Emotional Intelligence, Sense of Coherence and Coping Behaviour

CA Law

BA (Hons)

Dissertation (article format) submitted in fulfilment of the requirements for the degree Magister Artium in Psychology at the North-West University, Vaal Triangle Campus

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Since your kindness
I spent my days
Searching for a hundred words
To say only two

I wanted them to be bigger
As big as you were
I wanted their brightness
To be worth a thousand pictures

If they were small
You might not notice them as much
And they might disappear into time

But I can't find a hundred as complete
So I will give you these
And hope their wings
Are strong enough to carry my charge

Thank you

SUMMARY

EMOTIONAL INTELLIGENCE, SENSE OF COHERENCE AND COPING BEHAVIOUR

(Key words: emotional intelligence, sense of coherence, coping behaviour, students)

In this study the relationship between emotional intelligence, sense of coherence and coping behaviour was investigated. An availability sample of 101 participants completed the Emotional Intelligence Scale (Schutte et al, 1998), the Orientation to Life Scale (Antonovsky, 1987), the Coping Strategy Indicator (Amirkhan, 1990) and the COPE Questionnaire (Carver, Scheier and Weintraub, 1989). The reliability and validity of the measuring instruments were acceptable for use in this particular group and the means and standard deviations calculated, compared well with those mentioned in literature for the same indices. By using regression analysis, it was found that emotional intelligence was better able, than sense of coherence, to predict the following coping strategies: turning to religion, suppression of competing activities, planning, active coping, and problem solving. Emotional intelligence and sense of coherence were both good predictors of the coping strategy of positive reinterpretation and growth. It was concluded that individuals with a high emotional intelligence have developed more effective coping strategies than individuals who do not have well-developed emotional abilities. Practical implications of the findings are indicated.

OPSOMMING

(Sleutelwoorde: Emosionele intelligensie, koherensiesin, coping strategieë en studente)

Die doel van hierdie studie was om die verhouding tussen emosionele intelligensie, koherensiesin en coping-gedrag in 'n groep studente aan 'n Suid Afrikaanse universiteit te ondersoek. 'n Beskikbaarheidsteekproef van 101 deelnemers het die Emotional Intelligence Scale van Schutte et al. (1998), die Orientation to Life Scale van Antonovsky (1987), die Coping Strategy Indicator van Amirkhan (1990) en die COPE Questionnaire van Carver, Scheier en Weintraub (1989), voltooi. Die betroubaarheid en geldigheid van die meetinstrumente was aanvaarbaar vir die gebruik in hierdie groep en die gemiddelde tellings en standard afwykings bereken, was vergelykbaar met dié vermeld in die literatuur vir dieselfde indekse. Met behulp van regressie-ontleding is bevind dat emosionele intelligensie 'n beter voorspeller as koherensiesin was vir die volgende coping-strategieë: keer na geloof, onderdruk meededingende aktiwiteite, beplanning, aktiewe coping en probleem oplossing. Emosionele intelligensie en koherensiesin was beide goeie voorspellers vir die coping-strategie van positiewe herinterpretasie en groei. Die gevolgtrekking was dat individue met 'n hoë mate van emosionele intelligensie meer doeltreffende coping-strategieë ontwikkel het as persone wat nie sodanige emosionele vermoëns het nie. Praktiese implikasies van die bevindinge word aangetoon.

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We, the supervisors and the school director, hereby declare that the input and effort of CA Law, in writing this article, reflects research done by her on this topic. We herby grant permission that she may submit this article for examination purposes in fulfilment of the requirements for the degree Magister Artium in Psychology.

Signed on this day 24 November 2006 at the North-West University.

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JP du Preez

Supervisor

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Director: School of Behavioural Sciences

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Running head: EMOTIONAL INTELLIGENCE, SENSE OF COHERENCE AND COPING BEHAVIOUR

Emotional intelligence, Sense of Coherence and Coping Behaviour

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ABSTRACT

The purpose of this study was to investigate the relationship between emotional intelligence, sense of coherence and coping behaviour in a group of students at a South African university. An availability sample of 101 students completed self-report measures of emotional intelligence, sense of coherence and coping behaviour. The measures were found to be valid and reliable in this particular group and the means and standard deviations calculated were comparable with those mentioned in literature. It was further found that emotional intelligence was better able, than sense of coherence, to predict the following coping strategies: turning to religion, suppression of competing activities, planning, active coping and problem solving. Emotional intelligence and sense of coherence were both good predictors of the coping strategy positive reinterpretation and growth. It was concluded that individuals with a high emotional intelligence have developed more effective coping strategies than individuals who do not have well-developed emotional abilities. Practical implications of the findings are indicated.

Key words: Emotional intelligence, sense of coherence, coping strategy, students.

EMOTIONAL INTELLIGENCE, SENSE OF COHERENCE AND COPING BEHAVIOUR

This study focuses on emotional intelligence, sense of coherence and coping behaviour in a group of students at a tertiary institution in South Africa, with a view to the eventual enhancement of psychological wellbeing and health in young people. Over the last few decades a shift has occurred in the focus of research in the area of personal functioning. Early research adopted a pathogenic approach, focusing on the way in which stressful life events predispose an individual to negative health outcomes. More recently a number of theorists and researchers have adopted a salutogenic approach, which refers to the origins of physical and mental health and explores the factors that assist individuals to maintain psychological and physical wellbeing in the face of stressful situations (Antonovsky, 1979, 1987; Pallant & Lae, 2002). The constructs of emotional intelligence, sense of coherence and coping used in this study are all constructs that have extensively been studied and applied in the salutogenic and newly emerging positive psychology approaches. This study aims to contribute to the database of these frameworks.

Goleman (1995) suggested that successful life outcomes are more a function of emotional rather than cognitive intelligence. He proposed several definitions for the emotional intelligence construct, including *a set of abilities which include self-control, zeal and persistence, and the ability to motivate oneself,* (1995: xii) and the ability to *control impulses and delay gratification, to regulate one's moods and to keep distress from swamping the ability to think, to empathize, and to hope.* (1995: 34). The success of Goleman's book *Emotional Intelligence* suggests that this construct is novel, alluring, and popular. The internet contains many web sites for societies devoted to applying the principles of emotional intelligence, discussion groups related to the topic, and organizations marketing their own version of emotional intelligence tests.

Much of the research on emotional intelligence to date was based on the foundation provided by Gardner (1983). Although he did not use the term "emotional intelligence," his reference to intrapersonal and interpersonal intelligence has been used as a foundation in more

recent models of this construct. Gardner's concept refers to having the ability to know and understand one's own emotions and other individuals' emotions and intentions. This understanding is presumed to guide one's behaviour.

The study of emotional intelligence includes at least two kinds of approaches. Work by Salovey and Mayer (1990) typifies the first approach that consists of identifying the abilities comprised in this type of intelligence. The second approach uses a broader definition of emotional intelligence and focuses on what emotional intelligence predicts, such as success in a broad sense across different situations. Petrides and Furnham (2000) refer to these approaches as information-processing and trait emotional intelligence, respectively. According to Petrides and Furnham trait emotional intelligence is concerned with cross-situational consistencies in behaviour (manifest in specific traits or behaviours such as empathy, assertiveness, and optimism), while information-processing emotional intelligence concerns abilities (e.g. able to identify, express and label emotions). This study focuses on the trait aspect of emotional intelligence, which can be measured by self-report inventories.

Salovey and Mayer (1990) were the first to formally conceptualise and use the term *emotional intelligence.* Their conceptualization included three mental abilities: firstly, the appraisal and expression of emotions in oneself and others, secondly, the regulation of emotion in oneself and others, and thirdly, the utilization of emotions to facilitate thought. These three abilities are further divided into subcomponents within the model. The first category, the appraisal and expression of emotion, is subdivided into those abilities dealing with oneself and those pertaining to others. The model further divides appraisal of self into nonverbal perception and empathy. The second mental ability, the regulation of emotion, is also subdivided into regulation of self and others. The third category, utilization of emotion, encompasses the components of flexible planning, creative thinking, redirected attention and motivation. (Salovey & Mayer, 1990)

In a reformulation of their original model, Mayer, Caruso and Salovey (2000) developed a revised framework within which to study emotional intelligence. Their current model presents

emotional intelligence as having four branches ranging from the most basic psychological processes to those that are more advanced. The most basic level of processing involves the perception, appraisal and expression of emotion. As these skills are mastered, one would advance to the emotional facilitation of thinking and then on to understanding and analysing emotions and utilizing emotional knowledge. The most integrated and highest level of processing involves the reflective regulation of emotions to further emotional and intellectual growth. Within each level, there exist representative abilities ranging from those that emerge early in development to those appearing later, usually in a more integrated adult personality. Individuals high in emotional intelligence are expected to progress more quickly through the branches and master each ability to its optimum (Mayer, Caruso & Salovey, 2000). Emotional intelligence is currently defined as the ability to monitor one's own and other's feelings and emotions, to regulate them, and to use emotion-based information to guide thinking and action. (Ciarrochi, Deane & Anderson, 2002; Mayer, Caruso & Salovey, 2000; Mayer & Geher, 1996; Mayer & Salovey, 1993; Salovey, Bedell, Detweiler & Mayer, 1999; Salovey & Mayer, 1990; Schutte, Malouff, Hall, Haggerty, Cooper, Golden & Dornheim, 1998).

As mentioned before, much interest has been generated in emotional intelligence. The concept has been researched from different viewpoints and attempts have been made to link emotional intelligence with various areas of psychological and personal functioning. Research included: defining and assessing components of emotional intelligence (Bar-On, 1997; Bar-On & Parker, 2000; Ciarrochi, Chan & Caputi, 2000; Davies, Stankov & Roberts, 1998; Dawda & Hart, 2000; Derkenson, Kramer & Katzko, 2002; Mayer, Caruso & Salovey, 2000; Mayer, DiPaolo & Salovey, 1990; Mayer & Salovey, 1993; O'Connor & Little, 2003; Salovey & Mayer, 1990; Schutte et al., 1998); individual differences, coping and personal functioning (Gohm & Clore, 2000; Martinez-Pons, 1998; Salovey et al., 1999); emotional intelligence in the workplace (Cooper & Sawaf, 1997; Flowers, 2000; Quebbeman & Rozell, 2002); emotional intelligence and leadership (Charbonneau & Adelheid, 2002; Martinez-Pons, 1998; Wolff, Pescolido & Druskat, 2002; Wong

& Law, 2002;); emotional intelligence, adolescent drug use and sex offending (Moriarty, Stough, Tidmarsh, Eger & Dennison, 2001; Trinidad & Johnson, 2002; Trinidad, Unger, Chou & Anderson, 2003) and emotional intelligence and academic performance (Newsome, Day & Catano, 2000; Parker, Summerfeldt, Hogan & Majeski, 2003; Pertrides, Fredrickson & Furnham, 2002).

If one follows Goleman's (1995) argument that successful life outcomes are a function of emotional intelligence, it seems clear that emotional intelligence forms part of the salutogenic approach mentioned before. A key proposer of the salutogenic model is Antonovsky (1979, 1987) who initially conceptualised sense of coherence (SOC), which he defined as *a global orientation that expresses the extent to which one has a pervasive, enduring though dynamic feeling of confidence that the stimuli deriving from one's internal and external environments in the course of living are structured, predictable and explicable; the resources are available to meet the demands posed by the stimuli; and these demands are challenges, worthy of investment and engagement* (Antonovsky, 1987: 19). Antonovsky (1979, 1987, 1990 & 1993) proposed that with this global orientation, one has the feeling that life is comprehensible, manageable, and meaningful. These three components constitute a person's coherent understanding of the world.

It would seem that SOC and emotional intelligence influence each other to a certain extent. Emotions that arise either inside a person or in others are stimuli that one must make sense of. Firstly, for the appraisal and expression of emotion one has to be able to comprehend what one or others are feeling before regulation of these emotions can take place. Comprehensibility *refers to the extent to which one perceives the stimuli that confront one, deriving from the internal and external environments, as making cognitive sense, as information that is ordered, consistent, structured, and clear* (Antonovsky, 1987: 16). Secondly, the manageability component of SOC is defined as *the extent to which one perceives that resources are at one's disposal which are adequate to meet the demands posed by the stimuli that bombard one.* (Antonovsky, 1987: 17). It would seem that this relates to an individual's emotional intelligence in the following ways: the individual must believe that he/she has the necessary emotional competence to deal with emotional

stimuli that he/she is faced with and the individual must believe that he/she will be able to regulate and utilise (and not be overwhelmed by) his/her own and others' emotions. Finally, meaningfulness as *the extent to which one feels that life makes sense emotionally, that at least some of the demands are worth investing in* (Antonovsky, 1987: 18) would imply that an individual who can ascribe meaning to events and experiences will not shy away from unhappy or stressful experiences but will take up the challenge and be determined to give meaning to them. An overall comparison of the sense of coherence model of Antonovsky (1990) with the four–branch model of emotional intelligence of Salovey, Mayer and Caruso (2002) shows that the comprehensibility and manageability aspects of sense of coherence agree in essence with the emotional understanding and emotional management branches of emotional intelligence. It is interesting however, that meaningfulness, which Antonovsky (1979) indicated as the emotional component of a sense of coherence, is only implied or has connotative meaning in emotional intelligence.

Although Antonovsky (1993) argued that SOC is not primarily a stress buffer variable, a growing number of studies have examined SOC as a stress resource/buffer or explored its stress-buffering effects (Antonovsky & Sagy, 2001; Jahnsen, Villien, Stanghelle & Holm, 2002; Jorgensen, Frankowski & Carey, 1999; Pallant & Lae, 2002; Sammallahti, Holi, Komulainen & Aalberg, 1996). According to Antonovsky (1992) the stress buffering effects of sense of coherence may be due to its influence on the choice of coping strategies. While sense of coherence is not a coping strategy in itself, individuals with a high sense of coherence may be more likely to adopt adaptive strategies flexibly, appropriate to the needs of the specific situation. A number of studies have investigated the relationship between sense of coherence and types of coping strategies adopted by subjects when faced with a stressful situation (Jahnsen, Villen, Stanghelle & Holm, 2002; Nilsson, Axelsson, Gustafson, Lundman & Norberg, 2001; Pallant & Lae, 2002).

According to Callan (1993) an event becomes stressful when it is appraised by an individual as a threat to the individual's wellbeing. Callan (1993) and Folkman & Lazarus (1984) distinguish between primary appraisals, which mean interpreting an event as irrelevant, benign-positive or

stressful, and secondary appraisals which refer to the evaluation of coping resources. In a situation where a primary appraisal indicates harm, loss or threat, the question of what to do (how to cope) becomes critical as the purpose of implementing coping resources is to reduce tension in order to restore emotional equilibrium and to deal with the situation that is causing the stress. Kleinke (1991: 3) defines coping as *the efforts we make to manage situations we have appraised as potentially harmful or stressful.* Coping refers to perceptual, cognitive, emotional or behavioural responses that are used to manage, avoid or control situations that could be regarded as difficult (Folkman & Lazarus, 1984 and Zeidner & Endler, 1996). The term coping could be used to refer to either strategies or results. As a strategy, coping refers to the different methods that a person may apply to manage his or her circumstances. As a result, coping refers to the eventual outcomes of this strategy for the person. For the purposes of this research, the focus is on coping as a behavioural strategy.

Amirkhan (1990), Callan (1993) and Folkman & Lazarus (1984) distinguish between problem-focused and emotion-focused coping. Problem-focused coping is directed at eliminating an unpleasant experience or reducing the effects thereof. Emotion-focused coping is directed at reducing the effects of stressful feelings caused by an unpleasant experience through relaxation, the use of alcohol and drugs, social activities and/or defence mechanisms. Carver, Scheier and Weintraub (1989) distinguish between five variations of problem-focused coping, namely:

- Active coping (taking active steps to remove stressors or to reduce their effects);
- Planning (thinking about various strategies which could be used to solve a problem);
- Suppressing competing activities (moving other projects temporarily to the background);
- Restraint coping (waiting for the right opportunity to solve a problem rather that acting impulsively) and
- Seeking social support for instrumental reasons (looking for advice, support or information).

Furthermore, Carver et al. (1989) distinguish between the following five variations of emotion-focused coping:

- Seeking social support for emotional reasons (reaching out to others for moral support, sympathy and understanding);
- Positive reinterpretation and growth (managing stress emotions rather than the stressors by reinterpretation);
- Denial (experiencing stressors as unreal);
- Acceptance (accepting stressors as reality) and
- Turning to religion (focusing on religion to facilitate emotional support, positive reinterpretation as well as active coping).

Carver et al. (1989) distinguish the following coping strategies that are less often used:

- Focus on and venting of emotions (focusing on a stressful situation and expressing feelings about it);
- Behavioural disengagement (ignoring and avoiding stressors and becoming more helpless and powerless);
- Mental disengagement (excessive sleeping or daydreaming to get away from stress) and
- Alcohol-drug disengagement (using alcohol or drugs to manage stress).

Although it can be said that people cope with life events, coping is primarily a response to the emotions, particularly negative emotions elicited by these events. Salovey, Bedell, Detweiler and Mayer (1999) believe that this is because the meaningfulness of external events is, to a large extent, a function of their ability to arouse emotion. Obviously, not all responses to emotional arousal are equally successful. There are people who consistently have difficulty coping with negative outcomes and other people who, even after the most saddening experience, readily bounce back and move forward. What distinguishes the resilient person from the person who does not cope effectively? Salovey et al. (1999) believe that the answer has to do with emotional competencies – individuals differ in how well they perceive, express, understand and manage emotional

phenomena. Salovey et al. argue that emotional intelligence influences the responses to emotional arousal and, as a result, plays a significant role in the coping process.

Salovey et al. (1999) further describe how emotional intelligence can contribute to the understanding of coping strategies such as rumination, the elicitation of social support, and the disclosure of feelings. Little empirical evidence, however, could be found that supports their claim. It is speculated that people who have well-developed emotional competencies and also a strong sense of coherence will have acquired coping styles or strategies that are more effective than those who have not. It was therefore the focus of this study to empirically investigate the relationship between emotional intelligence, sense of coherence and coping strategies or behaviours.

AIMS

1. To measure the levels (means, standard deviations and range of scores) of emotional intelligence, sense of coherence and coping behaviours in this group of participants;
2. To determine the psychometric properties of the measuring instruments in this South African sample;
3. To determine the relationship between the constructs emotional intelligence, sense of coherence and coping behaviour and
4. To determine the variance of coping behaviour explained by emotional intelligence and sense of coherence.

METHOD

Participants

An availability sample of undergraduate psychology students was obtained from students at the North-West University, Vaal Triangle Campus. A total of 103 students consented to complete the questionnaires of which 2 were returned incomplete; the study therefore retained 101 questionnaires.

Measuring Instruments

The Emotional Intelligence Scale (EIS) developed by Schutte et al. (1998) was used to measure emotional intelligence. The scale consists of 33 items that are based on the conceptual model of Salovey and Mayer (1990). Thirteen of the items measure appraisal and expression of emotion, 10 of the items measure regulation of emotion and 10 items measure utilization of emotion. The items are arranged along a Likert-type scale with 1 = strongly agree, 3 = not sure, and 5 = strongly disagree. Schutte et al. (1998) reported alpha coefficients of 0.90. Higher scores indicate emotional intelligence.

The Orientation to Life Scale (SOC) (Antonovsky, 1987) was used to assess sense of coherence and is mostly referred to as the Sense of Coherence Scale. It is a 29-item scale, in which, for each item, respondents use a seven-point semantic differential scale with an anchoring phrase at the end of the continuum. The scale evaluates an individual's sense of coherence on a qualitative level, and the three components - comprehensibility, manageability and meaningfulness - are included in the questionnaire. It measures an individual's way of experiencing the world and his/her life in it. Higher scores are indicative of a strong sense of coherence. Test-retest reliabilities range from 0.76 to 0.86 for a one-year interval and Cronbach alpha coefficients range from 0.83 to 0.95 (Antonovsky, 1987).

The COPE Questionnaire (COPE) (Carver, Scheier & Weintraub, 1989) was used to measure the different ways that people cope in different situations and it is used to measure 14 different coping strategies. Five subscales measure different aspects of problem-focused coping and five subscales measure aspects of emotion-focused coping while four subscales measure avoidance behaviour. The COPE has a self-report format in which participants have to describe what they mostly do or think in stressful situations. A four-point Likert scale is used that ranges from 1 (I don't usually do this at all) to 4 (I usually do this). Carver, Scheier and Weintraub (1989) reported Cronbach alpha coefficients varying from 0.45 to 0.92. They reported sufficient levels of reliability for all the subscales with the exclusion of mental disengagement which measured lower than 0.6. Test-retest

reliability ranged between 0.46 and 0.86 and when applied after two weeks it ranged between 0.42 and 0.89. Higher scores indicate that the particular coping strategy is more likely to be used in a stressful situation.

The Coping Strategy Indicator (CSI) (Amirkhan, 1990) was also used to measure the different ways in which people cope in different situations and it measures three coping strategies, namely, problem solving, seeking social support and avoidance. Amirkhan (1990) reported Cronbach alpha coefficients of 0.93 for seeking support, 0.90 for problem solving, and 0.84 for avoidance. Higher scores indicate that the particular coping strategy is more likely to be used in a stressful situation.

Procedure

The four measures were bound in a booklet (in English only) and handed out during classes. Students were requested to voluntarily participate. Participants were thoroughly informed of the aims and procedures of the research and how the information would be utilised. The questionnaires were completed under the supervision of the first author in this study and taken in immediately after completion. From all participants informed consent was obtained to use the data anonymously. All ethical considerations as laid down by the Medical, Dental and Health Professions council concerning research and data gathered for research was adhered to.

Statistical Analysis

The statistical analysis was carried out by means of the SAS program (SAS-Institute, 1999a&b). Factor analysis was performed on each instrument to determine validity and Cronbach alpha coefficients were used to assess the reliability of the instruments (Clark & Watson, 1995). Descriptive statistics (e.g. means and standard deviations) were used to analyse the data. Pearson product moment correlations were used to determine the relationships between the variables. A cut-off point of 0.36 (Ellis & Steyn, 2003) was set for practical significance of the correlation coefficients. A regression analysis was used to determine the percentage of the variance explained

in the dependant variable (coping) that was predicted by the independent variables (emotional intelligence and sense of coherence).

RESULTS AND DISCUSSION

Descriptive statistics

The means, standard deviations and range of scores for the Total Group on all measuring instruments are presented in Table 1.

[Insert table 1 here]

An analysis of the available literature on the measuring instruments used in this study depicts comparable results to those obtained in this study as presented in Table 1.

With regard to the Emotional Intelligence Scale, this sample group obtained an emotional intelligence total mean score of 128.39 (EIS-T), which is higher than the mean score obtained by Chan (2004) in a Chinese sample of secondary school teachers in Hong Kong (122.15). Standard deviations are similar. Schutte et al. (1998) reported means scores of 134.92 for therapists, 120.08 for prisoners and 122.23 for clients in a substance abuse program. The mean scores obtained in this study are lower than those obtained by Schutte et al. for therapists but higher than those obtained for prisoners and clients in a substance abuse program. Standard deviations in this study are similar to those reported by Schutte et al. (1998). Literature with regard to the EIS's performance in other South African samples could not be found and it was therefore impossible to compare the results obtained in this investigation to those obtained in other South African samples. However, it would appear that this research group manifests appraisal and expression of emotion as the stronger

component of emotional intelligence. Further research is recommended on the EIS specifically for the South African context.

With regard to the SOC the total group's mean score of 133.58 is slightly lower than the scores obtained in Walker's (1999) study of wellbeing of a South African sample (137.52) and Antonovsky's (1993) study in a Jewish sample (136.50). However, it falls within the midrange of mean scores as reported by Antonovsky (1993) of between 117 – 152.6 for 26 studies. Standard deviations are similar.

With regard to the CSI the mean scores of 28.46 for problem solving, 24.15 for seeking social support and 20.87 for avoidance compare well with those found by Wissing and van Eeden (2002) of 28.32, 24.22 and 19.87 respectively. The current mean scores are slightly higher than those found by Amirkhan (1990) of 26.55, 23.42 and 19.03 respectively. Standard deviations are almost the same. It would appear that this group mostly makes use of problem solving coping strategies rather than avoidance strategies.

With regard to the COPE the mean scores vary between 12.85 for planning and 1.42 for alcohol-drug disengagement. This is slightly lower than the mean scores obtained by Van Der Bank's (2002) study in a South African sample of expatriates with mean scores ranging from 14.13 for planning and 1.22 for alcohol-drug disengagement and than those of Jansen Van Vuuren's (2001) South African sample with mean scores ranging from 14.28 for planning to 1.12 for alcohol-drug disengagement. Standard deviations are comparable. It would appear that this group mostly makes use of emotion-focused coping strategies rather than problem-focused or avoidance coping strategies.

From the above it would appear that the mean scores reported in Table 1 for the emotional intelligence, sense of coherence and coping behaviour indices compare adequately with scores reported in the literature. Standard deviations are also similar to those reported in the literature. Individual variation in scores can be seen from the relative wide range of scores.

Psychometric properties of the measuring instruments

Reliability of the measuring instruments

The Cronbach alpha coefficients of the measuring instruments are reported in Table 1. Nunnally (1978: 295) suggests *0.7 as an acceptable reliability coefficient; smaller reliability coefficients are seen as inadequate. However this varies by discipline.* According to Smit's (1991) criteria, reliability coefficients larger than 0.5 are considered acceptable in this study.

Cronbach alpha coefficients for the Emotional Intelligence Scale (EIS) found in Table 1 were 0.79 for appraisal and expression of emotion, 0.72 for regulation of emotion, 0.73 for utilisation of emotion, and 0.95 for the total score. In Chan's (2004) study the reliability indices were reported as 0.60 for appraisal and expression of emotion, 0.61 for regulation of emotion, 0.64 for utilization of emotion and 0.87 for the total EIS score, which are lower than those found in the present study. The EIS thus obtained acceptable reliability scores in this group.

The alpha coefficients for the Orientation to Life Scale (SOC) as shown in Table 1 are 0.67 for comprehensibility, 0.56 for manageability, 0.67 for meaningfulness and 0.86 for the total score. Results from Jorgensen, Frankowski and Carey (1999) indicated an alpha coefficient for the total score of 0.91. The present study's reliability indices are comparable to those reported in South African samples by Walker (1999) who obtained 0.88 for the total score and Wissing & Van Eeden (2002) who obtained 0.85 for the total score. The SOC as a total scale thus seems reliable for use in this research group.

As indicated in Table 1 the alpha coefficients for the Coping Strategy Indicator were 0.84, 0.90 and 0.62 for the subscales respectively. Amirkhan (1990) reported comparable reliability indices of 0.93 for seeking social support, 0.9 for problem solving and 0.84 for avoidance. In their South African research group Wissing and van Eeden (2002) found reliability scores of 0.83 for problem solving, 0.88 for seeking social support and 0.72 for avoidance, respectively. The CSI is thus a reliable scale for use in this group.

The Cronbach alpha coefficients found for the COPE questionnaire were between 0.42 and 0.72. The reliability coefficients for the behavioural disengagement (0.46) and mental disengagement (0.42) subscales are too small for these subscales to be considered internally consistent in this study. Due to this, the results of these subscales are not used in further analyses. In a South African study Van der Bank (2002) reported the following comparable reliability indices for the COPE: active coping (0.63); planning (0.60); suppression of competing activities (0.11); restraint (0.68); seeking social support for instrumental reasons (0.74); seeking social support for emotional reasons (0.83); positive reinterpretation and growth (0.60); acceptance (0.58); turning to religion (0.94); focus on and venting of emotions (0.70); denial (0.53); behavioural disengagement (0.63) and mental disengagement (0.22). Jansen Van Vuuren (2001) found comparable reliability indices as follows: active coping (0.58); planning (0.80); suppression of competing activities (0.56); restraint (0.59); seeking social support for instrumental reasons (0.74); seeking social support for emotional reasons (0.89); positive reinterpretation and growth (0.75); acceptance (0.62); turning to religion (0.90); focus on and venting of emotions (0.79); denial (0.52); behavioural disengagement (0.59) and mental disengagement (0.25). It is interesting to note that both Van der Bank and Jansen van Vuuren cited above, found low reliability scores for the mental disengagement subscale of the COPE, as did this study. This calls for further research and even consideration of whether this subscale should not be totally discarded. The COPE can however be assumed to be a mostly reliable instrument for use in this group.

In the light of the above it can be concluded that most of the measuring instruments display moderate to acceptable reliability indices according to the criteria of either Nunally (1978) or Smit (1991). The results and conclusions obtained in this study can thus be assumed to have a reliable basis.

Validity of the measuring instruments

Emotional intelligence scale (EIS) (Schutte et al. 1998)

Using the varimax rotation method, 8 factors were retained by the MINEIGEN criterion, where these factors explained 61.4% of the variance. The commonalities of variables were in most cases greater than 0.5. Eigen values range from 1.45 to 3.37.

According to Schutte et al. (1998), *a factor analysis of a larger pool of items suggested a one-factor solution of 33 items. This one-factor solution resulted in scale items that represented each of the following categories: appraisal and expression of emotion in the self and others, regulation of emotion in the self and others and utilization of emotions in solving problems.* In this study, factor 1 is the factor reflecting the utilization of emotion category with most of the items of this subscale loading on this factor; factors 2, 4, and 6 represent the regulation of emotion category with most of the items of this subscale loading on these factors. This seems to indicate that the regulation of emotion subscale is the less stable of the three emotional intelligence subscales and therefore the results found with this subscale should be interpreted with caution in spite of its fairly good reliability coefficient. Factor 3 represents the appraisal and expression of emotion category with most of the items of this subscale loading on this factor. Although factors 1 and 3 representing the subscales appraisal and expression of emotions and utilization of emotions are significant or major factors, as evaluated according to the criteria of Zwick and Velicer (1986), there were a few items not loading as hypothesized. For the purposes of this study however, these subscales of the EIS can be assumed valid for use in this research group (also taking into account their acceptable reliability indices). The subscale for the regulation of emotion does not meet the validity requirements of Zwick and Velicer (1986) and the results obtained with it should either be discarded or used only speculatorily. It has been suggested that the EIS is better used as a one factor solution scale (Schutte et al. 1998), however, other research has found the scale to be valid when the above three factors are extracted. (Ciarrochi, Deane & Anderson, 2002). Further

validation of the EIS for use with South African groups is necessary especially because it is a relatively newly developed scale and has not been used much in research.

The Orientation to Life Scale (SOC) (Antonovsky, 1987)

Using the varimax rotation method, 9 factors were retained by the MINEIGEN criterion, where these factors explained 64.4% of the variance. The commonalities of variables were in all cases greater than 0.5. Eigen values range from 1.54 to 3.39.

Analysis of the factor structure shows that factor 1 represents the subscale meaningfulness, factor 2 represents the subscale comprehensibility, and factor 3 represents the subscale manageability, evaluated with the aid of criteria specified by Zwick and Velicer (1986), although several items did not load as expected. Based on the guidelines of Zwick and Velicer (1986), this 3 factor solution for the SOC can be assumed valid for use in this research group, but it must be considered that Antonovsky (1987 & 1993) strongly indicated that the SOC should be used as a unitary (1 factor) scale. Gana and Garnier (2001) also found a three-correlated-factor model, representing manageability, meaningfulness and comprehensibility, to be valid. The partial validity of the SOC found in this study is surprising in the light of extensive research that has been done with the SOC in South Africa with comparable and diverse groups, where the validity of the scale was hardly ever questioned. The reasons for the partial validity of the SOC in this group of respondents are not clear, but it is speculated that group-specific characteristics may be responsible.

The Coping Strategy Indicator (CSI) (Amirkhan, 1990)

Using the varimax rotation method, 9 factors were retained by the MINEIGEN criterion, where these factors explained 65.4% of the variance. The commonalities of variables were in all cases greater than 0.5. Eigen values range from 1.2 to 5.73.

Amirkhan (1990) found that it was valid to retain 3 factors, namely problem solving, seeking support and avoidance. In this study factor 1 represents seeking support with all of the

items of this subscale loading here. Factor 2 indicates problem solving with most of the items required loading on it. Factors 4 and 5 represent avoidance with all of the items of this subscale loading only on these two factors. According to the Zwick and Velicer's (1986) criteria these factors sufficiently indicate the validity of the CSI for use in this group. Furthermore, the CSI obtained acceptable to good reliability coefficients in this study and has also been used extensively in South African research, with ample indications of its validity (Wissing & Van Eeden, 2002).

The COPE Questionnaire (COPE) (Carver, Scheier and Weintraub, 1989)

Using the varimax rotation method, 15 factors were retained by the MINEIGEN criterion, where these factors explained 72.8% of the variance. The commonalities of variables were in all cases greater than 0.5. Eigen values range from 1.32 to 5.64

Carver, Scheier and Weintraub (1989) found that the active coping and planning items all loaded together on one factor. Similarly, items reflecting the seeking of social support all loaded together on a single factor, independent of the basis for seeking out social support. In the present study similar results were obtained, where items from the active coping and planning subscales both loaded on factor 1 and seeking social support for instrumental and emotional reasons subscales both loaded on factor 2. Furthermore, positive reinterpretation and growth, and acceptance items loaded on a single factor 3; items for turning to religion loaded on factor 4; factor 5 represented the subscale for denial; factor 6 represented the subscale for focus on and venting emotions; suppression of competing activities items loaded on factor 7 and items from the mental and behavioural disengagement subscales loaded on factor 5, 8, 9 and 14. Factors 10 and 11 loaded most of the items on the subscale restraint and the single alcohol and drug disengagement item loaded on factor 13. Evaluating the factorial structure of the COPE scale according to the criteria of Zwick and Velicer (1986), the validity for use in this group can be assumed for most of the subscales except for the mental and behavioural disengagement indices. This finding is also

reflected in the poor reliability scores for these two subscales. Research done by Du Toit (2000) with South African groups found acceptable validity for the COPE scale.

The relationship between emotional intelligence, sense of coherence and coping behaviour

Pearson correlation coefficients (r) were used to specify the linear relationships between emotional intelligence, sense of coherence and coping behaviour. See Table 2.

[Insert Table 2 here]

According to Ellis and Steyn (2003) a correlation coefficient larger than 0.36 indicates a medium effect that might indicate a practically significant correlation, while coefficients larger than 0.5 indicate a correlation that is practically significant. Significant internal correlations between the subscales of the EIS, the SOC, those of the CSI and those of the COPE are theoretically expected and point to the internal consistency of these scales. Significant correlations between the CSI and the COPE scales and subscales are also theoretically expected and point to the convergent validity of these scales and the constructs that they operationalize.

From Table 2 it is evident that emotional intelligence (EIS-T) shows significant positive correlations with the coping strategies of problem solving, active coping, planning, suppressing competing activities and turning to religion. Emotional utilization (UTIL) correlates positively significantly with the coping strategies of problem solving, active coping, planning, suppression of competing activities, seeking social support for instrumental reasons. Emotional appraisal and expression (APP/EXP) correlates positively significantly with the coping strategies of problem solving, active coping, planning, suppression of competing activities and turning to religion. These findings suggest that emotional intelligence and the various aspects thereof show significant

positive correlations mostly with the problem-focused aspects of coping behaviour in this research group. The lack of significant correlations between emotional intelligence and emotion-focused coping is surprising. No comparable results were found in existing literature. However, Ciarrochi, Deane and Anderson (2002) investigated the usefulness of emotional intelligence in understanding the relationship between mental health and stress. They found that people high in expression of emotion tended to adapt better to stress. They believed the ability to express emotions appropriately enabled individuals to build closer friendships and therefore obtain greater social support, which could be of psychological benefit in times of stress. It would appear that emotionally perceptive people are better able to perceive their own reactions to a stressful situation and that if they are able to regulate and appropriately express their emotions they are better able to cope with the situation and obtain support from others. Thus, although causality cannot be deducted, it would seem that emotional intelligence enables the individual to appropriately appraise challenges and to engage in active problem-solving strategies to cope with these demands.

The meaningfulness (Mean) component of a sense of coherence (SOC) shows a significant positive relationship to the problem-solving and turning-to-religion coping strategies. Research by Pallant and Lae (2002) found similar statistically significant correlations between the SOC scale and a number of the COPE subscales indicating that subjects with a high sense of coherence were more likely to adopt active, problem-focused coping, and to look for a positive interpretation of the situation and were less likely to give up and withdraw from the situation or to use drugs or alcohol.

Emotional intelligence (EIS-T) correlates positively significantly with a sense of coherence (SOC-T) and with the components of manageability (Man) and meaningfulness (Mean). Emotional utilization (UTILl) and the meaningfulness (Mean) component of sense of coherence relate positively significantly. Regulation of emotion (REGUL) shows a significant positive correlation with sense of coherence (SOC-T) and the components of manageability (Man) and meaningfulness (Mean). Appraisal and expression of emotion (APP/EXP) correlates positively significantly with sense of coherence (SOC-T) and the meaningfulness (Mean) component of sense of coherence. It is

interesting to note that emotional intelligence and aspects of emotional intelligence correlate significantly positively with a sense of coherence as a global orientation to life (SOC-T) and with the manageability (Man) and meaningfulness (Mean) components of the SOC. This finding agrees firstly with the hypothesis of Salovey, Mayer and Caruso (2002) that the fourth branch of their Model of Emotional Intelligence, namely that of Emotional Management (or self-regulation), has a strong bearing on mental stability and a general sense of health and wellness. Secondly, it is the meaningfulness component of the SOC that has the most and strongest positive correlations with emotional intelligence and its components. This finding not only agrees with Antonovsky's (1979 & 1987) emphasis that meaningfulness is the emotional component of a sense of coherence but it also seems to indicate that the emotional intelligence construct could contain a strong implied component of meaningfulness. In other words, certain emotions could be the indicators that life makes sense and is worth investing energy and effort in. These tentative conclusions further remind of Fredrickson's (2002) Broaden–and–Build model of positive emotions which hypothesizes that positive emotions appear to broaden people's momentary thought–action repertoires and build their enduring personal resources, much like the comprehensibility–manageability components and the meaningfulness component of the orientation to life or sense of coherence construct of Antonovsky (1986). Furthermore, although few empirical research findings on the relationship between emotional intelligence and a sense of coherence could be found in literature, research findings on significant correlations between the SOC and indices of affective wellbeing (e.g. Affectometer 2 and PANAS) abound (Du Toit, 1999; Walker, 1999 and Wissing & van Eeden, 2002).

Walker (1999) investigated the affective component (as operationalized by emotional intelligence and affective stability) of psychological wellbeing (as operationalized by sense of coherence and satisfaction with life). Walker concluded that the affective component was an important predictor of general wellbeing as is also depicted in the literature by Salovey and Mayer (1990), who describe a person with emotional intelligence as having attained at least a basic level of positive mental health and by Bar-On (1997), who sees one's emotional intelligence as an important

predictor in determining one's general wellbeing. Further research on the concomitant relationship between emotional intelligence and a sense of coherence is necessary.

Regression analysis

A regression analysis was used to determine the percentage of variance explained in the dependant variable (coping) that is predicted by the independent variables (emotional intelligence and sense of coherence). Only those findings that were statistically significant are reported (R-Square > 0.13). According to Ellis and Steyn (2003) an R-Square larger than 0.13 (medium effect) can indicate a practically significant relationship. See Table 3.

[Insert table 3 here]

The following equations were obtained:

1. Problem solving = 9.32 + 0.03(SOC_TOT) +0.12(EI_TOT)

The sense of coherence total score coefficient was not statistically significant (P=0.12). According to Ellis and Steyn (2003), P<0.05 indicates practical significance indicating that emotional intelligence was a better predictor of problem solving as a coping strategy than sense of coherence.

2. Active coping = -0.94 + 0.01(SOC_TOT) + 0.09(EI_TOT)

The sense of coherence total score coefficient was not statistically significant (P=0.73) indicating that emotional intelligence was a better predictor of active coping as a coping strategy than sense of coherence.

3. Planning = 0.85 + 0.01(SOC_TOT) + 0.09(EI_TOT)

The sense of coherence total score coefficient was not statistically significant (P=0.63) indicating that emotional intelligence was a better predictor of planning as a coping strategy than sense of coherence.

4. Suppression of competing activities = 1.9 + -0.03(SOC_TOT) + 0.1(EI_TOT)

The sense of coherence total score was not statistically significant (P=0.06) indicating that emotional intelligence was a better predictor of suppression of competing activities as a coping strategy than sense of coherence.

5. Turning to religion = 0.25 + 0.25(SOC_TOT) + 0.07(EI_TOT)

The sense of coherence total score was not statistically significant (P=0.16) indicating that emotional intelligence was a better predictor of turning to religion as a coping strategy than sense of coherence.

6. Positive reinterpretation and growth = 1.97 + 0.04(SOC_TOT) + 0.05(EI_TOT)

Both the sense of coherence total score coefficient and the emotional intelligence total score coefficient were statistically significant (P<0.05) indicating that both emotional intelligence and sense of coherence were significant predictors of positive reinterpretation and growth as a coping strategy.

From the above it is clear that emotional intelligence is a better predictor than sense of coherence of four strategies of problem-focused coping and one of emotion-focused coping behaviour and that emotional intelligence and sense of coherence are both significant predictors of the positive reinterpretation and growth coping strategy. The Broaden–and–Build model of positive emotions of Fredrickson (2000) could partly explain this finding in the sense that *cultivated positive emotions not only counteract negative emotions, but also broaden individual's habitual modes of thinking and build their personal resources for coping.* It can be concluded that an individual with emotional intelligence will have the ability to cultivate positive emotions and to utilize such

emotional skills to broaden and build their personal problem-solving, coping strategies and skills. A sense of coherence however, functions mostly cognitively (van Eeden, 1996) and that could explain its role in positive reinterpretation and growth which also makes use of thinking skills and abilities.

CONCLUSION

In this study the relationship between emotional intelligence, sense of coherence and coping behaviour in a group of students at a South African university was investigated. The measuring instruments used proved to have acceptable psychometric properties for use in this group and the mean scores and standard deviations obtained were mostly similar to those reported in literature. Emotional intelligence had a stronger correlational relationship with coping behaviour (especially problem-focused coping) than a sense of coherence. The reason for this could be that positive affect is known to be more related to action than thought is. In other words, high levels of positive feeling are more likely to focus a person outward and towards actively engaging the environment, than thinking about matters (Fredrickson, 2002 & Watson, 2002). A sense of coherence on the other hand, is predominantly a cognitive ability and therefore serves as a global orientation to life's experiences and has a more moderating influence (van Eeden, 1996). As far as the relationship between emotional intelligence and sense of coherence is concerned, the fact that the meaningfulness (emotional) component of the SOC has the strongest positive correlations with emotional intelligence and its components is theoretically expected but needs further explication.

A limitation of this study must be taken into account in interpreting the results of this investigation. While causal hypotheses were considered in this research, it is well to keep in mind that the study was correlational in nature and that, ultimately, definitive evidence of causality can be obtained only through the use of manipulative experimental or quasi-experimental methods. Therefore, while the findings show relations of emotional intelligence and sense of coherence with

various coping behaviours, further work is needed that statistically examines changes in coping behaviours following induced changes in aspects of emotional intelligence and of a sense of coherence. Other limitations of this study that must be taken into account are that the use of a non-probability sample limits the generalisation of the findings to other settings and that the validity of the results may be affected due to the exclusive use of self-report measures.

Despite the limitations, the findings of this study suggest the value that emotional intelligence development (as proposed by Bar-On, 1997; Goleman, 1995 and Salovey & Mayer, 1990) may have for the psychological wellbeing and psychosocial health of young people in general and in the South African context specifically. The enabling outcomes of such emotional training programmes include enhanced coping abilities, improved interpersonal skills and higher levels of bio-psycho-social wellness. Such emotional intelligence enhancement or training could be integrated into the existing curricula of schools or corporate companies. This would prepare individuals to cope better with environmental demands and increase their ability to function and succeed in life. The study also has implications for the scope of psychotherapy and counselling. By training clients and patients to better understand, regulate and express their emotions they can improve their personal strategies for coping and become better able to handle the stressful situations that have been inhibiting them.

The results of this study suggest that further research is necessary to validate the Emotional Intelligence Scale in a South African sample. The scale is a simple-to-use self-report questionnaire but very little empirical evidence supports its use in a South African sample.

Evidence has also been gathered for the role emotional intelligence plays in predicting the choice of coping strategies and further research into this area would be beneficial to better understand the nature of resilient people and the skills that they have to cope with life's demands.

Further research into exploring what emotional intelligence predicts, both as an overall ability and in terms of individual profile of strengths and weaknesses, as well as focusing on how emotional intelligence can be developed through the life span, is recommended.

Very little literature is available regarding the relationship between sense of coherence and emotional intelligence. Both constructs have been established as contributing to psychological wellbeing but the dynamics between them remains mostly poorly researched and therefore unknown. It is therefore recommended that future research further explore this theoretical relationship between emotional intelligence and sense of coherence and how it is manifested in behaviour.

REFERENCES

American Psychological Association. (1984). *Publication Manual of the American Psychological Association.* Washington: American Psychological Association.

Amirkhan, J.H. (1990). A factor analytically derived measure of coping: The coping strategy indicator. *Journal of Personality and Social Psychology,* 59 (5), 1066-1074.

Anastasi, A. (1998). *Psychological testing (6th ed.).* New York: Mcmillan.

Anderson, T.W. (1984). *An introduction to multivariate statistical analysis (2nd ed.).* New York: John Wiley & Sons.

Antonovsky, A. (1979). *Health, stress and coping.* San Francisco, California: Josey-Bass.

Antonovsky, A. (1987). *Unravelling the mystery of health.* San Francisco, California: Josey-Bass.

Antonovsky, A. (1990). Personality and health: Testing the sense of coherence model. In H. S. Friedman (Ed.), *Personality and disease.* Canada: Wiley.

Antonovsky, A. (1992). Can attitudes contribute to health? Advances. *The Journal of Mind-Body Health,* 8, 33-49.

Antonovsky, A. (1993). The structure and properties of the sense of coherence scale. *Social Science and Medicine,* 36, 725-733.

Antonovsky, H. & Sagy, S. (2001). The development of a sense of coherence and its impact on responses to stress situations. *The Journal of Social Psychology,* 126 (2), 213-225.

Baron, R.A. & Byrne, D. (2003). *Social Psychology.* Boston: Allyn & Bacon.

Bar-On, R. (1997). *BarOn Emotional Quotient Inventory Technical Manual.* Toronto, Canada: Multi-Health Systems Inc.

Bar-On, R. & Parker, J.D.A. (eds.). (2000). *The handbook of emotional intelligence.* San Francisco: Jossey-Bass.

Buitendach, J.H. & Janse van Rensburg, J.E. (2003). *The relationship between job insecurity, coping and psychological well-being of pilots within an airline association.* VanderbijlPark: North-West University.

Callan, V.J. (1993). Individual and organizational strategies for coping with organizational challenge. *Work and Stress*, 7, 63-75.

Carver, C.S., Scheier, M.S. & Weintraub, J.K. (1989). Assessing coping strategies: A theoretically based approach. *Journal of Personality and Social Psychology*, 56 (2), 267-283.

Cattell, R.B. (1973). *Factor analysis: An introduction and manual for the psychologist and social scientist.* Westport: Greenwood.

Chan, D.W. (2004, June). Perceived emotional intelligence and self-efficacy among Chinese

secondary school teachers in Hong Kong. *Personality and Individual Differences*, 36 (8), 1781-1795.

Charbonneau, D. & Adelheid, A.M.N. (2002, November). Emotional intelligence and leadership in adolescents. *Journal of Personality and Individual Differences*, 33 (7), 1101-1113.

Ciarrochi, J.V., Chan, A.Y.C. & Bajgar, J. (2001, November). Measuring emotional intelligence in adolescents. *Journal of Personality and Individual Differences*, 31 (7), 1105- 1119.

Ciarrochi, J.V., Chan, A.Y.C. & Caputi, P. (2000). A critical evaluation of the emotional intelligence construct. *Personality and Individual Differences*, 28, 539-561.

Ciarrochi, J.V., Deane, F.P. & Anderson, S. (2002, January). Emotional intelligence moderates: the relationship between stress and mental health. *Journal of Personality and Individual Differences,* 32 (2), 197-209.

Ciarrochi, J., Forgas, J.P. & Mayer, J.D. (eds.). (2001). *Emotional intelligence in everyday life: A scientific enquiry*. Philadelphia: Psychology Press.

Clark, L. A. & Watson, D. (1995). Constructing validity: Basic issues in objective scale development. *Psychological Assessment*, 7 (3), 309-319.

Cohen, J. (1988). *Statistical power analysis for the behavioural sciences (2na ed.).* New Jersey: Erlbaum.

Cooper, R.K. & Sawaf, A. (1997). *Executive EQ: Emotional intelligence in leadership and organizations.* New York: Grosset/Putnam.

Davies, M., Stankov, L. & Roberts, R.D. (1998). Emotional intelligence: In search of an elusive construct. *Journal of Personality and Social Psychology*, 75 (4), 989-1015.

Dawda, D. & Hart, S.D. (2000). Assessing emotional intelligence: Reliability and validity of the Bar-On Emotional Quotient Inventory (EQ-I) in university students. *Personality and Individual Differences*, 28, 797-812.

Derkensen, J., Kramer, I. & Katzko, M. (2002, January). Does a self-report measure for emotional intelligence measure something different than general intelligence? *Journal of Personality and Individual Differences*, 32 (1), 37-48.

Dulewicz, V. & Higgs, M. (1999). Can emotional intelligence be measured and developed? *Leadership and Organization Development Journal*, 20 (5).

Du Toit, M.M. (1999). *Die dinamiek van lewenskonteks, persoonlike facktore, coping prosesse en psigologiese welsyn by jeugdes, met die oog op programontwikkeling vir kapasiteitsbou* Unpublished PhD thesis. Potchefstroom University for Christian Higher Education.

Eckenrode, J. (ed.). (1991). *The social context of coping.* New York: Plenum Press.

Ekman, P. & Friesen, W.V. (1975). *Unmasking the face: A guide to recognizing emotions from facial expressions.* New Jersey: Prentice-Hall.

Ellis, S.M. & Steyn. H.S. (2003). Practical significance (effect sizes) versus or in combination with statistical significance (p-values). *Management Dynamics*, 12 (4), 51-53.

Field, K., Cohler, B.J. & Wool, G. (eds.). (1989). *Learning and education: Psychoanalytic perspectives.* Madison: International Universities.

Flowers, J.L. (2000). Emotional intelligence in the workplace. *Library Collections, Acquisitions and Technical Services*, 24 (3), 431-433.

Folkman, S. & Lazarus, R.S. (1984). *Stress, appraisal and coping.* New York: Springer.

Fredrickson, B.L. (2000, March). Cultivating positive emotions to optimise health and well-being. *Prevention and Treatment*, 3, 1-24.

Fredrickson, B.L. (2002). Positive emotions. In Snyder, C.R. & Lopez, S.J. (eds.). *The handbook of positive psychology.* New York: Oxford University Press.

Gana, K & Garnier, S. (2001, November). Latent structure of the sense of coherence scale in a French sample. *Personality and Individual Differences*, 31 (7), 1079-1090.

Gardner, H. (1983). *Frames of the mind.* New York: Basic Books.

Gohm, C.L. (2003, March). Mood regulation and emotional intelligence: Individual differences. *Journal of Personality and Social Psychology*, 84 (3), 594-607.

Gohm, C.L. & Clore, G.L. (2000, June). Individual differences in emotional experience: Mapping

available scales to processes. *Personality and Social Psychology Bulletin*, 26 (6), 679-697.

Goleman, D. (1995). *Emotional Intelligence*. New York: Bantam.

Goleman, D. (1998). *Working with emotional intelligence*. London: Bloomsbury.

Jahnsen, R., Villen, L., Stanghelle, J.K. & Holm, I. (2002). Coping potential and disability – sense of coherence in adults with cerebral palsy. *Disability and Rehabilitation*, 24 (10), 511-518.

Jansen Van Vuuren, J.A. (2001). *The relationship between psychological strengths. Coping and burnout of senior managers in a manufacturing industry.* Unpublished Master's dissertation. Potchefstroom University for Christian Higher Education.

Jorgenson, R.S., Frankowski, J.J. & Carey, M.P. (1999). Sense of coherence, negative life events, and appraisal of physical health among university students. *Personality and Individual Differences*, 27, 1079-1089.

Kleinke, C.L. (1991). *Coping with life challenges*. San Francisco, CA: Brooks/Cole.

Koen, M. (2002). *Sense of coherence, constructive thinking and fortitude as components of psychological well-being.* Unpublished Master's dissertation. Potchefstroom University for Christian Higher Education.

Kumpfer, K. (1999). Factors and processes contributing to resilience: The resilience framework. In Glantz and Johnson (eds.). *Resilience and development: Positive life adaptations.* New York: Plenum Publishers.

Lopes, P.N., Salovey, P. & Straus, R. (2003). Emotional intelligence, personality, and the perceived quality of social relationships. *Journal of Personality and Individual Differences.* Article in Press.

Lyne, K. & Roger, D. (2000, August). A psychometric re-assessment of the COPE questionnaire. *Personality and Individual Differences,* 29 (2), 321-335.

Martinez-Pons, M. (1998). The relation of emotional intelligence with selected areas of personal functioning. *Imagination, Cognition and Personality*, 17 (1), 3-13.

Mayer, J.D., Caruso, D.R. & Salovey, P. (2000). Emotional intelligence meets traditional standards for an intelligence. *Intelligence*, 27 (4), 267-298.

Mayer, J.D., DiPaolo, M. & Salovey, P. (1990). Perceiving affective content in ambiguous visual stimuli: A component of emotional intelligence. *Journal of Personality Assessment*, 54 (3&4), 772-781.

Mayer, J.D. & Geher, G. (1996). Emotional intelligence and the identification of emotion. *Intelligence*, 22, 89-113.

Mayer, J.D. & Salovey, P. (1993). The intelligence of emotional intelligence. *Intelligence,* 17, 433-437.

Moore, D.S. & McCabe, G.P. (1999). *Introduction to the practice of statistics (3ra ed.).* New York: W. H. Freeman and Company.

Moriarty, N., Stough, C., Tidmarsh, P., Eger, D. & Dennison, S. (2001, December). Deficits in

emotional intelligence underlying adolescent sex offending. *Journal of Adolescence*, 24 (6), 743-751.

Newsome, S., Day, A.L. & Catano, V.M. (2000). Assessing the predictive validity of emotional intelligence. *Personality and Individual Differences*, 29, 1005-1016.

Nilsson, I., Axelsson, K., Gustafson, Y., Lundman, B. & Norberg, A. (2001). Well-being, sense of coherence, and burnout in stroke victims and spouses during the first few months after stroke. *Scandanavian Journal of Caring Science*, 15, 203-214.

Nunnally, J. (1978). *Psychometric theory*. New York: McGraw-Hill.

O' Connor, Jr, R.M. & Little, I.S. (2003). Revisiting the validity of emotional intelligence: Self-report vs. ability-based measures. *Journal of Personality and Individual Differences*. Article in Press.

Ortney, A., Clore, G.L. & Collins, A. (1988). *The cognitive structure of emotions.* New York: Cambridge University.

Pallant, J.F. & Lae, L. (2002). Sense of coherence, well-being, coping and personality factors: further evaluation of the sense of coherence scale. *Personality and Individual Differences,* 33, 39-48.

Parker, D.A., Summerfeldt, L.J., Hogan, M.J. & Majeski, S.A. (2003). Emotional intelligence and academic success: Examining the transition from high school to university. *Journal of Personality and Individual Differences*. Article in Press

Pertrides, K.V., Fredrickson, N. & Furnham, A. (2002). The role of trait emotional intelligence in academic performance & deviant behaviour at school. *Journal of Personality and Individual Differences.* Article in Press.

Pertrides, K.V. & Furnham, A. (2000). On the dimensional structure of emotional intelligence. *Personality and Individual Differences*, 29, 313-320.

Petrides, K.V. & Furnham, A. (2001). Trait emotional intelligence: Psychometric investigation with reference to established trait taxonomies. *European Journal of Personality,* 25, 425-448.

Pfeiffer, S.I. (2001, April). Emotional intelligence: Popular but elusive construct. *Roeper Review*, 23 (3), 138-145.

Potchefstroom University for Christian Higher Education. (2003). *Manual for postgraduate study.* Potchefstroom: Potchefstroom University.

Quebbeman, A. & Rozell, E.J. (2002). Emotional intelligence and dispositional affectivity as moderators of workplace aggression: The impact on behaviour choice. *Human Resource Management Review*, 12 (1), 125-143.

Ryff, C.D. & Singer, B.H. (eds.). (2001). *Emotion, social relationships and health.* New York: Oxford University.

Saklofske, D.H., Austin, E.J. & Minski, P.S. (2003, March). Factor structure and validity of a trait emotional intelligence measure. *Journal of Personality and Individual Differences*, 34 (4), 707-721.

Salovey, P., Bedell, B.T., Detweiler, J.B. & Mayer, J.D. (1999). Coping Intelligently: Emotional intelligence and the coping process. In Snyder, C.R. (eds.). *Coping: The psychology of what works.* New York: Oxford University Press.

Salovey, P. & Mayer, J.D. (1990). Emotional intelligence. *Imagination, Cognition and Personality*, 9 (3), 185-211.

Salovey, P., Mayer, J.D. & Caruso, D. (2002). The positive psychology of emotional intelligence. In Snyder, C.R. & Lopez, S.J. (eds.). *The handbook of positive psychology.* New York: Oxford University Press.

SAS Institute Inc. (1999). SAS Institute Inc., SAS Online Doc® (version 8). Carey: SAS Institute.

SAS Institute Inc. (1999). The SAS system for Windows Release 8.02 TS Level 02M0. Carey: SAS Institute.

Sammallahti, P.R., Holi, M.J., Komulainen, E.J. & Aalberg, V.A. (1996). Comparing two self-report measures of coping – The Sense of Coherence Scale and the Defense Style Questionnaire. *Journal of Clinical Psychology,* 52 (5), 517-524.

Schutte, N.S., Malouff, J.M., Hall, L.E., Haggerty, D.J., Cooper, J.T., Golden, C.J. & Dornheim, L. (1998). Development and validation of a measure of emotional intelligence. *Personality and Individual Differences,* 25, 167-177.

Smit, G.J. (1991). *Psychometrics.* Pretoria: HAUM-tertiary.

StatSoft, Inc. (2003). STATISTICA. (Data analysis software system), version 6. www.statsoft.com.

Steiner, C. & Perry, P. (1999). *Achieving emotional literacy.* London: Bloomsbury.

Sternberg, R.J. (eds.). (1988). *Handbook of human intelligence.* Cambridge: Cambridge University.

Steyn, H.S. (2000). Practical significance of the difference in means. *Journal of Industrial Psychology*, 26 (3), 1-3.

Steyn, H.S. (2002). Practically significant relationships between two variables. *South AfricanJournal of Industrial Psychology*, 28 (3), 10-15.

Sullivan, G.C. (1993). Towards clarification of convergent concepts: Sense of coherence, will to meaning, locus of control, learned helplessness and hardiness. *Journal of Advanced Nursing*, 18, 1772-1778.

Tapia, M. (2001). Measuring emotional intelligence. *Psychological Reports*, 88, 353-364.

Trinidad, D.R. & Johnson, C.A. (2002, January). The association between emotional intelligence and early adolescent tobacco and alcohol use. *Journal of Personality and Individual Differences*, 32 (1), 95-105.

Trinidad, D.R., Unger, J.B., Chou, C-P. & Anderson, J. (2003). The protective association of emotional intelligence with psychosocial smoking risk factors for adolescents. *Journal of Personality and Individual Differences.* Article in Press.

Van Der Bank, M. (2002). *Dispositional factors and coping as predictors of expatriates' performance and desire to terminate the assignment.* Unpublished Master's dissertation. Potchefstroom University for Christian Higher Education.

van Eeden, C. (1996). Psigologiese welstand en koherensiesin. Unpublished PhD thesis. Potchefstroom University for Christian HigherEducation.

Vermeulen, S. (1999). *EQ: Emotional intelligence for everyone.* Parrow: Zebra.

Walker, H.J. (1999). *Clarifying the affective component of psychological well-being.* Unpublished Master's dissertation. Potchefstroom University for Christian Higher Education.

Watson, D. (2002). Positive affectivity: the disposition to experience pleasurable emotional states. In Snyder, C.R. & Lopez, S.J. (eds.). *The handbook of positive psychology.* New York: Oxford University Press.

Wissing, M.P. & van Eeden, C. (2002). Empirical clarification of the nature of psychological well-being. *The South African Journal of Psychology*, 32 (1), 32-44.

Wolff, S.B., Pescosolido, A.T. & Druskat, V.U. (2002, October). Emotional intelligence as the basis of leadership emergence in self-managing teams. *The Leadership Quarterly*, 13 (5), 505-522.

Wong, C-S. & Law, K.S. (2002, January). The effects of leader and follower emotional intelligence on performance and attitude. *The Leadership Quarterly*, 13 (3), 243-27.

Zeidner, M. & Endler, N.S. (1996). *Handbook of Coping: Theory, research and applications.* New York: Wiley.

Zwick, W.R. & Velicer, W.F. (1986). Comparison of five rules for determining the number of components to retain. *Psychological Bulletin*, 99 (3), 432-442.

Table 1: Descriptive statistics and reliability indices: Total Group (N = 101)

Scale Subscale	Mean	Std.Dev.	Minimum	Maximum	Cronbach Alpha
EIS					
App/Exp	48.80	6.33	34	61	0.79
Regul	39.88	4.58	24	49	0.74
Util	39.70	4.65	27	49	0.73
EIS-T	128.39	13.46	88	154	0.95
SOC					
Com	42.25	9.20	23	64	0.67
Man	47.61	7.16	30	60	0.56
Mean	43.72	6.69	24	56	0.67
SOC-T	133.58	18.41	89	176	0.86
CSI					
ProSol	28.46	3.90	15	33	0.84
SocSup	24.15	5.41	11	33	0.90
Avd	20.87	3.59	12	29	0.62
COPE					
Activ	11.66	2.83	5	16	0.63
Plan	12.85	2.93	6	16	0.72
Supp	10.57	2.59	6	16	0.58
Rest	10.97	2.52	5	16	0.52
Sup-In	10.75	2.98	4	16	0.66
Sup-Em	10.63	3.42	4	16	0.72
Pos-R&g	12.42	2.76	5	16	0.63
Accept	11.79	2.77	4	16	0.62
Relig	12.91	3.16	4	16	0.72
Vent-E	10.26	3.27	4	16	0.63
Den	6.51	2.64	4	14	0.62
Beh-D	6.70	2.14	4	13	0.46
Men-D	9.15	2.60	4	16	0.42
Alc-Drg	1.42	0.82	1	4	*

Note: EIS - Emotional Intelligence Scale, App/Exp - Appraisal and Expression of emotion, Regul - Regulation of emotion, Util - Utilization of emotion, EIS-T - Emotional Intelligence Scale total score, SOC - Sense of Coherence scale, Com - Comprehensibility, Man - Manageability, Mean -Meaningfulness, SOC-T - Sense of Coherence scale total score, CSI - Coping Strategy Indicator, ProSol - Problem Solving Coping Strategy, SocSup - Seeking Social Support Coping Strategy, Avd -Avoidance Coping Strategy; COPE - , Activ - Active Coping, Plan - Planning, Supp - Suppression of Competing Activities, Rest - Restraint, Sup-In - Seeking Social Support for Instrumental Reasons, Sup-Em - Seeking Social Support for Emotional Reasons, Pos-R&g - Positive Reinterpretation and Growth, Accept - Acceptance, Relig - Turning to Religion, Vent-E – Focus on and Venting Emotions, Den -Denial, Beh-D - Behavioural Disengagement, Men-D - Mental Disengagement, Alc-Drg - Using Alcohol and Drugs to Cope.

*Cronbach Alpha could not be calculated as this sub-scale contains only one item

Table 2: Pearson product moment correlations for all scales and subscales used.

Scale Subscale	App/ Exp	Regul	Util	EIS-T	Com	Man	Mean	SOC-T	Prob Sol	Soc Sup	Avd	Activ	Plan	Supp	Restr	Sup-In	Sup-Em	Pos-R&g	Relig
EIS																			
App/Exp	1						0.46	0.42	0.46			0.45	0.38	0.39					0.39
Regul	0.63	1				0.45	0.51	0.39											
Util	0.55	0.70	1				0.52		0.39			0.43	0.35	0.43		0.34			
EIS-T	0.88	0.88	0.84	1		0.41	0.57	0.44	0.47			0.46	0.41	0.41					0.37
SOC																			
Com					1														
Man					0.45	1													
Mean						0.61	1		0.37										0.36
Soc-T					0.80	0.84	0.76	1											
CSI																			
ProSol									1										
SocSup										1									
Avd											1								
COPE																			
Activ									0.62			1							
Plan									0.68			0.79	1						
Supp									0.64			0.79	0.66	1					
Restr									0.49				0.41	0.36	1				
Sup-In										0.73						1			
Sup-Em										0.85						0.75	1		
Pos-R&g									0.44			0.36	0.44		0.36			1	
Accept																		0.59	
Vent-E										0.52						0.39	0.60		

Note: EIS - Emotional Intelligence Scale, App/Exp - Appraisal and Expression of emotion, Regul - Regulation of emotion, Util - Utilization of emotion, EIS-T - Emotional Intelligence Scale total score, SOC - Sense of Coherence scale, Com - Comprehensibility, Man - Manageability, Mean -Meaningfulness, SOC-T - Sense of Coherence scale total score, CSI - Coping Strategy Indicator, ProSol - Problem Solving Coping Strategy, SocSoc - Seeking Social Support Coping Strategy, Avd -Avoidance Coping Strategy; COPE - , Activ - Active Coping, Plan - Planning, Supp - Suppression of Competing Activities, Rest - Restraint, Sup-In - Seeking Social Support for Instrumental Reasons, Sup-Em - Seeking Social Support for Emotional Reasons, Pos-R&g - Positive Reinterpretation and Growth, Accept - Acceptance, Relig - Turning to Religion, Vent-E - Focus on and Venting Emotions, Alc-Drg - Using Alcohol and Drugs to Cope.

Table 3. Regression analysis of emotional intelligence, sense of coherence and coping behaviour

Dependant variable	Equation	R-Square	Adjusted R- Square
problem solving	= 9.32 + 0.03(SOC_TOT) +0.12(EI_TOT)	0.24	0.22
active coping	= -0.94 + 0.01(SOC_TOT) + 0.09(EI_TOT)	0.21	0.19
planning	= 0.85 + 0.01(SOC_TOT) + 0.09(EI_TOT)	0.17	0.16
suppression of competing activities	= 1.9 + -0.03(SOC_TOT) + 0.1(EI_TOT)	0.20	0.18
positive reinterpretation and growth	= 1.97 + 0.04(SOC_TOT) + 0.05(EI_TOT)	0.15	0.13
Turning to religion	=0.25 + 0.25(SOC_TOT) + 0.07(EI_TOT)	0.16	0.14

Note: SOC_TOT – Sense of Coherence Scale Total; EI_TOT – Emotional Intelligence Scale Total