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Running Head. SUICIDE AND SCHIZOPHRENIA

**Suicidality Among Individuals With Schizophrenia:
The Interaction of Personality and Known Risk Factors**

by

Brenda J. Davie

A Thesis

Submitted to the Faculty of Graduate Studies and Research

through the Department of Psychology

in Partial Fulfilment of the

Requirements for the Degree

of Master of Arts

at the University of Windsor

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Abstract

The rate of completed suicide among individuals with schizophrenia is very high: 10% across the lifespan, compared to 1% in the population as a whole. The focus of the literature in this area has been on clinical and demographic risk factors. Two specific known risk factors are social isolation and high premorbid achievement. The present study hypothesized that high levels of two personality traits, Extraversion and Achievement Striving, interact with these factors to increase or decrease the risk for suicide. The predicted pattern was not supported. However, individuals who were low on Extraversion and low on Achievement Striving had higher ratings of suicide risk. Future research should focus on exploring the link between personality and suicide, both among individuals with schizophrenia, and in the general population.

Dedication

This is dedicated to Ron S., who has always been willing to discuss his own experience with schizophrenia.

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My deepest thanks go to the individuals with schizophrenia with whom I have had the privilege of interacting, both during this project, and during other endeavours.

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Chapter I: Introduction

Now you are dead, I cling
To a few dark strands the undertaker snipped off.
But for the ashes, all that is left
of you, sealed in an envelope
Oh, that I had gathered those other curls,
woven you into a butterfly.

-Margo Button, 1996, p. 73

mother of a schizophrenic who completed suicide

In North America, individuals with schizophrenia are at a much higher risk for suicide than the general population, 10% over the lifetime (Miles, 1977) as compared to 1.4% (National Center for Health Statistics, 1996). The heightened risk of suicide among this population was noticed in the first decade of this century by Bleuler, who wrote, "The most serious of all schizophrenic symptoms is the suicidal drive" (1950, p. 488). Reviews of the literature have found that between 19% (Niskanen, Lonnqvist, & Achete, 1973) and 55% (Roy, Mazonson, & Pickar, 1984) of schizophrenics have attempted suicide. As in the population as a whole, the attempt rate is higher among females (Barner-Rasmussen, 1986), while the rate of completed suicide is higher among males. In inpatient settings, those with a diagnosis of schizophrenia account for between 35% (Modestin, Zarro, & Waldvogel, 1992) and 78% (Farberow, Ganzler, Cutter, & Reynolds, 1971) of completed suicides. The rate of attempted suicide among inpatient schizophrenics has been found to be as high as 55% (Roy, Mazonson, & Pickar, 1984).

Suicide Among Individuals with Schizophrenia

Much of the research in this area has focussed on demographic and clinical factors that indicate the individual is in a high-risk group. Briefly, findings indicate that suicide among

schizophrenics is associated with being male, young, having good premorbid functioning, including higher premorbid achievement, being socially isolated, and being in the first decade of the disorder (Caldwell & Gottesman, 1990). Those who experience a chronic course of the disorder with multiple relapses and hospital admissions are at a higher risk for suicide than those who do not (Roy, 1986). When individuals with schizophrenia who complete suicide are compared to the general population and to other psychiatric populations, it is found that they are younger than both other groups (Roy, 1986).

Gender

Approximately half the studies reviewed showed that schizophrenic males are significantly more likely to complete suicide than their female counterparts (Roy, 1982; Krausz, Muller-Thomsen, & Haasen, 1995; Tsuang, 1978, Breier & Astrachan, 1984). However, the others find no significant difference between males and females (Drake, Gates, Cotton, & Whitaker, 1984, Roy & Draper, 1995; Allebeck, Varla, Kristjansson, & Wistedt, 1987). Even the gender differences that did not achieve significance found that the number of male suicides, without exception, is higher than the number of female suicides (Drake, Gates, & Cotton, 1986; Drake et al., 1984).

The evidence is unclear as to whether or not schizophrenia increases the suicide risk for women by a greater factor than it does for men. Some studies find that the standardized mortality ratio (SMR; the ratio of observed to expected deaths in a given population) for schizophrenics is higher for women than men. For example, Black, Warrack, and Winokur (1985) found that the SMR for women with schizophrenia was double that of men. Stated another way, there is a tendency toward convergence in the

male to female ratio of completed suicide. This ratio in the general population is 4:1 (Hendin, 1995), while among schizophrenics it is as close as 3:1 or 2:1. Thus, schizophrenia may differentially increase the suicide risk for women. Although it is clear that more male schizophrenics kill themselves, the evidence seems to indicate that schizophrenia differentially increases the risk of suicide among female schizophrenics, relative to females in general.

There is some evidence that there are important gender differences in the risk factors and patterns of suicidality among schizophrenics. Due to the fact that suicide is a low base-rate phenomenon, and a relatively small number of schizophrenic women complete suicide, these differences are often difficult to test statistically. In cases where the number of females has been adequate, the differences will be highlighted.

Age

In the general population, the suicide rate increases with age, and is distributed bimodally among males, with both the young and the elderly being at risk (Garrison, 1992), a pattern that is different from that among schizophrenics. When suicides among schizophrenics are compared to unmatched (on age) schizophrenic controls, no significant age differences are found (Drake et al., 1984; Allebeck et al., 1987; Roy & Draper, 1995; Test, Burke, & Wallisch, 1990). However, an age difference is found when schizophrenic completers are compared with completers with other psychiatric disorders. Schizophrenic patients tend to kill themselves at younger ages than patients with other psychiatric disorders (Breier & Astrachan, 1984), which may be due to the fact that schizophrenia has an earlier age of onset than the other psychiatric disorders studied, particularly among

males. Male schizophrenics tend to kill themselves at significantly younger ages than females (Drake et al., 1984).

Race

Studies that examined race and suicide among schizophrenics have found mixed results. Of two studies that looked at race of completers, one found significantly more Whites among the suicides than among the schizophrenic controls (Breier & Astrachan, 1984). There were no significant differences in the number of Blacks or other races in the two groups. Another study revealed no race differences between Whites and non-Whites (Drake et al., 1984). Among attempters, no race difference was found compared to controls when blacks were compared to non-blacks (Roy, Mazonson, & Pickar, 1984).

In the population as a whole, Whites are more likely to complete suicide than Blacks. However, this overall finding obscures the finding that among Black people between the ages of 20 and 35, the suicide rate is higher than that of Whites (Hendin, 1995).

Employment

Economic implications of schizophrenia are also related to suicide. Research that has examined unemployment has found that compared to schizophrenic controls, those who completed were significantly more likely to be unemployed (Roy, Schreiber, Mazonson, & Pickar, 1986; Roy, 1982; King, 1994; Roy & Draper, 1995). Suicides were also significantly more likely to be financially dependent on others (Nyman & Jonsson, 1986). It remains to be established whether the link between unemployment and suicide is due to a relationship between illness severity and unemployment, or whether it is a risk factor in and of itself, as it is in the general population (Platt, 1984).

Substance Abuse

A history of alcohol and/or drug abuse does not differentiate suicide completers or attempters from controls (Allebeck et al., 1987; Drake et al., 1984; Bartels, Drake, & McHugo, 1992; Roy et al., 1984). This is also true of inpatient populations (Roy & Draper, 1995). Therefore, unlike in the general population (Hendin, 1995), substance abuse does not appear to be a useful risk factor with a schizophrenic population.

Marital Status

In the general population, married people have lower suicide rates than those who are single, divorced, or widowed (Stack, 1992). When the marital status of schizophrenic attempters and completers of both genders have been compared to controls, the most frequent finding has been that the groups are not significantly different (Drake et al., 1984; Roy, 1982; Roy et al., 1984). However, one study (Breier & Astrachan, 1984) found that schizophrenic completers were more likely to never be married, when compared to both schizophrenic controls and suicides with other psychiatric disorders. There were more men in the suicide group than the control group, while the other two studies had approximately the same proportion of men in both groups. This may explain the difference in marital status. Gender differences are particularly apparent in the marital status of schizophrenics. In general, females are more likely to be married than males, partly because of the later age of onset among women.

Research that looks at gender differences in marital status among suicides reflects this characteristic of schizophrenics in general. Female suicides are more likely to be

unmarried, divorced, or widowed, while males are more likely to never have been married (Roy, 1982). When female schizophrenics were examined separately, they were significantly more likely than female controls to be unmarried, divorced, or widowed. There was no difference between male completers and schizophrenic male controls on marital status (Allebeck et al., 1987).

It appears that the gender differences in marital status may be accounting for some of the mixed findings about the marital status of schizophrenic suicides compared to controls. The emerging pattern in terms of marital status is that never being married, or having lost a spouse to divorce or death are risk factors for females, while never being married is a risk factor for males. Because of the early onset among males, they are less likely to have ever married. This may be the reason that having lost a spouse does not appear to be a risk factor for males.

Psychosis

The vast majority of schizophrenics do not appear to complete suicide during periods of active psychosis (Breier & Astrachan, 1984; Krausz et al., 1995). As evidence of this, one study found that only 15% of patients were acutely psychotic at the time of their suicidal deaths (Breier & Astrachan, 1984). Contrary to what may appear intuitive, suicide among those with schizophrenia is rarely the result of command hallucinations to do so. Roy, Schreiber, Mazonson, and Pickar (1986), found that chronic schizophrenics who completed suicide were no different from matched controls in terms of command hallucinations. A review of the literature in this area (Drake et al., 1985) concluded that some evidence suggested that psychosis may precede suicide attempts rather than

completed suicide. In one study, none of the schizophrenic completers showed evidence of command hallucinations (Breier & Astrachan, 1984), while in another (Roy, 1982) two of 30 patients who completed suicide had command hallucinations telling them to kill themselves. In the latter case, two schizophrenics in the control group also had command hallucinations to suicide. Clinicians interviewed after the loss of a schizophrenic client to suicide have also reported that the suicide did not occur during a psychotic phase (Cotton, Drake, & Gates, 1985).

Course of Illness

Those with a chronic, remitting illness are more likely to complete suicide (Krausz et al., 1995; Roy, 1982). One study found that 80% of those who completed suffered from a chronic course with exacerbations and remissions, compared to 50% of those who did not suicide (Roy, 1982). This is supported by the finding that suicidal behaviour is significantly correlated with the number of hospitalizations prior to the index hospitalization (Roy et al., 1986).

The link between this symptom pattern and suicidality is supported by evidence of an association between suicidality and a greater number of past psychiatric admissions (Dassori, Mezzich, & Keshavan, 1990; Roy et al., 1984). This is not found in all cases however (Roy, 1982; Krausz et al., 1995; Drake et al., 1984). In one study there was no significant difference in terms of number of hospitalizations, but the total time spent in the hospital was significantly higher for completers than controls (Krausz et al., 1995).

It has been consistently found that most individuals with schizophrenia who complete suicide do so within the first decade of the illness (Tsuang, 1978; Drake et al., 1984),

which is similar to other psychiatric suicides (Tsuang, 1978). Males are found to complete suicide earlier in this first decade than females (Roy, 1982). Although the rate of schizophrenic suicide is clearly higher during the first decade of the illness, and the rate appears to be inversely related to the time since onset, researchers stress that it is important to remember that the individual with schizophrenia remains at higher risk for suicide than the population as a whole throughout his or her life (Tsuang, 1978; Black et al., 1985). The time of greatest vulnerability is in the weeks and months following discharge (Yarden, 1974; Black et al. 1985; Drake et al., 1984). As an example of this, in Roy's (1982) study, 30% of all completed suicides occurred within the first month, 50% occurred within the first three months, and 90% occurred within one year of discharge. Other researchers have found similar patterns. More schizophrenics complete suicide within the month following discharge than patients with any other psychiatric diagnosis (Pokorny, 1964). Our inability to identify and intervene effectively with high risk individuals is evidenced most clearly by the fact that many schizophrenic suicides occur so shortly after discharge from the hospital.

Suicidal Ideation

Schizophrenics who complete suicide are significantly more likely than schizophrenic controls to have expressed suicidal intent at some point in their treatment (Dingman & McGlashan, 1988; Drake et al, 1984, Nyman & Jonsson, 1986; Yarden, 1974). However, compared to other psychiatric patients, schizophrenics are less likely to have expressed intent (King, 1994; Breier & Astrachan, 1984). When suicidal ideation is expressed, it is indicative of suicidal risk; however, the absence of expressed ideation is less of an

indication of lack of risk than in other populations. One study found gender differences in both the number of schizophrenics who expressed ideations, and the relationship between expressed ideation and completed suicide. Females who had expressed suicidal ideation were at increased risk for suicide; whereas as many male non-completers expressed ideation as male completers (Allebeck et al., 1987).

Suicide Attempts

A history of attempts is significantly more common among suicides than living controls (Nyman & Jonsson, 1986; Allebeck et al., 1987; Test et al., 1990; Dassori et al., 1990; Pokorny, 1966). In a study that examined gender differences, a history of previous attempts was even more strongly related to completed suicide for females than for males (Allebeck et al., 1987). One possible explanation is that schizophrenic males are more likely to complete on their first attempt, as has been found in the non-schizophrenic population (Maris, 1992).

In looking at the temporal relationship between attempts and completion, it has been found that previous attempts were not predictive of imminent suicide, although this relationship was found between attempts and completion in other psychiatric patients (Breier & Astrachan, 1984). These researchers found that twice as many months had passed between the last attempt and the completed suicide for schizophrenics than for the other psychiatric patients. Non-psychiatric patients completed suicide, on average, one year after their last attempt. For schizophrenic patients, there was an average of two years between their last attempt and their suicide. The weight of the evidence supports the finding that a history of suicide attempts and the number of previous attempts is indicative

of future risk, especially for females. However, previous attempts are less indicative of when the schizophrenic individual is at risk than it is in individuals with other disorders.

Risk Assessment Scales

Reviewers of the literature on suicide among schizophrenics often refer to the finding that traditional risk assessment scales are not useful with a schizophrenic population (e.g., Drake, Gates, Whitaker, & Cotton, 1985). An extensive review of this literature revealed that only two studies examined risk scales (Shaffer, Perlin, Schmidt, & Stephens, 1974; Pokorny, 1983), and both used scales developed in the 1960s. This literature review indicated that no recent risk assessment scales have been used in this research area with a schizophrenic population. Risk assessment scales have been of mixed utility in the general population (Rothberg & Geer-Williams, 1992), therefore no comparisons can be made at this time.

Depression and Hopelessness

Another risk factor is whether or not the schizophrenic individual has experienced an affective disorder. Suicides were significantly more likely to have had a past depressive episode (Roy, 1982; Jones et al., 1994; Dassori et al., 1990), to have had past treatment for depression (Roy, 1982), to have been depressed during their last treatment episode (Roy, 1982), and to have had a history of more frequent depressive episodes (Drake et al., 1984). Schizophrenic attempters were more likely to have had a previous major depressive episode than non-attempters (Roy et al., 1984; Jones et al., 1994).

Overall, individuals who ideate, attempt, or complete suicide, both schizophrenic and non-schizophrenic, are more depressed than individuals who do not (Jones et al., 1994).

Within the depressive symptoms, it is hopelessness that appears to be the key ingredient that leads to suicide. Hopelessness has been found to be more closely related to intent than depression among individuals with schizophrenia (Minkoff, Bergman, A. Beck, & R. Beck, 1973), which reflects a relationship also seen in the general population.

Hopelessness has been shown to be one of the best predictors of eventual completed suicide among individuals with schizophrenia, other psychiatric populations, and the general population (Beck, Brown, & Steer, 1989, Beck, Steer, Kovacs, & Garrison, 1985). However, among attempters it is depression, not hopelessness, that distinguishes them from controls (Jones et al., 1994). Therefore, it appears that within the depressive symptoms, it is hopelessness specifically that is related to completed suicide, and depression that is associated with attempts.

In research without a control group, most schizophrenics are found to have expressed hopelessness prior to suicide (Yarden, 1974), and in research with control groups, this was found to be significantly different from non-suicide controls (Drake et al., 1984). Hopelessness is also more common among attempters than controls (Minkoff et al., 1973; Jones et al., 1994). In a more indirect measure of hopelessness, it has been found that compared to suicides in other diagnostic groups, schizophrenics were more likely to have had a negative or indifferent attitude towards psychiatric personnel, other staff, and medication prior to their suicides. These results were interpreted as indicating a loss of trust in treatment and a state of despair prior to the suicide (Virkkunen, 1976).

Psychiatric inpatients who completed suicide were found to have significantly higher scores on the Beck Hopelessness Scale (BHS) than inpatients who did not complete

suicide. In a 10-year prospective study of patients hospitalized for suicidal ideation (Beck et al., 1985), BHS scores correctly identified 91% of the eventual suicides.

Looking specifically at schizophrenics, Drake and Cotton (1986) assessed depression and hopelessness using the BHS and clinician's ratings according to the DSM-III. Both depression and hopelessness were related to completed suicide, however when hopelessness was accounted for, the relationship between depression and suicide disappeared. Thus it appears that in the schizophrenic population, hopelessness is also a better predictor of eventual completed suicide than depression. Stated another way, it appears that hopelessness is the specific component of depression that accounts for its relationship to completed suicide.

Premorbid Achievement

Premorbid achievement, particularly academic success, also appears to be a risk factor for completed suicide among schizophrenics. Completers had significantly higher education levels, and the majority had attended college, had significantly higher expectations for themselves than non-suicides (Drake et al., 1984; Drake & Cotton, 1986), and were significantly more likely to fear further mental disintegration (Drake et al., 1984). Again, it appears that the risk factors for attempts are not identical to those of completion, as a comparison of schizophrenic attempters and schizophrenic non-attempters revealed no differences in terms of education (Jones et al., 1994).

Researchers in this area (Drake et al., 1984) have postulated that schizophrenics with good premorbid functioning may be at higher risk for suicide because they experience greater performance interference, and have more difficulty accepting chronic illness. This

view is supported by evidence that schizophrenics who complete suicide have achieved higher levels of education (Drake et al., 1984) and higher military ranks (Farberow, Shneidman, & Neuringer, 1966). For example, in one study, 73% of schizophrenic suicides had attended college, compared to 29% of schizophrenic controls ($p < .01$) (Drake et al., 1984). This corresponds with the suggestion by Baumeister (1991) that when high expectations for oneself are followed by a failure to meet those expectations, suicide risk is increased. It does not appear to be the individual's actual performance or achievement that puts them at risk, but rather the sharp contrast with their high expectations.

Life Stressors

In general, life stressors do not differentiate schizophrenic completers from schizophrenic non-completers. In one study, it was actually found that suicide among schizophrenics was less likely to be preceded by life stresses than suicides among individuals with other psychiatric disorders (Breier & Astrachan, 1984). However, one life event does precede a significant number of schizophrenic suicides, and that is experiencing a significant loss of contact or support from their families, in particular being told that they were not able to return home to live with their family (Breier & Astrachan, 1984; Cotton et al., 1985).

Social Isolation

Social isolation is a known predictor in the population as a whole (Maris, 1992). This relatively low amount of contact or support may be interpreted as rejection or isolation. This finding corresponds to a phenomenon that other researchers have labelled social isolation. That is, schizophrenic suicides have been found to be more likely to be

living alone at the time of death, compared to schizophrenic controls (Roy & Draper, 1995, Drake et al., 1984). This finding has not been invariable, but of two studies that found no difference in terms of living alone (Roy, 1982; Nyman & Jonsson, 1986), one found that suicides were significantly more likely to have reported feeling isolated from social contact than controls (Nyman & Jonsson, 1986). The evidence is mixed as to whether or not schizophrenics are more likely to be living alone at the time of suicide. The trend seems to be that, regardless of their actual living situation, suicides are more socially isolated than controls.

Summary of Risk Factors

Some of the risk factors for suicide among schizophrenics are also found in the general population, while some are unique to individuals with this disorder. Like in the population as a whole, suicide among schizophrenics is more common among males. However, the data suggests that for women, there is a greater increase in suicidality with the advent of schizophrenia than there is for men. There does not appear to be a gender difference among attempters among schizophrenics, while females attempt more often than males in the general population. Like in the general population, both depression and hopelessness are related to schizophrenic suicides, as is unemployment. A history of attempts is related to a higher risk of later completed suicide. Although substance abuse is a risk factor for other populations, it does not appear to be of any predictive value in those with schizophrenia. Suicide in the general population is more common among Whites and Aboriginals, yet this is not found conclusively among schizophrenics. Risk factors unique to schizophrenia include a course with many exacerbations and remissions and a history of

psychotic activity including hallucination and delusions. Active command hallucinations ordering one to kill oneself are not found to be an imminent risk factor.

While the characteristics that put individuals with schizophrenia at high risk have been fairly well established in the literature, the fact remains that even those who have all of the characteristics that put them at high risk usually do not kill themselves. What accounts for this?

Personality

It is proposed that personality, or “an individual’s enduring response patterns” (Harre & Lamb, 1983, p 409), is part of what differentiates those in high-risk groups who go on to complete suicide from those who do not. Personality is a filter through which we perceive and act on the world. It affects how we experience our world, and many of the choices we make. Much of the research in the area of personality in the last 60 years has revealed five broad traits, or domains, within personality. This model has come to be known as the Five Factor Model (FFM).

Analysis of Personality Adjectives

In the 1930's, Gordon Allport listed personality-related descriptors from an English-language dictionary and categorised 4500 of these 18 000 descriptors as stable traits (Goldberg, 1990). In the 1940's, Raymond Catell used descriptors from psychology, along with Allport’s trait descriptors, and summarized them in 35 clusters (Goldberg, 1990). Factor analysis of rating scales derived from these clusters reveals the FFM (Goldberg, 1990).

Using a more comprehensive collection of trait terms than Allport (and consequently

Catell), Goldberg (1990) attempted to address some of the criticisms of the research on the FFM. The criticisms addressed included: 1) that it does not generalize beyond the 35 clusters of traits originally described by Catell (Waller & Ben-Porath, 1987); 2) that it is highly dependent on the factor extraction and rotation procedures used (Eysenck, 1981); and, 3) that five is not the optimal number of factors for the optimal description of personality (e.g., Eysenck, 1990, Tellegen, 1993), either more or fewer are required.

Goldberg's (1990) factor analysis of this more comprehensive set of descriptors initially revealed the FFM. When six factors were rotated, the original fifth factor, Conscientiousness, split into two factors. One of the factors was of descriptors more central to the dimension of Conscientiousness, while the other factor was made up of more peripheral descriptors. A rotation of seven factors revealed a factor of Religiosity on which only three variables loaded. Rotating up to 13 factors revealed no additional factors. Goldberg concluded that the five factors provided a comprehensive model of personality, and that the FFM "remains quite stable across variations in the number of factors that are rotated" (p. 1221). The initial five-factor solution was analyzed with ten different factor analysis methods. The average correlation of each factor across methods ranged from .991 to .995, which indicates high internal reliability. The factor solution did not change in any substantial way, supporting the conclusion that the FFM exists independently of the factor analytic method used.

The Five Factor Model

The five factors are commonly labelled Neuroticism (vs. Emotional Stability), Extraversion (or Surgency), Openness to Experience (or Culture, or Intellect),

Agreeableness (or Pleasantness), and Conscientiousness (or Dependability) (Goldberg, 1990). Neuroticism is a general measure of emotional instability, reflecting the tendency to experience negative emotions such as anxiety and depression (Costa & McCrae, 1991). High scorers tend not to cope as well with stress (Costa & McCrae, 1992b), and low scorers can be described as even-tempered (McCrae & John, 1992).

Extraversion reflects sociability, gregariousness, assertiveness and high activity level (Costa & McCrae, 1991). High scorers like other people, and prefer being with groups of people to being alone. Low scorers, or introverts, are reserved and even-paced (Costa & McCrae, 1992b). Costa and McCrae (1992b) state that introversion is “the absence of extraversion, rather than what might be assumed to be its opposite” (p. 15).

Individuals who are high on Openness are characterized by intellectual curiosity, an active fantasy life (Costa & McCrae, 1991), and a preference for variety (Costa & McCrae, 1992b). Low scorers tend to engage in more conventional behaviour and have a more conservative perspective (Costa & McCrae, 1992b).

Individuals high on Agreeableness are more likely to engage in prosocial behaviour (Loehlin, 1992) such as altruism, and to be trusting and compliant. Those who score low in this domain are antagonistic, and competitive rather than cooperative (Costa & McCrae, 1992b).

Those who score highly on Conscientiousness prefer order (Costa & McCrae, 1991), are determined, and strive to achieve. High scorers are found to achieve higher in both academic and occupational domains (Costa & McCrae, 1992b). Individuals who are low on Conscientiousness put less effort into working toward their goals (Costa & McCrae,

1992b).

Each domain scale is divided into six specific facet scales, which were developed through factor analysis in method similar to the NEO as a whole. Of particular interest is the Achievement Striving facet scale, which specifically measures the individual's level of aspiration, and the extent to which he or she is driven to succeed (Costa & McCrae, 1992b).

Although trait theory has been criticized for ignoring important individual differences in favour of the broad traits, and for being inadequate in both the description and the explanation of personality (e.g., Pervin, 1994), it has much support within the field of personality research. Support for the FFM comes from analyses of comprehensive sets of adjectives (e.g., Goldberg, 1990), self and observer ratings (Costa & McCrae, 1991), and cross-cultural studies (e.g., Bond, 1991). Although these three sources of support often overlap in individual studies, they will be discussed separately for conceptual clarity.

The NEO Personality Inventory

The NEO-PI is an inventory developed specifically to assess the FFM (Costa & McCrae, 1985). It has been followed by a revised version, the NEO-PI-R (Costa & McCrae, 1991), and a short version, the NEO-FFM (Costa & McCrae, 1989). The inventory names will be used when referring to a specific version, and the term "NEO" will be used in discussing the measure more conceptually.

Personality traits, as outlined above and as measured by the NEO, show considerable longitudinal stability. Stability coefficients of the five domain scales over seven years, as measured by the NEO-PI, ranged from .63 to .84 (Costa & McCrae, 1991).

There are currently no published reports on the use of the NEO with individuals with schizophrenia. Use with individuals with other disorders (e.g., depression) indicates that they differ only in mean level of some traits. In particular, they are found to have elevated Neuroticism scores (Costa & McCrae, 1992b). Research on a variety of clinical samples indicated that individuals with psychiatric disorders often “show a range of variation of the five factors similar to that seen in a normal sample” (Costa & McCrae, 1992b, p.14). The authors of the NEO state that using a non-clinical measure of personality serves as a reminder that individuals in a treatment setting “are similar in many respects to normal volunteers” (p. 14). It is their perspective that “many aspects of personality are relatively unaffected by psychopathology . . . [and] most patients can be profitably described in terms of the dimensions of the five-factor model” (Costa & McCrae, 1992a, p. 7). They have, however, noted that the NEO is unlikely to be useful with floridly psychotic patients (Costa & McCrae, 1992b). Therefore, although this measure has not been used specifically with this population, there is no reason to believe it is not a valid instrument for assessing personality in schizophrenics who are not floridly psychotic during the assessment.

Importance of Personality Assessment

Important reasons for assessing normal personality in individuals with schizophrenia are two-fold. First, all individuals, including those who are schizophrenic and/or potentially suicidal, are more than the sum of their clinical and demographic characteristics, and personality may add substantially to these variables in assessing suicide risk. It is this relationship that is the focus of the present study.

Second, information about normal personality is useful in treating a range of clients.

Miller (1991) has found using the NEO provides clinicians with information regarding client's emotions and needs, helps the clinician understand and anticipate problems and opportunities in treatment, and aids in the development of a treatment plan that takes these anticipated problems and opportunities into account. For example, clients high on Neuroticism are likely to be experiencing a variety of distressing feelings, those low on Extraversion may be hesitant to talk, and those high on Openness will prefer imaginative approaches. A treatment alliance will be more easily established with clients high on Agreeableness, while those low on Conscientiousness are unlikely to carry out assigned exercises.

Cross-Cultural Evidence

There is strong cross-cultural support for the FFM. It has appeared in samples of Japanese, Filipino, and German individuals, thus suggesting that the five superordinate factors of personality are present in a variety of cultures (Digman, 1990). In an effort to examine the model in a non-Western culture, Narayanan, Menon, and Levin (1995) studied the underlying factor structure of personality among students in India, using two different techniques. The techniques, specifically the use of self-generated descriptors, were an attempt to avoid importing Western conceptualizations of personality. First, one group of participants listed descriptors of their own personalities, then rated themselves along a collection of these descriptors as they thought others would describe them. Factor analysis of these ratings revealed five factors. A second group of students described a situation in which they had observed others or themselves, and indicated an accompanying thought, feeling, or behaviour. These situations were classified according to the

personality attributes they represented, and the classifications fit into the broad trait domains of the FFM.

More recently the five-factor structure has been found in a multi-national study that included participants from Japan, Korea, Israel, Portugal, Germany, and the United States, leading the authors to call the FFM “a common human structure of personality” (McCrae & Costa, 1997, p 515). These cross-cultural findings of the model provide strong evidence of its robustness.

Conclusion and Hypotheses

Much of what we know thus far about suicide and schizophrenia is focussed on demographic variables. Elucidation of the relationship between personality traits and risk factors may contribute important information regarding suicide potential among members of this high-risk group.

I expect to find relationships among personality, premorbid achievement, and social isolation. The first hypothesis is that individuals who are high on both premorbid achievement and Achievement Striving will report greater hopelessness than any other combination of these two variables. Stated simply, those who are high on both variables will have the highest achievement expectations, and therefore have the greatest discrepancy between their current life situation and their expectations. The second, related, hypothesis is that the relationship between Conscientiousness and premorbid achievement will also be examined in this manner as Conscientiousness is a broad measure of achievement striving. The third hypothesis is that, participants who are both socially isolated and high on Extraversion will report greater hopelessness than those in the other

groups. Put simply, those who like being with people and aren't around people will be at the highest risk.

Participants will be considered high or low on Extraversion, Achievement Striving, and Conscientiousness if they are significantly higher or lower than the population norm on these measures. As in previous research in this area, participants will be considered socially isolated if they live alone.

Two measures of premorbid achievement will be examined. Those who have pursued education beyond high school will be considered high, whereas those who have only completed high school will be considered low. Participants who have achieved military ranks in the top half of the sample will be considered high, while the remainder will be considered low.

The main measure of suicide risk used in this study is the BHS, which is one of the best predictors of completed suicide when a cutoff score of 9 or above is used. Current or past suicidal ideation, and past suicide attempts will also be examined as measures of suicidality.

Chapter II: Method

Participants

Individuals diagnosed with schizophrenia were recruited from the inpatient and outpatient units of the Veterans Administration Medical Center (VAMC) in Detroit, Michigan. Patients in programs that provide service to individuals with schizophrenia were approached by the researcher and asked if they would like to participate. In addition, flyers (see Appendix A) advertising the study were distributed in VAMC clinics and to VAMC clinicians. Those who had been declared legally incompetent (as per chart information) or had a legal guardian (as per chart information or information from the patient) were not included. Twelve male patients were interviewed, and 10 met the DSM-IV criteria for schizophrenia using the SCID (see below). All participants agreed to follow-up contact, and all participants were given two one-dollar Canteen Coupon Booklets. Among the total sample interviewed, the mean age was 48.67; seven participants were Black and five were White. The ten participants retained for analysis ranged in age from 39 to 59 (mean age 48.3). Three were White and seven were Black. All participants who agreed to participate completed the interview, and in all cases but one, the interview was completed in one session. One participant's measures were incomplete, some of the comparison thus involves nine participants.

Materials

Structured Clinical Interview for DSM-IV Axis I Disorders

The SCID (First, Spitzer, Gibbon, & Williams, 1995) is a structured interview designed to diagnose major DSM-IV Axis I disorders. Using a decision tree approach, the

SCID guides the clinician in testing diagnostic hypotheses as the interview is conducted. The output of the SCID is a record of the presence or absence of each of the disorders being considered, for current episode (past month) and for lifetime occurrence. The SCID has been shown to have acceptable concurrent validity and test-retest reliability (Spitzer, Williams, Gibbon, & First, 1992). It is commonly used in research studies to characterize a study sample in terms of past and psychiatric diagnoses. For the purposes of this study, five modules of the SCID were used: Mood Episodes, Psychotic Symptoms, Psychotic Differential, Mood Differential, and Substance Use Disorders. The first two modules describe mood and psychotic symptoms, respectively, while the third and fourth module determine the diagnosis of these disorders. The SCID was used to include or exclude patients from the study, as well as to provide a description of any substance related disorders.

NEO Five Factor Inventory

Personality was assessed with the NEO Five Factor Inventory (NEO-FFI; Costa & McCrae, 1989). The NEO-FFI (see Appendix B) is a short (60 item) version of the (240 item) NEO-PI-R. This version was chosen in the interest of time, as the measures were read to the participants. Response options are on a 5-point scale ranging from strongly agree to strongly disagree. Internal consistency of the NEO-FFI, measured by coefficient alpha, was .86, .77, .73, .68, and .81, for Neuroticism, Extraversion, Agreeableness, Openness, and Conscientiousness, respectively.

Social Isolation

Social isolation was measured in two ways: by determining if the participant lives

alone or with others, and by determining the number of people with whom the participant has contact on a regular basis, (i.e., several times per week). The measure did not assess the individual's perception of these contacts. This was important because it is the interaction between social isolation and Extraversion that is to be examined; to have the measure of the social isolation contaminated by the individual's perception would have obscured this interaction, (e.g., those who are high on Extraversion would be likely to perceive living alone/small social network as inadequate). These items concerning social isolation were added to the demographic information section one of the other measures.

Premorbid Achievement

Achievement was measured by the highest level of education and the highest military rank attained. These two measures of achievement have been found to differentiate schizophrenics who go on to complete suicide from those who do not (Drake, et al., 1984; Farberow et al., 1966). These items were also added to one of the other measures. In order to compare ranks across branches of the military, military pay grades will be used. Among enlisted personnel, pay grades range from E-1 to E-9, with higher numbers indicating higher rank. For example, E-1 is the pay grade of a Private in the U. S. Army, an Basic Airman in the U. S. Air Force, and a Seaman Recruit in the U. S. Navy. E-6 is the pay grade of a Army Staff Sergeant, an Air Force Technical Sergeant, and a Navy 1st Class Petty Officer (The Bluejackets Manual, 1989).

Suicidality

Suicide risk was measured with a modified version of the Harkavy-Asnis Suicide Survey (see Appendix J) (HASS; Harkavy-Friedman & Asnis, 1989). The HASS has been

used previously with schizophrenic individuals (Asnis et al., 1993), and provides a detailed picture of past and present suicidality. The HASS also includes a section on demographic variables, and several questions have been added in order to make this section more comprehensive and more suitable to the purposes of the current study.

Hopelessness

Hopelessness was measured with the Beck Hopelessness Scale (see Appendix K) (BHS, Beck, Weissman, Lester, & Trexler, 1974). The BHS assesses hopelessness as a cognitive construct. As discussed above, it has been established that hopelessness is highly correlated with eventual completed suicide, and that in many cases hopelessness has been found to account for the relationship between depression and suicide. In this study the BHS score will therefore also be referred to as the measure of “suicide risk.”

Procedure

The letter of informed consent (see Appendix E) was read out loud to participants, who then signed a written copy. This letter met the requirements of the Wayne State University Human Investigation Committee, the VAMC Research Committee, and the University of Windsor Department of Psychology Ethics Committee. Following consent, participants were asked a set of true and false items in order to establish their understanding of the study (see Appendix F). All participants answered over half the questions correctly, therefore none were excluded at this point. Participants were assured that their responses were confidential, but that any information regarding risk to themselves or others would be shared with their treatment team. They were also informed that the researcher would be completing two scales at the request of the VAMC staff (see

below), and that their responses to these scales would be entered into their chart.

The participants were interviewed to determine their diagnosis, using the Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-I, First et al., 1995). The SCID-I incorporated the chart information and the participant's self-report. Charts provided information that aided in making the diagnosis and clarified the participant's interview responses. The researcher had previous experience with the SCID and was supervised by a clinical psychologist.

Each assessment measure was be read to the participant, and responses were recorded by the researcher. Oral administration was due to the fact that this VAMC population has a 3rd or 4th grade reading level (personal communication, Dr. Manuel Tancer, January 1997). In addition, for each measure that required a forced-choice response (e.g., true/false), the participant was given a written list of the response choices (see Appendix G, Appendix H, and Appendix I). This aided in keeping them oriented to the task.

As part of the general VAMC intake information, the researcher also completed the Brief Psychiatric Rating Scale (BPRS; Overall & Gorham, 1962) and the Heinrichs Quality of Life Scale (HQL; Heinrichs, Hanlon, & Carpenter, 1984) for inclusion in the patient's chart. The HQL is a 21-item semi-structured interview that assesses several areas of the patient's life, including interpersonal relations and instrumental role functioning. This measure is scored on a scale of one to six, where one indicates virtually no functioning in the area, and six indicates average functioning.

Following the study, participants were given a letter of debriefing to explain the study in further detail (see Appendix J). The length of the interviews ranged from 75 minutes to

155 minutes, with a mean length of 121 minutes.

Chapter III: Results

Because of the small sample, inferential statistics were not calculated. The standard error of measurement (SEM) was calculated for each individual's score on Extraversion, Conscientiousness, and Achievement Striving. The SEM was calculated using the formula $sd[(1-r_{tt})^{.5}]$ (Anastasi, 1988). Calculating a confidence interval that is 2 SEM on either side of the individual's actual score provides a measure with 95% likelihood that the individual's true score will be in this range (Anastasi, 1988). Table 1 summarizes the individual scores with the confidence intervals.

The BHS scores ranged from 1 to 18, with a mean of 8.44 (low risk). Participants' years of formal education ranged from 13 to 16 ($M=13.1$, $SD=5.73$). They had achieved military ranks from E2 to E6 (mode=E5). Seven participants were living with other people, while three were living alone. Two were considering suicide currently, nine had a history of ideation, and four had a history of one suicide attempt.

The hypotheses are explored in two ways. First, the patterns of the group results are examined. Second, cases that are highest and lowest on the BHS are described in detail.

Hypothesis-Testing

Table 2 summarizes the hypothesis-relevant data. The results of participant 02 will not be included in the following examination of the hypotheses as his BHS was incomplete.

Achievement Striving and Premorbid Achievement

It was hypothesized that individuals high on Achievement Striving and high on premorbid achievement would be high on suicide risk. No participants scored significantly above the average score for adult males on Achievement Striving. Conscientiousness was

examined as a broader measure of achievement striving. Participant 04 was high on Conscientiousness and high on achievement, based on his military rank. Participant 12 was high on Conscientiousness and high on achievement, based on his education. Their data appears to refute the hypothesis, as their respective BHS scores were 1 and 6, which indicate very low risk.

It was predicted that participants who were high on Achievement Striving and low on either measure of premorbid achievement would be low on suicide risk. There were no participants in this group, and no participants who were high on Conscientiousness and low on achievement.

Participant 07 was low on Achievement Striving and low on rank. It was hypothesized that individuals with these characteristics would be low on suicide risk. When Conscientiousness was examined as a broad measure of achievement striving, both participants 07 and 03 were high. Participant 03 had a BHS score of 11, and participant 07 had a BHS score of 18. These two men had scores above the cutoff for predicting completed suicide, again refuting the hypothesis. There were no participants eligible for analysis that were low on Achievement Striving or Conscientiousness and education.

Extraversion and Social Isolation

It was hypothesized that individuals who were high on Extraversion and high on social isolation would be high on suicide risk. No participants had these characteristics.

The two participants (07 and 09) who were socially isolated were also low on Extraversion, and their respective BHS scores were 15 and 18. Their scores indicate a high risk of eventual completed suicide. These were the two highest BHS scores in the

sample, which refutes the hypothesis that individuals who were low on both variables would be low on suicide risk.

There were no participants who fell into the low Extraversion-not socially isolated group

Case Highlights

The two cases with the highest suicide risk, and the two with the lowest suicide risk, according to the BHS, will be highlighted. These four cases will be discussed to provide a clinical description of participants at either end of the suicide spectrum. Information about the individual's course of illness and the number of hospitalization would add relevant detail to these descriptions, but such information was not available. Describing the participants in such detail will allow evaluation of the clinical utility of the hypotheses.

Participants Highest on Suicide Risk

Participant 07.

This participant is a 53 year old Black male diagnosed with Schizophrenia, Paranoid Type. He completed 13 years of formal education, and his highest military rank was E3. He has never been married, and currently lives alone. Most of his free time is spent alone. He has one friend that he sees on the weekends. Although he has seven siblings in the Greater Detroit area, he only sees them once a year at Christmas.

In his own words he defined suicide as "relief, another lifetime." He reported an episode of suicidal ideation at the age of 23, when he contemplated overdosing. Several months ago, he again thought about completing suicide, for a period that lasted more than a week. In the past week he has had these thoughts for "a couple" of days, and stated that

he would take drugs, specifically heroin. He denied any past use of heroin. He expressed considerable hopelessness about the future, scoring 18 on the BHS. He has never attempted suicide. He reported an episode of depression at the age of 21, and multiple episodes since that time. He denied current depression. There is no history of suicidal ideation, attempts, or completion in his family, but one of his friends killed his wife and then killed himself.

This participant spontaneously reported that he frequently has dreams, thoughts, and feelings about being homosexual, and this scares him a great deal as he does not want to be homosexual. He reports that he is scared in the presence of other men as a result.

His raw score on Extraversion was significantly below the average for the adult male population, and was the lowest in this sample. He has a strong preference for being alone, and is likely to associate only with a few close friends. He is a quiet and serious person. His raw score on Conscientiousness was the lowest in the sample, and one of five that were significantly below the adult male norm. This indicates that he is poorly organized, and that he is likely to appear aimless. His score on Achievement Striving was significantly below the norm for adult males, and was the lowest in the sample. This indicates that he is lackadaisical in his approach to goals, perhaps even to the point of being perceived as lazy.

According to the specific hypotheses of this study, this participant should not be high on suicidality. It was hypothesized that social isolation be related to higher suicidality when the individual was high on Extraversion, and he was low on Extraversion. Although he is high on one of the measures of achievement, education, he was low on

Conscientiousness, a combination that was hypothesized to predict lower suicidality.

This individual would be considered at risk based on what is generally known about suicide among schizophrenics as he is so socially isolated, has a history of depression, and has recently been considering suicide.

Participant 09.

This participant is a 49 year old White male with a diagnosis of Schizophrenia, Paranoid Type. He completed 13 years of formal education, and achieved a military rank of E5. He is currently divorced, and is living alone. Most of his free time is spent alone.

He first thought about suicide at 22, and it was at this time that he attempted suicide by eating rat poison. He stated his reason for doing so as "I couldn't go through the future." He met the criteria for depression at this time, and has had multiple depressive episodes. These episodes were "worse" in his 30's, and he reports that although he still experiences depression, it has not been as bad in his 40's. He has one cousin who completed suicide by shooting himself, but knows of no other expressions of suicidality among his family and friends. Although he states he is not currently considering suicide, his sense of hopelessness about the future is evident in his BHS score of 15. In addition, he acknowledged that he had felt that life was not worth living and had wished he was dead once in the last two weeks. He has considered suicide in the past, but reports that he has never attempted. He denied currently thinking about suicide.

His score on Achievement Striving was not significantly different from the adult male norm, which indicates that he has some need to set and pursue goals. He scored significantly below the adult male norm on Conscientiousness, and his score was second

lowest in this sample. This score indicates that he has little ambition, prefers not to make plans, and is not very well organized. His score on Extraversion was also one of the five that was significantly below the male norm. He prefers to be alone or with a few close friends. He is emotionally reserved, and would likely be described as quiet by those who know him.

The hypotheses would predict that this individual would be at low risk for suicide as he did not score high on either Conscientiousness or Extraversion. However, he had the second highest risk score on the BHS.

Based on risk factors for suicide among schizophrenics, this participant would be at-risk because of high social isolation, his history of high achievement and his history and current episode of depression.

Participants Lowest on Suicide Risk

Participant 10

This participant is a 42 year old Black male diagnosed with Schizophrenia, Paranoid Type. He achieved a military rank of E5, and completed 13 years of formal education. He lives with one other person, his brother.

He scored 2 on the BHS, indicating very low suicide risk. He acknowledged that he had thought about suicide once at the age of 34, a year after the onset of his symptoms of schizophrenia. These thoughts only lasted a few days, and he did not have a plan. This short-lived suicidal ideation does not place him at increased risk for suicide, as many people have thought about suicide at least once in their lives. He has never attempted suicide, and is not aware of any history of suicidality among his family or friends. He does

not have a history of depression, and did not meet the diagnostic criteria for depression in the interview.

His scores on both Extraversion and Conscientiousness were not significantly different from the adult male norm. He enjoys being with other people, but also values his privacy. He is moderately organized, and fairly dependable. His score on Achievement Striving was within the average range for adult males, indicating that he has a moderate need for achievement, but that he can also set the pursuit of goals aside in order to engage in leisure activities.

The hypotheses would predict that this individual would be low on suicidality as his high achievement is not concomitant with high Conscientiousness, and he is not socially isolated. Based on what is known generally about suicide risk factors, he is at low risk because he has none of them.

Participant 04.

This participant is a 44 year old Black male with a diagnosis of Schizophrenia, Paranoid Type. He achieved a military rank of E5, one of the highest in the sample, and completed 12 years of formal education. He lives with two other people: his wife and his son.

His score on the BHS was 1, the lowest in the sample. He has considered suicide once, at the age of 26, four years after the onset of his symptoms of schizophrenia. This feeling only lasted a day, and he has never made an attempt, and is not considering suicide at this time. He has no history of depression and did not meet the diagnostic criteria based on the interview.

His score on Extraversion did not differ significantly from the adult male norm. Like others who are average on this trait, he enjoys both the company of others, and being alone. He scored in the average range on Achievement Striving, which indicates that he has some need to set goals for himself and work toward them. His score on Conscientiousness was significantly higher than the norm. He is well-organized and likely to meet his commitments. He has high standards for himself, and strives to achieve his goals.

The hypotheses would predict that this individual would be at high risk for suicide due to his high Conscientiousness and high rank. Once again, the findings do not fit the hypothesized pattern.

The fact that he does not have a history of depression, and is not socially isolated would put him at lower risk for suicide. His high rank in the military is a risk factor for suicide, based on previous research findings. Overall, this individual would likely be judged at low risk.

Additional Results

It was noticed by the researcher that ratings on the HQL item labelled "Engagement and Emotional Interaction with Interviewer" were lower in participants who appeared more hopeless. On this item, a score of one indicates that the interviewer feels virtually ignored, and a score of six indicates consistently good engagement and reactivity. BHS scores were moderately correlated, $r = -.63$, $p = .069$. Although nonsignificant, this correlation is close to significance, and certainly suggests an important relationship.

Chapter IV: Discussion

It was hypothesized that the personality trait Extraversion would interact with social isolation such that individuals high on both would be high on suicide risk, as defined by the BHS. It was also hypothesized that Achievement Striving, or Conscientiousness as a measure of the need for achievement, would interact with premorbid achievement. Individuals high on the personality trait who also had a history of high achievement were predicted to be higher on suicidality. Neither the group data nor the data of individual participants fit the hypothesized pattern. Among this sample of individuals with schizophrenia these hypotheses were not valuable in terms of further refining the prediction of suicide risk.

The two participants with the highest suicide risk (BHS scores) were living alone, and had the two lowest scores on Extraversion. They were also lower than most others on Conscientiousness and Achievement Striving. Two possible explanations for the apparent relationship between these variables will be discussed.

First, low Extraversion, low Achievement Striving, and low Conscientiousness may be risk factors, either independently or in relation to each other. To the knowledge of this researcher, there are no published reports on the relationship between these personality traits and suicide risk. However, the link between personality and depression has been studied. Hirschfeld, Klerman, Clayton, and Keller (1983) compared female patients who had recovered from a depressive episode, their first degree female relatives who also met this criteria, and first degree female relatives who had no history of psychiatric illness. The relatives with no history of psychiatric illness had significantly higher scores on both

Extraversion [as measured by the Maudsley Personality Inventory (MPI); Eysenck, 1962] and Sociability [as measured by the Guilford-Zimmerman Temperament Scale (GZTS); Guilford & Zimmerman, 1949]. Although these results support the current findings of a relationship between low Extraversion and depressive symptomology, they do not indicate the nature of this relationship. Further research by Hirschfeld and colleagues (1989) found that premorbid assessment of MPI Extraversion and GZTS Sociability did not differentiate individuals who went on to experience a depressive episode from those who did not.

Taken together, the results from these two studies suggest that the differences in Extraversion and Sociability found following recovery from a depressive episode are not indicative of premorbid differences, but of the impact of depression on these personality characteristics.

A second possible explanation is that some of the negative symptoms of schizophrenia (i.e., avolition and social withdrawal) may be related to lower scores on Extraversion, Achievement Striving, and Conscientiousness. Negative symptoms have not been found to predict later suicidal ideation, attempts, or completed suicide among schizophrenics (Kaplan & Harrow, 1996). Their findings, along with the findings of the current study, suggest there may be a direct relationship between these personality traits and suicide risk.

A particularly interesting finding was the relationship between higher suicide risk and the interviewer's ratings of reduced emotional engagement. There are several possible reasons for this apparent relationship. Individuals who are experiencing greater hopelessness may withdraw from others, including the researcher. It may be related to Virkkunen's (1976) conclusion that schizophrenics who go on to complete suicide

experienced a loss of trust in treatment prior to the suicide, as demonstrated by a negative or indifferent attitude toward various aspects of the treatment setting prior to the suicide. Or, the tendency of the participants to be minimally engaged in their interactions, as demonstrated in their exchanges with the interviewer, may be in part what has led to their hopelessness. But the ratings may also have been a result of the researcher's feelings in the interaction. Maltzberger (1986) warns us of "countertransference mistakes" in the interaction between clinician and client. He suggests that clinical judgement may be biased by the negative feelings the suicidal client brings up in the clinician. This is possibly the mechanism underlying the lack of connectedness felt by the interviewer during the interview with the more hopeless participants. Clinicians who are experiencing little emotional engagement in their interactions with individuals with schizophrenia may have greater difficulty in accurately assessing suicide risk. It is possible that this is part of the reason we have been unable to identify and intervene effectively with high risk individuals, as evidenced most clearly by the fact that many schizophrenic suicides occur so shortly after discharge from the hospital.

Among this sample of individuals with schizophrenia, lower-than-average Extraversion and Conscientiousness were linked with suicide risk. Previous research findings were confirmed in that social isolation, and past and current depression were also linked to suicidality. This suggests that in addition to known risk factors, the personality traits Extraversion and Conscientiousness are useful in the study of suicide among schizophrenics.

Limitations of the Present Study

Most individuals with schizophrenia who complete suicide are young, and complete suicide in the first decade of the illness. This sample is unusual compared to most of the research on suicide among schizophrenics as all the participants were veterans and the majority were Black. They were older than the samples used in most previous research on suicide among schizophrenics. After the age of 35, Whites are far more likely to complete suicide than Blacks. In most cases, the participants had been diagnosed with schizophrenia for more than ten years, and were therefore beyond the period of highest risk. This particular sample of middle-aged Black men is therefore at low risk compared to the population of schizophrenics in general.

Although the factor structure of the NEO has been replicated among Blacks (Costa & McCrae, 1992b), the traits may have different meanings in each population. For example, Achievement Striving may not have the same meaning or the same relationship to other variables as it does in the White population.

Directions for Future Research

The lack of support for the hypotheses may be related to the particular sample in which they were tested. Future research in a younger, multiracial population of schizophrenics is needed to further evaluate the utility of these specific hypotheses.

Based on the findings of this study, low Conscientiousness, low Achievement Striving, and low Extraversion should be examined further as suicide risk factors among schizophrenics. These variables should be studied both separately and in conjunction with other risk factors.

In general, more basic research is needed on personality and personality measures, and on the relationship between personality and suicide. At this time the specific meaning of personality traits across populations is not known. There is also a need to compare a variety of methods of personality assessment in order to study the relationship between personality and other variables.

The relationship between a lack of emotional engagement and hopelessness may be limited to the clinical setting, or may pervade the hopeless individual's interactions.

Personality influences most areas of a people's lives, from their ability to adapt to change, to their choice of occupation, to the development of psychological disorders, to their needs in interpersonal relationships (Costa & McCrae, 1991; 1992b). Based on the findings of the present study, personality traits also appear to be related to suicide risk. To this researcher's knowledge, there are no published reports on the relationship between personality and suicide among individuals with schizophrenia. Personality is an important direction for suicidology research, and these findings indicate it may shed more light on suicide risk among schizophrenics, and perhaps among other populations.

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Appendix A

Recruitment Flyer

If you have been diagnosed with schizophrenia you may be eligible to participate in a questionnaire study. The study involves answering questions about your personality and your mood. Participation will take three to four hours, and take place at the Veteran's Administration Medical Center (VAMC). You will receive one or two Canteen Coupon Books for your participation. For further information please contact Brenda Davie at (313) 993-3962.

Appendix B

NEO-FFI

1. I am not a worrier.
2. I like to have a lot of people around me.
3. I don't like to waste my time daydreaming.
4. I try to be courteous to everyone I meet.
5. I keep my belongings clean and neat.
6. I often feel inferior to others.
7. I laugh easily.
8. Once I find the right way to do something, I stick to it.
9. I often get into arguments with my family and coworkers.
10. I'm pretty good about pacing myself so as to get things done on time.
11. When I'm under a great deal of stress, sometimes I feel like I'm going to pieces.
12. I don't consider myself especially "light-hearted."
13. I am intrigued by the patterns I find in art and nature.
14. Some people think I'm selfish and egotistical.
15. I am not a very methodical person.
16. I rarely feel lonely or blue.
17. I really enjoy talking to people.
18. I believe letting students hear controversial speakers can only confuse and mislead them.
19. I would rather cooperate with others than compete with them.
20. I try to perform all the tasks assigned to me conscientiously.
21. I often feel tense and jittery.
22. I like to be where the action is.
23. Poetry has little or no effect on me.
24. I tend to be cynical and skeptical of others' intentions.
25. I have a clear set of goals and work toward them in an orderly fashion.
26. Sometimes I feel completely worthless.
27. I usually prefer to do things alone.
28. I often try new and foreign foods.
29. I believe that most people will take advantage of you if you let them.
30. I waste a lot of time before settling down to work.
31. I rarely feel fearful or anxious.
32. I often feel as if I'm bursting with energy.
33. I seldom notice the moods or feelings that different environments produce.
34. Most people I know like me.
35. I work hard to accomplish my goals.
36. I often get angry at the way people treat me.
37. I am a cheerful, high-spirited person.
38. I believe we should look to our religious authorities for decisions on moral issues.
39. Some people think of me as cold and calculating.
40. When I make a commitment, I can always be counted on to follow through.
41. Too often, when things go wrong, I get discouraged and feel like giving up.
42. I am not a cheerful optimist.
43. Sometimes when I am reading poetry or looking at a work of art, I feel a chill or a wave of excitement.
44. I'm hard-headed and tough-minded in my attitudes.
45. Sometimes I'm not as dependable or reliable as I should be.
46. I am seldom sad or depressed.
47. My life is fast-paced.
48. I have little interest in speculating on the nature of the universe or the human condition.
49. I generally try to be thoughtful and considerate.
50. I am a productive person who always gets the job done.
51. I often feel helpless and want someone else to solve my problems.
52. I am a very active person.
53. I have a lot of intellectual curiosity.
54. If I don't like people, I let them know it.
55. I never seem to be able to get organized.
56. At times I have been so ashamed I just wanted to hide.
57. I would rather go my own way than be a leader of others.
58. I often enjoy playing with theories or abstract ideas.
59. If necessary, I am willing to manipulate people to get what I want.
60. I strive for excellence in everything I do.
61. I am easy-going and lackadaisical.
62. When I start a self-improvement program, I usually let it slide after a few days.
63. I don't feel like I'm driven to get ahead.
64. I strive to achieve all I can.
65. I'm something of a "workaholic."

Appendix C
Harkavy Asnis Suicide Survey
(Modified February 1997)

ID: _____ **Date:** _____

Age: _____ **Sex:** M ___ F ___

Education: _____

Highest Military Rank Attained: _____

Race: White ___ Black ___ Hispanic ___ Other ___

Religion: Catholic ___ Protestant ___ Jewish ___ Other ___

Is your mother alive? Yes ___ No ___

If no, how old were you when she died? ___ years

Is your father alive? Yes ___ No ___

If no, how old were you when he died? ___ years

Marital Status: Single ___ Married ___ Divorced ___ Separated ___ Other ___

Who do you live with?

alone ___ spouse ___ brothers ___ other relatives ___

father ___ sons ___ sisters ___ non-relatives ___

mother ___ daughters ___ grandparents ___

other _____

Who do you spend most of your free time with? How is your free time spent? How frequently?

1. Do you know what suicide is? Yes ___ No ___

If yes, please define in your own words:

2. Have you *ever thought* about killing yourself, but did not actually try? Yes ___ No ___

If yes:

a) Have those thoughts ever persisted for 7 days in a row? Yes ___ No ___

b) How old were you when you had these thoughts? (list each age):

c) Did you have a plan? Yes ___ No ___

If yes, what specifically were you going to do:

3. Have you *thought about* killing yourself in the past week?

Yes ___ No ___ If yes:

a) Have these thoughts persisted for 7 days in a row? Yes ___ No ___

b) Do you have a plan? Yes ___ No ___

If yes, what specifically are you thinking of doing?

4. Have you *ever tried* to kill yourself? Yes ___ No ___
If yes, please fill in the table below for each item:

	First attempt	Second	Third
How specifically did you try to kill yourself?			
At what age?			
How come you tried to kill yourself? (be specific)			
Did you require medical treatment after you tried to kill yourself? If yes, what kind, and where?	Yes ___ No ___	Yes ___ No ___	Yes ___ No ___
Did you tell anyone before?	Yes ___ No ___	Yes ___ No ___	Yes ___ No ___
Did you tell anyone after?	Yes ___ No ___	Yes ___ No ___	Yes ___ No ___
Did you want to die?	Yes ___ No ___	Yes ___ No ___	Yes ___ No ___
Did you expect to die?	Yes ___ No ___	Yes ___ No ___	Yes ___ No ___
Were you in psychiatric treatment when you tried?	Yes ___ No ___	Yes ___ No ___	Yes ___ No ___
Did you start psychiatric treatment in the month after you tried?			

5. Have family members *talked* about killing themselves?

Yes ___ No ___

If yes, who? (relationship)

- 1.
- 2.

6. Has anyone in your family *tried* to kill him/herself?

Yes ___ No ___

If yes, who? (relationship) How many times? How?

- 1.
- 2.

7. Has anyone in your family *killed* him/herself?

Yes ___ No ___

If yes, who? (relationship) How?

- 1.
- 2.

8. Did you know *anybody* who has tried to kill him/herself?

Yes ___ No ___

If yes, who? (relationship) How?

- 1.
- 2.

9. Do you know *anybody* who has *killed* him/herself?

Yes ___ No ___

If yes, who? (relationship) How?

- 1.
- 2.

10. Have you seen an individual such as a counsellor, psychiatrist, psychologist, or social worker for any emotional problems you were having?

Yes ___ No ___

If yes, please list the profession of the person you were seeing, how old you were, and how long you were seeing that person. Please list this information for each person you were seeing.

<u>Profession</u>	<u>Dates</u>	<u>Length of Treatment</u>	<u>Age When Started</u>
-------------------	--------------	----------------------------	-------------------------

- a.
- b.
- c.

Are you in treatment right now?

Yes ___ No ___

Please circle the number that fits best.

These questions just pertain to the **past 2 weeks**. Here, the numbers you circle have the following meaning:

0 = Never

1 = Once

2 = 1-2 times per week

3 = 3-4 times per week

4 = Daily

Please answer all of the questions. Thank you for your cooperation.

HOW OFTEN HAVE YOU:	Never	Once	1-2 times per week	3-4 times per week	Daily
1. thought that you would be better off dead?	0	1	2	3	4
2. dreamed about death?	0	1	2	3	4
3. had ideas about killing yourself?	0	1	2	3	4
4. thought that the world would be better off without you?	0	1	2	3	4
5. thought about death and dying?	0	1	2	3	4
6. smoked marijuana?	0	1	2	3	4
7. been in high places and felt like jumping?	0	1	2	3	4
8. thought about ways to kill yourself?	0	1	2	3	4
9. taken drugs other than marijuana or prescription drugs?	0	1	2	3	4
10. gotten so discouraged that you thought about ending your life?	0	1	2	3	4
11. felt like running into traffic?	0	1	2	3	4
12. had a plan of how you would kill yourself?	0	1	2	3	4
13. wished you were dead?	0	1	2	3	4

14. felt that life was not worth living?	0	1	2	3	4
15. drunk alcoholic beverages?	0	1	2	3	4
16. thought about killing yourself but did not try to do it?	0	1	2	3	4
17. tried to kill yourself?	0	1	2	3	4
18. dreamed about killing yourself?	0	1	2	3	4
19. talked to someone about killing yourself?	0	1	2	3	4
20. had a plan to kill yourself, started to it and then stopped at the last minute?	0	1	2	3	4
21. smoked cigarettes?	0	1	2	3	4

Appendix D

Beck Hopelessness Scale

- T F 1. I look forward to the future with hope and enthusiasm.
- T F 2. I might as well give up because I can't make things better for myself.
- T F 3. When things are going badly, I am helped by knowing they can't stay that way forever.
- T F 4. I can't imagine what my life would be like in 10 years.
- T F 5. I have enough time to accomplish the things I most want to do.
- T F 6. In the future, I expect to succeed in what concerns me most.
- T F 7. My future seems dark to me.
- T F 8. I expect to get more of the good things in life than the average person.
- T F 9. I just don't get the breaks, and there's no reason to believe I will in the future.
- T F 10. My past experiences have prepared me well for my future.
- T F 11. All I can see ahead of me is unpleasantness rather than pleasantness.
- T F 12. I don't expect to get what I want.
- T F 13. When I look ahead to the future, I expect to be happier than I am now.
- T F 14. Things just won't work out the way I want them to.
- T F 15. I have great faith in the future.
- T F 16. I never get what I want so it's foolish to want anything.
- T F 17. It is very unlikely that I will get any real satisfaction in the future.
- T F 18. The future seems vague and uncertain to me.
- T F 19. I can look forward to more good times than bad times.
- T F 20. There's no use in really trying to get something I want because I probably won't get it.

Letter of Informed Consent

Department of Veterans Affairs	VA RESEARCH CONSENT FORM
	Page 1 of 4

Subject Name: _____	Date: _____
Name of study: Suicidality among individuals with schizophrenia	
Principal Investigator: Manuel Tancer, MD	VAMC, Detroit, MI

INTRODUCTION:
 I am being asked to participate in a study that looks at how personality affects emotions and suicide among people who are diagnosed with schizophrenia. This study will take between three and four hours, and will likely be completed in one session.

PROCEDURES:
 First, I will be interviewed about my symptoms of schizophrenia, any mood symptoms I may have had, and my history of drug and alcohol use. If I qualify for the study, we will continue with the second part of the study. I will be asked to answer a series of questionnaires about my personality, my mood, my feelings, and experiences I may have had with suicide. There are no right or wrong answers to any of these questions, only what I think and feel, and how I describe myself. When we have finished the first part of the interview, I will be given a one dollar Canteen Coupon Book. If I qualify for the study and complete the remainder of the questionnaires, I will receive another Canteen Coupon Book. In addition, the researcher would like to repeat several of the questionnaires in three to six months. At this time, I would receive one Canteen Coupon Book for my participation. In order to be contacted, I would need to give my name, address, and phone number, and the names and phone numbers of two people who would know where to contact me if I move. This contact information will be kept in a locked file in a separate location from my questionnaire responses.

RISKS:
 The possible risk to me during participation in this study is that I could possibly be upset by some of the questions. If I do become upset, the interviewer will be available to talk to afterwards. Also, my therapist or physician here at the medical center will be notified.

VA RESEARCH CONSENT FORM

Department of Veterans Affairs

Page 2 of 4

Subject Name: _____

Date: _____

Name of study: Suicidality among individuals with schizophrenia

Principal Investigator: Manuel Tancer, MD

VAMC, Detroit, MI

ALTERNATIVE TREATMENT/PROCEDURES:

As this is not a treatment study, there are no alternate procedures available.

BENEFITS:

As a benefit, I will be helping researchers understand the how people's personality, background, and feelings are related to suicidality. This research may give us more information about identifying and treating individuals with schizophrenia who are feeling upset or suicidal.

VOLUNTARY PARTICIPATION/WITHDRAWAL:

My participation in this study is completely voluntary, I may quit at any time. If I choose not to participate in the study, it will not affect my treatment. I do not have to answer any questions I do not want to answer. I may decline to participate in the follow-up part of the study. I am free to ask any questions I may have, before, during, and after the study.

CONFIDENTIALITY:

My name will not be on any of the orally administered questionnaires. However, if I report any information that indicates I may harm myself or someone else, it will be discussed with my therapist or physician. All questionnaires will be given a code number and will be kept in a secure place to ensure confidentiality. The link between the code number and contact information will be kept in a separate locked location.

QUESTIONS:

If I have any questions or concerns about this study, I am encouraged to call the researchers (Dr. Manuel Tancer, 313-576-3872; Brenda Davie, 313-993-3962), or her supervisor (Dr. William Balance, 519-253-4232, ext. 2227).

VA RESEARCH CONSENT FORM

Department of Veterans Affairs

Page 3 of 4

Subject Name: _____

Date: _____

Name of study: Suicidality among individuals with schizophrenia

Principal Investigator: Manuel Tancer, MD

VAMC, Detroit, MI

RESEARCH SUBJECT'S RIGHTS

I understand that in the event of physical injury resulting from the research procedures, no compensation and no medical treatment or reimbursement from Wayne State University is offered under this program. I understand that, (1) if I sustain physical injury as a result of my participation in this investigation and (2) if I am an eligible veteran, I will be entitled to medical care and treatment from the Veterans Administration. I may also be eligible for compensation under 38 USC 351, or, in some circumstances, under the Federal Tort Claims Act. However, if I am not an eligible veteran or if I am a non-veteran, I will be entitled only to receive medical care on a humanitarian emergency basis. Any compensation under this circumstance will be limited to situations where negligence occurred and would be controlled by the provisions of the Federal Tort Claims Act.

I have read or have had read to me all of the above. Brenda J. Davie has explained the study to me and answered all of my questions. I have been told of the risks or discomforts and possible benefits of the study. I have been told of other choices of treatment available to me.

I understand that I do not have to take part in this study, and my refusal to participate will involve no penalty or loss of rights to which I am entitled. I may withdraw from this study at any time without penalty or loss of VA or other benefits to which I am entitled.

I may be contacted (by letter) by the Research Service to participate in a clinical research survey. I will be asked to complete a short questionnaire.

If I have any questions regarding my rights as a research subject, Dr. Peter Lichtenberg, Chairman of the Behavioral Investigation Committee can be contacted at (313) 577-5174.

The results of this study may be published, but my records will not be revealed unless required by law.

In case there are medical problems or questions, I have been told I can call my physician at (313) 576-1000 during the day and the on-call psychiatrist at (313) 576-1000 after hours. I understand that if any medical problems occur in connection with this study the VA will provide emergency care.

Department of Veterans Affairs **VA RESEARCH CONSENT FORM**
Page 4 of 4

Subject Name: _____ Date: _____

Name of study: **Suicidality among individuals with schizophrenia**

Principal Investigator : **Manuel Tancer, MD** VAMC, Detroit, MI

I understand my rights as a research subject, and I voluntarily consent to participate in this study. I understand what the study is about and how and why it is being done. I understand that I will receive a signed copy of this consent form.

Subject's Signature Date

Witness's Signature Date

Physician's Signature Date

I consent / do not consent [circle one] to being contacted to participate in the follow-up part of the study.

Subject's Signature Date

Witness's Signature Date

Appendix F
Consent Quiz

Please answer the following questions “true” or “false” based on the consent form you have just been read.

- ___ 1. I will be interviewed about my symptoms of schizophrenia, my personality, my feelings and my mood.
- ___ 2. The interviewer will never share any of my answers with the VAMC staff.
- ___ 3. I will receive a one dollar Canteen Coupon Book if I complete the study.
- ___ 4. I will have to read the questions and write down the answers.
- ___ 5. I have to finish the study, even if I want to quit.
- ___ 6. This study is about how personality is related to suicide in people who have schizophrenia.
- ___ 7. I will receive no further Canteen Coupon Books if I come in for the follow-up part of the study.

Appendix G

Response Options for the Consent Quiz
and the Beck Hopelessness Scale

TRUE

FALSE

Appendix H

Response Options for the HASS

0 = Never

1 = Once

2 = 1-2 times per week

3 = 3-4 times per week

4 = Daily

Appendix I
Response Options for the NEO-FFI

SD strongly disagree

D disagree

N neutral

A agree

SA strongly agree

Appendix J
Letter of Debriefing

Dear Participant,

First, I would like to express my appreciation of your participation in this study. It is through the cooperation of people such as yourself that we are able to learn more about suicide risk among people with schizophrenia.

Second, I would like to give you some further information regarding the study. I am looking at the relationship between personality, social isolation, past achievement, thoughts about the future, and suicidality.

Third, I want to assure you that the only situation in which information you provide in this interview is if you are at risk of harming yourself or someone else. In this situation, the information will be discussed with your therapist or physician.

Fourth, if you consented to coming in for the follow-up study, I will phone you in three to six months to make an appointment with you. If you did not consent to coming in for the follow-up study, you will not be contacted further regarding this study.

Finally, if you have any questions about the study that have not been answered here or at the research session, please feel free to contact Brenda Davie at (313) 993-3962. You may also contact Dr. William Balance at (519) 253-4232, ext. 2227.

Sincerely,

Brenda J. Davie, B.A.
Clinical Psychology Graduate Student

Appendix K

Tables

Table 1. Raw scores and confidence intervals of personality variables of individual participants

Participant	Achievement Striving (M=19.3)	Conscientiousness (M=34.1)	Extraversion (M=27.22)
01	19 (14.3-23.7)	33 (27.8-38.2)	32 (26.4-37.6)
02	14 (9.3-18.7)*	26 (20.8-31.2)*	20 (14.4-25.6)*
03	16 (11.3-20.7)	23 (17.8-28.2)*	29 (23.4-34.6)
04	24 (19.3-28.7)	42 (36.8-47.2)**	29 (23.4-34.6)
05	17 (12.3-21.7)	25 (19.8-30.2)*	22 (16.4-27.6)
07	10 (5.3-14.7)*	18 (12.8-23.2)*	12 (6.4-17.6)*
08	16 (11.3-20.7)	22 (16.8-27.2)*	30 (24.4-35.6)
09	16 (11.3-20.7)	31 (25.8-36.2)	17 (11.4-22.6)*
10	20 (15.3-24.7)	35 (29.8-40.2)	31 (25.4-36.6)
12	23 (18.3-27.7)	40 (34.8-45.2)**	34 (28.4-39.6)

The numbers in parentheses are the 95% confidence intervals.

*significantly below norm for adult males

**significantly above norm for adult males

Table 2 Summary of hypothesis-relevant data for individual participants.

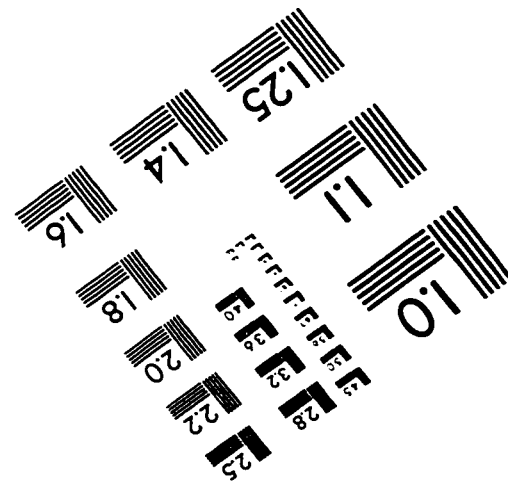
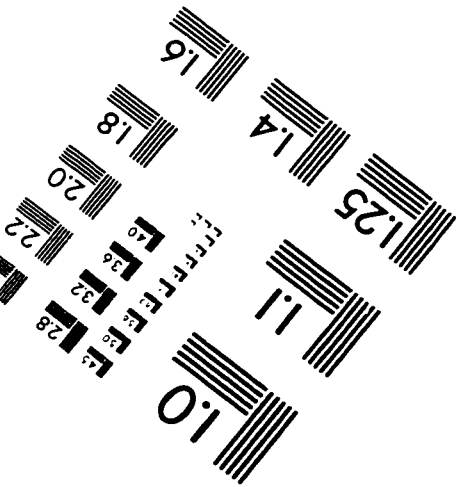
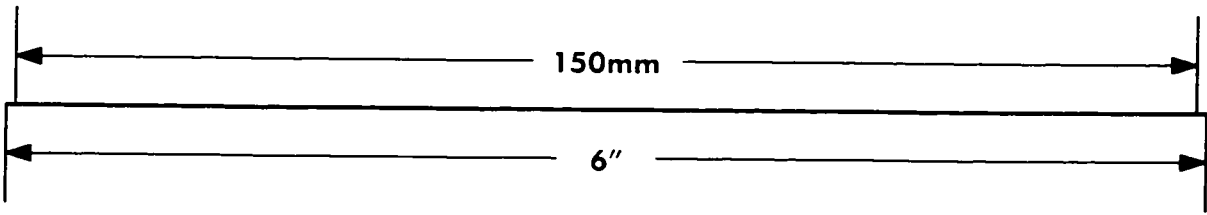
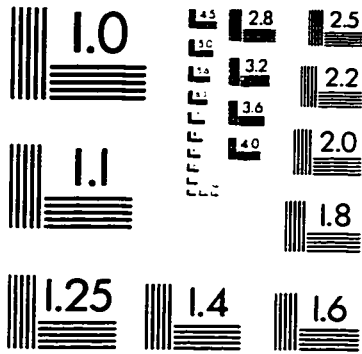
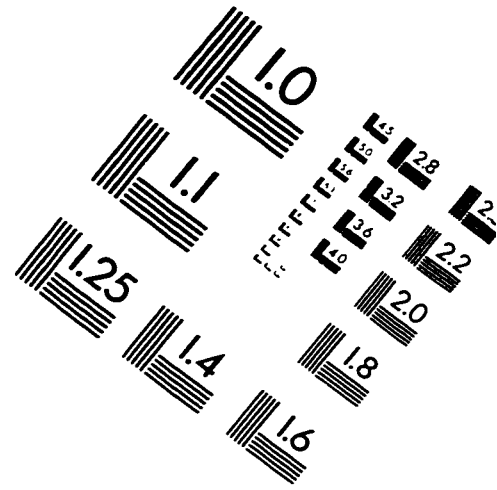
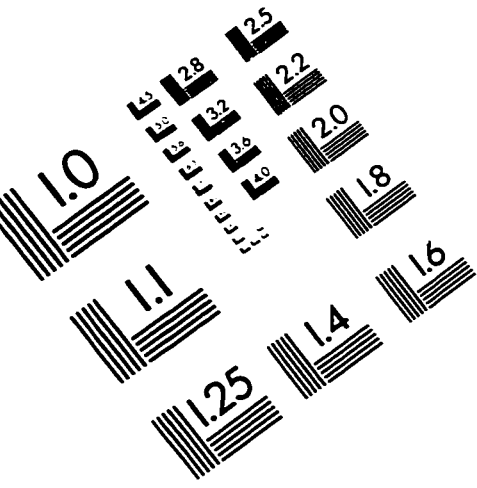
partic- ipant	extra raw (T)	cons raw (T)	ach raw (T)	living	rank	edu	bhs	current ideation	hx ideation	hx attempt	interview
04	29 (53)	42 (63)	24 (61)	2	5	12	1	no	yes	no	5
10	31 (56)	35 (52)	20 (52)	2	5	13	2	no	yes	no	5
08	30 (55)	22 (30)	16 (42)	4	6	13	6	yes	yes	no	3
05	22 (41)	25 (35)	17 (44)	2	5	16	6	no	yes	no	4
12	34 (62)	40 (60)	21 (54)	1	2	14	6	no	yes	yes	4
03	29 (53)	23 (31)	16 (49)	2	3	13	11	no	no	no	4
01	32 (58)	33 (48)	19 (49)	1	3	12	11	no	yes	yes	5
09	17 (33)	31 (45)	16 (42)	alone	5	13	15	no	yes	yes	3
07	12 (27)	18 (26)	10 (27)	alone	3	13	18	yes	yes	no	3
02	20 (38)	26 (36)	14 (37)	alone	4	12	n/a*	no	yes	yes	5

*02 did not answer all the bhs items His possible range of total scores is 2-10

VITA AUCTORIS

Brenda J. Davie was born in Surrey, B.C. in July 1971. She completed high school at Earl Marriott Secondary, B.C., in 1989. In 1994 she completed her B.A. in Psychology at the University of Victoria in B.C. She is currently pursuing her Ph.D. in Adult Clinical Psychology at the University of Windsor.

IMAGE EVALUATION TEST TARGET (QA-3)



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