudes towards self-destructive methods parallel the relationship between experiences and attitudes toward suicide as demonstrated by Bagley and Ramsay.

## **F. Conclusion**

This study has established a baseline reflecting the extent of conception regarding the deadliness of self-destructive methods among an at-risk group. The low knowledge baseline and large variance among the knowledge scores implies

that conception of lethality may be a valuable discriminator for identifying not only risk of future DSH but more specifically risk of future, fatal DSH. The data showed that certain subgroups were at higher risk because of higher conception of lethality scores.

Knowing that conception of lethality varies among groups and possibly within groups is valuable. This offers clinicians one more variable to consider when attempting to predict which subgroups of large at-risk groups are at higher risk and also which members of a subgroup are at higher risk.

With continued intensive examination not only of this topic but of the suggestions for future research, it may be possible for clinicians to more accurately identify who is at high risk of future, fatal DSH.

Identifying those at risk of DSH is essential to efforts aimed at reducing the the incidence of DSH.



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## APPENDIX A

### SURVEY USED IN THE STUDY

APPENDIX A-1

CONSENT FORM



## **LETHALITY OF SELF-DESTRUCTIVE METHODS: ESTABLISHING THE EXTENT OF ACCURATE CONCEPTION IN AN AT-RISK POPULATION**

As part of my graduate program in Medical Sciences at the University of Calgary, I am seeking information about the extent of knowledge concerning the deadliness of various methods used for self-injury. I am also looking at how the amount of knowledge may vary with experiences with and attitudes toward self-destructive methods. Better understanding of the determinants of choice of method for a self-destructive episode can hopefully lead to improved intervention and prevention strategies.

As a student of the University of Calgary, you are being asked to complete 3 questionnaires regarding the subjects mentioned above. The three questionnaires are attached. The total time required to complete the questionnaires is approximately 15-20 minutes. Participation is entirely voluntary. You are free to withdraw your consent to participate or discontinue participation at any time. I do require that all questionnaires, completed or not completed, be turned in. Since I am interested in not just individual responses but the responses of an aggregate of University students, reporting of results will take place on a group level. Your name will not be identified with any of your responses and will not appear on the questionnaires.

I hope you will be willing to help in this project but wish to assure you that your participation is entirely voluntary. You are welcome to ask questions regarding the study and your participation in it. Answers to the knowledge survey will not be available for distribution. Your consent to participate will be established informally through your agreement to complete the questionnaire package. I wish to remind you that your comments will remain strictly confidential. Thank you for your assistance and cooperation.

Annette Crisanti, B.A.

Dr. B. L. Tanney, Supervisor

## APPENDIX A-2

### COMPONENT OF THE SURVEY ASSESSING EXPERIENCES

**EXPERIENCES**

AGE: &lt;20 \_\_\_\_ 20-24 \_\_\_\_ 25-29 \_\_\_\_ 30-39 \_\_\_\_ 40-49 \_\_\_\_

SEX: Male \_\_\_\_ Female \_\_\_\_

MARITAL STATUS: S \_\_\_\_ M \_\_\_\_ Sep \_\_\_\_ Div \_\_\_\_ Widow/er \_\_\_\_ Other \_\_\_\_

OCCUPATION: \_\_\_\_\_

FACULTY: \_\_\_\_\_ YEAR OF PROGRAM: \_\_\_\_\_

MAJOR: \_\_\_\_\_ MINOR: \_\_\_\_\_

PREVIOUS DEGREES: \_\_\_\_\_

WHAT FORMAL LEARNING EXPERIENCES HAVE YOU HAD ABOUT SUICIDE?

	( )	How long was the session
None	_____	_____
Lectures	_____	_____
Courses	_____	_____
Workshops	_____	_____

HAS ANYONE YOU KNOW ATTEMPTED SUICIDE? Yes \_\_\_\_ No \_\_\_\_  
If yes, who?

Member of the immediate family	_____	Other Family	_____
Acquaintance	_____	Close Friend	_____
Other	_____		

What was the method used for self-injury?

Firearm	_____	Overdose	_____
Hanging	_____	Cutting	_____
Drowning	_____	Jumping	_____
Carbon Monoxide	_____	Other	_____

HAS ANYONE YOU KNOW DIED BY SUICIDE? Yes \_\_\_\_ No \_\_\_\_

If yes, who?

Member of the immediate family \_\_\_\_ Other Family \_\_\_\_  
 Acquaintance \_\_\_\_ Close Friend \_\_\_\_  
 Other \_\_\_\_

What was the method used for self-injury?

Firearm \_\_\_\_ Overdose \_\_\_\_  
 Hanging \_\_\_\_ Cutting \_\_\_\_  
 Drowning \_\_\_\_ Jumping \_\_\_\_  
 Carbon Monoxide \_\_\_\_ Other \_\_\_\_

OVER THE PAST 12 MONTHS, HAVE YOU EVER THOUGHT ABOUT  
 DELIBERATELY HARMING YOURSELF? Yes \_\_\_\_ No \_\_\_\_

If yes, how often?

Often \_\_\_\_ Rarely \_\_\_\_  
 Once in a while \_\_\_\_ Never \_\_\_\_

Have you thought about what method you would use for self-injury? Yes \_\_\_\_ No \_\_\_\_

If yes, what method have you thought about using the most?

Firearm \_\_\_\_ Overdose \_\_\_\_  
 Hanging \_\_\_\_ Cutting \_\_\_\_  
 Drowning \_\_\_\_ Jumping \_\_\_\_  
 Carbon Monoxide \_\_\_\_ Other \_\_\_\_

HAVE YOU EVER DELIBERATELY HARMED YOURSELF? Yes \_\_\_\_ No \_\_\_\_

If yes, how medically serious was the attempt?

There was a high probability of death \_\_\_\_  
 There was a moderate probability of death \_\_\_\_  
 There was a low probability of death \_\_\_\_

What method did you use for self-injury?

Firearm \_\_\_\_ Overdose \_\_\_\_  
 Hanging \_\_\_\_ Cutting \_\_\_\_  
 Drowning \_\_\_\_ Jumping \_\_\_\_  
 Carbon Monoxide \_\_\_\_ Other \_\_\_\_

## APPENDIX A-3

### COMPONENT OF THE SURVEY ASSESSING ATTITUDES

## ATTITUDES TOWARD SELF-DESTRUCTIVE METHODS

The purpose of this scale is to measure your attitude towards two methods used for self-injury, firearm and overdose, by having you indicate your judgement on a series of descriptive scales. Please make your judgements on the basis of what the method means to you.

The scales should be used as follows:

If you feel that the self-destructive method is very closely related to one or the other end of the scale, you should place your rating in the space as indicated below:

OR      good   X  :\_\_\_\_:\_\_\_\_:\_\_\_\_:\_\_\_\_:\_\_\_\_:\_\_\_\_: bad  
           good \_\_\_\_:\_\_\_\_:\_\_\_\_:\_\_\_\_:\_\_\_\_:\_\_\_\_:   X  : bad

If you feel that the self-destructive method is quite closely related to one or the other end of the scale you should place your rating in the space as indicated below:

OR      good \_\_\_\_:   X  :\_\_\_\_:\_\_\_\_:\_\_\_\_:\_\_\_\_:\_\_\_\_: bad  
           good \_\_\_\_:\_\_\_\_:\_\_\_\_:\_\_\_\_:\_\_\_\_:   X  :\_\_\_\_: bad

If you feel that the self-destructive method is only slightly related to one side as opposed to the other, then you should place your rating as indicated below:

OR      good \_\_\_\_:\_\_\_\_:   X  :\_\_\_\_:\_\_\_\_:\_\_\_\_:\_\_\_\_: bad  
           good \_\_\_\_:\_\_\_\_:\_\_\_\_:\_\_\_\_:   X  :\_\_\_\_:\_\_\_\_: bad

If you consider the self-destructive method to be neutral on a scale, or consider both sides to be equally associated with the method, or if you consider the scale irrelevant or unrelated to the method, then you should place your rating in the middle as indicated below:

good \_\_\_\_:\_\_\_\_:\_\_\_\_:   X  :\_\_\_\_:\_\_\_\_:\_\_\_\_: bad

**IMPORTANT:** Place marks in the middle of spaces, not on the boundaries.

This                      Not this

\_\_\_\_:\_\_\_\_:   X  :\_\_\_\_:\_\_\_\_:\_\_\_\_:\_\_\_\_:

Thank you. Please proceed to the following page.

## OVERDOSE

a. quick	_____:	slow
b. painful	_____:	painless
c. difficult	_____:	easy
d. nonviolent	_____:	violent
e. tidy	_____:	messy
f. courageous	_____:	cowardly
g. impulsive	_____:	planned
h. respectful	_____:	disrespectful
i. sane	_____:	insane
j. passive	_____:	active
k. careless	_____:	careful
l. fair	_____:	unfair
m. masculine	_____:	feminine
n. effective	_____:	ineffective





**APPENDIX A-4**

**COMPONENT OF THE SURVEY ASSESSING CONCEPTION OF  
LETHALITY REGARDING SELF-DESTRUCTIVE METHODS**

## METHODS OF SELF-INJURY

The following survey is intended to assess knowledge of the deadliness associated with some of the various methods used for self-injury. LETHALITY refers to the MEDICAL CONSEQUENCES of the act. It is used synonymously with deadliness. Please read the directions and each question carefully.

### DIRECTIONS:

There are THREE types of questions:

- 1) "True, False, Don't know": indicate your reply by CIRCLING the number under the appropriate heading. Make only one choice for each item. For some questions you will be asked to order the items that you marked true.
- 2) "Increase, Decrease, No Effect, Don't Know": indicate your reply by CIRCLING the number under the appropriate heading. Make only one choice for each item.
- 3) Multiple choice: circle only one answer.

**TAKE YOUR TIME TO COMPLETELY ANSWER ALL QUESTIONS.**

**FIREARM**

1) If a firearm were used for a self-destructive purpose, the following feature(s) would influence the deadliness of the act: (Circle one number for each item)

	TRUE	FALSE	DON'T KNOW
A) Speed of bullet	1	2	3
B) Weight of gun	1	2	3
C) Length of barrel	1	2	3
D) Size of bullet	1	2	3
E) Type of gun	1	2	3

For those items circled True, put them in order of least to most influential by placing the letter corresponding to the item on the appropriate location on the line below.

---

Least Influential	Most Influential
----------------------	---------------------

2) If a firearm is used as the means of suicide, what physically happens to the body to cause death:

---



---



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3) In order to be sure that the use of a firearm will result in death, the following factor(s) are needed: (Circle one number for each item)

	TRUE	FALSE	DON'T KNOW
A) The ability to take careful aim	1	2	3
B) Ample consumption of alcohol	1	2	3
C) Knowledge of vital organ location	1	2	3

For those items circled True, put them in order of least to most needed by placing the letter corresponding to the item on the appropriate location on the line below.

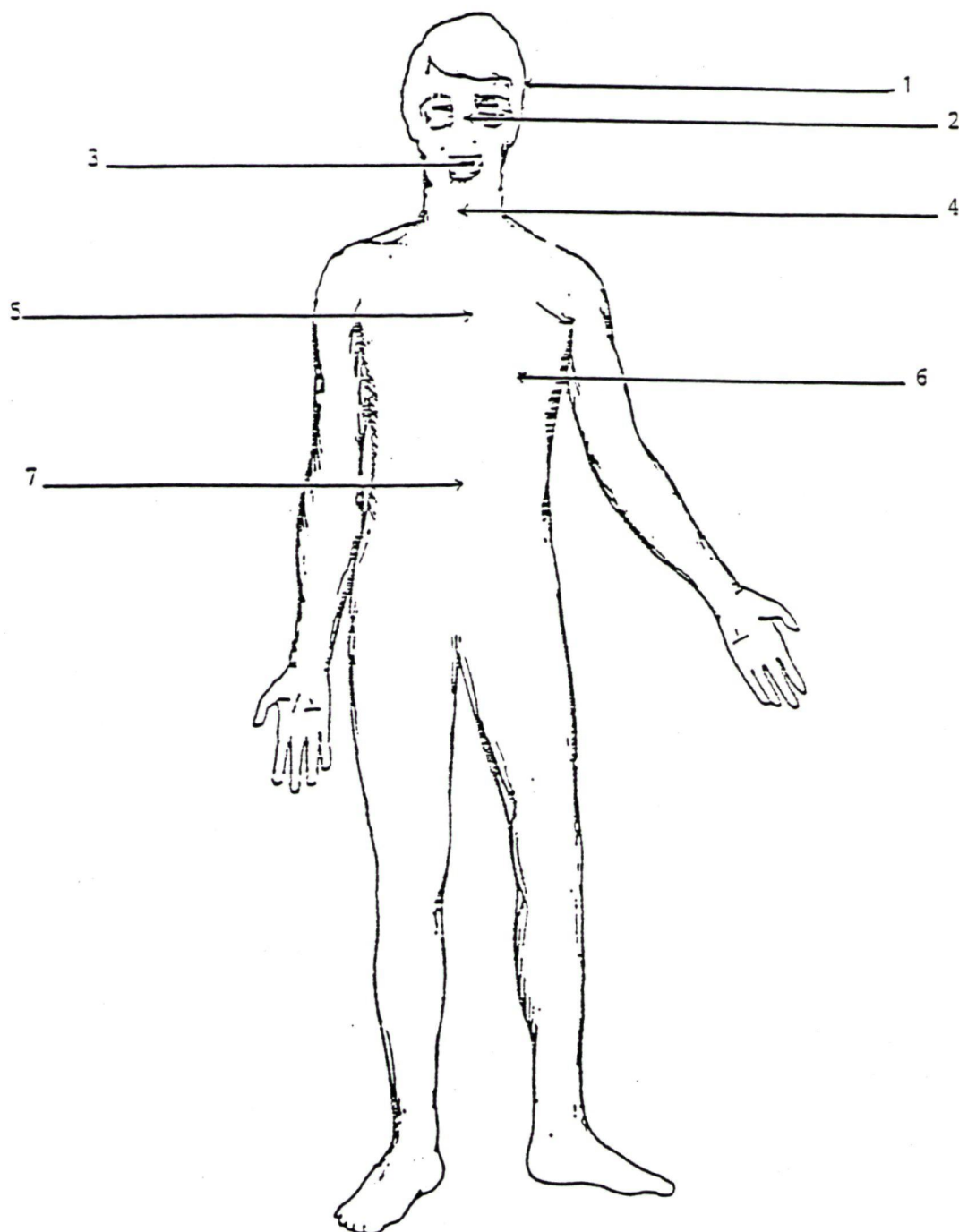
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Least Needed	Most Needed
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4) Of every 100 suicide attempts by firearm, what percentage result in completed suicide?

\_\_\_\_\_ %

5) Which area(s) of the body do you believe to be most vulnerable to death by firearm? Circle 1 or more numbers on the diagram below.



**JUMPING**

1) Jumping can be a lethal method of suicide because: (Circle one number for each item below)

	TRUE	FALSE	DON'T KNOW
A) There is no turning back	1	2	3
B) Death can be guaranteed	1	2	3
C) More than one vital organ can be damaged	1	2	3

2) Of every 100 suicide attempts by jumping, what percentage result in completed suicide?

\_\_\_\_\_ %

3) In order to be sure that jumping will result in death, the following factor(s) are needed: (Circle one number for each item)

	TRUE	FALSE	DON'T KNOW
A) A hard surface to land on	1	2	3
B) A height of 30ft/10m or more	1	2	3
C) Ample consumption of alcohol	1	2	3
D) Good weather conditions	1	2	3
E) A body of water to land in	1	2	3

For those items circled True, put them in order of least to most needed by placing the letter corresponding to the item on the appropriate location on the line below.

---

Least  
Needed

Most  
Needed

## CUTTING

1) Of every 100 suicide attempts by cutting, what percentage result in completed suicide?

\_\_\_\_\_ %

2) In order to be sure that cutting will result in death, the following factor(s) are needed: (Circle one number for each item)

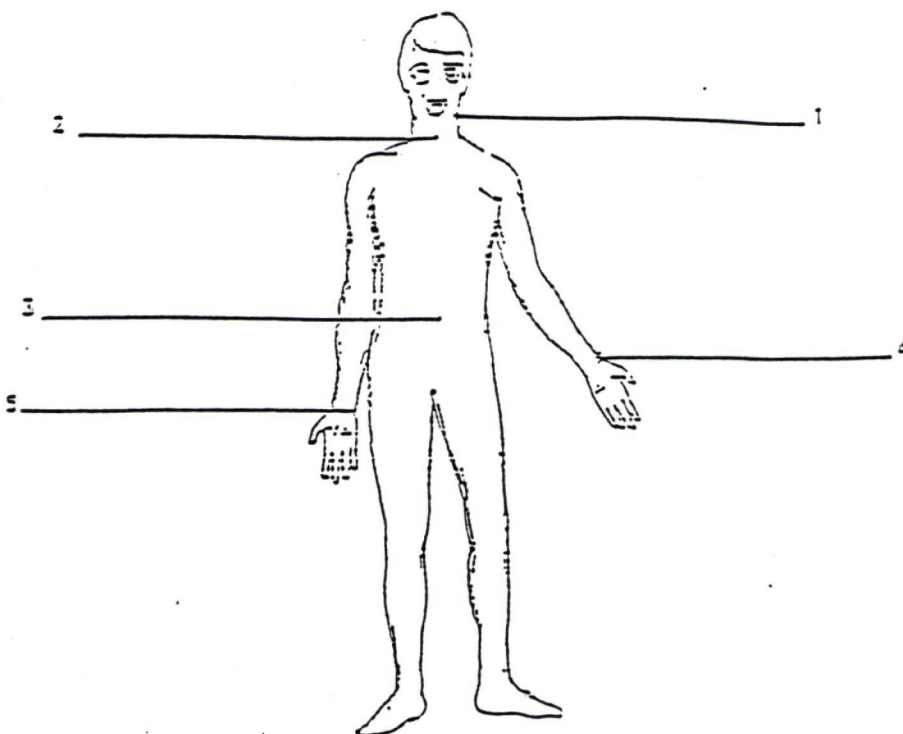
	TRUE	FALSE	DON'T KNOW
A) A large weapon	1	2	3
B) Ample consumption of alcohol	1	2	3
C) A sharp weapon	1	2	3
D) Internal bleeding	1	2	3

For those items circled True, put them in order of least to most needed by placing the letter corresponding to the item on the appropriate location on the line below.

Least  
Needed

Most  
Needed

3) Which area(s) of the body do you believe to be most vulnerable to death by cutting? Circle 1 or more numbers on the diagram below.



**CARBON MONOXIDE**

1) In a suicide attempt by carbon monoxide, how long does it take to lose the ability to function physically? (Circle one number below)

- |                  |                  |
|------------------|------------------|
| 1) 0-5 Minutes   | 5) 21-25 Minutes |
| 2) 6-10 Minutes  | 6) 26-30 Minutes |
| 3) 11-15 Minutes | 7) 31-35 Minutes |
| 4) 16-20 Minutes | 8) 36-40 Minutes |

2) In a suicide attempt by carbon monoxide, how long does it take for death to result? (Circle one number below)

- |                  |                  |
|------------------|------------------|
| 1) 10-15 Minutes | 5) 31-35 Minutes |
| 2) 16-20 Minutes | 6) 36-40 Minutes |
| 3) 21-25 Minutes | 7) 41-45 Minutes |
| 4) 26-30 Minutes | 8) 46-50 Minutes |

3) If carbon monoxide is used as the means of suicide, what physically happens to the body to cause death:

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4) In order to be sure that carbon monoxide will result in death, the following factor(s) are needed: (Circle one number for each item)

	TRUE	FALSE	DON'T KNOW
A) A closed in garage	1	2	3
B) Ample consumption of alcohol	1	2	3
C) Leaded gas	1	2	3

For those items circled True, put them in order of least to most needed by placing the letter corresponding to the item on the appropriate location on the line below.

---

Least Needed	Most Needed
-----------------	----------------

5) Of every 100 suicide attempts by carbon monoxide, what percentage result in completed suicide?

\_\_\_\_\_ %

**OVERDOSE**

1) In a suicide attempt by overdose: (Circle one number for each item)

	TRUE	FALSE	DON'T KNOW
A) Everyone reacts the same to a given drug	1	2	3
B) Drugs with fewer side affects are less deadly	1	2	3
C) Falling asleep increases the deadliness	1	2	3
D) All types of medication are potentially deadly	1	2	3
E) Death can not result from only ingesting alcohol	1	2	3
F) Surviving the attempt means that the potential for medical danger is over	1	2	3
G) Death cannot result from only ingesting cold remedies	1	2	3

2) Of every 100 suicide attempts by overdose with PRESCRIPTION medications, what percentage result in completed suicide?

\_\_\_\_\_ %

3) Of every 100 suicide attempts by overdose with NONPRESCRIPTION medications (those sold over the counter), what percentage result in completed suicide?

\_\_\_\_\_ %

4) To result in death, an overdose with drugs sold over the counter requires at least: (Circle one number below)

- 1) 0-20 Times the prescribed dose
- 2) 21-40 Times the prescribed dose
- 3) 41-60 Times the prescribed dose
- 4) 61-80 Times the prescribed dose
- 5) 81-100 Times the prescribed dose



5) What effects, INCREASE (I) or DECREASE, (D) do each of the following have on the deadliness of a suicide attempt by overdose. If there is NO EFFECT, (N.E) circle number 3. If you DON'T KNOW, circle number 4. (Circle one number for each item below)

	"I"	"D"	" N. E"	"D.K"
A) Taking pills which have expired	1	2	3	4
B) Taking the drug intravenously	1	2	3	4
C) Ingesting multiple types of drugs	1	2	3	4
D) Preventing vomiting	1	2	3	4
E) Taking the pills with soda water	1	2	3	4
F) Regular use of the drug	1	2	3	4
G) Having a full stomach	1	2	3	4
H) Slowing down the body's metabolism	1	2	3	4
I) If the person attempting is female	1	2	3	4
J) If the person attempting is old	1	2	3	4
K) If the medications ingested with alcohol are gel capsules rather than tablets	1	2	3	4

6) In a suicide attempt with an overdose of medications normally prescribed for psychiatric disorders, alcohol consumption increases the deadliness by approximately: (Circle one number below)

- 1) 0-20%
- 2) 21-40%
- 3) 41-60%
- 4) 61-80%
- 5) 81-100%

7) If an overdose is used as the means of suicide, what physically happens to the body to cause death:

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**HANGING**

1) In order to be sure that hanging will result in death, the following factor(s) are needed: (Circle one number for each item)

	TRUE	FALSE	DON'T KNOW
A) A rope	1	2	3
B) Ample consumption of alcohol	1	2	3
C) A height over 10ft	1	2	3
D) Tied hands	1	2	3

For those items circled True, put them in order of least to most needed by placing the letter corresponding to the item on the appropriate location on the line below.

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Least Needed	Most Needed
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2) If hanging is used as the means of suicide, what physically happens to the body to cause death:

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3) Of every 100 suicide attempts by hanging, what percentage result in completed suicide?

\_\_\_\_\_ %

**DROWNING**

1) If drowning is used as the means suicide, what physically happens to the body to cause death:

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2) Of every 100 suicide attempts by drowning, what percentage result in completed suicide?

\_\_\_\_\_ %

## OTHER

1) What percent of single vehicle motor vehicle accidents are suicide attempts in disguise? (Circle one answer below)

- 1) 0-5 %
- 2) 6-10 %
- 3) 11-15 %
- 4) 16-20 %
- 5) 21-25 %

## SUMMARY

1) Order the following suicide methods in regards to their potential for deadliness by placing the corresponding letter of the method on the appropriate location on the line below.

- |                    |                       |
|--------------------|-----------------------|
| A) Hanging         | B) Firearm            |
| C) Overdose        | D) Piercing/Cutting   |
| E) Jumping         | F) Drowning           |
| G) Carbon Monoxide | H) Plastic Bag/Pillow |

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Least  
Deadly

Most  
Deadly

2) In answering the above question, how did you decide the location of each letter: (Circle one answer below)

- 1) Going in order from A (hanging) thru to H (plastic bag/pillow)
- 2) Selecting one method, and using it as an anchor to determine the deadliness of the others (Which method was selected as the anchor \_\_\_\_\_)
- 3) Using a comparing process in which I determined where a method should be located on the line by comparing it to the other methods which I had already positioned on the line
- 4) Randomly selecting the methods

3) Many people find talking about suicide distressing. How distressed were you by completing this questionnaire? (Circle one answer below)

- 1) Not at all
- 2) Somewhat
- 3) Moderately
- 4) Very much

**APPENDIX A-5**

**REFERENCE SHEET**

If you feel that talking about the issue of suicide would be helpful for you, you might contact:

### **CALGARY EMERGENCY NUMBERS**

Distress Centre/ Drug Centre	24 hours	266-1605
Emergency Medical Service	24 hours	911
Alberta Mental Health Services (North West)		297-7345

Contact your local Hospital Emergency Department

### **CALGARY SUICIDE PREVENTION RESOURCES**

Suicide Intervention Program	CMHA 9:00 am - 5:00 pm 297-1700
Youth and Adult Education Program	CMHA 9:00 am - 5:00 pm 297-1700
Suicide Bereavement Program	CMHA 9:00 am - 5:00 pm 297-1700
Suicide Information and Education Centre	SIEC 8:30 am - 4:30 pm 245-3900

### **UNIVERSITY OF CALGARY RESOURCES**

Counselling Services	220-5893
Chaplains	220-5451

or talk to your family physician, mental health or spiritual counsellor or an important support person in your life.