# SENSE OF COHERENCE (SOC), PERSONALITY, AND MENTAL HEALTH

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**Hons. B.A.**

Mini-dissertation submitted in partial fulfilment of the requirements for the degree

**Magister Artium in Clinical Psychology**

at the Potchefstroomse Universiteit vir Christelike Hoër Onderwys.

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Potchefstroom

1996

# ACKNOWLEDGEMENTS

I hereby acknowledge the kind assistance of the following people, without whom this study would not have been possible:

1. My wife, Madi, and son, Finn for the time they sacrificed,
2. My parents for their ongoing support and encouragement,
3. My supervisers, Marietjie Du Toit, and Marie Wissing, for their expert and patient guidance,
4. Prof Steyn for the statistical analysis,
5. Kate Tucker, for her assistance with language use.

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# SUMMARY

**Title:** Sense of Coherence (SOC), Personality, and Mental Health.

**Keywords:** Sense of coherence, mental health, personality, SOC.

This research is concerned with the relationships among SOC, personality, and mental health. In previous research it has been indicated that a strong SOC is negatively correlated with physical illness, depression, anxiety, and stress, and positively correlated with indicators of psychological well-being. It also emerged from the literature that aspects of personality functioning are linked to mental health. As both SOC and aspects of personality have been associated with mental health, it was hypothesised that SOC and personality could be related, even though Antonovsky (1987, 1993) emphasised the differences between SOC and personality.

In an empirical study the relationships among indicators of the constructs SOC, positive and negative mental health, and personality were investigated. Instruments measuring (Sense of coherence scale, Satisfaction With Life Scale, Symptom checklist- 90, NEO Personality Inventory - Revised) the above constructs were applied to a group of 30 psychiatric patients as well as a group of 30 non-patients. Descriptive data was obtained for all measuring instruments. Relationships among the variables were determined as well as differences between the patient (P) and non-patient (N) groups.

The results supported the hypothesis of significant relationships between SOC and satisfaction with life (positive correlation), SOC and symptomatology of psychopathology (negative correlation); between aspects of personality functioning and aspects of positive and negative mental health, and between SOC and aspects of personality functioning. Significant differences were found on all measuring instruments (as expected) when applied to the contrast groups of patients and non-patients. The implications of these findings are discussed.

# OPSOMMING

**Titel:** Koherensiesin, Persoonlikheid, en Geestesgesondheid.

**Sleutelterme:** Koherensiesin, geestesgesondheid, persoonlikheid.

Hierdie navorsing het betrekking tot die verhoudings tussen koherensiesin, persoonlikheid, en geestesgesondheid. Vorige navorsing het aangetoon dat 'n sterk koherensiesin 'n sterk negatiewe verband het met indekse van liggaamlike siektes, angs, depressie, en spanning, en 'n positiewe korrelasie met aanwysers van psigologiese gesondheid. Uit die literatuur blyk dit dat aspekte van persoonlikheids funksionering 'n verband het met geestesgesondheid. Aangesien sowel koherensiesin as aspekte van persoonlikheidsfunksionering verbande met geestesgesondheid getoon het, is daar gehipotetiseer dat koherensiesin en persoonlikheid met mekaar verband kon hou, al het Antonovsky (1987, 1993) die verskil tussen koherensiesin en persoonlikheid beklemtoon.

In die empiriese studie is die verbande tussen indekse van die konstrukte, koherensiesin, positiewe en negatiewe geestesgesondheid, en persoonlikheid ondersoek. Meetinstrumente (Sense of Coherence Scale, Satisfaction With Life Scale, Symptom Checklist-90, NEO Personality Inventory-Revised) is toegepas op 'n groep van 30 psigiatriese pasiënte, asook 'n groep van 30 nie-pasiënte.

Beskrywende data was vir al die instrumente verkry. Verbande tussen die veranderlikes is vasgestel, asook verskille tussen die pasiënte (P), en nie-pasiënte (N) groepe.

Die resultate het die hipotese van betekenisvolle verbande tussen koherensiesin en geestesgesondheid (positiewe verband), tussen koherensiesin en simptome van psigopatologie (negatiewe verband), tussen aspekte van positiewe en negatiewe geestesgesondheid, en tussen koherensiesin en aspekte van persoonlikheidsfunksionering ondersteun. Betekenisvolle verskille tussen die kontrasgroepe (pasiënte en nie-pasiënte) is met al die instrumente verkry. Die implikasies van die bevindinge is bespreek.

# CHAPTER 1

# 1. INTRODUCTION AND PROBLEM STATEMENT

## 1.1 INTRODUCTION

This research is concerned with the relationships among SOC, personality, and mental health. In this chapter the problem will be presented along with an overview of the research undertaken, to orientate the reader as to the layout of this research project.

## 1.2 THE PROBLEM

Antonovsky (1979; 1987) works from a salutogenic paradigm, which investigates the constituents of health (Strümpfer, 1990). He developed the construct 'sense of coherence' (SOC) which is defined as a dynamic, dispositional orientation through which one has confidence that the world is understandable, manageable and meaningful (Antonovsky, 1987).

High scores on a scale that measures the degree of SOC have been negatively correlated with indicators of physical illness, anxiety, depression and stress (Antonovsky, 1987, 1993; Flannery & Flannery, 1990). A high incidence of SOC has been positively correlated with indicators of coping and psychological well-being (Antonovsky, 1987, 1993; Flannery & Flannery, 1990; Frenz, Carey & Jorgensen, 1993). As the abovementioned variables related to SOC are components of mental health it would appear that SOC is related to aspects of mental health. Mental health is here conceptualised as a continuous phenomenon ranging from psychopathology or negative mental health on the one side, to optimal or positive mental health on the other.

Mental Health

Personality tests and scales are often used to assess a person's mental health. High and low scores on specific personality dimensions are indicative of psychopathology or mental illness, while high and low scores on other dimensions are said to be indicative of a healthy personality or mental health (McCrae, 1991; Miller, 1991). A high neuroticism score on the NEO Personality Inventory-Revised (NEO PI-R), together with low conscientiousness and low extraversion is seen as indicative of pathology (Miller, 1991). High scores on the extraversion dimension have been linked with healthy coping mechanisms, and high scores on neuroticism with poor coping mechanisms (McCrae & Costa, 1986). Personality has thus been linked to mental health by numerous studies (Costa & McCrae, 1991; Friedman, 1991; McCrae & Costa, 1990; McCrae, 1991).

As both SOC and aspects of personality have been associated with mental health, it can be hypothesised that the SOC and personality could be related. While Antonovsky (1987;1993) emphasises the differences between the SOC and personality, other researchers (Friedman, 1990; Friedman & DiMatteo, 1989; Margalit & Eysenck, 1990) have suggested that there may be a relationship between SOC on the one hand, and dimensions of personality on the other.

An investigation into the relationship between SOC and personality dimensions could enrich our knowledge of both personality and SOC. To obtain a thorough analysis of mental health, SOC and personality, it will be necessary to analyse the responses of people at both ends of the mental health continuum (healthy and pathological).

In the present study the following research questions will be addressed:

1. What is the relationship between SOC and indicators of positive and negative mental health?
2. What is the relationship between personality and indicators of positive and negative mental health?
3. What is the relationship between SOC and personality dimensions?

4. Is there a significant difference in the mean scores of patients and non-patients in SOC, indicators of positive and negative mental health, and personality.

## 1.3 AIM OF THE STUDY

The aim of this study is to determine :

1. the relationship between SOC scores and indicators of positive and negative mental health;
2. the relationship between indicators of personality and indicators of positive and negative mental health;
3. the relationship between SOC scores and personality indicators;
4. whether there is a significant difference between the means of patients and non-patients in SOC scores, indicators of positive and negative mental health, and personality indicators.

## 1.4 HYPOTHESES

1. SOC scores are expected to correlate positively with an indicator of positive mental health (SWLS) and negatively with an indicator of negative mental health (SCL-90).

2. Scores on the personality dimension Neuroticism are expected to correlate positively with an indicator of negative mental health (SCL-90) and negatively with an indicator of positive mental health (SWLS).

3. Scores on the personality dimensions Openness, Conscientiousness, Agreeableness, and Extraversion are expected to correlate positively with an indicator of positive mental health (SWLS) and negatively with an indicator of negative mental health (SCL-90).

4. SOC scores are expected to correlate positively with scores on the dimensions Openness, Extraversion, Agreeableness and Conscientiousness and negatively with Neuroticism.

5. Non-patients are expected to differ from patients on all psychometric instruments.

## 1.5 SUMMARY AND PREVIEW

In the above paragraphs, a brief introduction to this study was presented by way of a statement of the research problem, aims, and hypotheses. In Chapter 2 the concepts SOC, personality and mental health as used in this study will be analysed, and their inter-relationships examined from a theoretical perspective as well as from empirical support as found in the literature. In Chapter 3 the empirical investigation will be described. Chapter 4 will present the results and interpretations, while Chapter 5 will present the conclusions of this study.

# CHAPTER 2.

# SENSE OF COHERENCE (SOC), PERSONALITY AND MENTAL HEALTH

## 2.1 INTRODUCTION

In this chapter the concepts SOC, personality and mental health will be analysed and defined to clarify their meaning and use in this study. Thereafter the possible link between SOC and personality will be explored as well as their respective relationships to mental health.

## 2.2 SENSE OF COHERENCE (SOC)

Antonovsky developed his SOC construct from a salutogenic paradigm. In order to better understand the SOC construct, the paradigm from which it developed needs to be examined. Thereafter SOC will be defined and examined in more detail.

### 2.2.1 Salutogenesis

The traditional medical model seeks to determine the cause of an illness or disease which results from the disturbance of homeostatic processes within the individual. The salutogenic paradigm (Antonovsky, 1987; Strümpfer, 1990) in contrast to the pathogenic paradigm, traces the origins of health.

Implicit in the pathogenic orientation is the dichotomy between health and disease. Even those writers with a health orientated view, who concentrate their efforts on keeping people healthy and avoiding disease, fall prey to this dichotomy (Antonovsky, 1987). The salutogenic view posited by Antonovsky (1987), initially held the position that it is more facilitative to place the individual on a continuum of health-ease/ dis-ease, but later came to view health-ease and dis-ease as separate dimensions.

A disadvantage of the pathogenic approach is that the focus is on the pathogen rather than on the individual's life situation, thus important etiological data relevant to the health of the person is lost (Antonovsky, 1987). A further differentiation between the two paradigms is that the pathogenic paradigm seeks to confirm hypotheses on pathology, while the salutogenic paradigm is interested in that which deviates from the norm, in other words subjects who do not develop pathology. Thus among subjects displaying Type A behaviour

pattern, (intense competitiveness, dominance, time urgency and ambition, related in some cases to coronary heart disease) (Eysenck & Fulker, 1983; Friedman, 1991; May & Kline, 1987; Deary, Alasdair, MacLullich & Mardon, 1991; Wong & Reading, 1989) those who did not suffer from coronary heart disease would be studied in addition to those who did (Antonovsky, 1987; Strümpfer, 1990). Within the salutogenic paradigm, it is not only the subjects who succumb to disease that are the focus of study, but especially those who do not.

It can be noted from the above that while a salutogenic perspective is encouraged, it is not to the exclusion of the pathogenic orientation. Antonovsky (1987) notes that the pathogenic orientation has much to offer health maintenance and should not be abandoned, but complemented by the salutogenic approach.

### 2.2.2 SOC & Generalised Resistance Resources

Numerous authors have noted that adverse health consequences of stress depend on an individual's ability to cope with stress (Antonovsky, 1979, 1987; Shepperd & Kashani, 1991; Olff, Brosschot & Godeart, 1993). According to Antonovsky (1979) stressors are omnipresent and an organism responds to them with a state of tension. Tension reflects the realisation that one has an unfulfilled need, that demands have been placed on one that have not been met, or action is required for one to realise a goal. Tension has both a physiological and an emotional component, which can have pathological, neutral or salutary consequences (Antonovsky, 1979, 1987).

Tension must be distinguished from stress, which contributes to pathogenesis. Tension can be salutary, but it could also lead to stress. Antonovsky (1979) identifies generalised resistance resources (GRRs) which prevent tension from being transformed into pathogenic stress. GRRs are any characteristic of the person, group or environment that can facilitate effective tension management. A GRR is a physical, biochemical, emotional, etc. characteristic. It presents as a phenomenon or relationship of an individual, group, subculture or society, for example: a healthy body, trustworthy friend, happy mood etc.. Antonovsky (1987) also identifies generalised resistance deficits (GRDs) that differ from GRRs only in that they are placed on the opposite end of the GRR continuum

and do not facilitate effective tension management. As GRDs are on the same continuum as GRRs I will not discuss them separately.

GRRs facilitate the meaningful understanding of the numerous stimuli that one receives from one's environment, and secures the perception that the information one transmits is received by the recipient without distortion. GRRs thus determine the extent to which specific resistance resources are accessible to us (Antonovsky, 1979). For example, an individual who has previously used humour successfully to diffuse a potentially explosive situation, could well do it again if it has been incorporated as a GRR.

The strength or weakness of one's SOC is dependant upon the degree to which one's life has provided GRRs-RDs. For a strong SOC to develop one's experiences must be predictable, rewarding, and to some degree frustrating, to facilitate the development of defences (Antonovsky, 1979).

### 2.2.3 Sense of Coherence Defined

Antonovsky's definition of the SOC concept is as follows:

> 'The sense of coherence is a global orientation that expresses the extent to which one has a pervasive, enduring though dynamic

> feeling of confidence that (1) the stimuli deriving from one's internal and external environments in the course of living are structured, predictable, and explicable; (2) the resources are available to one to meet the demands posed by these stimuli; and (3) these demands are challenges worthy of investment and engagement' (Antonovsky, 1987, p. 19).

In the above definition three components of SOC have been identified, namely: comprehensibility, manageability, and meaningfulness (Antonovsky, 1987). These components merit further discussion to facilitate a deeper understanding of their implications (see Antonovsky, 1987; Strümpfer, 1990).

***Comprehensibility*** refers to the degree to which one perceives that both internally and externally sourced stimuli are structured, ordered, consistent, and clear. This will facilitate the expectation that such stimuli will in future be explicable, orderable and possibly predictable. These stimuli are thus perceived as making cognitive sense.

***Manageability*** refers to the perceived availability of resources to deal with the demands posed by the stimuli which one confronts. Resources are thus viewed subjectively as sufficient to deal with the experienced life-events. These resources could be under the direct control of the person facing the challenges,

or under the control of legitimate others (spouse, relatives, friends, a physician, an attorney etc.) who could use these resources on that person's behalf.

*Meaningfulness* refers to a motivational component in that a person feels that the challenges faced are worth the effort expended on them. This component thus has an emotional element to it rather than a cognitive one.

Of note in the above discussion is that all three components refer to subjectively perceived intrapsychic processes occurring in the individual, and they are thus not required to conform to specific externally detectable realities.

Antonovsky (1987) found that while the intercorrelations among these components were high, it was conceivable that differences between the components could be present within an individual. Antonovsky (1987) notes that while all three components of the SOC concept are necessary, they are not of equal centrality. For him meaningfulness is the most important component of SOC as without it high levels of comprehensibility and manageability will not be maintained. Second in importance to meaningfulness is comprehensibility, as manageability is contingent upon understanding. Manageability is viewed as vital to the SOC construct, as without the necessary resources to accomplish a goal the meaningfulness of it is diminished. Due to the interdependence of these components, all three are necessary for the maintenance of a consistently high SOC (Antonovsky, 1987).

### 2.2.4 The Development of SOC

Antonovsky (1987) noticed that there were people with strong SOC's who did not view their whole objective world as coherent. There are thus areas of an individual's life that are important for the development and maintenance of SOC and areas that are not. These areas are encapsulated by boundaries, the outside of which are unimportant for one's SOC, while the areas inside are very important for one's SOC. The extent of these boundaries can vary from very narrow to very broad, depending on the individual. If there are no spheres of life that are of subjective importance to the individual, there is very little chance of the individual having a strong SOC.

Antonovsky (1987) noted that for an individual to have a strong SOC the boundaries of personal subjective importance would have to be broad enough to encompass the following four critical areas: immediate interpersonal relations, inner feelings, major activity, and existential issues (death, shortcomings, failures, isolation, and conflict). In saying this Antonovsky (1987) is not claiming that areas outside the boundary of subjective importance will not effect the person. For example; a person might exclude the area of politics from his sphere of subjective importance, but remain subject to the decisions made in the political arena.

Antonovsky (1987) posited that one of the ways persons with strong SOCs maintained a sense of coherence is through the flexibility of boundaries. Such persons would thus contract their boundaries to exclude any spheres of life that no longer have sufficient meaningfulness, comprehensibility or manageability. They would maintain their SOC in this manner, provided that they did not exclude one of the four critical areas identified above. This aforementioned exclusion from the area of subjective importance need not be permanent, so if an excluded area regains its facilitative role it can once more be incorporated within the boundary.

A further quality of SOC described by Antonovsky (1987) is that of rigidity. He noted that there were individuals who attained extremely high scores on the SOC scale, and he subsequently questioned the truth of this. Antonovsky (1987) came to the conclusion that boredom would become a stressor that would erode meaningfulness (and hence SOC) for those individuals who claimed that their lives were totally comprehensible, manageable, and meaningful. He viewed extremely high SOC scores as representing a rigid or inauthentic SOC. Antonovsky (1987) theoretically differentiates the rigid from the strong SOC people by noting that the strong SOC people will be guided by the application of rules and fundamental principles that, for their application, rely on a good measure of personal autonomy in the relevant environment. Unfortunately

there is currently no way of differentiating the strong from the rigid SOC people without an intensive qualitative investigation.

## 2.3 PERSONALITY

Personality can be conceptualised and measured from many perspectives. The five-factor model of personality trait theory (McCrae & Costa, 1990) was chosen as the framework from which to conceptualise and operationalise personality in this study. This was chosen as a lot of interest and research has recently been conducted from within this framework (Deary & Matthews, 1993; Donahue, 1994; Montag & Levin, 1994; John & Robins, 1993).

### 2.3.1 Personality Traits Explored

Allport (1937) noted that traits were expressed in everyday language use when people characterise themselves, or others. He went on to differentiate traits from habits, attitudes and types, and further refined the concept to enable individual differences to be identified and researched.

Personality traits are generalised dispositions in an individual, that are expressed through a variety of specific acts, thoughts and feelings (Costa & McCrae, 1988; Brody, 1988; McCrae, 1990; McCrae & Costa, 1990; McCrae &

John, 1992). These traits are said to be relatively stable after thirty years of age (McCrae & Costa, 1990).

The five-factor model developed out of the lexical tradition (Allport, 1937; Costa & McCrae, 1992; McCrae & John, 1992; Brand & Egan, 1989; Szirmák & De Raad, 1994), which systematically examines the language of individual differences. The rationale behind this approach is that significant individual differences will be noticed and encoded in the lexicon (daily language use and the dictionary). A thorough examination of the dictionary for lexical expressions that contain or describe personality aspects should reveal virtually all descriptors that have a differential capacity (Szirmák & De Raad, 1994; Goldberg, 1990). From this universe of personality descriptors (potential traits) variables are selected with great care to ultimately be tested as trait descriptors or traits.

The utility of the lexical approach illustrated above is that the natural language which the population themselves speak could be used from which to derive traits, facilitating the population's interpersonal understanding, and the feedback given to them by a psychologist. In addition it would ensure that the psychologist evaluating the subject's personality would be assured of more accurate information (McCrae & John, 1992).

Mischel's (1968) criticism of personality trait validity was refuted as being due to unsound research methodology by a number of studies (Brody, 1988; McCrae &

Costa, 1990; Eysenck & Eysenck, 1980; Amelang & Borkenau, 1986; Deary & Matthews, 1993). Mischel (1968) noted that people's behaviour in certain situations failed to predict their behaviour in other situations. Mischel (1968) erroneously based his critique on single behavioural acts and the averaging of summary statistics across sound and unsound studies without reference to theory (Deary & Matthews, 1993; Eysenck & Eysenck, 1980). Mischel (1968) attempted to infer and refute complex multidimensional traits using discrete specific behaviours (Eysenck & Eysenck, 1980). Resultant upon the studies into Mischel's critique, there has been renewed interest and research in trait theory (Angleitner, 1991).

### 2.3.2 Biological Support for Personality Traits

Although it developed from a lexical tradition, biological support has been found for the five-factor model. Allport (1937) claimed that hereditary factors influence every feature of personality. Specific personality traits have been found to have a moderate degree of heritability (Buss, 1990; Eysenck, 1990; Brody, 1988; Zuckerman, 1991; Deary & Matthews, 1993; Rowe, 1989; Kline, 1993). Data obtained by studying numerous samples of monozygotic (MZ) and dizygotic (DZ) twins reared both together and apart have revealed that genetic factors play a significantly greater role in determining personality traits than do shared environmental factors (Zuckerman, 1991; Bergeman, et al., 1993; Eysenck,

1990; Buss, 1990; Deary & Matthews, 1993). Contrary to research findings that shared environment has little or no effect on personality traits (Zuckerman, 1991; Eysenck, 1990), Rose et al. (1988) concluded that both shared environment and genetic factors were important in determining personality traits. In support of this, researchers (Rose et al., 1988; Bergeman et al., 1993) noted that different personality traits have varying degrees of genetic and environmental influence. A major contribution to personality trait theory has been offered by genetics, in that genetics offer the ultimate justification for traits as biologically, methodologically and chronologically prior to social influence. This does not preclude or deny the study of social influence, but emphasises the contribution that the individual brings into the social environment (Brody, 1988).

### 2.3.3 The Five-Factor Model

There are a number of variations on the number of traits which are regarded as important by various researchers. Cattell, Eber, & Tatsuoka (1970) describes a model consisting of sixteen traits, while Eysenck (1991) proposes a model consisting of three dimensions, and McCrae & Costa (1990) propose a five-factor model.

Eysenck (1991) disputes the utility of the five-factor model, while Deary & Matthews (1993) note that both five and three factors were extricated from a

population, depending on the type of method used. Researchers (Zuckerman, Kuhlman, & Camac, 1988) have found strong evidence in favour of Eysenck's three dimension theory, while others (McCrae, 1986; McCrae, 1989; Caprara, Barbaranelli, Borgogni, & Perugini, 1993; Botwin, & Buss, 1989; Zuckerman, Kuhlman, Thornquist, & Kiers, 1991; Lorr, & Strack, 1993; Hofstee, De Raad, & Goldberg, 1992; Piedmont & Weinstein, 1993) are more inclined to opt for the five-factor model.

A major advantage of the five-factor model over the three dimension model is that greater specificity can be achieved without loss of reproducibility (Zuckerman, Kuhlman, Thornquist, & Kiers, 1991; McCrae, & Costa, 1989). This could be due to an optimal ratio of bandwidth (broadness), and specificity of the five-factors (John, Hampson, & Goldberg, 1991; Costa, & McCrae, 1993). This would then imply that the five-factor model can do everything the three dimension model can, while at the same time being more specific. It can be seen from the above that in spite of criticism (Blinkhorn, & Johnson, 1990), there has been a renewed interest in personality trait research, particularly the five-factor model. This has contributed to the validation and further development of the five-factor model.

### 2.3.3.1 Operationalising the Five-Factor Model (Costa & McCrae, 1992).

The NEO PI-R is an accepted, valid and reliable instrument used to operationalise the Five-Factor Model (Costa & McCrae, 1992). This instrument identifies five dimensions or factors, each comprising six subscales or facets. The five dimensions are: Neuroticism, Extraversion, Openness, Agreeableness, and Conscientiousness. Each of these domains comprises six subscales or facets, giving the researcher not only access to more detailed information regarding the nature of each of the dimensions, but a deeper understanding of the participant through the responses. Each of the dimensions together with their subscales will now be elucidated further.

#### 2.3.3.1.1 *NEUROTICISM*

Neuroticism refers to the tendency of individuals to experience negative affects such as fear, anger, guilt, embarrassment, sadness, and disgust (Costa & McCrae, 1992). This domain thus contrasts emotional stability or adjustment with emotional instability or maladjustment. Individuals who score high in Neuroticism will be inclined to lack impulse control and also display less facilitative coping responses to stress than those with low scores. Individuals who score high on this domain do not necessarily have diagnosable

psychopathology, while those with low scores are not necessarily free from psychopathology. Individuals who score low on this dimension however are usually calm, relaxed, even tempered-people who can effectively cope with stressful situations, without adverse emotional effects. A deeper understanding of this dimension can be obtained through examining the facets that constitute Neuroticism.

*Anxiety:* This facet does not measure specific phobias, but rather nervousness, tension, jitteriness, apprehension, and proneness to worry. High scorers are however more likely to have specific phobias, in addition to free-floating anxiety. Low scorers are calm and relaxed and not preoccupied by what might go wrong.

*Angry Hostility:* This facet measures the tendency to experience anger, frustration, and bitterness. The expression of this anger is however determined by the participant's level of Agreeableness. Participants scoring low on this facet will be slow to anger.

*Depression:* This facet refers to the tendency to experience depressive affect. High scorers are more likely to be dejected, discouraged, and experience feelings of guilt, hopelessness, sadness, and loneliness. Participants with low scores will seldom experience the aforementioned affects, but will not necessarily be light-hearted and cheerful, as these affects are associated with Extraversion.

*Self-Consciousness:* Individuals with high scores on this facet will be inclined to experience shame and embarrassment around other people. Feelings of inferiority, discomfort, and sensitivity to ridicule characterise the high scorer on this facet. Low scorers are less disturbed by awkward social situations, but do not necessarily have good social skills or poise.

*Impulsiveness:* This facet measures the inability to control urges and cravings (e.g., for possessions, food, and the like). In spite of later regretting a particular behaviour, the high scorer has low resistance to desire/s. Low scorers have a higher frustration tolerance and thus find it easier to resist such temptations.

*Vulnerability:* This facet measures the individual's vulnerability to stress. High scorers are likely to become dependent, hopeless, panicked, or unable to cope when facing stressful situations.

### 2.3.3.1.2 *EXTRAVERSION*

Extraversion refers to the tendency of individuals to be sociable, assertive, active and talkative (Costa & McCrae, 1992). This dimension thus has a strong interpersonal component. Extraverts prefer large social gatherings, and like excitement and stimulation. They are inclined to be optimistic and energetic. Introversion should not be viewed as the opposite of extraversion, but rather the absence of extraversion. Introverts could thus be seen as independent people who are reserved, and not prone to the high spirits of extraverts, while at the same time not being unhappy or pessimistic.

The facets that comprise Extraversion will now be examined to enhance our understanding of this concept.

***Warmth:*** High scorers genuinely like people, are affectionate and friendly, and easily form close attachments to others. Low scorers, while not being hostile, are more reserved, formal and distant than high scorers.

***Gregariousness:*** This facet refers to the preference for the company of others. High scorers enjoy the company of others, while low scorers do not seek, or possibly actively avoid other people's company.

*Assertiveness:* Individuals with high scores on this facet will be forceful, dominant, socially ascendant, and inclined to lead groups with which they are involved. Low scorers prefer to remain in the background, and allow others to lead.

*Activity:* High scorers will display a rapid tempo, vigorous movement, a need to keep busy, and a sense of energy. They will be inclined to lead fast-paced lives. Low scorers while being more leisurely and relaxed in tempo, are not necessarily sluggish or lazy.

*Excitement-Seeking:* High scorers will seek excitement, stimulation, and enjoy noisy environments and bright colours. Low scorers will tend to shun thrills and lead lives that high scorers would find boring.

*Positive Emotions:* This facet measures the tendency to experience positive emotions, such as joy, love, happiness, and excitement. High scorers are cheerful and optimistic, and will laugh easily and often. Low scorers while not necessarily being unhappy, are less exuberant and high spirited.

### 2.3.3.1.3 *OPENNESS*

This should be read as Openness-to-experience. Individuals who score high on this dimension will be more open to experiences that occur in their inner and outer worlds, and thus experience both positive and negative emotions more keenly than their low scoring colleagues. These individuals could be seen as unconventional, and more likely to consider novel social and political ideas. Individuals who have low scores on this dimension would prefer the familiar to the novel and be more inclined to conventional behaviour and conservative outlooks. Less Open individuals should not be viewed as displaying authoritarian tendencies or hostile intolerance. This domain's implications for psychological health depends on the specific requirements of the individual's situation, rather than whether the scores are high or low.

The facets that comprise Openness will now be discussed.

***Fantasy:*** Participants with high scores on this facet will be inclined to have a vivid imagination and experience rich fantasies. These people will create a stimulating inner world through their fantasies, which should be viewed not as escapist, but creative. Low scorers will be more inclined to focus on the present reality as they see it.

*Aesthetics:* High scorers have a deep fascination with, and appreciation of the arts. These people will be moved by poetry, music or visual arts. They need not display any specific artistic talent, but will have a greater than average knowledge of the arts and more profound appreciation of works of art. Low scorers will lack this enthusiasm and sensitivity for the arts.

*Feelings:* High scorers have a greater openness to their own inner experiences and emotions, and place high value on these emotions. These individuals thus experience deeper and more differentiated emotions than average, and thus feel both positive and negative emotions more intensely. Low scorers are inclined to have blunted affects and view emotions as less important than high scorers.

*Actions:* This facet refers to the inclination to try new activities, go to different places, or eat unusual foods. High scorers are inclined to try different hobbies, and will prefer variety to routine. Low scorers do not enjoy change and will stick to familiar routines.

*Ideas:* This facet refers to the ability to be open-minded and contemplate unconventional ideas for their own sake. It refers to the active pursuit of intellectual interests for the enjoyment of doing so. High scorers are fascinated by brain teasers and enjoy philosophical debates. Low scorers lack curiosity and will focus their attention on more limited subjects.

***Values:*** This facet refers to the tendency to re-examine social, political, and religious values. Low scorers will be inclined to accept authority and tradition, and will be generally more conservative than their high scoring colleagues. High scorers could be seen as undogmatic.

#### 2.3.3.1.4 *AGREEABLENESS*

This domain refers to a general belief that others are to be helped and that one will be helped in return (Costa & McCrae, 1992). The individual who scores highly on this domain will be altruistic and sympathetic to others. There is thus a strong interpersonal component to this domain. People scoring low on this dimension could be disagreeable, antagonistic, egocentric, sceptical, and competitive rather than co-operative. High scores on this dimension have been associated with dependent personality disorder, while low scores have been associated with paranoid, narcissistic, and antisocial personality disorders.

The facets comprising this dimension are as follows:

***Trust:*** High scorers will view others as honest and well-meaning. Low scorers will be cynical and sceptical and view others as dishonest or devious.

*Straightforwardness:* High scorers will be inclined to be frank and sincere. Low scorers are likely to manipulate others through flattery and deception. Low scorers see these as necessary social skills, and view high scorers as naïve. Low scorers could also be more reticent with their opinions and inclined to stretch the truth. Low scorers should not be viewed as dishonest, manipulative people, but rather as being more disposed towards using these skills than high scorers. This scale must not be utilised as a lie scale or validity test for this instrument.

*Altruism:* High scorers are inclined to be generous people concerned for the welfare of others. They consider other people and are always willing to help them. Low scorers are more self-centred and reluctant to get involved in other people's difficulties.

*Compliance:* This facet refers specifically to situations of interpersonal conflict. High scorers will comply to other's requests, inhibit aggressive responses, and forgive and forget. High scorers are viewed as meek and mild individuals. Low scorers are seen as more aggressive and competitive, and likely to express anger when required.

*Modesty:* High scorer will be inclined to be humble and self-effacing, while at the same time not lacking in self-confidence or self-esteem. Low scorers believe they are superior to others and could be seen as conceited or arrogant by others. The clinical conception of narcissism reflects a pathological lack of modesty.

*Tender-Mindedness:* This facet refers to attitudes of concern and sympathy for others. High scorers are inclined to emphasise the human side of social policies, and be moved by the needs of others. Low scorers remain unmoved by appeals to pity, and view themselves as realists making rational, logical decisions.

### 2.3.3.1.5 *CONSCIENTIOUSNESS*

This domain refers to the traits of purposefulness, determination, and the ability to organise and plan tasks to their completion (Costa & McCrae,1992). High scores on this domain are associated with occupational achievement, punctuality, fastidiousness, reliability, and compulsive neatness and workaholic behaviour.

The facets comprising this dimension are as follows:

*Competence:* This facet refers to one's perception of oneself as capable, prudent, sensible, and effective. High scorers are likely to have an internal locus of control and have a high self-esteem, that results from one feeling capable of dealing with the demands of life. Low scorers are more likely to feel unprepared, incompetent and inept.

*Order:* High scorers are neat, tidy people, who are well organised and like to keep things in their proper places. Low scorers are disorganised people who view themselves as unmethodical. Extremely high scores on this facet could be indicative of Obsessive Compulsive Personality disorder.

*Dutifulness:* High scorers scrupulously fulfil their moral obligations and adhere strictly to their ethical principles. Low scorers are less dependable and reliable, and display a more casual attitude to their obligations.

*Achievement Striving:* High scorers have high aspirations and work hard to achieve their goals. These individuals are diligent and dedicated with a strong sense of purpose and direction in life. Very high scorers could over invest in their careers and become workaholics. Low scorers are not driven to succeed, and appear lackadaisical or lazy. They lack ambition and are often content with their low levels of achievement.

*Self-Discipline:* This facet refers to the ability to carry out boring tasks to their completion in spite of distractions. High scorers are self-motivated people who get the job done. Low scorers are inclined to procrastinate, and are also easily discouraged and eager to quit.

*Deliberation:* This facet refers to the tendency to think before acting. High scorers are inclined to be cautious and deliberate. Low scorers are inclined to

speak or act without considering the consequences. However some low scorers could be seen as spontaneous, able to think on their feet, and make snap decisions.

## 2.4 MENTAL HEALTH

The term mental health has been used over the decades with a number of subtle shifts in emphasis that make it necessary to note these perspectives and relate them to this study. It is of note that in a recent psychiatric diagnostic textbook (Kaplan, Sadock, & Grebb, 1994) no definition is given of mental health, while one is presented for mental disorder. This illustrates the stance taken by the medical model, which depicts the pathogenic focus and regards health as the absence of symptomatology.

Mental health has also been conceptualised by psychiatrists as the average, and mental illness the deviations from this average. The difficulty with this definition lies in the determination of this "average" (Jaspers, 1963). The concepts of health and illness that Jaspers (1963) proposed find little support in modern psychiatry, which focuses on determining the presence or absence of certain features which are then regarded as symptomatology of a mental disorder or illness.

Further definitions of mental health such as those posited by Maslow, Rogers and Klein have postulated an ideal personality type (George & Brooker, 1984), which is then viewed as not just psychologically healthy but possibly even optimal, which further reinforces the salutogenic paradigm. The World Health Organisation (WHO) defined health as a state of complete physical, mental and social well-being, and not merely the absence of disease (Kaplan, Sadock, & Grebb, 1994); this definition thus includes both the pathogenic and the salutogenic paradigms.

The WHO's definition of health added the concept of well-being to the definition of health. Emmons (1986 & 1992) uses the concepts subjective well-being and psychological well-being interchangeably, and views this construct as consisting of the following components: positive affect, negative affect and life satisfaction. This definition of psychological well-being thus has an emotional component in the form of affect, and a cognitive component in the form of life satisfaction (Pavot & Diener, 1993).

Ryff (1989) noted that happiness was also an important aspect of psychological well-being, but that there were several other dimensions of psychological well-being that required attention and needed to be operationalised. These dimensions appeared separate from the well researched concepts of psychological well-being (positive and negative affect, & cognition), they are the following: self-acceptance, positive relations with others, autonomy, environmental mastery, purpose in life, and personal growth. This research conducted by Ryff (1989) highlighted the need for further research in the area of psychological well-being. Van Staden & Krüger (1994) noted the need for clarification of the concepts sickness and health in the medical profession, indicating that even in its field of origin the exclusive use of the pathogenic model is queried.

It can be seen from the above that the construct mental health can have different meanings and implications for different people. It could explicitly denote pathology for some or optimal functioning for others. Due to the nature of this study it is necessary to focus on both the symptomatology (or negative mental health) and the experience of subjective well-being (or positive mental health) (Emmons, 1992), so both perspectives are utilised in this study. It is also of note that no researchers could be found who advocate the abandoning of any of these perspectives in favour of the exclusive use of another perspective, indicating that they are generally accepted as being complimentary in the field of health research.

## 2.5 SOC AND MENTAL HEALTH

### 2.5.1 Social Influences on SOC and Health

Social class has been related to illness in a number of studies. People in lower income groups have been found to have higher rates of mortality and morbidity of most diseases and illnesses (Syme & Berkman, 1976 in Antonovsky, 1979). Syme & Berkman suggest that this vulnerability be attributed to the general manner in which people attempt to resolve difficulties in their everyday lives. This vulnerability could in turn also be related to SOC, in that it would appear to reflect the manageability component of SOC. If a weak SOC is a central characteristic of lower-class life then SOC would appear to be related to health status.

To further support this one has only to examine the mortality rates of widowed and unmarried males and compare them to those of their married counterparts. Married males were found to have significantly lower mortality rates than unmarried males (Gove, 1973 in Antonovsky, 1979).

Hinkle and Wolf (1957, in Antonovsky, 1979) studied Chinese expatriates living in New York who had been exposed to a rapidly changing culture, physical relocations and repeated disruptions of their social patterns. They claim that the

healthiest members of this community were those that were able to tolerate these disruptions and view them as normal and expected. If these disruptive experiences exceed the ability of the individual to meet them, ill health will result. Antonovsky (1979) suggests a strong SOC would insulate individuals from the effects of these experiences and thus prevent them from becoming ill.

SOC has been closely related to locus of control (Lefcourt, 1976 in Antonovsky 1979). External locus of control or learned helplessness has been linked to depression (Seligman, 1975 in Antonovsky, 1979), which would lend support to a link between SOC and depression. Glass (1977, in Antonovsky, 1979) distinguishes Type A (coronary prone personality) as a behavioural pattern and as a global orientation of learned helplessness (weak SOC). He asserts that the exposure of Type A's to uncontrollable stress results in enhanced vulnerability to helplessness among them, which predisposes them to coronary heart disease. A weak SOC combined with Type A behaviour and lack of environmental control, can therefore lead to coronary heart disease.

Holmes and Rahe (in Antonovsky, 1979) related life events (events associated with disruption and stress in the average persons life for example, death of a spouse, going on vacation, or moving house) to ill health. Antonovsky (1979) agrees that a person with a weak SOC, when confronted by life changes would likely respond with a sense of helplessness which in turn could become a self-fulfilling prophecy rendering adaptation unlikely. However, these life changes

could also facilitate the development of GRR's, which in turn contribute to the strength of SOC. An individual with a strong SOC could thus experience the life changes as salutary (Antonovsky, 1987). Thus while Antonovsky concurs with Holmes and Rahe that life events can effect health, he differs as to how they effect health.

### 2.5.2 Empirical Evidence that links SOC to Health

SOC has been negatively correlated with trait anxiety and illness measures, and positively correlated with positive health measures (Antonovsky, 1987). SOC was correlated positively with a general health rating and social support while it was negatively correlated with powerlessness (Strümpfer & Louw, 1989 in Strümpfer, 1990). Fritz (1989, in Strümpfer, 1990) found negative correlations between SOC, somatic complaints and depression. Job satisfaction and life satisfaction were positively correlated with SOC. Margarlit & Eysenck (1990) found positive correlations between gender, (female) social skills and SOC and negative correlations with psychotism, neuroticism and extraversion.

SOC was negatively correlated with life stress and psychological symptomatology (Flannery & Flannery, 1990). Antonovsky & Sagy (1986) found that SOC strength increased with adolescent's age and that stability of the community contributes to SOC strength along with emotional closeness. These researchers also noted that SOC was negatively correlated to anxiety states in a

"normal" potentially ego-threatening situation, but displayed no correlation in an acute, communal stress situation. Antonovsky & Sagy (1986) thus noted that while their research supported Antonovsky's theoretical model empirically, it also illustrated a limitation, in that individual mobilisation of coping skills is not sufficient to guarantee the positive health of a community subject to acute stress.

Margalit, Leyser & Avraham (1989) noted that an orientation to personal growth was positively related to SOC. Antonovsky's SOC was found to have a strong negative correlation with trait anxiety that was confirmed with an eighteen month follow up (Bernstein & Carmel, 1987; Carmel & Bernstein, 1989). SOC was found to have a strong negative correlation with the SCL-90, a measure of psychiatric pathology (Dahlin, Cederblad & Antonovsky, 1990).

Antonovsky's SOC has thus been theoretically and empirically related to aspects of mental health.

## 2.6 THE FIVE FACTOR MODEL AND ITS RELATIONSHIP TO MENTAL HEALTH

Personality has been linked to health in three different ways:

1. Personality traits have been hypothesised to influence the physiological response of the individual to stress, which in turn has been hypothesised to hasten disease (Smith & Williams, 1992).

2. Personality traits are causally related to specific behaviours which increase the risk of disease. Such behaviours could be: imprudent diet, smoking, or a sedentary lifestyle (Smith & Williams, 1992).

3. Personality traits can have a moderating effect on acute medical crises, and facilitate the adjustment to chronic illness (Smith & Williams, 1992).

As can be seen by the above the primary focus has been pathogenic, and related personality to physical, and not psychological illness/ health. To enable us to examine the relationship between personality and mental or psychological health it is necessary to look at empirical support of this relationship.

Liebowitz, Stallone, Dunner & Fieve (1979 in Costa, 1991), noticed elevated neuroticism in depressed patients. Paraphilic males were found to have elevated Neuroticism scores, low Agreeableness and low Conscientiousness scores on the NEO-PI (Fagan, Wise, Schmidt, Ponticas, Marshall & Costa, 1991).

McCrae (1991) noted that an analysis of all five factors of the NEO-PI was required to facilitate the understanding of individual personality disorders. Mutén (1991), in evaluating patients for a behavioural medicine program, noted that elevated Neuroticism scores differentiated patients from normal groups. In addition to this he noticed that patients scoring low on Conscientiousness had a weaker prognosis. It is clear from this that the personality trait, Neuroticism, is negatively related to psychological well-being, while low Conscientiousness scores defer the realisation of psychological well-being.

Miller (1991), in his research with psychotherapy patients, noted that patients with high Neuroticism, low Extraversion and low Conscientiousness have little capacity for psychological well-being.

The NEO-PI has been found to facilitate the diagnosis of both axis I and axis II (DSM-III-R) psychopathology (Widiger & Trull, 1992). This would imply correlations between various personality traits and mental illness, of both an acute and a chronic nature.

Coping behaviour in response to stress was related to personality traits, resulting in the conclusion that Neuroticism correlates with maladaptation, while Extraversion and Openness correlate with adaptation (McCrae & Costa, 1986). Neurotic coping was found to relate negatively to psychological well-being.

Personality traits were related to life satisfaction and various other measures of psychological well-being (McCrae & Costa, 1991). Agreeableness, Conscientiousness and Extraversion were found to predict higher levels of subjective well-being, while Neuroticism was negatively correlated to well-being (McCrae & Costa, 1991). These results are supported by a study (Pavot, Diener & Fujita, 1990) that noted a positive correlation between Extraversion and subjective well-being and a positive correlation between Neuroticism and negative affect.

While subjective well-being can be used as a measure of psychological health its relationship with objective health is weak (Brief, Butcher, George & Link, 1993). These authors have further noted that subjective well-being can be effected by both personality predisposition and the influences of life events (A conclusion that supports the findings of research conducted by Headey & Wearing in 1989). It has been suggested that psychological well-being is synonymous with happiness (Pavot, Diener & Fujita, 1990). Ryff (1989) claims that this conceptualisation of psychological well-being is too narrow, and suggests that attention be focused on the construct, personal striving, among others.

Personal strivings and the recurring goals an individual is trying to accomplish, have been associated with psychological distress, and in particular depression (Emmons, 1992). As personal strivings are viewed as dispositional characteristics that differ from individual to individual, it would seem that they

are related to personality traits as defined by McCrae & Costa (1990). In an earlier study (Emmons, 1986) it was hypothesised that strivings are more closely related to subjective well-being than personality traits, and should be differentiated from them. In this earlier article however, traits were defined less broadly than the definition used by McCrae & Costa (1990). Emmons (1986) further neglects to mention that personality could well be expressed through personal strivings.

In the preceding paragraphs, the evidence linking personality to mental health has been primarily argued through linking personality dimensions to specific forms of psychopathology. Due to the lack of objective evidence linking personality to objective psychological health, we can only infer such a relationship based on the available research linking personality dimensions to subjective well-being (Wissing & Du Toit, 1994) and psychopathology.

## 2.7 PERSONALITY AND SOC

In the preceding paragraphs both SOC and personality have been linked to mental health. It is thus possible that SOC and personality are related. This possibility will now be investigated.

The definitions of both SOC and personality will be examined to determine if they are related theoretically. Hereafter, presuming a relationship is found, the nature of it will be investigated and empirical evidence used to guide this discussion.

SOC is defined as - a global orientation which facilitates a dynamic, enduring perception of the world as comprehensible, manageable and meaningful (Antonovsky, 1987). This orientation is seen by Antonovsky (1987) as stably situated on the SOC continuum by thirty years of age. Antonovsky (1987) differentiates SOC from personality by stressing the comparative broadness of SOC as a dispositional orientation, as opposed to a personality trait. Antonovsky (1987) views traits as neuropsychic determinants of perception and response to that perception. These traits are seen as individual and abstracted from the situation in which they are expressed (Antonovsky, in Friedman, 1991). According to Antonovsky, personality thus determines specific behavioural responses, while SOC predicts the quality of these responses. The SOC will thus facilitate the emotional and cognitive evaluation of a given situation, and will not predict a specific behaviour. This evaluation will effect the way a person behaves in a particular situation. The individual with a strong SOC will note the uniqueness of the situation and adaptive, flexible behaviour will result (Antonovsky, 1987).

While he differentiates SOC from personality, Antonovsky (in Friedman, 1991) contributed a chapter titled "Personality and Health: Testing the Sense of Coherence Model" to a book in the field of health psychology. In this chapter he discusses SOC and relates it to health. This seems to indicate that while Antonovsky (1987; in Friedman 1991) might differentiate SOC from personality, he does condone some sort of relationship between the two phenomena. Dana (1985) also views SOC as being related to personality as he suggests using SOC as a way of giving subjects feedback on their personality functioning.

McCrae and Costa (1990) view personality traits as enduring dispositions that are unlikely to change significantly once a person has attained thirty years of age. These dispositions are expressed in tendencies to display consistent patterns of thoughts, actions and feelings (McCrae & Costa, 1990). In this definition traits predispose individuals to act in specific ways in certain circumstances depending on the strength of a particular trait, and the nature of the circumstances. Traits therefore cannot determine specific behaviour in a given situation, but they can predict tendencies to behave in a certain way (McCrae & Costa, 1990).

McCrae and Costa (1990) thus appear to have narrowed the conceptual distance between SOC and personality by adopting a more flexible definition of personality traits than that used by Antonovsky (1987; in Friedman, 1991). Both SOC and personality traits refer to dispositional orientations. SOC and personality traits are stable after thirty years of age. Personality traits and SOC

are sensitive to the situation that the individual is exposed to, and will effect his or her behaviour. Both SOC and personality traits have cognitive, emotional and action components. It is thus apparent that personality as defined by McCrae and Costa (1990) and SOC (Antonovsky, 1979, 1987) are theoretically related.

Empirical evidence reviewed previously found SOC to be negatively correlated to life stress, physical and mental illness along with the personality dimensions of psychotism, neuroticism and extraversion. SOC has evolved out of a tension and stress milieu which could have salutogenic (high SOC) or pathogenic (low SOC) consequences. SOC can only develop with exposure to tension and stress, the facilitative resolution of which depends on the presence of GRR's-RD's. Neuroticism has been found to mitigate against the successful coping with stressors, psychological well-being and physical health. One would thus expect a high negative correlation between SOC and Neuroticism.

SOC has, in the preceding paragraphs, been shown to correlate positively with psychological well-being, physical health, social support and the ability to cope with stress. The personality traits of Agreeableness, Extraversion and Conscientiousness have been positively correlated with psychological well-being. Extraversion and Openness were found to correlate positively with the adaptive coping with stressors, while Conscientiousness was found to correlate

to psychotherapy prognosis. A positive correlation between high SOC and Extraversion, Agreeableness and Openness could thus be expected.

In examining the empirical support of a possible relationship between SOC and personality traits, it is of note that the support of a high negative correlation between Neuroticism and SOC seems more substantial than the evidence correlating any of the other personality traits with SOC.

## 2.8 SUMMARY AND INTEGRATION

In the above the concepts of SOC, personality, and health have been examined and various theoretical and empirical correlations highlighted. Both personality and SOC were found to be related to various components of positive and negative mental health, while some authors linked SOC directly to personality. In the following chapter the methodology of the empirical investigation undertaken in this study will be described.

# CHAPTER 3

# EMPIRICAL INVESTIGATION

## 3.1 INTRODUCTION

In this chapter the aims of the empirical study will be presented, after which the design of the study will be described. The characteristics of the participants will be described along with their allocation into each of the two groups used in this study. Thereafter the psychometric instruments and their rationale, administration, validity, reliability, and motivation for their use will be presented. The procedure undertaken will be described as well as the statistical analysis, hypotheses, and statistical hypotheses.

## 3.2 AIM OF THE STUDY

The aim of the empirical study was to determine whether there is a:

1. relationship between SOC scores and indicators of positive and negative mental health;
2. relationship between indicators of personality and indicators of positive and negative mental health;

3. relationship between SOC scores and personality indicators;

4. significant difference in the means of patients and non-patients in SOC scores, indicators of positive and negative mental health, and personality indicators.

## 3.3 DESIGN

An ex post facto cross sectional two group design was used.

## 3.4 PARTICIPANTS

Participants were selected on the basis of availability. Two groups of participants took part in this study:

*Group P (patients)* comprised fifteen males and fifteen females aged between twenty four and forty five years. These participants were inpatients at a mental hospital in a metropolitan area. All these patients were deemed to be suffering from a psychiatric illness (DSM IV) by a multidisciplinary team, trained in psychodiagnosis. The diagnoses included mood disorders, anxiety disorders, eating disorders, and almost without exception, personality disorders. Cluster B personality disorders were prevalent, and in particular, borderline personality disorder. None of the patients were psychotic, or suffering from organic neuropathology. The patients participated voluntarily.

***Group N (non-patients)*** comprised fourteen males and sixteen females aged between twenty four and forty years. These people were resident in the same metropolitan area as those in Group P. Members of this group had no history of a psychiatric disorder. In addition they had to either be employed, or functioning well within their family environment if not employed.

## 3.5 MEASURING INSTRUMENTS

### 3.5.1 Biographic Questionnaire

This was constructed by the researcher to facilitate the description of the participants. It required of the participants to answer a few biographical questions before commencing with the actual psychometrics (see Appendix A).

## 3.5.2 Sense of Coherence Scale (Antonovsky, 1987)

### 3.5.2.1 Rationale:

This scale was devised by Antonovsky (1987) to operationalise his SOC construct. It is a twenty nine item questionnaire that measures the three components of SOC (Manageability, Comprehensibility and Meaningfulness) and integrates them into a global score.

### 3.5.2.2 Nature and Administration:

The SOC scale is a self-report measure consisting of twenty nine items. Respondents are required to respond to statements about their lives on a bipolar continuum, with the numbers one and seven being answers at each end of the continuum.

### 3.5.2.3 Scoring and Interpretation:

A SOC score is obtained by adding the totals of the indicated choices, ensuring that the scale is reversed for those that are reverse scored. This score is the total SOC score, which if high indicates a high SOC, and if low indicates a low SOC.

### 3.5.2.4 Validity and Reliability:

Preliminary data seems to support the validity of the scale (Antonovsky, 1993; Frenz, Carey, and Jorgensen, 1993) The SOC scale has been found to have high levels of reliability, with Cronbach alpha scores ranging from 0.82 to 0.95 (Antonovsky, 1993; Frenz, Carey, and Jorgensen, 1993). In this study a reliability level of 0.94 (Cronbach's alpha) was obtained

### 3.5.2.5 Motivation for Use:

SOC is the main construct used in this study. This scale was developed by Antonovsky (1987), who was also responsible for the theoretical grounding of the SOC construct. This scale has been used extensively in both published and unpublished research (Antonovsky, 1993; Frenz, Carey, and Jorgensen, 1993).

### 3.5.3 Personality: Revised NEO-Personality Inventory (NEO-PI-R) (Costa & McCrae, 1992).

#### 3.5.3.1 Rationale:

This is a self-report scale that measures the five factors or dimensions of personality based on personality trait theory.

#### 3.5.3.2 Nature and Administration:

The NEO PI-R is a two hundred and forty item scale. Statements are made to which the respondent indicates strong disagreement, disagreement, neutral, agreement, or strong agreement. The instructions are given to the respondent who then proceeds to complete the questionnaire. The five dimensions identified by the authors are; Neuroticism (N), Extraversion (E), Openness (O), Agreeableness (A), and Conscientiousness (C). Each of the above dimensions comprises six facets. The Neuroticism facets are: Anxiety, Angry Hostility, Depression, Self-Consciousness, Impulsiveness, and Vulnerability. The facets of Extraversion are: Warmth, Gregariousness, Assertiveness, Activity, Excitement-Seeking, and Positive Emotions. Openness facets are: Fantasy, Aesthetics, Feelings, Actions, Ideas, and Values. The Agreeableness facets are: Trust, Straightforwardness, Altruism, Compliance, Modesty, and Tender-Mindedness.

The Conscientiousness facets are: Competence, Order, Dutifulness, Achievement Striving, Self-Discipline, and Deliberation.

#### 3.5.3.3 Scoring and Interpretation:

Raw scores are obtained for each of the six facets of the five dimensions. These facets are then totalled to obtain scores for the relevant dimensions. Each of these facets and dimensions can then be transferred to normalised T values to obtain a profile according to the norms. As correlations and significant differences were required by this study, the scores used here are raw scores and not standardised scores. High scores in a particular facet or dimension indicate a high presence of that specific facet or factor in the respondent, and vice versa.

#### 3.5.3.4 Validity and Reliability:

The NEO PI-R has been found to be valid on a number of different populations (Costa & McCrae, 1992). Reliability of the factors ranges from 0.86 to 0.92 (Cronbach's alpha), while reliability of the facets ranges from 0.56 to 0.81 (Cronbach's alpha) (Costa & McCrae, 1992). The reliability factors obtained for the individual dimensions in this research were as follows: Neuroticism 0.93, Extraversion 0.85, Openness 0.87, Agreeableness 0.75, and Conscientiousness 0.86.

#### 3.5.3.5 Motivation for Use:

This scale is a highly valid and reliable measure of the five personality factors. Research using this scale has proliferated, which has led to its further validation and reliability (Piedmont & Weinstein, 1993; Montag & Levin, 1994). This is generally accepted as the best scale from which to measure personality as conceptualised in personality trait theory.

### 3.5.4 Positive Mental Health: Satisfaction With Life Scale (SWLS) (Diener, Emmons, Larsen, & Griffin, 1985)

#### 3.5.4.1 Rationale:

This is a self-report scale that measures the cognitive evaluative component of subjective well-being.

#### 3.5.4.2 Nature and Administration

This is a five item scale in which respondents indicate their agreement or disagreement with the statements made on seven point scales, where one indicates strong disagreement, four neutrality, and seven strong agreement.

#### 3.5.4.3 Scoring and Interpretation:

The SWLS score is obtained by totalling the responses, high scores indicate high SWL.

#### 3.5.4.4 Validity and Reliability:

This scale has been found to be both valid and reliable in a number of studies over a period of time (Diener, Emmons, Larsen, & Griffin, 1985; Pavot, Diener, Colvin, & Sandvik, 1991; Pavot, & Diener, 1993). In this study the reliability factor of this scale was found to be 0.89 (Cronbach's alpha).

#### 3.5.4.5 Motivation for Use:

In spite of its brevity this scale has been found to have high levels of reliability and validity in a number of studies (Diener, Emmons, Larsen, & Griffin, 1985; Pavot, Diener, Colvin, & Sandvik, 1991; Pavot & Diener, 1993). Pavot & Diener (1993) further recommended this measure to complement those that measure psychopathology, to gain the individual's subjective evaluation of personal well-being.

## 3.5.5 Negative Mental Health: Symptom Checklist (SCL-90) (Derogatis, Lipman, & Covi, 1973).

### 3.5.5.1 Rationale:

This is a self-report scale designed to measure the presence and degree of psychiatric symptomatology experienced by the respondent at the time of testing and during the week preceding testing.

### 3.5.5.2 Nature and Administration:

This scale consists of a list of ninety symptoms. Respondents are required to indicate how much they were bothered by the these symptoms during the week prior to, and up until they completed the questionnaire. Respondents choose to indicate their distress for each symptom on a five point scale ranging from "not at all"(0) to "extremely"(4). The SCL-90 comprises the following subscales; Somatisation, Obsessive-compulsive, Interpersonal Sensitivity, Depression, Anxiety, Anger-hostility, Phobic Anxiety, Psychoticism, Paranoid Ideation, and Sleep Difficulty.

#### 3.5.5.3 Scoring and Interpretation:

The respondents scores are added to give a total. The higher the total the greater the amount and severity of symptomatology experienced by the respondent.

#### 3.5.5.4 Validity and Reliability:

This scale was found to have high levels of validity and reliability, and was found to be particularly useful for differentiating healthy from unhealthy people in the general population (Hafkenscheid, 1993). The reliability index obtained in this study was 0.98 (Cronbach's alpha).

#### 3.5.5.5 Motivation for Use:

This instrument was found to be highly valid for differentiating psychologically healthy people from those who are unhealthy (Derogatis, Lipman, & Covi, 1973; Hafkenscheid, 1993). This scale was used in this study to operationalise symptomatology as viewed from a pathogenic paradigm.

## 3.6 PROCEDURE

Group P (patients) were volunteers from a mental hospital in a metropolitan area where the researcher was employed. They signed a letter of informed consent to indicate their willingness to participate in this study (see Appendix B). These subjects were then required to complete the tests in the presence of the researcher.

Group N (non-patients) were recruited using the snowball method. After ensuring that they understood the test procedure and instructions, and had signed a letter of informed consent, testing proceeded.

The test battery took approximately one and a half hours to complete.

## 3.7 STATISTICAL ANALYSIS

Descriptive statistics (mean, standard deviation, & the range) were calculated, as well as the reliability indices for all the tests. Pearson correlations were obtained to determine the intercorrelations of the scores. The t-tests were used to determine the differences between the two groups for every test.

## 3.8 STATISTICAL HYPOTHESES

$H0_1$ There will be no significant correlation between/ among pairs of the following tests: SOC, NEO PI-R (N, E, O, A, C), SWLS, and/ or SCL-90.

$H1_1$ There will be significant correlation between/ among pairs of the following tests: SOC, NEO PI-R (N, E, O, A, C), SWLS, and/ or SCL-90.

$H0_2$ Group P and group N will not differ significantly with regard to scores on the following tests: SOC, NEO PI-R (N, E, O, A, C), SWLS, and/ or SCL-90.

$H1_2$ Group P and group N will differ significantly with regard to scores on the following tests: SOC, NEO PI-R (N, E, O, A, C), SWLS, and/ or SCL-90.

## 3.9 SUMMARY

The empirical investigation has been described and the hypotheses stated. In the following chapter the results of the statistical analysis will be reported and interpreted.

# CHAPTER 4

# RESULTS AND INTERPRETATIONS

## 4.1 INTRODUCTION

In this chapter the descriptive statistics for all the measuring instruments will be presented.

The relationship between SOC scores, personality indicators, and indicators of positive and negative mental health will be examined, and the statistical hypotheses tested.

Group N (Non-patients) and Group P's (Patients) scores on all the psychometric instruments will be examined to determine if they differ significantly or not.

The results of the above analyses will then be interpreted and discussed in relation to previous research as reported in Chapter 2.

## 4.2 DESCRIPTIVE STATISTICS AND RELIABILITY OF THE MEASURING INSTRUMENTS

Cronbach's alpha was used to determine the reliability indices of the instruments used in this study. It can be seen from Table 1 that all the measuring instruments displayed high reliability (Cronbach alfa's ranging from 0.75 to 0.98). The results and conclusions obtained in this study thus have a reliable basis.

**Table 1: Descriptive Statistics and Reliability of all Measuring Instruments (N= 60).**

| | Mean | Std Dev | Range | Cronbach's Alfa |
|---|---|---|---|---|
| SWLS | 18.78 | 8.27 | 5 - 35 | 0.89 |
| SOC | 126.30 | 29.28 | 68 - 182 | 0.94 |
| SCL-90 | 99.08 | 75.93 | 10 - 310 | 0.98 |
| NEO PI-R | | | | |
| NEUROTICISM | 99.67 | 28.44 | 50 - 163 | 0.93 |
| EXTRAVERSION | 107.42 | 20.71 | 56 - 161 | 0.85 |
| OPENNESS | 116.60 | 21.45 | 81 - 168 | 0.87 |
| AGREEABLENESS | 115.50 | 15.12 | 74 - 143 | 0.75 |
| CONSCIENTIOUSNESS | 112.37 | 19.51 | 46 - 150 | 0.86 |

The descriptive statistics for groups N and P are presented in Table 2.

**Table 2: Descriptive Statistics for Groups N and P.**

| | Group P (N= 30) | | | Group N (N= 30) | | |
|---|---|---|---|---|---|---|
| | Mean | Std Dev | Range | Mean | Std Dev | Range |
| SWLS | 14.27 | 7.85 | 5 - 35 | 23.20 | 5.93 | 10 - 33 |
| SOC | 110.87 | 27.38 | 68 - 173 | 141.73 | 22.92 | 87 - 182 |
| SCL-90 | 144.77 | 74.47 | 10 - 310 | 53.40 | 43.21 | 13 - 203 |
| N | 114.43 | 25.64 | 56 - 163 | 84.90 | 23.18 | 50 - 148 |
| E | 102.87 | 20.83 | 56 - 144 | 111.97 | 19.90 | 73 - 161 |
| O | 108.80 | 18.23 | 81 - 158 | 124.40 | 21.86 | 85 - 168 |
| A | 114.57 | 16.23 | 74 - 143 | 116.43 | 14.04 | 92 - 140 |
| C | 109.97 | 22.40 | 46 - 150 | 114.77 | 16.14 | 71 - 146 |

N= Neuroticism
E= Extraversion
O= Openness
A= Agreeableness
C= Conscientiousness

Group P's mean scores on the SWLS indicate that members of this group experienced a very low level of satisfaction with their lives, while the mean scores of Group N indicated that these participants were generally satisfied with their lives when scores are compared to those found by Diener, Emmons, Larsen, & Griffin (1985).

Group P's mean scores on the SOC scale were below those expected by normal healthy participants, while the mean scores attained by Group N were indicative of the expected scores for healthy participants (cf. Antonovsky, 1987, 1993; Wissing & Du Toit, 1994).

Group P's mean scores on the SCL-90 were indicative of a higher level of psychiatric symptomatology than would be expected from psychologically healthy participants (cf. Derogatis, Lipman, & Covi, 1973; Hafkenscheid, 1993). Group N's mean scores on the SCL-90 indicated a low level of symptomatology, as could be expected from psychologically healthy participants (cf. Derogatis, Lipman, & Covi, 1973; Hafkenscheid, 1993).

Group P's mean scores on the Neuroticism dimension were in the high to very high norm range, while Group N's mean scores on this dimension were in the average norm range (cf. Costa & McCrae, 1992). With scores like these group P participants are thus likely to suffer psychological distress, or negative affects (cf. Costa & McCrae, 1992).

Group P and Group N attained mean scores in the average norm range on the Extraversion dimension (cf. Costa & McCrae, 1992). Participants in both groups thus enjoy socialising, and participating in large group activities to a moderate degree (cf. Costa & McCrae, 1992).

Group P's mean scores on the Openness dimension were in the average norm range, while Group N's mean scores on this dimension fell within the high norm range (cf. Costa & McCrae, 1992). Group N participants could thus be expected to display high levels of creativity and openness to experiences, and lower than average levels of conservativism (cf. Costa & McCrae, 1992).

Both Group P and Group N displayed mean scores in the low to average norm range on the Agreeableness dimension (cf. Costa & McCrae, 1992). Participants in both groups are thus likely to display a lower, to an average degree of altruism and sympathy for others predicaments (cf. Costa & McCrae, 1992).

Groups P and N both attained mean scores in the low to average norm range on the Conscientiousness dimension (cf. Costa & McCrae, 1992). Participants in both groups are therefore likely to exhibit a low to an average amount of purposefulness, determination, and planning (cf. Costa & McCrae, 1992).

An examination of Table 2 revealed a broad range of scores and standard deviations, particularly among Group P, reflecting the individual differences among participants. It must thus be noted that while individual participants may differ from the norms in their respective groups, in this study the mean scores are to be considered as representative of a particular group.

## 4.3 CORRELATIONS BETWEEN INDICATORS OF THE CONSTRUCTS: SOC, MENTAL HEALTH, AND PERSONALITY

In this section the relationships between these constructs will be examined. Initially the relationship between SOC and mental health will be examined, then that between personality and mental health, and finally the relationship between SOC and personality will be examined.

Table 3 presents the correlations between the above mentioned constructs for Groups N and P combined.

**Table 3: Correlation Matrix of the Measuring Instruments for both Groups (N= 60).**

| | SWLS | SOC | SCL-90 | N | E | O | A | C |
|---|---|---|---|---|---|---|---|---|
| SWLS | 1.00 | 0.74** | -0.67** | -0.67** | 0.28* | 0.14 | 0.28* | 0.47** |
| SOC | | 1.00 | -0.82** | -0.85** | 0.51** | 0.05 | 0.11 | 0.59** |
| SCL-90 | | | 1.00 | 0.73** | -0.36** | -0.22 | -0.12 | -0.40** |
| N | | | | 1.00 | -0.44** | 0.03 | -0.19 | -0.56** |
| E | | | | | 1.00 | 0.25 | -0.06 | 0.37** |
| O | | | | | | 1.00 | 0.06 | -0.05 |
| A | | | | | | | 1.00 | 0.27* |
| C | | | | | | | | 1.00 |

* P<0.05
** P<0.01

***SOC and mental health:*** SOC showed a strong negative correlation with the SCL-90, indicating that SOC has an inverse relationship with psychiatric symptomatology. SOC displayed a strong positive correlation with SWLS, the indicator of subjective well-being. $HO_1$ is thus rejected with reference to the relationship between SOC and SCL-90, as well as between SOC and SWLS. $H1_1$ is therefore supported with reference to the relationship between SOC and SCL-90, and between SOC and SWLS. This research thus supports previous research positing a significant relationship between SOC and mental health (Antonovsky, 1987; Fritz, in Strümpfer, 1990; Margarlit & Eysenck, 1990; Flannery & Flannery, 1990; Dahlin, Cederblad, & Antonovsky, 1990).

In Tables 4 and 5 it can be seen that the above relationship between SOC and health was replicated in both Group N and Group P when analysed separately.

***Personality and mental health:*** As indicated in Tables 3, 4, & 5, Neuroticism as a dimension of personality, displayed high positive correlations with psychiatric symptomatology (SCL- 90) in Group N, Group P, and both groups combined, along with high negative correlations with subjective well-being (SWLS). This supports previous research positively correlating Neuroticism to negative mental health, or psychopathology (Mutén, 1991; Liebowitz, Stallone, Dunner, & Fieve, 1979 in Costa, 1991; McCrae & Costa, 1991). $H0_1$ is thus rejected with reference to Neuroticism's correlations with SWLS and the SCL-90, while $H1_1$ is supported with regard to these relationships. For a more detailed examination

of the relationship between personality and mental health it is necessary to refer to Tables 6, 7, and 8, which present the correlations between the personality facets that comprise the five dimensions, and mental health indicators.

**Table 4: Correlation Matrix of the Measuring Instruments for Group N (Non-Patients) (N= 30).**

| | SWLS | SOC | SCL-90 | N | E | O | A | C |
|---|---|---|---|---|---|---|---|---|
| SWLS | 1.00 | 0.56** | -0.53** | -0.54** | -0.20 | -0.23 | 0.31 | 0.69** |
| SOC | | 1.00 | -0.74** | -0.85** | 0.27 | -0.08 | 0.07 | 0.64** |
| SCL-90 | | | 1.00 | 0.71** | -0.10 | -0.10 | -0.20 | -0.60** |
| N | | | | 1.00 | -0.14 | 0.09 | -0.20 | -0.64** |
| E | | | | | 1.00 | 0.51** | -0.28 | -0.05 |
| O | | | | | | 1.00 | -0.06 | -0.21 |
| A | | | | | | | 1.00 | 0.25 |
| C | | | | | | | | 1.00 |

* P<0.05
** P<0.01

**Table 5: Correlation Matrix of the Measuring Instruments for Group P (Patients) (N= 30).**

| | SWLS | SOC | SCL-90 | N | E | O | A | C |
|---|---|---|---|---|---|---|---|---|
| SWLS | 1.00 | 0.68** | -0.51** | -0.53** | 0.49** | 0.06 | 0.29 | 0.37* |
| SOC | | 1.00 | -0.76** | -0.74** | 0.64** | -0.29 | 0.10 | 0.61** |
| SCL-90 | | | 1.00 | 0.58** | -0.40* | 0.08 | -0.05 | -0.34 |
| N | | | | 1.00 | -0.60** | 0.34 | -0.17 | -0.56** |
| E | | | | | 1.00 | -0.18 | 0.09 | 0.63** |
| O | | | | | | 1.00 | 0.14 | -0.02 |
| A | | | | | | | 1.00 | 0.28 |
| C | | | | | | | | 1.00 |

* P<0.05
** P<0.01

It can be seen in Table 6 that all the Neuroticism facets display significant negative correlations with subjective well-being (SWLS) when both groups are combined. In Table 7 it is indicated that for Group N, only the Self-Consciousness facet of Neuroticism failed to exhibit a significant negative correlation with SWLS. For Group P (see Table 8) the only Neuroticism facets that did not display significant negative correlations with SWLS were Angry Hostility and Impulsiveness. These facets were thus not significantly related to the subjective well-being of Group P participants.. It can thus be seen that the majority of Neuroticism facets are negatively related to subjective well-being for both Groups P and N.

In Table 6 it is indicated that when Groups N and P were combined all the Neuroticism facets showed significant positive correlations with psychiatric symptomatology (SCL-90). An analysis of Group P's correlations (see Table 8) revealed that the facets; Angry Hostility, Self-Consciousness, and Impulsiveness did not exhibit significant correlations with SCL-90. A similar analysis of Group N's results (see Table 7) revealed that only the Impulsiveness facet did not correlate significantly with psychiatric symptomatology. It is thus apparent that while not all Neuroticism facets display significant correlations with indicators of psychological health, the association between Neuroticism and mental health indicators is a strong one.

The Extraversion dimension exhibited a significant positive correlation with SWLS and a significant negative correlation with the SCL-90 when both Groups P and N were combined (Table 3). In these regards $H0_1$ is thus rejected and $H1_1$ supported. Within Group N (see Table 4) no significant correlation was found between Extraversion and SWLS or between Extraversion and SCL-90. Thus for Group N Extraversion is not related to indicators of positive or negative mental health. In Group P a significant negative correlation was found between Extraversion and SCL-90, and a significant positive correlation between Extraversion and SWLS. For Group P participants there is thus a clear association between Extraversion and indicators of positive and negative mental health. An examination of the facet scales (Tables 6, 7, & 8) revealed that the facets contributing most significantly to Extraversion's relationship with

subjective well-being (SWLS) were Warmth and Positive Emotions. Again it is noteworthy that these significant relationships between Warmth and SWLS and between Positive Emotions and SWLS are manifested in Group P but not in Group N. This could possibly be indicative of the lower levels of Warmth and Positive Emotions experienced by the patient group that contributed to their difficulties functioning outside the hospital environment. While the Extraversion facets contributing to a negative correlation with SCL-90 were Warmth, Gregariousness, Assertiveness, and in particular, Positive Emotions. Extraversion and psychological health thus display strong associations for Group P, but not for Group N.

**Table 6: Correlation Matrix of NEO PI-R Subscales for both Groups (N= 60).**

| | SWLS | SOC | SCL-90 | N | E | O | A | C |
|---|---|---|---|---|---|---|---|---|
| NEUROTICISM | | | | | | | | |
| ANXIETY | -0.55** | -0.81** | 0.69** | 0.91** | -0.50** | 0.07 | -0.07 | -0.52** |
| ANGRY HOSTILITY | -0.47** | -0.42** | 0.48** | 0.67** | -0.08 | -0.20 | -0.42** | -0.36** |
| DEPRESSION | -0.67** | -0.85** | 0.76** | 0.85** | -0.42** | -0.03 | -0.13 | -0.45** |
| SELF-CONSCIOUSNESS | -0.56** | -0.73** | 0.57** | 0.83** | -0.44** | -0.02 | -0.03 | -0.32* |
| IMPULSIVENESS | -0.36** | -0.38** | 0.30* | 0.62** | -0.02 | 0.18 | -0.26* | -0.44** |
| VULNERABILITY | -0.55** | -0.76** | 0.62** | 0.86** | -0.56** | -0.12 | -0.05 | -0.61** |
| EXTRAVERSION | | | | | | | | |
| WARMTH | 0.38** | 0.51** | -0.39** | -0.50** | 0.77** | 0.29* | 0.15 | 0.51** |
| GREGARIOUSNESS | 0.23 | 0.45** | -0.33** | -0.41** | 0.71** | 0.04 | -0.08 | 0.22 |
| ASSERTIVENESS | 0.18 | 0.38** | -0.28* | -0.38** | 0.64** | 0.19 | -0.22 | 0.39** |
| ACTIVITY | 0.11 | 0.28* | -0.21 | -0.22 | 0.73** | 0.22 | -0.03 | 0.28* |
| EXCITEMENT SEEKING | -0.18 | -0.04 | 0.19 | 0.07 | 0.56** | -0.02 | -0.26* | -0.05 |
| POSITIVE EMOTIONS | 0.41** | 0.46** | -0.41** | -0.31* | 0.66** | 0.35** | 0.19 | 0.16 |
| OPENNESS | | | | | | | | |
| FANTASY | -0.02 | -0.06 | -0.07 | 0.17 | 0.08 | 0.79** | -0.12 | -0.22 |
| AESTHETICS | 0.07 | -0.10 | -0.01 | 0.19 | 0.12 | 0.71** | 0.22 | 0.10 |
| FEELINGS | 0.05 | -0.02 | -0.03 | 0.17 | 0.33* | 0.75** | 0.15 | 0.04 |
| ACTIONS | 0.15 | 0.02 | -0.20 | -0.18 | 0.18 | 0.54** | 0.04 | -0.17 |
| IDEAS | 0.13 | 0.24 | -0.36** | -0.30* | 0.32* | 0.75** | -0.01 | 0.11 |
| VALUES | 0.22 | 0.13 | -0.27* | -0.18 | 0.04 | 0.70** | -0.02 | -0.11 |
| AGREEABLENESS | | | | | | | | |
| TRUST | 0.43** | 0.60** | -0.44** | -0.64** | 0.60** | 0.09 | 0.31* | 0.40** |
| STRAIGHTFORWARDNESS | 0.18 | 0.11 | -0.09 | -0.07 | -0.10 | -0.07 | 0.77** | 0.26** |
| ALTRUISM | 0.04 | -0.06 | -0.04 | 0.05 | 0.11 | 0.30* | 0.51** | 0.12 |
| COMPLIANCE | 0.37** | 0.03 | -0.12 | -0.19 | -0.35** | 0.07 | 0.69** | 0.09 |
| MODESTY | -0.20 | -0.28* | 0.28* | 0.20 | -0.43** | -0.28* | 0.40** | -0.03 |
| TENDER-MINDEDNESS | 0.00 | -0.15 | 0.10 | 0.17 | 0.06 | 0.20 | 0.61** | 0.01 |
| CONSCIENTIOUSNESS | | | | | | | | |
| COMPETENCE | 0.52** | 0.66** | -0.66** | -0.62** | 0.41** | 0.16 | 0.09 | 0.62** |
| ORDER | 0.14 | 0.10 | 0.09 | 0.05 | 0.04 | -0.09 | -0.08 | 0.52** |
| DUTIFULNESS | 0.30* | 0.38** | -0.27* | -0.34** | 0.34** | 0.05 | 0.39** | 0.78** |
| ACHIEVEMENT STRIVING | 0.26* | 0.42** | -0.14 | -0.36** | 0.37** | 0.02 | 0.17 | 0.77** |
| SELF-DISCIPLINE | 0.44** | 0.50** | -0.38** | -0.46** | 0.28* | -0.10 | 0.19 | 0.85** |
| DELIBERATION | 0.25 | 0.34** | -0.24 | -0.50** | 0.09 | -0.21 | 0.32* | 0.58** |

* P<0.05

** P<0.01

**Table 7: Correlation Matrix of NEO PI-R Subscales of Group N (Non-Patients) (N= 30).**

| | SWLS | SOC | SCL-90 | N | E | O | A | C |
|---|---|---|---|---|---|---|---|---|
| NEUROTICISM | | | | | | | | |
| ANXIETY | -0.42* | -0.81** | 0.63** | 0.91** | -0.31 | 0.07 | -0.14 | -0.50** |
| ANGRY HOSTILITY | -0.47** | -0.48** | 0.56** | 0.75** | 0.11 | -0.01 | -0.47** | -0.49** |
| DEPRESSION | -0.48** | -0.86** | 0.69** | 0.87** | -0.21 | 0.21 | -0.04 | -0.62** |
| SELF-CONSCIOUSNESS | -0.32 | -0.70** | 0.41* | 0.76** | -0.40* | -0.06 | -0.01 | -0.45* |
| IMPULSIVENESS | -0.47** | -0.28 | 0.32 | 0.52** | 0.52** | 0.27 | -0.30 | -0.36 |
| VULNERABILITY | -0.36* | -0.80** | 0.64** | 0.83** | -0.34 | -0.12 | -0.01 | -0.56** |
| EXTRAVERSION | | | | | | | | |
| WARMTH | -0.29 | 0.19 | -0.20 | -0.17 | 0.63** | 0.57** | -0.03 | -0.16 |
| GREGARIOUSNESS | -0.23 | 0.09 | -0.04 | -0.05 | 0.51** | 0.29 | -0.15 | -0.16 |
| ASSERTIVENESS | 0.05 | 0.31 | -0.30 | -0.26 | 0.62** | 0.31 | -0.20 | 0.29 |
| ACTIVITY | -0.15 | 0.08 | 0.05 | 0.04 | 0.78** | 0.28 | -0.16 | 0.02 |
| EXCITEMENT SEEKING | -0.22 | 0.11 | 0.21 | 0.07 | 0.72** | 0.22 | -0.48** | -0.21 |
| POSITIVE EMOTIONS | 0.01 | 0.30 | -0.14 | -0.19 | 0.78** | 0.43* | -0.07 | 0.03 |
| OPENNESS | | | | | | | | |
| FANTASY | -0.24 | -0.04 | -0.04 | 0.07 | 0.48** | 0.81** | -0.16 | -0.31 |
| AESTHETICS | -0.16 | -0.27 | 0.05 | 0.27 | 0.21 | 0.72** | 0.09 | -0.06 |
| FEELINGS | -0.26 | -0.08 | -0.09 | 0.21 | 0.50** | 0.85** | -0.00 | -0.18 |
| ACTIONS | -0.23 | -0.20 | 0.15 | 0.11 | 0.44* | 0.56** | -0.04 | -0.28 |
| IDEAS | -0.08 | 0.23 | -0.34 | -0.22 | 0.45* | 0.76** | -0.02 | -0.06 |
| VALUES | -0.07 | 0.01 | -0.16 | -0.07 | 0.17 | 0.63** | -0.16 | -0.10 |
| AGREEABLENESS | | | | | | | | |
| TRUST | 0.27 | 0.50** | -0.36* | -0.51** | 0.39* | 0.33 | 0.40* | 0.24 |
| STRAIGHTFORWARDNESS | 0.20 | 0.18 | -0.20 | -0.20 | -0.25 | -0.37* | 0.69** | 0.38* |
| ALTRUISM | -0.23 | -0.13 | 0.08 | 0.05 | 0.19 | 0.30 | 0.20 | -0.03 |
| COMPLIANCE | 0.44* | 0.03 | -0.15 | -0.24 | -0.55** | -0.32 | 0.77** | 0.19 |
| MODESTY | 0.28 | -0.19 | 0.02 | 0.16 | -0.51** | -0.30 | 0.56** | 0.17 |
| TENDER-MINDEDNESS | -0.15 | -0.30 | 0.03 | 0.19 | -0.01 | 0.39* | 0.61** | -0.27 |
| CONSCIENTIOUSNESS | | | | | | | | |
| COMPETENCE | 0.53** | 0.78** | -0.74** | -0.69** | 0.26 | 0.05 | 0.06 | 0.77** |
| ORDER | 0.30 | 0.02 | 0.02 | 0.06 | -0.11 | -0.20 | -0.11 | 0.49** |
| DUTIFULNESS | 0.43* | 0.37* | -0.37* | -0.40* | 0.11 | 0.03 | 0.30 | 0.61** |
| ACHIEVEMENT STRIVING | 0.46** | 0.62** | -0.37* | -0.56** | 0.22 | -0.05 | 0.09 | 0.69** |
| SELF-DISCIPLINE | 0.59** | 0.48** | -0.47** | -0.49** | -0.11 | -0.32 | 0.11 | 0.81** |
| DELIBERATION | 0.35 | 0.18 | -0.35 | -0.37* | -0.45* | -0.25 | 0.48** | 0.47** |

* $P<0.05$

** $P<0.01$

**Table 8: Correlation Matrix of NEO PI-R Subscales of Group P (Patients) (N= 30).**

| | SWLS | SOC | SCL-90 | N | E | O | A | C |
|---|---|---|---|---|---|---|---|---|
| NEUROTICISM | | | | | | | | |
| ANXIETY | -0.41* | -0.73** | 0.61** | 0.87** | -0.60** | 0.50** | 0.04 | -0.55** |
| ANGRY HOSTILITY | -0.27 | -0.16 | 0.26 | 0.51** | -0.08 | -0.15 | -0.40* | -0.25 |
| DEPRESSION | -0.54** | -0.74** | 0.63** | 0.73** | -0.51** | 0.30 | -0.19 | -0.37* |
| SELF-CONSCIOUSNESS | -0.43* | -0.59** | 0.36 | 0.79** | -0.39* | -0.49** | -0.02 | -0.21 |
| IMPULSIVENESS | -0.27 | -0.45* | 0.28 | 0.78** | -0.45* | 0.20 | -0.21 | -0.48** |
| VULNERABILITY | -0.45* | -0.64** | 0.45* | 0.83** | -0.66** | 0.18 | -0.05 | -0.65** |
| EXTRAVERSION | | | | | | | | |
| WARMTH | 0.55** | 0.59** | -0.33 | -0.59** | 0.86** | -0.04 | 0.23 | 0.79** |
| GREGARIOUSNESS | 0.35 | 0.61** | -0.35 | -0.58** | 0.86** | -0.42* | -0.05 | 0.43* |
| ASSERTIVENESS | 0.22 | 0.47** | -0.25 | -0.52** | 0.67** | -0.14 | -0.30 | 0.54** |
| ACTIVITY | 0.13 | 0.37* | -0.25 | -0.37* | 0.65** | -0.05 | 0.08 | 0.54** |
| EXCITEMENT SEEKING | 0.13 | 0.16 | -0.10 | -0.25 | 0.62** | -0.06 | -0.06 | 0.14 |
| POSITIVE EMOTIONS | 0.56** | 0.43* | -0.41* | -0.17 | 0.49** | 0.04 | 0.41* | 0.21 |
| OPENNESS | | | | | | | | |
| FANTASY | -0.09 | -0.31 | 0.12 | 0.54** | -0.38* | 0.77** | -0.11 | -0.21 |
| AESTHETICS | 0.19 | -0.08 | 0.06 | 0.28 | 0.00 | 0.75** | 0.36 | 0.22 |
| FEELINGS | 0.09 | -0.19 | 0.23 | 0.42* | 0.10 | 0.62** | 0.28 | 0.16 |
| ACTIONS | 0.08 | -0.21 | -0.05 | -0.09 | -0.21 | 0.38* | 0.06 | -0.21 |
| IDEAS | -0.05 | -0.05 | -0.15 | -0.09 | 0.08 | 0.64** | -0.05 | 0.18 |
| VALUES | 0.00 | -0.25 | 0.09 | 0.19 | -0.28 | 0.66** | 0.03 | -0.24 |
| AGREEABLENESS | | | | | | | | |
| TRUST | 0.42* | 0.62** | -0.38* | -0.70** | 0.74** | -0.38* | 0.24 | 0.49** |
| STRAIGHTFORWARDNESS | 0.09 | -0.03 | 0.07 | 0.14 | -0.03 | 0.12 | 0.83** | 0.18 |
| ALTRUISM | 0.06 | -0.17 | 0.04 | 0.19 | 0.02 | 0.28 | 0.69** | 0.17 |
| COMPLIANCE | 0.33 | -0.07 | -0.03 | -0.10 | -0.27 | 0.34 | 0.63** | 0.02 |
| MODESTY | -0.31 | -0.13 | 0.22 | -0.04 | -0.26 | -0.06 | 0.32 | -0.12 |
| TENDER-MINDEDNESS | 0.34 | 0.13 | -0.03 | 0.01 | 0.22 | 0.16 | 0.67** | 0.25 |
| CONSCIENTIOUSNESS | | | | | | | | |
| COMPETENCE | 0.35 | 0.46* | -0.54** | -0.44* | 0.44* | 0.02 | 0.07 | 0.54** |
| ORDER | 0.14 | 0.25 | 0.10 | 0.00 | 0.19 | 0.07 | -0.04 | 0.57** |
| DUTIFULNESS | 0.26 | 0.42* | -0.25 | -0.35 | 0.49** | 0.02 | 0.44* | 0.85** |
| ACHIEVEMENT STRIVING | 0.25 | 0.42* | -0.11 | -0.35 | 0.53** | 0.13 | 0.23 | 0.85** |
| SELF-DISCIPLINE | 0.41* | 0.59** | -0.40* | -0.49** | 0.59** | 0.04 | 0.24 | 0.87** |
| DELIBERATION | 0.20 | 0.47** | -0.20 | -0.67** | 0.43* | -0.28 | 0.21 | 0.64** |

* P<0.05

** P<0.01

As indicated in Table 3 (as well as Tables 4 & 5) the Openness dimension of personality as conceptualised and operationalised in the NEO PI-R, does not display any significant correlations with indicators of positive and negative mental health. $H0_1$ is thus accepted in these regards. In the analysis of the facets

that comprise the Openness dimension, the only significant correlations found were the negative correlations between the facets, Ideas, and Values, and psychiatric symptomatology (SCL-90) when both groups are combined (Table 6).

The Agreeableness dimension of personality exhibited a significant positive correlation with subjective well-being (SWLS) when the results of both Group P and N were combined (Table 3). $H0_1$ is therefore rejected in this regard and $H1_1$ is supported. However when groups P and N are examined separately (Tables 4 & 5) the correlations between Agreeableness and SWLS are not significant. Agreeableness did not display significant correlations with the SCL-90 (see Tables 3, 4, & 5). $HO_1$ is thus accepted in this regard, while $H1_1$ is rejected. An examination of the facets that comprise Agreeableness indicate (see Table 6) that the facets Trust and Compliance contribute significantly to the correlation between Agreeableness and SWLS. In Table 7 (Group N) the Compliance facet displays a significant correlation with SWLS, while in Table 8 (Group P) it is the Trust facet that displays the significant correlation with SWLS. The Trust facet displayed a significant negative correlation with SCL-90, for groups P and N both individually and combined. A low level of Trust could be associated with a high level of psychopathology, or vice versa. When the results of both groups were combined the Modesty facet displayed a significant positive correlation with the SCL-90. Agreeableness is thus only in some instances related to indicators of mental health.

The Conscientiousness dimension of personality displayed significant positive correlations with SWLS and significant negative correlations with the SCL-90 (as indicated in Table 3). $H0_1$ is thus rejected with reference to the relationship between Conscientiousness and SWLS, and Conscientiousness and SCL-90. $H1_1$ is thus supported in these instances. Table 4 revealed that Group N displayed a significant positive correlation between Conscientiousness and SWLS, and a significant negative correlation between Conscientiousness and SCL-90. Table 5 revealed that Group P displayed a significant positive correlation between Conscientiousness and SWLS. An analysis of Table 6 reveals that the facets contributing significantly to the correlations when both groups were combined were Competence, Dutifulness, Achievement Striving, and Self-Discipline. All of these facets displayed significant positive correlations with SWLS, and except for Achievement Striving, they all displayed significant negative correlations with SCL-90. Among Group N alone (see Table 7), these correlations were replicated, with the exception of Achievement Striving which displayed a significant negative correlation with SCL-90. Among Group P (see Table 8), Competence was significantly negatively correlated with the SCL-90, while Self-Discipline was significantly positively correlated with SWLS, and negatively correlated with SCL-90. The Conscientiousness dimension is thus clearly related to measures of psychological health.

In the preceding paragraphs we have seen that both SOC and personality dimensions are related to indicators of positive and negative mental health. SOC will now be examined in relation to personality to determine whether or not they are related.

*SOC and personality:* As indicated in Table 3, SOC displayed a strong negative correlation with the personality dimension Neuroticism, and strong positive correlations with the dimensions Extraversion and Conscientious. With regard to the relationships between SOC and Neuroticism, SOC and Extraversion, as well as SOC and Conscientiousness, $H0_1$ is rejected, and $H1_1$ is thus supported. As indicated in Table 4, Group N exhibited significant correlations between SOC and Neuroticism (negative), and SOC and Conscientiousness (positive), but did not display a significant correlation between SOC and Extraversion. Group P (see Table 5) displayed significant positive correlations between SOC and Extraversion, as well as SOC and Conscientiousness, and a significant negative correlation between SOC and Neuroticism. In Table 6 it is indicated that SOC has; significant negative correlations with all Neuroticism facets and the Modesty facet of Agreeableness, significant positive correlations with all the Extraversion facets bar Excitement Seeking, significant positive correlations with the Trust facet of Agreeableness, and all Conscientiousness facets except for Order. Among Group N (see Table 7) SOC displayed significant negative correlations with all Neuroticism facets except Impulsiveness, and significant positive correlations with the Trust facet of Agreeableness and

Conscientiousness facets of; Competence, Dutifulness, Achievement Striving, and Self-Discipline. Among Group P (see Table 8) SOC displayed significant negative correlations with all Neuroticism facets bar Angry Hostility, and significant positive correlations with all Extraversion facets bar Excitement Seeking, as well as all Conscientiousness facets except for Order, in addition to the Trust facet of Agreeableness.

The results thus indicated that a high degree of sense of coherence is significantly negatively related to all facets of Neuroticism, and positively to several aspects of Extraversion and Conscientiousness, as well as to Trust in people. Empirical evidence is thus presented for a relationship between SOC and aspects of personality. These relationships make sense if the nature of these particular personality dimensions and facets, and the nature of SOC (manageability, comprehensibility, and meaningfulness) are taken into account. This information could enhance the usability of the NEO PI-R in making deductions with regard to the mental health of subjects.

## 4.4 PSYCHOMETRIC COMPARISON OF GROUPS N AND P.

The mean scores of groups N and P are presented in Table 9, together with the relevant P value indicating the significance of the differences between the groups (see Table 2 for the standard deviations from the respective means).

It can be seen from the Table 9 that there are significant differences between groups N and P on all psychometric measures barring the Extraversion, Agreeableness, and Conscientiousness dimensions of the NEO PI-R. As for a comparison of groups N and P with regard to their mean scores on SWLS, SOC, SCL-90, Neuroticism, and Openness is concerned, $H0_2$ is rejected and $H1_2$ supported. Group P scored significantly lower than Group N on the SWLS, SOC, and Openness dimension of the NEO PI-R, while Group P scored significantly higher scores than Group N on the SCL-90 and the Neuroticism dimension of the NEO PI-R.

These results indicate that the patient group experience lower levels of SOC and subjective well-being than the non-patient group, while at the same time experiencing significantly more symptomatology of psychological dysfunction than the non-patient group. This lends support to findings of previous research indicating that SOC and mental health status are closely related (Antonovsky,

1987), and provides further evidence for the concurrent validity of the SOC scale.

**Table 9: Significance of Differences Between Groups P and N.**

| | Group P (N=30) Mean Score | Group N (N=30) Mean Score | P |
|---|---|---|---|
| SWLS | 14.27 | 23.20 | 0.0001 |
| SOC | 110.87 | 141.73 | 0.0001 |
| SCL-90 | 144.77 | 53.40 | 0.0001 |
| N | 114.43 | 84.90 | 0.0001 |
| E | 102.87 | 111.97 | 0.0890 |
| O | 108.80 | 124.40 | 0.0040 |
| A | 114.57 | 116.43 | 0.6367 |
| C | 109.97 | 114.77 | 0.3454 |

The fact that SWLS scores are significantly lower in Group P seems to indicate that subjective well-being could be associated with objective psychological health, which contradicts the research findings of Brief, Butcher, George, & Link (1993), namely that subjective well-being is not associated with objective psychological health. The SCL-90 also clearly differentiated the patients from the non-patients, which supports previous research findings indicating it's usefulness for identifying psychopathology (Derogatis, Lipman, & Covi, 1973; Hafkenscheid, 1993).

In terms of personality structure the patient group scored significantly higher than the non-patient group on the Neuroticism dimension and significantly lower on the Openness dimension, which supports previous research findings linking these dimensions to psychological health (Mutén, 1991; Liebowitz, Stallone, Dunner & Fieve, 1979, in Costa, 1991). It is interesting to note the lack of differentiation between the groups in terms of the personality dimensions Extraversion, Agreeableness, and Conscientiousness, contrary to what was previously found by McCrae and Costa (1991). These dimensions thus do not differentiate psychologically healthy from psychologically ill people, in this study.

As noted in Chapter 2 certain personality types could be predisposed to psychological illness or health. If this is the case then it seems logical to speculate that people scoring high on Neuroticism and low on Openness are less likely to be psychologically healthy. As a more detailed examination of the specific facets that comprise the personality dimensions will be presented in a following section, this discussion will be elaborated on there.

## 4.5 SPECIFIC PERSONALITY DIFFERENCES BETWEEN GROUP N AND GROUP P.

Table 10 presents an analysis of the simple statistics of the facets that comprise each of the personality dimensions for both groups, in addition to determining the significance of the differences between them in terms of these facets.

The only Neuroticism facet that does not differ significantly is Impulsiveness, indicating that both patients and non-patients are equally likely to be able to control urges and desires.

In spite of there being no significant difference between groups N and P on the Extraversion dimension, there are significant differences on some of the facets that comprise this dimension. Group P was significantly lower on the Warmth facet, indicating that the patients were less inclined to be friendly and affectionate and less likely than non-patients to form close relationships with others. Group P scored significantly higher on the Excitement-

**Table 10: Simple Statistics for the NEO PI-R Subscales for Groups N and P, and Significance of Differences between them.**

| | Group N (N= 30) | | | Group P (N= 30) | | | |
|---|---|---|---|---|---|---|---|
| | Mean | Std Dev | Range | Mean | Std Dev | Range | P |
| NEUROTICISM | | | | | | | |
| ANXIETY | 14.57 | 5.76 | 2 - 26 | 20.13 | 6.06 | 8 - 32 | 0.0006 |
| ANGRY HOSTILITY | 14.73 | 4.48 | 8 - 26 | 8.53 | 5.54 | 7 - 30 | 0.0050 |
| DEPRESSION | 13.97 | 5.84 | 6 - 29 | 22.33 | 5.98 | 9 - 32 | 0.0001 |
| SELF-CONSCIOUSNESS | 14.30 | 4.25 | 7 - 23 | 20.10 | 5.35 | 8 - 30 | 0.0001 |
| IMPULSIVENESS | 16.40 | 4.89 | 9 - 28 | 17.60 | 5.22 | 8 - 30 | 0.3621 |
| VULNERABILITY | 10.93 | 4.49 | 1 - 19 | 15.73 | 5.91 | 4 - 31 | 0.0008 |
| EXTRAVERSION | | | | | | | |
| WARMTH | 22.73 | 3.86 | 15 - 31 | 19.87 | 6.25 | 7 - 32 | 0.0376 |
| GREGARIOUSNESS | 17.73 | 5.98 | 5 - 30 | 14.57 | 6.64 | 2 - 28 | 0.0572 |
| ASSERTIVENESS | 16.47 | 5.25 | 2 - 26 | 15.13 | 3.43 | 3 - 21 | 0.2498 |
| ACTIVITY | 19.00 | 4.42 | 8 - 27 | 17.37 | 3.18 | 10 - 24 | 0.1062 |
| EXCITEMENT SEEKING | 15.43 | 5.15 | 4 - 28 | 18.47 | 5.08 | 5 - 29 | 0.0252 |
| POSITIVE EMOTIONS | 20.60 | 5.08 | 10 - 32 | 17.47 | 4.61 | 8 - 26 | 0.0152 |
| OPENNESS | | | | | | | |
| FANTASY | 20.00 | 5.00 | 12 - 29 | 18.10 | 5.00 | 9 - 30 | 0.1462 |
| AESTHETICS | 20.73 | 6.10 | 9 - 32 | 19.80 | 4.99 | 11 - 32 | 0.5189 |
| FEELINGS | 22.03 | 4.80 | 12 - 32 | 20.33 | 4.63 | 12 - 32 | 0.1676 |
| ACTIONS | 17.77 | 4.03 | 6 - 27 | 14.80 | 3.97 | 8 - 22 | 0.0057 |
| IDEAS | 22.10 | 5.36 | 14 - 32 | 18.67 | 4.62 | 9 - 31 | 0.0102 |
| VALUES | 21.77 | 4.79 | 12 - 30 | 17.10 | 4.97 | 6 - 27 | 0.0005 |
| AGREEABLENESS | | | | | | | |
| TRUST | 18.30 | 4.56 | 9 - 26 | 15.77 | 5.01 | 1 - 23 | 0.0452 |
| STRAIGHTFORWARDNESS | 19.73 | 4.46 | 10 - 27 | 18.60 | 5.16 | 8 - 29 | 0.3670 |
| ALTRUISM | 22.07 | 2.79 | 15 - 29 | 21.13 | 4.20 | 12 - 29 | 0.3155 |
| COMPLIANCE | 17.43 | 4.86 | 7 - 28 | 16.17 | 6.59 | 0 - 27 | 0.4008 |
| MODESTY | 22.10 | 5.36 | 14 - 32 | 20.73 | 4.38 | 10 - 27 | 0.0225 |
| TENDER-MINDEDNESS | 21.77 | 4.79 | 12 - 30 | 22.17 | 3.51 | 16 - 31 | 0.1717 |
| CONSCIENTIOUSNESS | | | | | | | |
| COMPETENCE | 20.70 | 3.86 | 12 - 28 | 17.50 | 4.68 | 5 - 25 | 0.0055 |
| ORDER | 18.30 | 3.81 | 11 - 23 | 18.73 | 4.16 | 7 - 28 | 0.6754 |
| DUTIFULNESS | 22.13 | 3.37 | 17 - 29 | 21.53 | 5.18 | 13 - 31 | 0.5971 |
| ACHIEVEMENT STRIVING | 18.30 | 4.27 | 11 - 24 | 18.53 | 4.45 | 8 - 27 | 0.8366 |
| SELF-DISCIPLINE | 18.67 | 5.14 | 4 - 27 | 17.80 | 6.06 | 0 - 28 | 0.5527 |
| DELIBERATION | 16.67 | 4.51 | 7 - 23 | 15.87 | 6.30 | 3 - 27 | 0.5742 |

Seeking facet, indicating that they are more inclined to prefer noisy, stimulating environments than non-patients. Group P scored significantly lower than Group N on the Positive Emotions facet, indicating that non-patients have a greater tendency to experience positive emotions, optimism and exuberance than patients.

The significant difference between Groups N and P on the Openness dimension can be attributed largely to the three facets (see Table 10) that show a significant difference. Group P attained lower scores on the Action facet, indicating that patients prefer a more routine lifestyle, and are less open to trying new activities than non-patients. Patients scores on the Ideas facet were significantly lower than non-patients, indicating that patients were less likely than non-patients to pursue intellectual ideas and philosophical debates simply for the enjoyment thereof. Patients are thus more inclined to focus their attention on more limited subjects. Patients also scored lower than non-patients on the Values facet, indicating that they are inclined to be more conservative, and will more readily accept authority and tradition than non-patients.

The low scores on the Openness facets described might be associated with the lower SOC scores of the patient group. The strength of SOC is dependent on the availability of GRRs (Antonovsky, 1979) as described in Chapter 2. If patients are less open to trying new activities, contemplating new and challenging ideas, and questioning their values, they will be less likely to develop GRRs. When they are then forced to confront such challenges they will therefore not have the necessary GRRs to meet them.

While no significant differences between groups N and P were elicited on the Agreeableness dimension, there were significant differences on two facets; Trust and Modesty. Group P displayed significantly lower scores on the Trust facet

than Group N. Patients will thus be less inclined to view others as well-meaning and trustworthy than non-patients, who will be tend to view others as such. Patients achieved lower scores than non-patients on the Modesty facet, indicating they are more inclined to believe they are superior, and be seen as conceited by others.

Only one of the Conscientiousness facets displayed a significant difference between the two groups. Patients attained significantly lower scores than non-patients on the Competence facet, indicating that they will be more inclined to view themselves as incompetent and inept than non-patients.

## 4.6 SUMMARY

In this chapter significant correlations were noted between SOC and mental health, personality and mental health, and SOC and personality. The two groups mean scores were compared and found to differ significantly. Patients were found to have lower SOC, SWLS, and Openness scores, and higher SCL-90 and Neuroticism scores than non-patients. Patients displayed lower personality facet scores than non-patients on facets that depict facilitative interpersonal, and intrapsychic aspects, for example Warmth and Positive Emotions.

The final conclusions will be presented in the following chapter.

# CHAPTER 5

# CONCLUSION

## 5.1 INTRODUCTION

In this chapter the conclusion will be presented along with a critique, and suggestions for further investigation.

## 5.2 CONCLUSION

In this study the relationships among SOC and indicators of positive and negative mental health, and personality were investigated. A sense of coherence (i.e. a feeling that life is manageable, comprehensible, and meaningful) as measured by the SOC Scale (Antonovsky, 1987) displayed significant negative correlations with indicators of negative mental health (i.e. symptomatology of psychopathology as measured by the SCL-90)(Derogatis, Lipman, & Covi, 1973), and significant positive correlations with indicators of positive mental health (i.e. degree of life satisfaction as measured by the SWLS) (Diener, Emmons, & Larsen, 1985). This means that sense of coherence is not only related to physical

health as hypothesised by Antonovsky (1979, 1987) and also found by Strumpfer (1990), but also to mental health.

The relationships between the various personality dimensions and facets and indicators of positive and negative mental health was explored, with Neuroticism displaying positive correlations with psychiatric symptomatology. As stated in Chapter 4, the Extraversion, Openness, and Agreeableness dimensions produced significant correlations with health measures, depending on which group was being examined. Thus while some facets were consensually related to health measures, others were not, in that in one group they would display a significant correlation, and in the other group they would not.

The relationship between SOC scores and personality was examined. SOC was found to have numerous significant correlations with personality dimensions and facets. SOC was negatively correlated with Neuroticism, and positively correlated with aspects of Extraversion and Conscientiousness and Trust in people. This is indicative of a strong relationship between SOC and personality as measured in this study. As SOC encapsulates aspects of personality functioning and mental health, it appears to be a hierarchically higher order construct than personality or mental health.

This study also examined the mean scores of both groups on all psychometric instruments to determine whether there were significant differences or not. The patient group was found to score significantly lower on indicators of positive mental health, and SOC, and significantly higher on indicators of negative mental health. Patients were also found to have significantly higher scores on the Neuroticism dimension, and significantly lower score on the Openness dimension than non-patients, which illustrates the validity of these instruments.

Personality while not a measure of mental health per se, clearly differed from Group P to Group N. It, together with SOC could contribute to a clinicians understanding of what maintains psychopathology or psychological health, and what mitigates against it. As the SOC scale is a comparatively short scale (29 items) in relation to the NEO PI-R (240 items), it could be used as a quick indicator of the degree of mental health, and integrity of personality functioning. The relationships found in this study could enhance the interpretation of results from the NEO PI-R in clinical use, and also contribute to the establishment of the concurrent validity of SOC. Information on the psychometric properties of scales implemented in this study indicate their usefulness. Data obtained with the present measuring instruments (means, standard deviations, range of scores) in contrast groups (patients and non-patients) extends our knowledge with regard to the validity of these scales, in addition to serving as a guide to the interpretation of scores in future use of these instruments.

SOC can thus give valuable input as to the psychological health of a person, in addition to supplying information as to the participants personality functioning.

## 5.3 CRITIQUE

Patients were recruited out of one mental hospital, which could result in a particular type of patient being admitted. This study would thus have benefited from larger samples, recruited from different areas and hospitals.

## 5.4 SUGGESTIONS FOR FURTHER RESEARCH

Both SOC and the NEO PI-R could benefit from a longitudinal study, to determine whether these scores change when a patient's condition improves. This could also determine whether or not these scales could predict therapeutic prognosis or not.

It is a question whether the relationships found in this study could also be manifested in other South African groups.

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# APPENDIX A

## BIOGRAPHICAL INFORMATION

1. Date of Birth :
2. Sex:
3. Marital Status:
4. Highest Educational Qualifications:
5. Occupation:
6. Are you currently employed?
7. If not when were you last employed, and for how long?

# APPENDIX B

## LETTER OF INFORMED CONSENT

I hereby volunteer my participation in the psychological research conducted by Patrick Randall. I understand that I will be required to complete a psychometric battery, and that my name will not appear on any written or oral account of the research.

I have received a complete explanation of the procedures and volunteer my participation as a subject.

Signature:

Date: