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A comparison of elevation and differentiation of SCL-90R item scores and scale scores between a distressed university outpatient population and a non-distressed control group.

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NOTICE

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A Comparison of Elevation and Differentiation of SCL-90R

Item Scores and Scale Scores Between a

Distressed University Outpatient Population and

a   Non-Distressed Control Group

by

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Abstract

The SCL-90R symptom ratings and the dimensional scale scores of 175 outpatients seeking psychological assistance at a University Psychological Services Centre were compared to those of 126 University students, not participating in psychological treatment. The clinical group reported more symptoms and rated symptoms as more severe than the control group. Symptom ratings were found to be more variable for the clinical group. The SCL-90R dimensional scale scores were more elevated and less variable for the clinical group. Gender-related differences in profile configurations and scale score variability were found in the clinical group. Males and females in the clinical group differed on the elevation of the Obsessive-Compulsive, Depression, Anxiety and Phobic Anxiety scales. Compared to females in the clinical group, males demonstrated less scale score variability. Interpretation of this result led to the suggestion that under acute psychological distress males may respond to SCL-90R items according to a different style than females. It is suggested that males may experience their symptomatology as less differentiated when under acute distress than females. It is also discussed that differences in SCL-90R profile configurations should be more closely examined in the context of strictly defined clinical groups.

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CHAPTER I

INTRODUCTION

Self-report symptom checklists have become an economical and efficient method of gathering psychological information about an individual. This information may be consulted to assist in diagnostic and screening decisions. However, researchers have found that symptom reporting is influenced by various response sets that are either related to personality or psychopathology (Sheffield and Kellner, 1970; Paykel, Prusoff, Klerman and Dimacio, 1973; Linden, Paulhus and Dobson, 1986; Mazmanian, Mendonca, Holden and Dufton, 1987). Paykel, Prusoff, Klerman and Dimacio (1973) and Mazmanian, Mendonca, Holden and Dufton (1987) have proposed that acute psychological distress influences symptom reporting. Paykel et al. suggested that distressed neurotic depressives tend to exaggerate their symptomatology. Mazmanian et al. hypothesized that the symptom reporting of distressed inpatients is influenced by a negative social desirability response set, a tendency to over-report symptom severity, and an impaired ability to differentiate the severity of their symptoms.

The present study examined the hypothesis that a distressed university outpatient population would demonstrate higher Symptom Checklist-90R symptom severity ratings and less differentiated symptom severity than a non-distressed University control group.

The introductory chapter will provide a rationale for the direction of this study by first presenting a discussion on the Symptom Checklist-90R test design. This will be followed by an exploration of response sets and their relationship to personality and psychopathology. This will lead to a review of the research that has examined the symptom reporting of distressed populations. Finally, the hypothesized effects of distress on SCL-90R symptom reporting will be discussed in the light of past research and cognitive elements associated with depression.

The Symptom Checklist-90R

The SCL-90R belongs to the family of self-report tests that invite the individual to report personal information from his or her perspective. Self-report test development is, in part, motivated by the need for efficient methods of screening and categorizing individuals, minimizing the effort put forth by professionals. Test creators strive toward objective scoring and interpretation (Anastasi, 1988). Self-report tests are commonly used in the context of a test battery for the assessment of personality. Some tests, like the MMPI, have proven to be highly informative when used in combination with other psychometric devices and the clinician's subjective impressions.

The roots of the SCL-90R are embedded in Woodworth's Personal Data Sheet (Woodworth, 1918), the first self-report inventory primarily concerned with the individual. At the

commencement of World War I, General John J. Pershing

requested the usage of screening methods to eliminate unfit

draftees. Individual psychiatric interviews for thousands of

recruits was impractical, so Woodsworth constructed a self-

report inventory consisting of 116 items, requiring yes or

no answers, based on the psychiatric literature of that

period. The Personal Data Sheet was considered successful

in distinguishing between mentally fit and unfit individuals

and served as a model for constructing later self-report

inventories (Cronbach, 1970; Kleinmuntz, 1982).

Another forerunner of the SCL-90R was the Cornell

Medical Index developed by Wilder (1948). This symptom

checklist instructs the person to provide yes-no responses

to 195 questions, 57 of which are devoted to mood, feelings

and habits and the remainder of the items refer to medical

complaints (Levitt, 1972).

The SCL-90R (Derogatis, 1977) is the revised form of

the SCL-90 prototype (Derogatis, Lipman and Covi, 1973).

The SCL-90 prototype suffered very minor changes, two items

were replaced and seven items were slightly altered. The

SCL-90R is a self-report instrument that instructs the

individual to respond to 90 items (see Appendix A). Each

item is descriptive of a particular physical or

psychological symptom. Each symptom is rated on a scale of

0 to 4 from "not at all" to "extremely". According to the

test creators, eighty-three of the ninety items can be

segregated into nine groups representing nine psychologically relevant symptom dimensions: Somatization (SOM), Obsessive-Compulsive (O-C), Interpersonal Sensitivity (INT), Depression (DEP), Anxiety (ANX), Hostility (HOS), Phobic Anxiety (PHOB), Paranoid Ideation (PAR) and Psychoticism (PSY). The description of each dimension is presented in Table 1 and Appendix B provides a list of items associated with each of the nine constructs. The first five of these constructs were adopted from the Hopkin's Symptom Checklist (Derogatis, Lipman, Rickels, Ulenhuth and Covi, 1974) which was used primarily in research applications, rather than individual clinical assessment. The remaining four dimensions were developed by "clinical/rational" methods and were designed to measure additional significant areas of symptomatology (Derogatis, 1977, p. 6). Three overall distress measures are also provided: the Global Severity Index, the Positive Symptom Distress Index, and the Positive Symptom Total.

Derogatis and Cleary (1977) factor analyzed the SCL-90R responses of a heterogenous population of psychiatric outpatients from four psychiatric facilities to empirically validate their nine theoretical constructs. A principal components analysis, combined with a varimax rotation identified nine factors, which accounted for 53% of the total variance. The PSY factor did not emerge as predicted and only four of the ten items loaded

significantly (criterion level ≥.30) on this factor.
Despite the poor loadings of six of the ten items, the
authors decided to retain the ten items comprising the PSY
dimension. This decision appears unwarranted considering
both the low criterion level and the lack of statistical
support for the PSY dimension. Perhaps these authors
modified the empirical methods in order to more
substantially support their rationally derived SCL-90R
dimensions.

Derogatis (1977) described the SCL-90R as an instrument
that reflects current psychopathology in terms of
symptomatic patterns. He refused to identify the SCL-90R as
a personality measure, but seemingly contradicted himself by
insisting that particular personality types demonstrate
characteristic profiles on the symptom dimensions. Payne
(1985) suggested that SCL-90R test designers intended it to
be used:" (1) to detect symptomatology in apparently normal
people (i.e., to serve as a psychiatric screening
device)...(2) to evaluate changes in symptomatology both
specific and general...(3) to form the basis of clinical
predictions; and (4) to allow the clinician to assign a
DSM III psychiatric diagnosis by the appropriate evaluation
of the patient's factor profile" (p. 1082).

The item ratings of the SCL-90R are mathematically
manipulated to yield measures for nine symptom dimensions

Table 1.

Descriptions of the SCL-90R Dimensional Scales (Derogatis, 1977, pp.6-10).

Somatization:

    The somatization dimension reflects distress arising from perceptions of bodily dysfunction. Complaints focused on cardiovascular, gastrointestinal, respiratory and other systems with strong autonomic mediation are included. Headaches, pain and discomfort of the gross musculature and additional somatic equivalents of anxiety are components of the definition. These symptoms and signs have all been demonstrated to have high prevalence in disorders demonstrated to have a functional etiology, although all may be reflections of true physical disease.

Obsessive - Compulsive:

    The Obsessive-Compulsive dimension reflects symptoms that are highly identified with the standard clinical syndrome of the same name. This measure focuses on thoughts, impulses, and actions that are experienced as unremitting and irresistible by the individual but are of an ego-alien or unwanted nature. Behaviors and experiences of a more general cognitive performance attenuation are also included in this measure.

Interpersonal Sensitivity:

    The Interpersonal Sensitivity dimension focuses on feelings of personal inadequacy and inferiority, particularly in comparisons with others. Self-deprecation, feelings of uneasiness, and marked discomfort during interpersonal interactions are characteristic manifestations of this syndrome. In addition, individuals with high score on INT report acute self-consciousness and negative expectancies concerning the communications and interpersonal behaviors with others.

Depression:

    The symptoms of the Depression dimension reflect a broad range of the manifestations of clinical depression. Symptoms of dysphoric mood and affect are represented as are signs of withdrawal of life interest, lack of motivation, and loss of vital energy. In addition, feelings of hopelessness, thoughts of suicide, and other cognitive and somatic correlates of depression are included.

Anxiety:
The **Anxiety** dimension is composed of a set of symptoms and signs that are associated clinically with high levels of manifest anxiety. General signs such as nervousness, tension and trembling are included in the definition, as are panic attacks and feelings of terror. Cognitive components involving feelings of apprehension and dread, and some of the somatic correlates of anxiety are also included as dimensional components.

Hostility:
The **Hostility** dimension reflects thoughts, feelings or actions that are characteristics of the negative affect state of anger. The selection of items includes all three modes of manifestation and reflects qualities such as aggression, irritability, rage and resentment.

Phobic Anxiety:
Phobic Anxiety is defined as a persistent fear response to a specific person, place, object or situation which is characterized as being irrational and disproportionate to the stimulus, and which leads to avoidance or escape behavior. The items of the present dimension focus on the more pathognomic and disruptive manifestations of phobic behavior. The actual structure of the dimension is in close agreement with the definition of "agoraphobia" (Marks, 1969), also termed "phobic anxiety depersonalization syndrome" by Roth (1959).

Paranoid Ideation:
The present dimension represents paranoid behavior fundamentally as a disordered mode of thinking. The cardinal characteristics of projective thought, hostility, suspiciousness, grandiosity, centrality, fear of loss of autonomy, and delusions are viewed as primary reflections of this disorder, and item selection was oriented toward representing this conceptualization.

Psychoticism:
The psychoticism scale was developed in a fashion to represent the construct as a continuous dimension of human experience. Items indicative of a withdrawn, isolated, schizoid life style were included, as were first-rank symptoms of schizophrenia, such as hallucinations and thought-broadcasting. The psychoticism scale provides a graduated continuum from mild interpersonal alienation to dramatic evidence of psychosis. In this respect the present definition owes much to the work of Eysenck (1968).

and three indices of distress. The score for each dimension is the average rating given to the items comprising the construct. The test authors failed to offer comprehensive conceptualizations of their three distress measures (Derogatis, Yeuzeroff and Wittelsberger, 1975). However, they operated on the assumption that high ratings on the intensity scales and/or a large number of reported symptoms are indicative of distress. The authors avoided addressing the issue of whether individuals demonstrating similar distress indices suffered from similar experiences of distress.

The Global Severity Index (GSI) is the average rating given to all 90 items. Without providing sufficient rational, Derogatis (1977 p. 11) claimed that this score represents "the best single indicator of the current level or depth of the disorder, and should be utilized in most instances where a single summary measure is required". Equivalent scores may be obtained by individuals who score high on few positive symptoms and those who score lower on a greater number of positive symptoms.

The Positive Symptom Distress Index (PSDI) is the mean rating of those symptoms that the respondent reports suffering to any degree. Derogatis (1977) viewed the PSDI as not only a measure of symptom intensity but as an indicator of response style, "communicating whether the patient is augmenting or attenuating symptomatic distress"

(p. 11). The PSDI indicates whether the respondent provides
extreme scores for symptom complaints or lower ones along
the intensity scale. The Positive Symptom Total (PST)
refers to the number of symptom complaints reported by the
individual.

In previous studies, the SCL-90R has demonstrated
strong reliability. Derogatis (1977) reported that SCL-90R
items were internally consistent, with alpha coefficients
ranging from .77 for the Psychoticism subscale to .90 for
the Depression subscale. Another study found that the SCL-
90R responses of a University outpatient population
demonstrated alpha coefficients that ranged from .74
(Psychoticism) to .86 (Anxiety and Hostility) (Wilson,
unpublished). In the same study, a control group provided
alpha coefficients ranging from .67 (Phobic Anxiety) to .89
(Depression). The above findings are summarized in Table 2.

Utilizing test-retest procedures (1-week apart),
Derogatis (1977) found that reliabilities for the subscales
ranged from .78 (Hostility) to .90 (Phobic Anxiety).

Studies examining the validity of the SCL-90R have
consistently found that this test demonstrates good
convergent validity (Derogatis, Rickels and Rock, 1976;
Dinning and Evans, 1977; Brophy, Norvell and Kiluk, 1988).
Derogatis, Rickels and Rock (1976) found that each SCL-90R
scale correlated most highly with the most comparable MMPI

Table 2.

Reliabilities for the SCL-90R Scales

Scale	No. of Items	Derogatis (1977)	Wilson (unpub.)	
			Clinical	Control
SOM	12	.86	.83	.82
O-C	10	.86	.81	.83
INT	9	.86	.82	.86
DEP	13	.90	.84	.89
ANX	10	.85	.86	.85
HOS	6	.84	.86	.79
PHO	7	.82	.78	.67
PAR	6	.80	.75	.79
PSY	10	.77	.74	.80

Note: These reliability coefficients were derived using the Chronbach's Alpha model.

scale. These findings were confirmed by the work of Dinning and Evans (1977).

Although the SCL-90R subscales have been shown to correlate most highly with scales that supposedly measure like constructs, these subscales have failed to demonstrate discriminant validity. Dinning and Evans (1977) found that each subscale had moderate and significant correlations with all but two of the MMPI scales. The authors also reported that every dimensional scale correlated highly with the Beck Depression Inventory scores and the Trait Anxiety scores and that the SCL-90R subscale scores were highly intercorrelated. Derogatis (1977) failed to address the discriminant validity of the SCL-90R, but other studies have found results that support the inability of the SCL-90R to discriminate between different constructs (Clark and Friedman, 1983; Brophy, Nowell and Kilak, 1988).

<u>Response Sets</u>

Researchers have debated whether response sets significantly influence the results of self-report tests. Some exponents of response sets have claimed that the MMPI scales can be reduced to two major factors that account for nearly all the common variance among the scales. These two factors have been interpreted as two types of response sets, acquiescence and social desirability (Anastasi, 1988). In contrast, Block (1965) contributed evidence supporting a content oriented interpretation of these two factors,

indicating that the contribution of response styles to the variance of the MMPI scores is negligible. Derogatis (1977), in defense of the SCL-90R, claimed that "response sets do not appear in actuality to be a major source of measurement error they were once heralded to be. Subsequent evaluations have not sustained the contentions that response sets have any substantially systematic effects on clinical self-report inventories"(p. 35). Derogatis appears to contradict himself when he describes the PSDI as an indicator of response style. Why would the author identify a phenomenon which apparently renders little significance?

Upon encountering a SCL-90R test item, the respondent reads the description of the symptom, self reflects and categorizes from 0-4 his self-perception of the symptom severity. It would be psychometrically convenient if each respondent extracted equivalent meaning from each symptom description and were able to assign identical quantifiable amounts of symptom severity to each point on the severity scale. However, exponents of response sets advocate that test-takers respond not only to a content dimension, but to other dimensions linked to a test item. Hui and Trandis (1985) defined response set as the tendency to respond in a manner that is unrelated to the content of the instrument.

Anastasi (1988) outlined three types of response sets: acquiesence, social desirability and deviation. The acquiescent individual is not only responding to the item

content but also to his or her tendency to answer true or yes to a test item. Acquiesence might be identified in those individuals who report numerous positive SCL-90R symptoms. A high PST may reflect an acquiesence response set. Couch and Keniston (1960) conceptualized acquiescence as a continuous variable; at one pole are the consistent yea sayers and at the other end of the scale are the nay sayers.

An individual exhibiting a social desirability set assigns item content along a social desirability dimension. These individuals tend to respond to item contents in a self-perceived socially desirable manner. This tendency to appear favourable may lead to responses on the SCL-90R that avoid reporting symptoms and/or to low symptom ratings. Edwards (1957) conceptualized the social desirability set primarily as a tendency to put up a good front of which the respondent is in the most part unaware. A negative social desirability response set has been described by Mazmanian, Mendonca, Holden and Dufton (1987) in which persons provide responses opposite to ones that are socially desirable. This response set may be identified through SCL-90R response that reflect high ratings and/or numerous symptoms.

The deviation set was formulated by Berg (1967). This response set is exhibited by the tendency to give unusual or uncommon responses. He showed that this set leads individuals to not only provide deviant responses to

personality test items, but to the selection of geometric figures that are irregular or unusual.

Hamilton (1968) described another manner of stimuli response, the extreme response style (ERS). This is the tendency to use the extreme alternatives in response to test items. He claimed that ERS is commonly identified in tests which utilize items requiring the subject to respond along an intensity dimension. SCL-90R symptom ratings, according to an ERS, would yield high positive symptom scores, which would be indicated by a high PSDI score.

The literature on response sets have progressed through two stages according to Anastasi (1938). First, response sets were perceived as a source of error variance to be eliminated from test results through "the reformulation of items, the development of special keys, or the application of correction terms" (p. 554). Secondly, response sets were identified as response styles that indicated enduring personality characteristics worthy of measurement in their own right.

Shapiro (1965) proposed that various neurotic personality styles are associated with differences in processing the Rorshach images to construct responses. Crowne and Marlow (1964) presented evidence to suggest that the intensity of the social desirability response set is related to the individual's need for self-protection, avoidance of criticism, social conformity, and social

approval. However, the individual who responds to unfavourable self-descriptive items may be motivated by a need for attention, sympathy or psychological assistance. Brim and Hoff (1957) suggested that ERS is due to rigidity or intolerance of ambiguity. The respondent can avoid ambiguity associated with values in the range of a scale by demonstrating extreme scores. Zuckerman, Oppenheimer and Gershowitz (1965) proposed that the ERS may be indicative of heightened emotionality or drive.

O'Donovan (1965) proposed that ERS is related to the interaction of personality characteristics and the meaningfulness of the stimulus material. Meaningful stimuli will tend to elicit more extreme responses than non-meaningful. The less disturbed the individual, the greater the predictive power of this meaning proposition. For example, neurotics polarize their responses to meaningful stimuli, whereas schizophrenics provide relatively less polarized responses.

Researchers have identified response sets that influence symptom reporting among different pathological populations. Sheffield and Kellner (1970) found that neurotic patients rated their symptoms as more severe and more frequent than normals. Linden, Paulhus and Dobson (1986) found that self-deceivers and repressors, as determined by the Self-Deception Questionnaire and the

Repression-Sensitization Scale, reported significantly fewer psychological and physical symptoms.

Distress and Self-Reporting

Investigators have suggested that responses to self-report tests are influenced by states of heightened emotionality or psychological distress. Zuckerman, Oppenheimer, and Gershowitz (1965) administered Berg's Perceptual Reaction Test to groups of male and female teachers, actors and actresses. The authors found that actors and actresses gave significantly more extreme scores than teachers. By attributing heightened emotionality or drive to actors and actresses, these researchers hypothesized that extreme responding may be symptomatic of increased emotionality or drive. They stated that "it would be interesting to see whether stress would increase responses on a non-stress relevant test" (p. 169).

Paykel, Prusoff, Klerman and Dimascio (1973) compared the self-reported symptom ratings of 190 female depressed patients to the ratings given by their psychiatrists. Comparisons were made based on symptom ratings at the time of admission and 4-6 weeks later, following amitryptaline treatment. The authors reported a low correlation between the patients' and the psychiatrists' initial evaluation of symptomatology. They suggested that the patient and the psychiatrist utilize different frames of reference in order make their evaluations. The patient relies on his or her

inner experience, whereas the psychiatrist interprets external behavior and personal experience with depressed individuals to arrive at symptom ratings. Following 4-6 weeks of amitryptaline treatment, the concordance between the patients' and the psychiatrists' ratings increased, but still remained relatively low. In response to the change in the correspondance between the patients' and psychiatrists' ratings, the authors suggested that, upon initial testing, the patients may have responded according to a response set related to distress, in which neurotic depressives over-rated their symptoms. After several weeks of treatment, this response set became less present. However, the authors did not rule out that the psychiatrists' ratings might be influenced by a rater set, in part influenced by the increased contact between the patient and psychiatrist.

Mazmanian, Mendonca, Holden and Dufton (1987) attempted to discover whether various response styles (including social desirability, infrequency and acquiesence) influence the SCL-90R responses of acutely distressed persons. The authors found that the SCL-90R scales were highly intercorrelated and negatively correlated with a social desirability measure. They concluded that a negative social desirability response set influenced the SCL-90R symptom ratings of acutely distressed inpatients. However, they also found that the intercorrelations of SCL-90R subscales were not significantly altered upon the removal of the

effect of this set. Consequently, the authors commented that a negative social desirability response set is not the only phenomenon operating to contribute to high subscale intercorrelations. They suggested that "patients in an acute state are prone to overreport the stress severity of symptoms as well as not to differentiate between different aspects of distress" (p. 146).

The Present Study

The primary focus of this study is to determine whether SCL-90R symptom ratings and dimensional scales are higher and less differentiated for a distressed outpatient population when compared to a non-distressed control group.

In a study conducted by Leff (1978), two groups rated 22 symptoms under three different categories: 1. when I am depressed, 2. when I am anxious and 3. when I am irritable. One group consisted of 20 new psychiatric outpatients and inpatients and the other group was comprised of 10 psychiatrists who were instructed to respond to the instrument as if they were being assessed as a neurotic patient. The correlations of the three sets of ratings for the patients ranged from 0.49 to 0.62, whereas those from psychiatrists ranged from 0.0 to 0.28. Leff suggested that patients conceive the different categories as overlapping.

Beck, Rush, Shaw and Emery (1979) proposed that depressed individuals process external stimuli according to absolutistic dichotomous thinking. They claimed that

depressives tend to place all experiences into one or two opposite categories or dimensions. They suggested that depressives reduce the "complexity, variability, and diversity of human experience into a few crude categories" (p.152).

According to Beck et al., depressives also tend to overgeneralize their negative experience onto other events or stimuli. The external world as well as internal processes are perceived and interpreted through the powerful experience of depression. Negative events are exaggerated or magnified, whereas positive events are minimized.

It is suspected that an acutely distressed population will similarly overgeneralize their distress by projecting this powerful experience onto the severity of their symptomatology. Consequently, this group will demonstrate a relatively extreme response style and the lower differentiation of SCL-90R scales. This suggestion would fit the notion that distressed pathological populations exaggerate the severity of their symptomatology. Lower SCL-90R scale differentiation may also stem from high symptom ratings motivated by the individual's desperate cry for help.

Distressed individuals may also tend to avoid the ambiguity of the SCL-90R middle ratings of the 5-point scale and provide extreme scores. This idea was extracted from

the proposal of Brim and Hoff (1957), which would also contribute to lower SCL-90R scale differentiation.

This study will not examine whether or not distressed outpatients over-report their symptomatology. However, this study proposes that the distressed group will report their symptoms as more numerous and more severe than the non-distressed group. This study also proposes that the distressed group will demonstrate an impaired ability to differentiate their symptomatology. The distressed group may respond to SCL-90R item content in the context of an overgeneralization of acute distress. Extreme scores and subsequently lower scale differentiation may also result from intolerance of ambiguity and the usage of the SCL-90R test items as a cry for help. These propositions lead to the following hypotheses:

Hypothesis 1. Subjects of the clinical group will report more symptoms than the control group.

Hypothesis 2. The mean rating on all 90 items for each subject will be greater for the clinical group than the normative group.

Hypothesis 3. The mean rating on only the positive symptoms for each subject will be greater for the clinical group than the normative group.

Hypothesis 4.   The mean of the dimensional scale scores for
                each subject will be greater for the
                clinical group than the control group.

Hypothesis 5.   Variability on only the positive symptoms
                will be reduced for the clinical group
                compared to the normative group.

Hypothesis 6.   Variability on the dimensional scale scores
                will be reduced for the clinical group
                compared to the normative group.

CHAPTER II

METHOD

Subjects

As part of the initial assessment procedure, the SCL-
90R is administered to individuals upon initial contact with
the University of Windsor's Psychological Services Centre.
The responses of 175 individuals were selected, using the
intake therapists' evaluation of psychotherapy suitability
as the subject selection criterion (73 males, 102 females;
mean age=25.66 years, range=18 to 59). The control group
was comprised of 126 University of Windsor students,
attending summer session, who were not participating in
psychological treatment at the time of SCL-90R
administration (60 males, 66 females; mean age= 24.92 years,
range 18 to 51). There was no significant difference in age
or sex proportionality between the two groups.

Procedure

The SCL-90R was administered to the outpatient
subjects, individually at the Psychological Services Centre.
The control subjects completed the checklist in small groups
in the Psychology Department's Microcomputer Laboratory
without partitions between respondents. For both groups,
the test items were communicated by microcomputer.
Responses to each item were made at a computer keyboard.
Dimensional scale scores and distress indices were
calculated by a computer program.

Data Analysis

A MANOVA procedure was conducted in order to determine group differences in respect to number of reported symptoms (raw PST), severity of reported symptoms (raw PSDI), mean item rating (raw GSI) and subjects' mean score on the 9 SCL-90R scales. A Multivariate F-test was utilized to determine if there was a significant overall group effect associated with the above dependent variables. A MANOVA was also employed to assess gender differences on the above elevation variables, except the mean score on the scales was omitted as these standardized scores account for gender differences. The existence of an overall gender effect was assessed by a Multivariate F-test.

Group and gender differences in respect to the variability of positive symptom ratings and scale scores were examined by an ANOVA procedure. In order to further assess group and gender interaction effects in respect to the variability of SCL-90R scale scores, ANOVA procedures were also utilized.

To assess group and gender effects in relation to the 9 SCL-90R scale scores a MANOVA was conducted. The MANOVA procedure assessed individual source effects and interaction effects. The overall effects were further analyzed by conducting a REPEATED MEASURES analysis which provided assessment of between subject effects and within subject effects. ANOVAs were employed to determine group and gender

differences on each of the SCL-90R scales. SCL-90R scale
profile configurations for the clinical and control groups
were presented in graph form. The profile patterns of males
and females, pooled from the two groups, were displayed on a
separate graph. Gender differences in respect to SCL-90R
scale score elevation in each group were also examined by
utilizing an ANOVA. Subsequently these results were also
presented in graph form.

CHAPTER III

RESULTS

Between-Group Elevation Differences

To assess the elevation differences in SCL-90R symptom reporting between the clinical (Cl) and control (Co) groups, a MANOVA was conducted (see Table 4). An overall significant elevation difference was found between the clinical and control groups ($F(4, 296)=38.03$; $p<.0001$). Compared to the control group, the clinical group had significantly higher raw Positive Symptom Total scores, indicating some degree of distress on more of the 90 SCL-90R items ($M(Cl)=57.73$; $M(Co)= 41.35$; $F(1, 299)=74.79$; $p<.0001$); significantly higher raw Global Severity Index scores, indicating greater distress overall ($M(Cl)=1.52$; $M(Co)= 0.83$; $F(1, 299)=106.94$; $p<.0001$); and significantly higher raw Positive Symptom Distress Index scores, indicating that their symptoms were more severe ($M(Cl)=2.31$; $M(Co)= 1.65$; $F(1, 299)=137.13$; $p<.0001$). The clinical group had significantly higher mean scores across the nine SCL-90R scales ($M(Cl)=68.28$; $M(Co)= 60.03$; $F(1, 299)=100.79$; $p<.0001$).

Gender Related Elevation Differences

The effects of subject gender on the amount and severity of symptomatology reported was assessed by a MANOVA in which the clinical and control groups were pooled (see Table 5). Gender was found to be a predictor overall ($F(3,297)=3.75$;

Table 3

Mean Scores Indicating Elevation and Variability of SCL-90R Responses of Different Groups

Group	Elevation Measures				SCL-90R Dimensional Scales									Variability	
	PST	GSI	PSDI	MSC	SOM	O-C	INT	DEP	ANX	HOS	PHOB	PAR	PSY	SDPO	SDSC
Clinical (n=175)	57.73	1.52	2.31	68.28	62.59	70.75	71.41	73.33	71.95	65.28	62.09	66.05	71.06	0.99	5.39
Control (n=126)	41.35	0.83	1.65	60.03	55.25	63.14	63.85	62.70	59.52	59.46	53.56	61.20	61.56	0.75	6.30
Male (n=133)	47.90	1.09	1.94	65.44	58.86	68.88	69.12	70.60	67.78	62.39	60.35	63.78	67.29	0.85	5.85
Female (n=168)	53.23	1.36	2.12	64.34	60.04	66.53	67.35	67.52	66.02	63.20	57.07	64.21	66.92	0.93	5.85
Clinical Male (n=73)	55.27	1.40	2.23	62.15	69.32	73.07	72.58	76.48	73.65	64.53	64.86	64.67	71.92	0.97	4.87
Clinical Female (n=102)	59.49	1.60	2.37	67.53	62.91	69.10	70.57	71.08	70.74	65.81	60.11	67.03	70.45	1.01	5.77
Control Male (n=60)	38.93	0.72	1.58	60.71	54.85	63.78	64.92	63.45	60.40	59.78	54.85	62.68	61.67	0.70	6.66
Control Female (n=66)	43.55	0.93	1.73	59.41	55.61	62.56	62.88	62.02	58.73	59.17	52.38	59.85	61.47	0.80	5.96

MSC=Mean scores across the nine SCL-90R scales

SDPO=Standard deviation of responses to items on which at least some distress was indicated

SDSC=Standard deviation of nine SCL-90R scales

Table 4

<u>Summary of Multivariate Analysis of Variance of SCL-90R</u>

<u>Elevation Variables as a Function of Group (Clinical,</u>

<u>Control)</u>

	F	p
Pillai's Trace	F (4, 296) = 38.03	p < .0001

<u>Summary of Significant Univariate Tests</u>

Dependent Variable: Number of Reported Positive Symptoms

Source of Variation	SS	df	MS	F
Group	19660.19	1	19660.19	74.79****
Error	78599.01	299	262.87	

**** p < .0001

Dependent Variable: Mean Rating Across 90 SCL-90R Items

Source of Variation	SS	df	MS	F
Group	34.39	1	34.39	106.94****
Error	96.16	299	0.32	

**** p < .0001

Dependent Variable: Mean Rating on Reported Positive Items

Source of Variation	SS	df	MS	F
Group	31.91	1	31.91	137.13****
Error	69.58	299	0.23	

**** p < .0001

Dependent Variable: Mean Score Across Nine SCL-90R Scales

Source of Variation	SS	df	MS	F
Group	4990.26	1	4990.26	100.79****
Error	14804.01	299	49.51	

**** p < .0001

Table 5

Summary of Multivariate Analysis of Variance of SCL-90R
Elevation Variables as a Function of Gender in Clinical and
Control Groups (Pooled)

	F	p
Pillai's Trace	F (3, 297) = 3.75	p < .05

Summary of Significant Univariate Tests

Dependent Variable: Number of Reported Positive Symptoms

Source of Variation	SS	df	MS	F
Gender	2104.07	1	2104.07	6.54*
Error	96155.13	299	321.59	

* p < .05

Dependent Variable: Mean Rating Across 90 SCL-90R Items

Source of Variation	SS	df	MS	F
Gender	4.38	1	4.38	10.37**
Error	126.18	299	0.42	

** p < .01

Dependent Variable: Mean Rating on Reported Positive Items

Source of Variation	SS	df	MS	F
Gender	2.50	1	2.50	7.56**
Error	98.98	299	0.33	

** p < .01

$p<.05$). Females had significantly higher raw PST scores ($\underline{M}$(M)=47.90; $\underline{M}$(F)=53.23; $\underline{F}$(1, 299)=6.54; $p<.01$), raw GSI scores ($\underline{M}$ (M)=1.09; $\underline{M}$(F)=1.36; $\underline{F}$(1, 299)=10.37; $p<.01$) and raw PSDI scores ($\underline{M}$(M)=1.94; $\underline{M}$(F)= 2.12; $\underline{F}$(1, 299)=7.56; $p<.01$). A MANOVA analysis failed to find significant age effects ($\underline{M}$(M)=65.44; $\underline{M}$(F)= 64.34; $\underline{F}$(3, 297)=1.36; $p>.05$).

Between-Group and Gender Variability Differences

To assess the variability difference in ratings of responses to items on which at least some distress was reported as a function of group and gender, an ANOVA was conducted (see Table 6). A significant difference between the clinical and control groups was found ($\underline{M}$(Cl)=0.99; $\underline{M}$(Co)= 0.75; $\underline{F}$(1, 297)=87.60; $p<.0001$). Males and Females significantly differed in the variability of the items that they reported as causing them some distress ($\underline{M}$(M)=0.85; $\underline{M}$(F)= 0.93; $\underline{F}$(1, 297)=8.67; $p<.01$). No significant group X gender interaction was found ($\underline{F}$(1, 297)=0.00; $p>.05$).

An ANOVA was also employed to assess differences in variability across the 9 SCL-90R scales as a function of group and gender (see Table 7). Compared to the control group, the clinical group demonstrated significantly lower standard deviations on the 9 SCL-90R scales ($\underline{M}$ (Cl)=5.39; $\underline{M}$(Co)= 6.30; $\underline{F}$(1, 297)=9.33; $p<.01$). No gender difference

Table 6

Summary of Analysis of Variance of Standard Deviation on

Positive SCL-90R Items as a Function of Group (Clinical,

Control) and Gender

Source of Variation	SS	df	MS	$\underline{F}$
Model	4.67	3	1.56	31.48****
Group	4.33	1		87.60****
Gender	0.43	1		8.67**
Group*Gender	0.00	1		0.00
Error	14.68	297	0.05	

** p < .01; **** p < .0001

Table 7

Summary of Analysis of Variance of Standard Deviation Across

Nine SCL-90R Scales as a Function of Group (Clinical and

Control) and Gender

Source of Variation	SS	df	MS	$\underline{F}$
Model	108.57	3	36.19	5.69***
Group	59.38	1		9.33**
Gender	2.06	1		0.32
Group*Gender	47.12	1		7.40**
Error	14.68	297	0.05	

** $\underline{p}$ < .01; *** $\underline{p}$ < .001

was found in the variability of each subject's scale scores
($\underline{M}(M)$=5.68; $\underline{M}(F)$= 5.85; $\underline{F}(1, 297)$=0.32; $\underline{p}$>.05). However,
the analysis revealed a group X gender interaction effect
($\underline{F}(1, 297)$=7.40; $\underline{p}$<.01).

An ANOVA was utilized to assess gender differences
within the clinical group regarding the variability of each
subject's scale score (see Table 8). Compared to females in
the clinical group, males demonstrated significantly less
variable scale scores ($\underline{M}(M)$=4.87; $\underline{M}(F)$= 5.77; $\underline{F}(1,173)$=4.66;
$\underline{p}$<.05). Gender differences regarding the variability of
scale scores were also compared within the control group
employing an ANOVA (see Table 9). The analysis found no
significant gender difference within the control group
($\underline{M}(M)$=6.66; $\underline{M}(F)$= 5.96; $\underline{F}(1, 124)$=3.00; $\underline{p}$>.05).

The scale score variability was compared between
females in the clinical and control groups by conducting an
ANOVA (see Table 10). The results indicate that the scale
score variability is not different among females in the two
groups ($\underline{M}(FCl)$=5.77; $\underline{M}(FCo)$= 5.96; $\underline{F}(1, 166)$=0.28; $\underline{p}$>.05).
Differences in scale score variability was also assessed
among males in the clinical and control groups by employing
an ANOVA (see Table 11). Males in the clinical groups
demonstrated significantly less variable scale scores than
the males in the control group ($\underline{M}(MCl)$=4.87; $\underline{M}(MCo)$= 6.66;
$\underline{F}(1, 131)$=14.33; $\underline{p}$<.001).

Table 8

Summary of Analysis of Variance of Standard Deviation Across

Nine SCL-90R Scales as a Function of Gender in the Clinical

Group

Source of Variation	SS	df	MS	$\underline{F}$
Gender	34.07	1	34.07	4.66*
Error	1264.61	173	7.31	

* $\underline{p}$ < .05

Table 9

Summary of Analysis of Variance of Standard Deviation Across
Nine SCL-90R Scales as a Function of Gender in the Control
Group

Source of Variation	SS	df	MS	$\underline{F}$
Gender	15.12	1	15.12	3.00
Error	625.51	124	5.04	

Table 10

Summary of Analysis of Variance of Standard Deviation Across

Nine SCL-90R Scales as a Function of Group (Clinical and

Control) in Females

Source of Variation	SS	df	MS	F
Group	1.55	1	1.55	0.28
Error	930.98	166	5.61	

Table 11

Summary of Analysis of Variance of Standard Deviation Across

Nine SCL-90R Scales as a Function of Group (Clinical and

Control) in Males

Source of Variation	SS	df	MS	$\underline{F}$
Group	104.95	1	104.95	14.33***
Error	959.14	131	7.32	

* $\underline{p}$ < .001

To further explore the elevation differences on the 9
SCL-90R scales as a function of group and gender, a MANOVA
was conducted (see Table 12). A significant group X gender
X scale effect was found ($\underline{F}$(8, 290)=2.58; $\underline{p}$<.01)
An overall group effect was indicated by the analysis
($\underline{F}$(9, 289)=24.87; $\underline{p}$<.0001) as well as significant group
differences on each of the nine scales (see Table 13):
Somatization ($\underline{M}$(Cl)=62.59; $\underline{M}$(Co)= 55.25; F(1, 299)=34.62;
$\underline{p}$<.0001), Obsessive Compulsive ($\underline{M}$(Cl)=70.75; $\underline{M}$(Co)= 63.14;
F(1, 299)=60.22; $\underline{p}$<.0001), Interpersonal Sensitivity
($\underline{M}$(Cl)=71.41; $\underline{M}$(Co)= 63.85; $\underline{F}$(1, 299)=48.70; $\underline{p}$<.0001),
Depression ($\underline{M}$(Cl)=73.33; $\underline{M}$(Co)= 62.70; $\underline{F}$(1, 299)=137.98;
$\underline{p}$<.0001), Anxiety ($\underline{M}$(Cl)=71.95; $\underline{M}$(Co)= 59.52;
$\underline{F}$(1,299)=132.24; $\underline{p}$<.0001), Hostility ($\underline{M}$(Cl)=65.28; $\underline{M}$(Co)=
59.46; $\underline{F}$(1,299)=21.31; $\underline{p}$<.0001), Phobic Anxiety
($\underline{M}$(Cl)=62.09; $\underline{M}$(Co)= 53.56; $\underline{F}$(1, 299)=53.67; $\underline{p}$<.0001),
Paranoid Ideation ($\underline{M}$(Cl)=66.05; $\underline{M}$(Co)= 61.20; $\underline{F}$(1,
299)=15.09; $\underline{p}$<.0001) and Psychoticism ($\underline{M}$(Cl)=71.06; $\underline{M}$(Co)=
61.56; $\underline{F}$(1, 299)=68.46; $\underline{p}$<.0001). A significant between
subjects group effect ($\underline{F}$(1, 297)=102.97; $\underline{p}$<.0001) supports
an overall elevation difference between SCL-90R profile
configurations of the two groups (see Figure 1). However, a
relatively small but significant within subjects scale X
group effect ($\underline{F}$(8, 2376)=9.34; $\underline{p}$<.0001) corresponds to the
similarities of the two profile patterns.

Table 12

Summary of Multivariate Analysis of Variance of SCL-90R

Dimensional Scales as a Function of Group (Clinical,

Control), Gender and Scale

Hypothesis	F	p
Scale*Group*Gender Effect	F (8, 290) = 2.58	p < .01
Scale*Gender Effect	F (8, 290) = 3.92	p < .001
Scale*Group Effect	F (8, 290) = 12.21	p < .0001
Scale Effect	F (8, 290) = 87.69	p < .0001
Group*Gender Effect	F (8, 290) = 2.51	p < .01
Gender Effect	F (9, 289) = 4.64	p < .0001
Group Effect	F (9, 289) = 24.87	p < .0001

Between Subjects Effects

Source of Variation	SS	df	MS	F
Group	45599.90	1	45599.90	102.97****
Gender	1558.45	1	1558.45	3.52
Group*Gender	38.74	1	38.74	0.09
Error	131526.37	297	442.85	

**** p < .0001

Within Subject Effects

Source of Variation	SS	df	MS	F
Scale	33294.40	8	4161.80	85.28****
Scale*Group	3646.79	8	455.85	9.34****
Scale*Gender	1498.78	8	187.35	3.84***
Scale*Group*Gender	1086.24	8	135.78	2.78**
Error (Scale)	115946.00	2376	48.80	

** $p < .01$; *** $p < .001$; **** $p < .0001$

Table 13

Summary of Univariate Tests of SCL-90R Scale Score as a

Function of Group (Clinical, Control)

Dependent Variable	Source	SS	df	MS	F
SOM	Group	3955.58	1	3955.58	34.62****
	Error	34167.57	299	114.27	
O-C	Group	4243.99	1	4243.99	60.22****
	Error	21071.86	299	70.47	
INT	Group	4182.97	1	4182.97	48.70****
	Error	25680.33	299	85.89	
DEP	Group	8282.38	1	8282.38	137.98****
	Error	17947.32	299	60.02	
ANX	Group	11319.25	1	11319.25	132.98****
	Error	25593.06	299	85.60	
HOS	Group	2481.08	1	2481.08	21.31****
	Error	34816.58	299	116.44	
PHOB	Group	5337.50	1	5337.50	53.67****
	Error	29733.65	299	99.44	
PAR	Group	1721.24	1	1721.24	15.09****
	Error	34101.67	299	114.05	
PSY	Group	6610.45	1	6610.45	68.16****
	Error	28997.30	299	96.98	

**** $p < .0001$
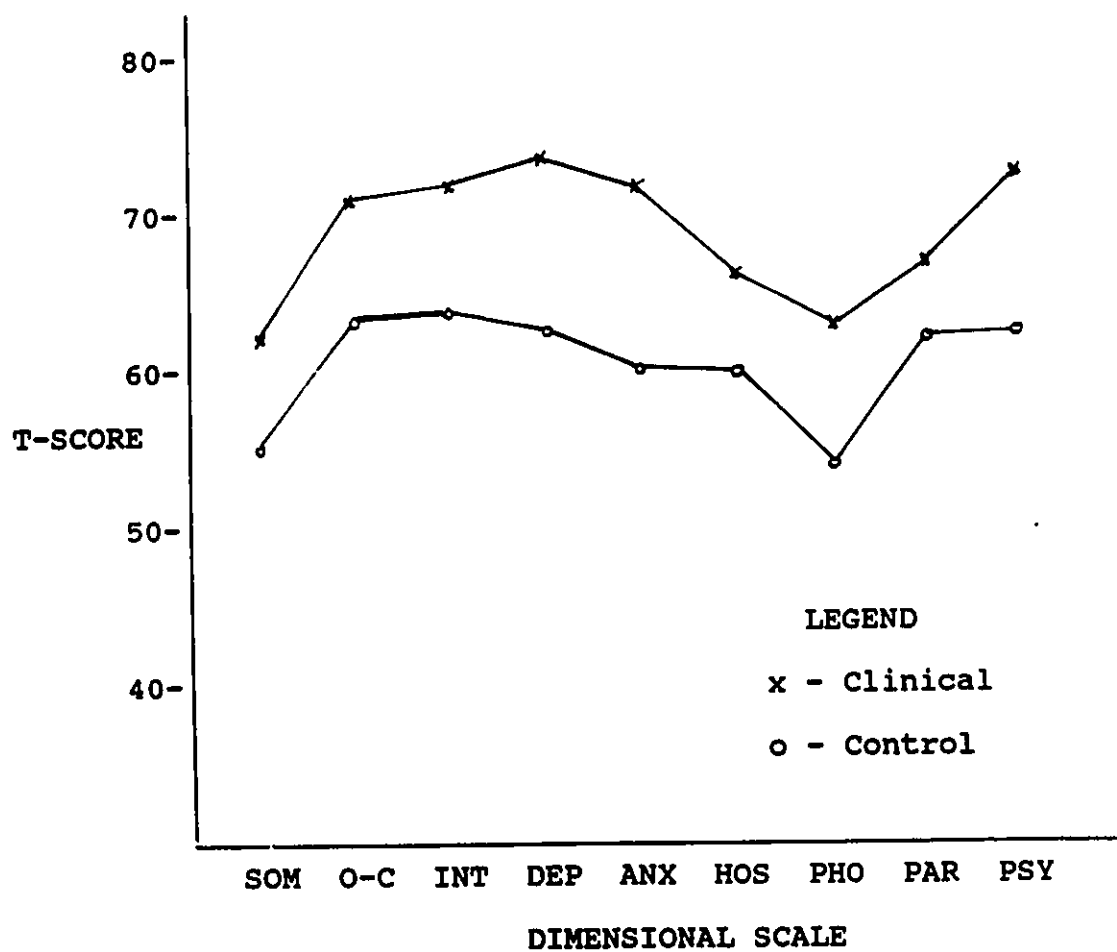
Figure 1. SCL-90R dimensional scale score profiles for the
clinical and control groups

The MANOVA analysis also revealed an overall gender effect in respect to the elevation of the SCL-90R scales derived from the responses of the pooled clinical and control groups ($\underline{F}(9, 289)=4.64$; $\underline{p}<.0001$) (see Table 12). Males and females differed significantly on the following SCL-90R scales (see Table 14): Obsessive Compulsive ($\underline{M}(M)=68.88$; $\underline{M}(F)= 66.53$; $\underline{F}(1, 299)=4.92$; $\underline{p}<.05$), Depression ($\underline{M}(M)=70.60$ $\underline{M}(F)= 67.52$; $\underline{F}(1, 299)=8.27$; $\underline{p}<.01$) and Phobic Anxiety ($\underline{M}(M)=60.35$; $\underline{M}(F)= 57.07$; $\underline{F}(1, 299)=6.94$; $\underline{p}<.01$). The MANOVA analysis indicated that there was no significant between subjects gender effect ($\underline{F}(1, 297)=3.52$; $\underline{p}>.05$), which corresponds to the overall overlapping character of the male and female SCL-90R profile configurations (see Figure 2). Although these configurations appear similar there are small but significant differences as indicated by a significant within subjects scale X gender effect ($\underline{F}(8, 2376)=3.84$; $\underline{p}<.001$).

The univariate tests comparing the SCL-90R scale scores of males and females in the clinical group indicated differences in the following scales (see Table 15): Obsessive Compulsive ($\underline{M}(M)=73.07$; $\underline{M}(F)= 69.10$; $\underline{F}(1, 173)=12.96$; $\underline{p}<.001$), Depression ($\underline{M}(M)=76.48$; $\underline{M}(F)= 71.08$; $\underline{F}(1, 173)=41.65$; $\underline{p}<.0001$), Anxiety ($\underline{M}(M)=73.65$; $\underline{M}(F)= 70.74$; $\underline{F}(1, 173)=5.38$; $\underline{p}<.05$) and Phobic Anxiety ($\underline{M}(M)=64.86$; $\underline{M}(F)= 60.11$; $\underline{F}(1, 173)=9.20$; $\underline{p}<.01$).

Table 14

Summary of Univariate Tests of SCL-90R Scale Score as a

Function of Gender in Clinical and Control Groups (Pooled)

Dependent Variable	Source	SS	df	MS	F
SOM	Gender	104.16	1	104.16	0.82
	Error	38018.99	299	127.15	
O-C	Gender	409.93	1	409.93	4.92*
	Error	24905.93	299	83.30	
INT	Gender	183.61	1	183.61	1.85
	Error	29679.69	299	99.26	
DEP	Gender	705.87	1	705.87	8.27**
	Error	25523.83	299	85.36	
ANX	Gender	204.27	1	204.27	1.66
	Error	36708.04	299	122.77	
HOS	Gender	48.87	1	48.87	0.38
	Error	37248.79	299	124.58	
PHOB	Gender	795.92	1	795.92	6.94**
	Error	34275.23	299	114.63	
PAR	Gender	13.98	1	13.98	0.12
	Error	35808.94	299	119.76	
PSY	Gender	10.20	1	10.20	0.09
	Error	35597.56	299	119.06	

* $p < .05$; $p < .01$
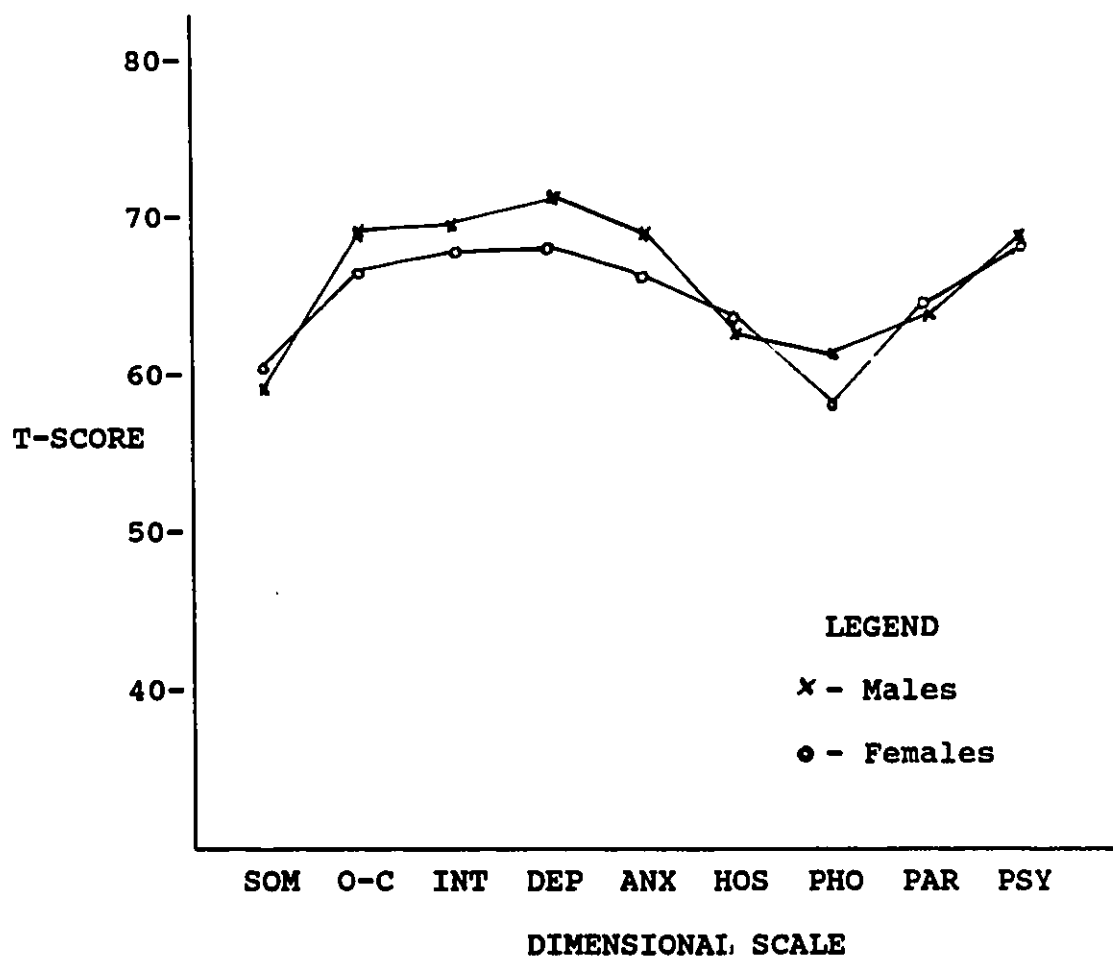
Figure 2. SCL-90R dimensional scale score profiles for males and females (groups pooled)

Table 15

Summary of Univariate Tests of SCL-90R Scale Score as a

Function of Gender in the Clinical Group

Dependent Variable	Source	SS	df	MS	F
SOM	Gender	24.65	1	24.65	0.20
	Error	21513.55	173	124.36	
O-C	Gender	670.76	1	670.76	12.96***
	Error	8953.68	173	51.76	
INT	Gender	171.34	1	171.34	2.39
	Error	12386.86	173	71.60	
DEP	Gender	1241.19	1	1241.19	41.65****
	Error	5155.59	173	29.80	
ANX	Gender	363.34	1	363.34	5.38*
	Error	11678.29	173	67.50	
HOS	Gender	69.65	1	69.65	0.61
	Error	19741.63	173	114.11	
PHOB	Gender	962.09	1	962.09	9.20**
	Error	18092.44	173	104.58	
PAR	Gender	236.61	1	236.61	2.18
	Error	18739.02	173	108.32	
PSY	Gender	91.55	1	91.55	1.20
	Error	13192.76	173	76.26	

* p < .05; ** p < .01; *** p < .001; **** p < .0001

An ANOVA was also employed to assess gender differences in respect to SCL-90R scale elevations in the control group (see Table 16). Males and females within the control group did not significantly differ on any of the nine SCL-90R scales. The finding of no significant between subjects group X gender effect (see Table 12) indicates that the profile configurations across group and and gender are not significantly different in overall elevation ($F(1, 297)=0.09$; $p>.05$) (see Figure 3). However, the significant within subjects scale X group X gender effect signifies that differences exist in relation to the character of the profile patterns. Further analysis revealed the SCL-90R scale scores of the clinical group exhibited no between subjects gender effect ($F(1, 297)=3.74$; $p>.05$), but a significant within subjects scale X gender effect ($F(8, 1384)=6.20$; $p<.01$). Whereas the SCL-90R scale scores of the control group were not marked by a between subjects gender effect ($F(1, 297)=0.80$; $p>.05$) or a within subjects scale X gender effect ($F(8, 992)=0.93$; $p>.05$). In summary these results support the above univariate tests for each scale and indicate that the profile patterns of the males and females in the clinical group are significantly different across scales. Where the profile pattern exhibited by each gender in the control group are not significantly different.

Table 16

<u>Summary of Univariate Tests of SCL-90R Scale Score as a</u>

<u>Function of Gender in the Control Group</u>

| Dependent Variable	Source	SS	df	MS	F
SOM	Gender	17.97	1	17.97	0.18
	Error	12611.41	124	101.70	
O-C	Gender	46.99	1	46.99	0.51
	Error	11400.44	124	91.94	
INT	Gender	130.52	1	130.52	1.25
	Error	12991.61	124	104.77	
DEP	Gender	64.71	1	64.71	0.70
	Error	11485.83	124	92.63	
ANX	Gender	87.94	1	87.94	0.81
	Error	13463.49	124	108.58	
HOS	Gender	11.95	1	11.95	0.10
	Error	14993.35	124	120.91	
PHOB	Gender	191.93	1	191.93	2.27
	Error	10487.18	124	84.57	
PAR	Gender	252.57	1	252.57	2.11
	Error	14873.47	124	119.95	
PSY	Gender	1.22	1	1.22	0.01
	Error	15711.77	124	126.71	
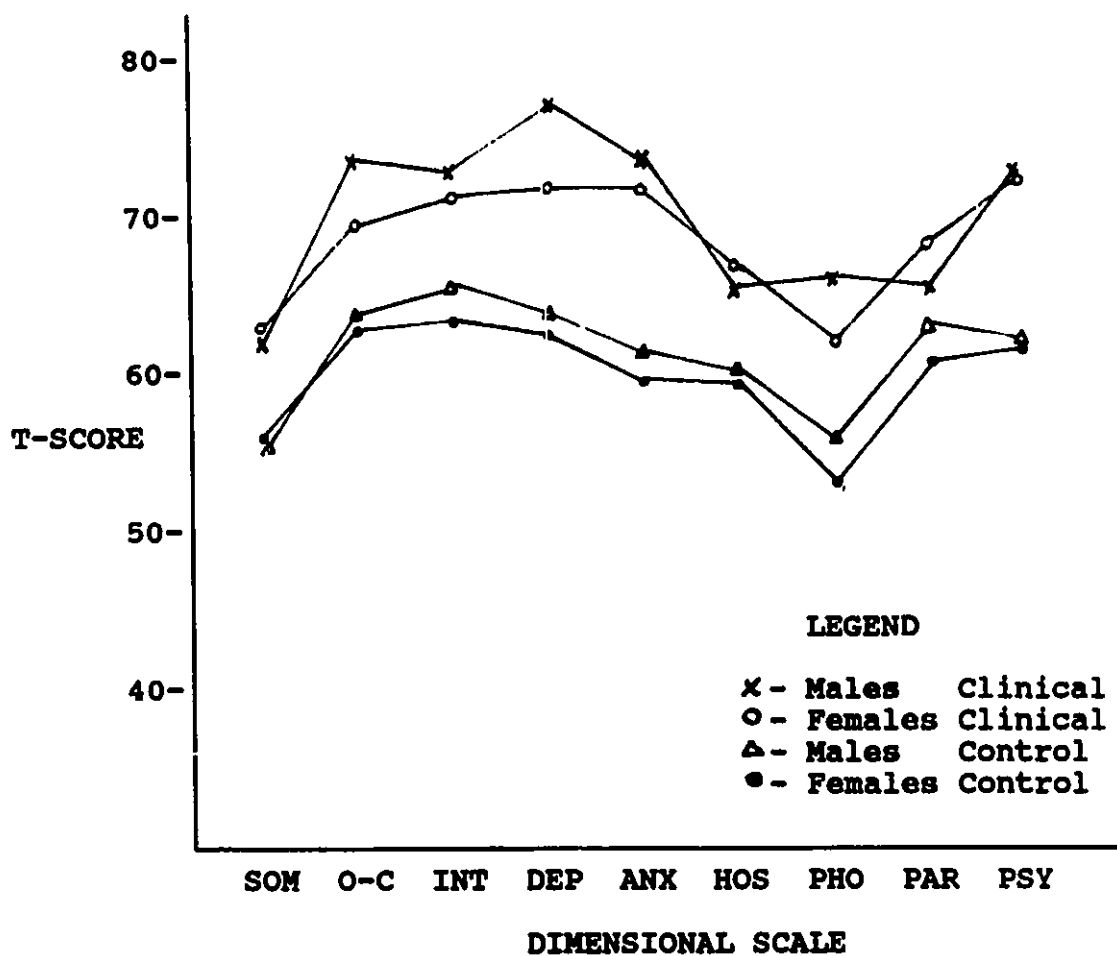
Figure 3. SCL-90R dimensional scales score profiles of males and females in the clinical group and males and females in the control group

CHAPTER IV

DISCUSSION

The SCL-90R is a psychometric tool that measures symptomatic distress and also provides three indices of general distress. This study examined whether acute distress influences SCL-90R symptom reporting, by comparing the SCL-90R responses of distressed and non-distressed populations. The assumption was made that individuals at the time of initial intake evaluation, at a Psychological Services Centre, are suffering from acute distress. It was hypothesized that the distressed group would report more symptoms and provide more elevated and less differentiated item scores and scale scores. These hypotheses were based on the idea that the clinical group would not only respond to the SCL-90R items in reaction to high levels of symptomatic distress, but also in reaction to a generalized distress associated with their acute state.

SCL-90R Group-Related Elevation Differences (Hypotheses 1-4)

The results of this study indicated that the clinical group reported higher levels of distress on more SCL-90R items than the control group. The clinical group also demonstrated greater mean ratings on the 90 SCL-90R items and higher mean scores on the 9 SCL-90R scales. These results support hypotheses 1-4 and they are interpreted to suggest that the clinical group suffers from greater levels

of symptomatic distress. However, these findings do not indicate whether the symptom severity ratings are influenced by an acute generalized distress, which might take the form of an exaggeration of symptomatic distress as suggested by Paykel, Prusoff, Klerman and Dimacio (1973) and Mazmanian, Mendonca, Holden and Dufton (1987) or an extreme response style as proposed by Zuckerman, Oppenheimer and Gershowitz (1965).

SCL-90R Group-Related Variability Differences

Hypotheses 5-6

This study also evaluated the idea that acute generalized distress would be associated with impaired symptom differentiation. Contrary to Hypothesis 5, the results indicated that the clinical group provided more variable ratings on the items that were causing some distress. Initially, it was thought that acute generalized distress would impair individuals differentiating between the distress they experienced from each SCL-90R item. However, the opposite finding may have stemmed from the clinical group responding to the majority of their items using a greater proportion of the 0-4 scale than the control group. The control group may have restricted themselves to placing the majority of their ratings in a narrower region of the 0-4 scale due to lower distress and perhaps as a consequence of other influences such as self-deception or social desirability. The control group's restricted use of

the severity scale may have led to a lower variability of item responses.

The finding that the clinical group demonstrated less variable dimensional scale scores compared to the control group supported Hypothesis 6. This finding supported the idea that the SCL-90R dimensions are more overlapped for a distressed clinical group than a non-distressed group. This finding also leads to the suggestion that an acute state of distress may be associated with diminished SCL-90R scale differentiation.

SCL-90R Gender-Related Elevation Differences

The study found that males and females within the control group demonstrated SCL-90R scale profile configurations that were not significantly different. In contrast, the SCL-90R scale profile configurations of males and females in the clinical group were found to be significantly different. Within the clinical group, males scored higher than females on the Obsessive Compulsive, Depression, Anxiety and Phobic Anxiety scales.

Gender differences in terms of SCL-90R scale profile configurations leads to at least two avenues of interpretation. The first avenue suggests that males may need to experience high levels of psychological distress before they seek out psychological assistance. Warren (1983) suggested that socialization has led males to maintain depressive feelings as a private experience and

attempt to alleviate their problems without external assistance. Conversely, O'Neil, Lancee and Freeman (1985) claimed that females are more inclined to accept psychiatric help. Similarly, women are more tolerant of the stigma associated with seeking professional help and more open to sharing problems with others (Johnson, 1988). Therefore gender differences in profile patterns and individual scales, within the clinical population, may stem from differences in distress levels.

Another avenue of interpretation would suggest that there are gender differences in respect to how acute distress influences males and females. Although Derogatis (1977) claimed that the SCL-90R scales exhibit invariance across sex, Hale and Cockran (1983) found sex differences in respect to SCL-90R profiles in the elderly. Males and females differed on the Anxiety, Interpersonal Sensitivity and Paranoid Ideation scales.

SCL-90R Gender-Related Variability Differences

Further data analysis revealed that there was a Group X Gender interaction that influenced the variability of SCL-90R scale scores. Males in the clinical group provided less variable scale scores than males in the control group, whereas no significant difference was discovered in regard to scale score variability between females of the two groups.

Scale score variability differences among males of the two groups and not females may stem from gender differences in distress levels within the clinical group. Alternatively, males and females may differ in their ability to differentiate symptom dimensions under distressed conditions.

In Western culture males are socialized "to be cool and tough, to monopolize the public sphere, to operate as the dominant sex in public and private" (Mackie, 1987, p. 263). The masculine role has been identified with the non-expression of emotion except for anger (Jourard, 1964). According to Hochschild (1975), our society has historically considered the rational dimension as superior to the sentimental one. Emotions have been perceived as an inhibitor of productivity. In Western society women have been socialized to be experts in emotion (Mackie, 1987). "Our culture invites women. . . to focus on feelings rather than action" (Hochschild, 1983, p. 57). Perhaps due to their greater attention to their emotions, women in this culture may be more psychologically aware of their inner processes such as personal feelings and thoughts. This focus on inner processes may have the effect on females of establishing the capacity to more clearly differentiate and label the components of their inner experience. Males may be more generally detached from their inner experience and therefore less acquainted with their personal feelings and

thoughts. Therefore when males are afflicted with acute psychological distress, they may experience a less defined, vague cloud of psychological distress in which the boundaries of the dimensions are less clearly defined. Whereas females, because of their past experience, may have less difficulty differentiating the dimensions of their distress.

The study found differences in the elevation and variability of SCL-90R item and scale scores between a distressed group and a non-distressed group. Higher levels of symptomatic distress can sufficiently explain the more elevated symptom severity scores demonstrated by the clinical group. However, as reported earlier, researchers have suggested that acute distress can be linked with the over-reporting of symptomatology. In order to clarify whether acute distress is related to symptom over-reporting, the SCL-90R could be administered at several periods during treatment as well as at initial intake. The underlying assumption would be that the heightened distress associated with initial intake would dissipate as treatment progressed. Subsequently, the number of symptoms, the symptom severity ratings and scale scores of the same clinical population, recorded at different time periods, could be compared. The results of this proposed study might shed some light on the effect of acute distress on the elevation levels of SCL-90R responses.

From the results of the study it is not clear whether differences in the SCL-90R scale configurations and score scale variability are sex-related or whether differences are due to differences in distress levels of males and females in the clinical population. In order to gain clarity concerning these two possibilities, the scale score profiles of male and female clinical groups manifesting identical distress levels could be compared.

If the suggested research is conducted and gender-related differences emerge from the data analysis, then it would support the idea that the SCL-90R should be more closely examined in the context of the characteristics of particular populations. As reported earlier, Hale and Cockran (1983) found differences in SCL-90R profile patterns, across sex, in the elderly. McNeil, Greenfield, Attkisson and Binder (1983) found an Interpersonal Sensitivity and a generalized Anxiety factor from the SCL-90R responses of inpatients that did not emerge in previous studies with outpatients. The authors suggested that the symptom patterns may be different for inpatients and outpatients. They also recommended a study that would analyze SCL-90R responses according to severity of psychopathology and level of care. Paykel, Prusoff, Klerman and Dimascio (1973) reported differences in symptom reporting between neurotics and psychotics. The authors claimed that "hysterics, oral-dependent persons and some

neurotics have long been regarded as exaggerators, and psychotic patients are almost by definition lacking in insight in their disturbance" (p. 181). It would be useful to study profile configurations of specific groups by stratifying populations by more strict criteria. The groups could be stratified by such criteria as gender, distress level, psychodiagnosis, level of care and socioeconomic status. In addition, it could be determined which SCL-90R dimensions are relevant or emerge from the responses of a particular population. Subsequently the SCL-90R could be fine-tuned and become more clinically discriminating and meaningful in the hands of a clinician.

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Appendix A

SYMPTOM CHECKLIST-90R
by L. Derogatis, R. Lipman, & L. Covi

You are about to complete a computerized questionnaire about the extent to which you have been bothered or distressed by various problems or complaints that people sometimes have.

Each problem or complaint will be displayed on the screen, followed by five possible answers.

Select the answer that best describes HOW MUCH THAT PROBLEM HAS BOTHERED OR DISTRESSED YOU DURING THE PAST SEVEN DAYS INCLUDING TODAY.

Then type the number that indicates the answer you have selected.
0=not at all, 1=a little bit, 2=moderately, 3=quite a bit, 4=extremely.

Symptom

1. Headaches

2. Nervousness or shakiness inside

3. Repeated unpleasant thoughts
    that won't leave your mind

4. Faintness or dizziness

5. Loss of sexual interest or
    pleasure

6. Feeling critical of others

7. The idea that someone else can
    control your thoughts

8. Feeling others are to blame for
    most of your troubles

9. Trouble remembering things

10. Worried about sloppiness or
    carelessness

11. Feeling easily annoyed or
    irritated

12. Pains in heart or chest

13. Feeling afraid in open spaces or on the streets

14. Feeling low in energy or slowed down

15. Thoughts of ending your life

16. Hearing voices that other people do not hear

17. Trembling

18. Feeling that most people cannot be trusted

19. Poor appetite

20. Crying easily

21. Feeling shy or uneasy with the opposite sex

22. Feelings of being trapped or caught

23. Suddenly scared for no reason

24. Temper outbursts that you could not control

25. Feeling afraid to go out of your house alone

26. Blaming yourself for things

27. Pains in lower back

28. Feeling blocked in getting things done

29. Feeling lonely

30. Feeling blue

31. Worrying too much about things

32. Feeling no interest in things

33. Feeling fearful

34. Your feelings being easily hurt

35. Other people being aware of your private thoughts

36. Feeling others do not understand you or are unsympathetic

37. Feeling that people are unfriendly or dislike you

38. Having to do things very slowly to ensure correctness

39. Heart pounding or racing

40. Nausea or upset stomach

41. Feeling inferior to others

42. Soreness in your muscles

43. Feeling that you are watched or talked about by others

44. Trouble falling asleep

45. Having to check or double-check what you do

46. Difficulty making decisions

47. Feeling afraid to travel on buses, subways, or trains

48. Trouble getting your breath

49. Hot or cold spells

50. Having to avoid certain things, places, or activities

51. Your mind going blank

52. Numbness or tingling in parts of your body

53. A lump in your throat

54. Feeling hopeless about the future

55. Trouble concentrating

56. Feeling weak in parts of your body

57. Feeling tense or keyed up

58. Heavy feelings in your arms or legs

59. Thoughts of death or dying

60. Overeating

61. Feeling uneasy when people are watching or talking about you

62. Having thoughts that are not your own

63. Having urges to beat, injure, or harm someone

64. Awakening in the early morning

65. Having to repeat the same actions such as touching, counting or washing

66. Sleep that is restless or disturbed

67. Having urges to break or smash things

68. Having ideas or beliefs that others do not share

69. Feeling very self-conscious with others

70. Feeling uneasy in crowds, such as shopping or at a movie

71. Feeling everything is an effort

72. Spells of terror or panic

73. Feeling uncomfortable about eating or drinking in public

74. Getting into frequent arguments

75. Feeling nervous when you are left alone

76. Others not giving you proper credit for your achievements

77. Feeling lonely even when you are with people

78. Feeling so restless you couldn't sit still

79. Feelings of worthlessness

80. The feeling that something bad is going to happen to you

81. Shouting or throwing things

82. Feeling afraid you will faint in public

83. Feeling that people will take advantage of you if you let them

84. Having thoughts about sex that bother you a lot

85. The idea that you should be punished for your sins

86. Thoughts and images of a frightening nature

87. The idea that something serious is wrong with your body

88. Never feeling close to another person

89. Feelings of guilt

90. The idea that something is wrong with your mind

APPENDIX B

Symptoms Comprising the Somatization Dimension

No. Symptom

1. Headaches
4. Faintness or dizziness
12. Pains in heart or chest
27. Pains in lower back
40. Nausea or upset stomach
42. Soreness in your muscles
48. Trouble getting your breath
49. Hot or cold spells
52. Numbness or tingling in parts of your body
53. A lump in your throat
56. Feeling weak in parts of your body
58. Heavy feelings in your arms or legs

Symptoms Comprising the Obsessive-Compulsive Dimension

No. Symptom

3. Repeated unpleasant thoughts
9. Trouble remembering things
10. Worried about sloppiness or carelessness
28. Feeling blocked in getting things done
38. Having to do things very slowly to ensure correctness
45. Having to check or double-check what you do
46. Difficulty making decisions
51. Your mind going blank
55. Trouble concentrating
65. Having to repeat the same actions such as touching, counting or washing

Symptoms Comprising the Interpersonal Sensitivity Dimension

No. Symptom

6. Feeling critical of others
21. Feeling shy or uneasy with the opposite sex
34. Your feelings being easily hurt
36. Feeling others do not understand you or are unsympathetic
37. Feeling that people are unfriendly or dislike you
41. Feeling inferior to others
61. Feeling uneasy when people are watching or talking about you
69. Feeling very self-conscious with others
73. Feeling uncomfortable about eating or drinking in public

Symptoms Comprising the Depression Dimension

No. Symptom

5. Loss of sexual interest or pleasure
14. Feeling low in energy or slowed down
15. Thoughts of ending your life
20. Crying easily
22. Feelings of being trapped or caught
26. Blaming yourself for things
29. Feeling lonely
30. Feeling blue
31. Worrying too much about things
32. Feeling no interest in things
54. Feeling hopeless about the future
71. Feeling everything is an effort
79. Feelings of worthlessness

Symptoms Comprising the Anxiety Dimension

No. Symptom

2. Nervousness or shakiness inside
17. Trembling
23. Suddenly scared for no reason
33. Feeling fearful
39. Heart pounding or racing
57. Feeling tense or keyed up
72. Spells of terror or panic
78. Feeling so restless you couldn't
    sit still
80. The feeling that something bad is
    going to happen to you
86. Thoughts and images of a
    frightening nature

Symptoms Comprising the Hostility Dimension

No. Symptom

11. Feeling easily annoyed or
    irritated
24. Temper outbursts that you could
    not control
63. Having urges to beat, injure, or
    harm someone
67. Having urges to break or smash things
74. Getting into frequent arguments
81. Shouting or throwing things

Symptoms Comprising the Phobic Anxiety Dimension

No. Symptom

13. Feeling afraid in open spaces
    or on the streets
25. Feeling afraid to go out of your
    house alone
47. Feeling afraid to travel on buses,
    subways, or trains
50. Having to avoid certain things,
    places, or activities
70. Feeling uneasy in crowds, such as
    shopping or at a movie
75. Feeling nervous when you are left
    alone
82. Feeling afraid you will faint in
    public

Symptoms Comprising the Paranoid Ideation Dimension

No. Symptom

8. Feeling others are to blame for
    most of your troubles
18. Feeling that most people cannot
    be trusted
43. Feeling that you are watched or
    talked about by others
68. Having ideas or beliefs that others
    do not share
76. Others not giving you proper credit
    for your achievements
83. Feeling that people will take
    advantage of you if you let them

Symptoms Comprising the Psychoticism Dimension

No. Symptom

No.	Symptom
7.	The idea that someone else can control your thoughts
16.	Hearing voices that other people do not hear
35.	Other people being aware of your private thoughts
62.	Having thoughts that are not your own
77.	Feeling lonely even when you are with people
84.	Having thoughts about sex that bother you a lot
85.	The idea that you should be punished for your sins
87.	The idea that something serious is wrong with your body
88.	Never feeling close to another person
90.	The idea that something is wrong with your mind

Additional Items in the SCL-90R

No. Symptom

No.	Symptom
19.	Poor appetite
44.	Trouble falling asleep
59.	Thoughts of death or dying
60.	Overeating
64.	Awakening in the early morning
66.	Sleep that is restless or disturbed
89.	Feelings of guilt

VITA AUCTORIS

Charles D. Wilson was born on August 11, 1960 in Toronto, Ontario. In June, 1980 he graduated from Thornhill Secondary School, Thornhill, Ontario. In September, 1980 he enrolled at York University. He graduated with the Bachelor of Science degree in June, 1987. Since September 1988 he has been enrolled in the Master's programme in adult clinical psychology at the University of Windsor.