

COPING, STRESS AND SUICIDE IDEATION IN THE SOUTH AFRICAN POLICE SERVICE

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PREFACE

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ABSTRACT

Subject: Coping, stress and suicide ideation in the South Africa Police Service

Key terms: Coping, stress, suicide, suicide ideation, police.

A productive and healthy police force is important for the economic growth and stability and the development of a country. In South Africa, various potential stressors, such as a high crime level, organisational transformation and a lack of resources challenge members of the police services. Increased rates of illness, post-traumatic stress, burnout, alcohol abuse and suicides, as well as decreased levels of job satisfaction and job performance as compared to norms for the general population are found in research with police members. The number of suicides in the South African Police Service (SAPS) is more than five times that of suicide rates reported in the literature for other police populations. Suicide ideation constitutes one aspect of suicidal behaviour. Suicide ideation, which refers to the thoughts and cognitions about suicidal behaviour and intent, may be considered an early marker of more serious suicidal behaviour. However, there is a lack of empirical research systematically investigating suicide ideation and possible correlates thereof in South Africa.

This research investigated the relationship between suicide ideation, stress and coping in the SAPS. The aim of this research was to determine national levels of suicide ideation, stress and coping, and the differences between various demographic groups (race, rank, province, language group and size of station). Further aims included the validation of a measure of stress and coping in the SAPS.

The research method for each of the four articles consists of a brief literature review and an empirical study. A cross-sectional survey design was used. Random samples ($N = 2396$ for research articles 1 and 2, and $N = 1431$ for research articles 3 and 4) were taken from police stations in nine provinces. Stations were divided into small, medium and large stations. All available police members in small and medium stations were included in the sample, while in large stations random samples were taken according to sex and race. The Adult Suicide Ideation Questionnaire(ASIQ), Police Stress Inventory (PSI), COPE questionnaire, a measure of social support and a biographical questionnaire were administered. Descriptive and inferential statistics were used to analyse the data.

Results indicated that 8,64% of the sample showed serious levels of suicide ideation. Previous suicide attempts and having previously been charged in terms of the disciplinary code were significant predictors of current levels of suicide ideation. It was shown that members that scored above the 97th percentile on suicide ideation are Black, from the ranks of sergeant and inspector, and from the Free State and small and medium stations.

Concerning the Police Stress Inventory, three internally consistent factors were extracted by means of principal components factor analysis. These factors were Job Demands, Lack of Job Resources and Inherent Police Stressors. Differences regarding stress factors were found between different ranks, races, language groups, provinces and different-sized stations.

A measure of coping was validated in the SAPS. Four factors were extracted, namely Active Coping, Avoidance, Seeking Emotional Support and Turning to Religion. Differences were shown between the coping strategies of different ranks, races, provinces and according to size of stations.

A stepwise discriminant analysis showed that previous suicide attempt, coping strategies (non-active coping, turning to religion and seeking emotional support) and lacking social support (support from psychological services of the SAPS and friends not in the SAPS), marital status, marital satisfaction, scholastic education, job satisfaction, province, race and physical exercise could be used to predict suicide ideation.

It is recommended that the SAPS review current suicide prevention programs to ensure their suitability to all levels of the organisation. The most prominent stressors in need of attention, namely officers not doing their job, poor quality equipment, inadequate salary and seeing criminals go free, were identified and need to be managed by the SAPS. Certain members could benefit from training in effective coping strategies.

By way of conclusion, recommendations for future research are made.

OPSOMMING

Onderwerp: Coping, stres en selfmoord-denkbeeldvorming in die Suid-Afrikaanse Polisie

Sleuteltermes: Coping, stres, selfmoord, selfmoord-denkbeeldvorming, polisie

'n Produktiewe en gesonde polisie is belangrik vir die ekonomiese groei en stabiliteit en die ontwikkeling van 'n land. In Suid-Afrika stel 'n verskeidenheid van stressors, soos 'n hoë misdadingsyfer, organisatoriese verandering en 'n gebrek aan hulpbronne, uitdagings aan lede van die polisie. Toenemende vlakke van siekte, post-traumatische stres, psigiese uitbranding, alkoholmisbruik en selfmoord, asook verlaagde vlakke van werkstevredenheid en werkspreslasie in vergelyking met norme vir die algemene bevolking word aangetref in navorsing met polisielede. Selfmoord in die Suid-Afrikaanse Polisie (SAPD) is meer as vyf keer hoër as selfmoord wat in studies elders in die wêreld gerapporteer word. Selfmoord-denkbeeldvorming is een aspek van selfmoordgedrag. Selfmoord-denkbeeldvorming, wat verwys na die gedagtes en kennisies oor selfmoord-gedrag en -bedoeling, kan gereken word as 'n vroeë kenmerk van meer ernstige selfmoord gedrag. Nietemin bestaan daar 'n gebrek aan empiriese navorsing wat sistematies ondersoek instel na selfmoord-denkbeeldvorming en moontlike korrelate daarvan in Suid Afrika.

Hierdie navorsing het die verband tussen coping, stres en selfmoord-denkbeeldvorming binne die SAPD ondersoek. Die doelstelling van die navorsing was om nasionale vlakke van coping, stres en selfmoord-denkbeeldvorming en die verskille tussen demografiese groepe (ras, rang, provinsie, taalgroep en grootte van stasie) te bepaal. Verdere doelstellings het die validering van meetinstrumente van stres en coping in die SAPS ingesluit.

Die navorsingsmetode vir elk van die vier artikels bestaan uit 'n bondige literatuuroorsig en 'n empiriese studie. 'n Dwarsdeursnee-opnameontwerp is gebruik. Ewekansige steekproewe ($N = 2\,396$ vir navorsingsartikels 1 en 2, en $N = 1\,431$ vir navorsingsartikels 3 en 4) is uit polisieostasies in nege provinsies geneem. Stasies is verdeel in klein, medium en groot stasies. Alle beskikbare polisielede in klein en medium stasies is ingesluit in die steekproef, terwyl in groot stasies gestratifiseerde steekproewe geneem is op grond van geslag en ras. Die Volwasse-selfmoord-denkbeeldvormingsvraelys (ASIQ), Poliestres-opname (PSI), COPE,

'n meetinstrument van sosiale ondersteuning en 'n biografiese vraelys is afgeneem. Beskrywende en inferensiële statistiek is gebruik om die data te analiseer.

Die resultate het aangetoon dat 8,64% van die steekproef ernstige vlakke van selfmoord-denkebeeldvorming getoon het. Vorige selfmoordpogings en vorige aanklagte ingevolge die dissiplinêre kode was beduidende voorspellers van selfmoord-denkebeeldvorming. Daar is getoon dat lede wat bo die 97ste persentiel vir selfmoord-denkebeeldvorming gemeet het, Swart is, van die range van sersant en inspekteur, en van die Vrystaat en klein en medium stasies kom.

Wat betref die Polisiestres-opname is drie intern konsekwente faktore met behulp van hoofkomponent-faktoranalise onttrek. Hierdie faktore staan bekend as Taakeise, Gebrek aan Taakhulpbronne en Inherente Polisiestressors. Verskille rakende stresfaktore is gevind tussen verskillende range, rassegroepe, taalgroepe, provinsies en grootte van stasie.

'n Meetinstrument van coping is in die SAPD gevalideer. Vier faktore is onttrek, naamlik Aktiewe Coping, Vermydning, Soek van Emosionele Ondersteuning en Gebruik van Religie. Verskille is getoon tussen die coping-strategieë van verskillende range, rasse en provinsies en na aanleiding van die grootte van stasies.

'n Stapsgewyse diskriminantanalise het getoon dat vorige selfmoordpoging, coping-strategieë (nie-aktiewe coping, gebruik van religie en soeke na emosionele ondersteuning) gebrekkige sosiale ondersteuning (ondersteuning van sielkundige dienste van die SAPD en vriende buite die werksverband), huwelikstaat, huwelikstevredenheid, skolastiese opvoeding, werkstevredenheid, provinsie, ras en fisieke oefening gebruik kan word om selfmoord-denkebeeldvorming te voorspel.

Daar word aanbeveel dat die SAPD huidige selfmoord-voorkomingsprogramme hersien om die geskiktheid daarvan vir alle vlakke van die organisasie te verseker. Die mees prominente stressors wat aandag verg, naamlik personeel wat nie hul werk doen nie, toerusting van swak gehalte, ontoereikende salaris en om misdadigers te sien vry gaan, is geïdentifiseer en behoort deur die SAPD bestuur te word. Sekere lede sal voordeel trek uit opleiding in effektiewe coping-strategieë.

Ter afsluiting word aanbevelings vir toekomstige navorsing aan die hand gedoen.

CHAPTER 1

INTRODUCTION

This thesis deals with suicide ideation, coping and stress in the South Africa Police Services.

In Chapter 1 the motivation for the research is discussed in terms of the problem statement and aims of the research. Thereafter the research method and division of chapters are discussed.

1.1 PROBLEM STATEMENT

A productive, motivated and healthy police service is an important contributor to the stability and resulting economic growth and development of countries. In South Africa, various potential stressors, such as a high crime level, organisational transformation and a lack of resources, challenge members of the police services. According to Anshel (2000), law enforcement is one of the most stressful occupations world-wide. In addition to experiencing job-related stressors such as dealing with unlawful, often dangerous actions of citizens, there is abusive treatment in the workplace and a general lack of social support. Not surprisingly, increased rates of illness, post-traumatic stress, burnout, alcohol abuse and suicides, and decreased levels of job satisfaction and job performance, as compared to norms for the general population, are found in research on police members (Anshel, 2000; Nel, 1994; Rothmann & Agathagelou, 2000; Rothmann & Strijdom, 2002).

World-wide there is an increasing incidence of suicide among police members (Janik & Kravitz, 1994). Studies report that police officers have higher rates compared to the rates of the general population (Wagner & Brzeczek, 1983) and those of other professions, e.g. New York City police officers (Helmkamp, 1996). Increasing suicide rates of police officers in recent years have also been reported for the United States (Violanti, 1995), France (Bourgoin, 1997) and Australia (Cantor, Tyman & Slater, 1995). Schmidtke, Fricke and Lester (1999) reported an average suicide rate of 23,03 per 100 000 police officers in Germany in 1996. The suicide rates per 100 000 members of the SAPS from 1994 to 2000 are given in Table 1.

Table 1

The Suicide Rate of SAPS Members from 1994 to 2000 (Per 100 000)

Year	1994	1995	1996	1997	1998	1999	2000
Frequency	200	200	150	130	110	110	130

Table 1 shows that the number of suicides in the SAPS decreased from 1995 to 1999, and then increased again to 130 per 100 000 members in 2000 (C. Swanepoel, personal communication, 26 March 2001). The suicide rate is also much higher than the average rate of 18 per 100 000 of the general population in South Africa. According to Rossouw (1997, 1998, 1999), the typical SAPS member who is likely to commit suicide is an unmarried Black or Asian male constable of between 24 and 29 years of age who speaks an African or Asian language at home. His duties include visible policing and he will be likely to commit suicide during a weekend between 18:00 and 24:00 by using his service weapon. More than 80% of the suicides in 1999 were committed with the use of a service weapon (Rossouw, 1999). The risk areas seem to be the Northern Cape, Mpumalanga, the North West Province and Gauteng. Rossouw (1998) expressed concern about the increasing tendency of police members to wound or kill others before committing suicide.

Suicidal behaviour may be considered a domain of psychological disturbance and is associated with potentially severe mental and/or physical health outcomes. According to Reynolds (1991a) suicidal behaviour may be categorised as including suicide completion, overt intention, suicide attempt and suicide ideation. Suicidal behaviour can be plotted on a continuum varying in severity from ideation through intent and attempt to completion. Suicide ideation therefore constitutes but one aspect of suicidal behaviour (Reynolds, 1991a). Research about suicide ideation may be viewed as an important and critical component in evaluating and promoting adult mental health. A strong association exists between suicide ideation and suicide (Jin & Zhang, 1998). Reynolds (1991a) states that all suicide attempts, as well as threats, should be considered indications of significant psychological distress.

Suicide ideation, which refers to the thoughts and cognitions about suicidal behaviour and intent, may be considered an early marker of more serious suicidal behaviour (Bonner & Rich, 1987; Reynolds, 1991a; Shea, 1998). Suicide ideation can be characterised as ranging

from relatively mild, general thoughts and wishes that one were dead to serious ideation about specific plans and means of taking one's life. Reynolds (1991a) defines suicide ideation as the domain of thoughts and ideas about death, suicide and serious self-injurious behaviour and includes thoughts related to the planning, conduct and outcome of suicidal behaviour, particularly as the last relates to thoughts about the response of others. Individuals measuring high on suicide ideation wish they had never been born, feel life is not worth living, wish they were dead and think that others would realise their worth when they are dead. They have thoughts of killing themselves, as well as thoughts on specific methods they can use and times or places at which to kill themselves. Schotte and Clum (1982) as well as Bonner and Rich (1987) found a relationship between the frequency of suicide ideation and the likelihood of attempts at suicide. Suicide ideation is consistent with a cognitive-behavioural focus and may be viewed as a domain of self-statements.

In a preliminary study in the SAPS in the North West Province, Rothmann and Van Rensburg (2001) found that 10,58% of the uniformed police members showed significant suicide ideation levels. It was also found that suicide ideation was higher in the case of police members who were working in police stations than in the case of those who were in training. The SAPS needs to intervene to increase and/or maintain the psychological health and decrease the suicidal behaviour of police members. However, little information is available about the reasons for the high suicide rate in the SAPS. Two studies were done to determine the level of suicide ideation of members of the SAPS in the North West Province (see Rothmann & Strijdom, 2002; Rothmann & Van Rensburg, 2001). It is therefore necessary to study suicide ideation of police members and possible correlates thereof. Many factors may contribute to suicidal behaviour of police members, including stressors in the work situation, factors outside the work situation and personality dimensions, as well as the interaction between these variables (Jacobs, 1998; Rossouw, 1998; Schmidtke et al., 1999).

According to McCafferty (1992), suicide of police members could largely be ascribed to stressors at work. Factors that may cause distress include authoritarian structure, lack of participation in decision-making, poor interpersonal relationships with supervisors, lack of administrative support, unfair discipline, unfair promotion and the nature of police work. Irregular working hours, poor working conditions, constant fear and trauma make police members more susceptible to suicide (Maynard, Maynard, McCubin & Shao, 1980; Rothmann & Strijdom, 2002). Shift work, the dangers involved in police work and low salaries seem to

be related to stress and suicidal tendencies (Kruger, 1996; Lott, 1995). Janik and Kravitz (1994) found that marital problems and job suspension were important contributing factors to a police officer's decision to attempt suicide. Supportive families can buffer and diminish the occupational stresses that police officers experience (Graf, 1986). Alcohol abuse accelerates their isolation from both family and administrative relationships.

One of the basic issues in the suicidal behaviour domain concerns coping, or ways in which an individual can attempt to deal with job stressors to ward off aversive strains (Beehr, Johnson & Nieva, 1995). Kohn (1996) contends that "the most important thing about how a person copes with everyday hassles ... is its circumstantial appropriateness, how well it fits the specific demands of the situation" (p. 182). Coping refers to perceptual, cognitive or behavioural responses that are used to manage, avoid or control situations that could be regarded as challenging (Folkman & Lazarus, 1984; Moos, 1994; Zeidner & Endler, 1996). Beehr et al. (1995) showed that problem-focused coping strategies were negatively related to strains (somatic complaints, emotional exhaustion, depersonalisation and thoughts of suicide) among police officers. Emotion-focused coping strategies were related to every police strain except the abuse of alcohol. One maladaptive coping strategy in police work is the excessive intake of alcohol to help reduce stress and improve psychological well-being.

Anshel (2000) states that alcohol or drug intake might serve as a means of coping with stress, but that it is not effective. Evens and Coman (1992) found a tendency towards ineffective coping among police officers who reported being unsentimental and emotionally detached and refused to share their emotional reactions to job stressors with others (such as their partners or families). Burke (1993) found a high level of use of alcohol, drugs, cigarettes and physical isolation from others to be methods of coping with job-related stress among police officers. Research by Hageman (1978) has shown that non-coping with stressors in the work environment may be related to suicide ideation.

Rothmann and Van Rensburg (2001) found that police members who suffered from a medical condition (compared to those who did not report suffering from a medical condition) had a weaker sense of coherence, lower self-efficacy and a higher external locus of control. Police members who took more than 14 alcoholic drinks per week (compared with those who took fewer drinks) had a weaker sense of coherence, lower self-efficacy, a higher external locus of control and more dysfunctional coping strategies, less job satisfaction and higher suicide

ideation.

Consistent with previous findings (e.g. Petrie & Brook, 1992; Rothmann & Strijdom, 2002), low scores on sense of coherence were related to a greater incidence of suicide ideation in police members. A weak sense of coherence was not only related to suicide ideation, but also to low generalised self-efficacy, an external locus of control and low job satisfaction. Low scores on generalised self-efficacy were related to a greater incidence of suicide ideation in police members. However, an expected relationship between an external locus of control and suicide ideation did not realise in the study. The linear discriminant function for police members with low or high suicide ideation includes sense of coherence, planning and suppressing of competing activities, and medical status. These variables classified correctly almost 82% of police members who measured high on suicide ideation, while they classified correctly almost 87% of the police members who measured low on suicide ideation.

The research problem could be summarised as follows: The SAPS shows an alarming level of suicide. Although ex post facto studies contribute to an understanding of the manifestation of and reasons for suicide, little information is available regarding the suicide ideation of police members, differences between the suicide ideation of demographic groups and the contribution of job stress and coping strategies to suicide ideation. If it is found that suicide ideation is related to these variables, programmes such as recruitment, selection, induction, training and development and performance management could be considered to facilitate the development of psychological strengths, i.e. constructive coping strategies, to reduce suicide ideation in the police service.

From the problem statement the following research questions emerge:

- What is the level of suicide ideation in the SAPS and how do demographic groups in the SAPS differ regarding their suicide ideation?
- What is the internal consistency and construct validity of a job stress inventory in the SAPS?
- Which factors contribute to job stress in the SAPS and how do demographic groups differ regarding job stress?

- What is the internal consistency and construct validity of a coping questionnaire in the SAPS?
- Which differences exist between the coping strategies of demographic groups in the SAPS?
- What are the relationships between stress, coping strategies and suicide ideation in the SAPS?
- Can stress and coping strategies be used to predict suicide ideation in the SAPS?
- Which recommendations can be made to prevent and manage suicide ideation in the SAPS?

This research will contribute to Industrial Psychology as a science in the following ways:

- The current manifestation and levels of suicide ideation in the SAPS will be known on a national level and for different demographic groups (such as provinces, ranks, size of station and different language groups). This could point to variables of importance in future studies of suicide ideation, as well as provide a demographic profile of the police officer most at risk of committing suicide.
- An internally consistent and valid stress measure will exist in the SAPS. This instrument will not only have utility for the organisation being analysed, but can also expand the theory of stress in a policing environment by examining salient stressors, underlying factors, as well as frequency and intensity of stressors.
- A measure of coping will be validated in the SAPS. The coping strategies most frequently used might point to problems regarding coping, and may highlight needs in the development of employee assistance programmes. This analysis might also expand coping theory, by examining construct equivalence and item bias across racial groups.
- Correlations between all variables can clarify the interaction of other variables with suicide ideation. This could point to important demographic variables, stress factors or coping factors that have an influence on the suicide ideation of police officers within the SAPS. Such correlations would highlight the most important variables that need to be addressed by suicide prevention efforts.

1.2 AIM OF THE RESEARCH

The aim of this research can be divided into a general aim and specific objectives.

1.2.1 General aim

The general aim of this study is to validate measuring instruments of suicide ideation, stress and coping in order to determine how these variables manifest in the SAPS, and to determine the factors that could be used to predict suicide ideation in the SAPS.

1.2.2 Specific objectives

- To determine national levels of suicide ideation, variations between provinces and differences between the suicide ideation of various demographic groups (ranks, races, language groups, differently sized stations).
- To develop a valid measure of police stress in the South African context, by focussing on typical work stressors that have been identified in previous research on police.
- To determine levels of stress, variations between provinces and differences between stress levels of various demographic groups (ranks, races, language groups and size of police station).
- To validate a measure of coping in the SAPS, and to determine the construct equivalence as well as the bias of the items of the questionnaire.
- To investigate differences between different provinces, ranks, races, language group and different-sized stations.
- To study possible causes of suicide ideation in the SAPS by highlighting those demographic variables, coping strategies and sources of stress that play a mediating or moderating role in the translation of stress into suicidal behaviour.
- To make recommendations for the prevention and/or management of suicide ideation in the SAPS.

1.3 RESEARCH METHOD

The research method for each of the four articles that are submitted for the purposes of this thesis consists of a brief literature review and an empirical study. Because separate chapters were not targeted for literature reviews, these paragraphs focus on aspects relevant to the empirical studies that were conducted. The reader should note that a literature study was conducted for the purpose of each article.

1.3.1 Research design

A survey design is used to achieve the research objectives. The specific design is the cross-sectional design, by means of which a sample is drawn from a population at a particular point in time (Shaughnessy & Zechmeister, 1997). Information collected is used to describe the population at that time. This design can be used to assess interrelationships among variables within a population. According to Shaughnessy and Zechmeister (1997), this design is ideally suited to the descriptive and predictive functions associated with correlational research.

1.3.2 Study population

Random samples ($N = 2432$) are taken from police stations in the Northern Province, Gauteng, Mpumalanga, Free State, Northern Cape, Western Cape, Eastern Cape, Natal and North West Province. For the purpose of the first and second articles, the total sample is used ($N = 2396$). The third and fourth articles made use of complete data sets (where all questionnaires have been completed) and a sample of $N = 1444$ was used. Since the nature of these articles is exploratory and descriptive, the aims were best addressed by the largest possible sample. Stations are divided into small (fewer than 25 staff members), medium (25–100 staff members) and large (more than 100 staff members). All police members randomly identified in small and medium stations in each of the provinces were asked to complete the questionnaire. In large stations stratified random samples were taken according to sex and race.

The following formulae proposed by Kerlinger and Lee (2000) is used to determine the sample size for this study:

$$n' = \frac{n}{1 + \frac{n}{N}}$$

and

$$n = \frac{z^2 \times SD^2}{d^2}$$

where n' = estimated sample size; n = the estimated sample size using the formula; N = the size of the population; z = standard score corresponding to the specified probability of risk; SD = the standard deviation of the population; and d = the specified deviation. The values for z , SD and d were used as previously determined in studies of suicide ideation in the SAPS (Rothmann & Strijdom, 2002; Rothmann & Van Rensburg, 2001).

1.3.3 Measuring instruments

The following questionnaires are used in this study:

- A questionnaire is developed to gather information about the demographic characteristics of the participants. This questionnaire gives participants the option of supplying their name and service number. Other information that is gathered includes: province and station, age, sex, years of service, years in current position (to assess advancement), educational qualifications, marital status, satisfaction with relationship with significant other, language, history of disciplinary action, self-rated performance, self-rated job satisfaction, medical conditions, use of prescription and over-the-counter medicine, reasons for using medication, number of alcoholic drinks per week, smoking behaviour, number of cigarettes per day, other drug use, exercise behaviour and previous suicide attempt.
- Social support is measured with a scale devised by the researchers. In line with recommendations by McIntosh (1991, p. 202) number of providers, the amount of the resource available and the perceived adequacy of the resource were measured. The scale

firstly contains nine possible sources of support (the public, the SAPS in general, Psychological Services of the SAPS, top management, the direct commander, colleagues, family, friends outside the SAPS and religious affiliation). The participant indicates with a yes or no whether he/she felt supported by the listed sources. The second scale contains the same sources, and participants rate the amount of the perceived support. Answers ranged from 1 (Supports me a little) to 5 (Supports me a lot). Adequacy of the perceived social support is rated on a third scale of 1 (not enough) to 5 (enough). A fourth scale again listed the sources of social support, and asked participants to indicate the availability of that source of support. Answers ranged from 1 (easy) to 5 (difficult).

- The *Adult Suicide Ideation Questionnaire (ASIQ)* (Reynolds, 1991a) is used to measure participants' current level of suicide ideation. Each of the items measures a specific suicidal behaviour or thought. Reynolds (1991a) reported that the internal consistency (coefficient alpha) of the ASIQ is 0,96, while Osman et al. (1999) found an alpha coefficient of 0,98. The test-retest reliability of the ASIQ varies between 0,86 and 0,95 (Reynolds, 1991b). Reynolds (1991a) provided evidence for the content, construct and criterion-related validity of the ASIQ. Osman et al. (1999) found that the ASIQ differentiated significantly between suicide attempt and psychiatric control groups. Rothmann and Strijdom (2002) found internal consistencies for the ASIQ of 0,98 and 0,95 for White and Black police officers respectively.
- The *Police Stress Inventory*. Several researchers mention stressors specific to the policing environment (Bartol, Bergen, Volckens & Knoras, 1992; Biggam, Power, MacDonald, Carcary & Moodie, 1997; Brown & Campbell, 1990; Brown, Cooper & Kirkcaldy, 1996; Brown & Fielding, 1993; Crank & Caldero, 1991; Kop & Euwema, 2001; Kop, Euwema & Schaufeli, 1999; Koortzen, 1996; Kirkcaldy, Cooper & Ruffalo, 1995; Patterson, 1992; Violanti & Aron, 1994). The sources mentioned are used to construct a "Police Stress Inventory". In line with recommendations by Biggam et al. (1997, p. 130), this study addresses both the severity and frequency of stressors.
- The *COPE Questionnaire (COPE)* (Carver, Scheier & Weintraub, 1989) is used to measure participants' coping strategies. The COPE is a multidimensional 53-item coping questionnaire that indicates the different ways that people cope in different circumstances

(Carver, Scheier & Weintraub, 1989). It measures 14 different coping strategies. Five subscales (4 items each) measure different aspects of problem-focused coping: Active Coping (AC), Planning (P), Suppressing of Competing Activities (SCA), Restraint Coping (RC) and Seeking Social Support for Instrumental Reasons (SSSIR). Five subscales (4 items each) measure aspects of emotionally focused coping: Seeking Social Support for Emotional Reasons (SSSER), Positive Reinterpretation and Growth (PR & G), Acceptance (A), Denial (D) and Turning to Religion (TTR). Four subscales measure coping responses that are used less: Focus on and Venting of Emotions (F & VE), Behavioural Disengagement (BD), Mental Disengagement (MD) and Alcohol-Drug Disengagement (ADD) (Carver et al., 1989). Carver et al. (1989) reported Cronbach alpha coefficients varying from 0,45 to 0,92. All the subscales have sufficient levels of reliability except for Mental Disengagement (MD), which measures lower than 0,60. Test-retest reliability varies from 0,46 to 0,86 and from 0,42 tot 0,89 (applied after two weeks).

1.3.4 Statistical analysis

The statistical analysis is carried out with the help of the SAS program (SAS Institute, 2000). Cronbach alpha coefficients, inter-item correlation coefficients and exploratory and confirmatory factor analysis will be used to assess the reliability and validity of the measuring instruments (Clark & Watson, 1995). Descriptive statistics (e.g. means, standard deviations, skewness and kurtosis) and inferential statistics are used to analyse the data.

T-tests and analysis of variance are used to determine differences between the sub-groups in the sample. A cut-off point of 0,50 (medium effect, Cohen, 1988) is set for the practical significance of differences between means. Pearson product-moment correlation coefficients are used to specify the relationships between the variables. In the case where the distribution of scores is skew, Spearman correlation coefficients are computed. A cut-off point of 0,30 (medium effect, Cohen, 1988) is set for the practical significance of correlation coefficients.

Construct (structural) equivalence is used to compare the factor structures of the COPE for different racial groups. Exploratory factor analysis and target (Procrustean) rotation will be used to determine construct equivalence (Van de Vijver & Leung, 1997). The factor loadings

of separate groups are rotated to a joint common matrix of factor loadings. After target rotation has been carried out, factorial agreement will be estimated using Tucker's coefficient of agreement (Tucker's phi).

An extension of Cleary and Hilton's (1968) use of analysis of variance will be applied to identify item bias, as in Van de Vijver and Leung (1997). Bias will be examined for each item separately.

A discriminant analysis is carried out to determine which combination of independent variables could be used to classify police members into groups who obtained low versus high suicide ideation scores. The resulting discriminant function separates the members of the groups maximally. The assumption of discriminant analysis is that the independent variables are continuous but that the dependent variable is categorical (Kerlinger & Lee, 2000). A stepwise discriminant analysis will be used to determine the proportion of variance in the dependent variable (suicide ideation) that is explained by the independent variables.

1.4 CHAPTER DIVISION

The chapters are presented as follows in this research:

- Chapter 1: Introduction
- Chapter 2: Suicide ideation in the South African Police Service
- Chapter 3: The internal consistency and construct validity of the Police Stress Inventory in the South African Police Service
- Chapter 4: Coping strategies in the South African Police Service
- Chapter 5: Suicide ideation, stress and coping in the South African Police Service
- Chapter 6: Conclusions, limitations and recommendations

1.5 CHAPTER SUMMARY

This chapter set out the problem statement, the aims of the research, the research method employed and the chapter division. Chapter 2 is the first research article.

CHAPTER 2

RESEARCH ARTICLE 1

SUICIDE IDEATION IN THE SOUTH AFRICAN POLICE SERVICE*

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ABSTRACT

A relatively high number of suicides occur in the South African Police Service (SAPS). No information exists regarding the suicide ideation of uniformed members of the SAPS. The objectives of this study were to determine the level of suicide ideation of police members and to determine the differences between the suicide ideation of various demographic groups. A cross-sectional design was used. Stratified random samples ($N = 2396$) were taken of police members of nine provinces in South Africa. The Adult Suicide Ideation Questionnaire (ASIQ) and a biographical questionnaire were administered. Results indicated that 8,64% of the sample showed a significant level of suicide ideation. Previous charges in terms of the disciplinary code and previous suicide attempts were related to suicide ideation.

OPSOMMING

'n Relatief groot aantal selfmoorde kom in die Suid-Afrikaanse Polisie (SAPD) voor. Geen inligting bestaan oor die selfmoord-denkebeeldvorming van uniformdraende lede van die SAPD nie. Die doelstellings van hierdie navorsing was om die vlakke van selfmoord-denkebeeldvorming van polisielede te bepaal asook om die verskille tussen die selfmoord-denkebeeldvorming van verskeie demografiese groepe te bepaal. 'n Dwars-deursnee-ontwerp is gebruik. Gestratifiseerde ewekansige steekproewe ($N = 2396$) is van polisielede uit nege provinsies geneem. Die Volwasse Selfmoord-denkebeeldvormings-vraelys (ASIQ) en 'n biografiese vraelys is afgeneem. Resultate het getoon dat 8,64% van die steekproef 'n beduidende vlak van selfmoord-denkebeeldvorming getoon het. Vorige aanklagte ingevolge die dissiplinêre kode en vorige selfmoordpogings was aan selfmoord-denkebeeldvorming verwant.

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Law enforcement is one of the most stressful occupations world-wide (Anshel, 2000). In addition to experiencing job-related stressors such as dealing with unlawful, often dangerous actions of citizens, there is abusive treatment in the workplace and a general lack of social support. In South Africa, various potential stressors, such as a high crime level, organisational transformation and a lack of resources challenge members of the police services. Not surprisingly, increased rates of illness, post-traumatic stress, burnout, alcohol abuse and suicides, as well as decreased levels of job satisfaction and job performance as compared to norms for the general population are found in research with police members (Anshel, 2000; Nel, 1994; Rothmann & Agathagelou, 2000; Rothmann & Strijdom, 2002).

Suicide among members of the police has been described as an epidemic (Violanti, 1996). Studies report that police officers (e.g. New York City police officers) have higher rates compared to the rates of the general population (Wagner & Brzeczek, 1983) and those of other professions (Helmkamp, 1996). Increasing suicide rates of police officers in recent years have also been reported for the United States (Violanti, 1995) and Australia (Cantor, Tyman & Slater, 1995). Schmidtke, Fricke and Lester (1999) reported an average suicide rate of 23,03 per 100 000 police officers in Germany in 1996. The average suicide rate for New York City police officers is about 29 per 100 000 per year (Vallone, 1995). Lindsay and Lester (2001, p. 226) report an average annual suicide rate for North-Eastern American police officers of 25 per 100 000 for the period 1987-1999.

The suicide rates per 100 000 members of the South African Police Service (SAPS) from 1994 to 2000 are given in Table 1.

Table 1

The Suicide Rate of SAPS Members from 1994 to 2000 (Per 100 000)

Year	1994	1995	1996	1997	1998	1999	2000
Frequency	200	200	150	130	110	110	130

Table 1 shows that the number of suicides in the SAPS (C. Swanepoel, personal communication, March 26, 2001) is more than five times that of suicide rates in some instances reported in the literature for other police populations. The suicide rate is also much

higher than the average rate of 18 per 100 000 of the general population in South Africa. According to Rossouw (1997, 1998, 1999), the SAPS member who is likely to commit suicide is an unmarried African or Asian male constable of between 24 and 29 years of age who speaks an African language at home. His duties include visible policing and he will be likely to commit suicide during a weekend between 18:00 and 24:00 by using his service weapon. More than 80% of the suicides in 1999 were committed with the use of a service weapon (Rossouw, 1999). The risk areas seem to be the Northern Cape, Mpumalanga, the North West Province and Gauteng (Masuku, 2000).

According to Reynolds (1991a), suicidal behaviour may be categorised as including suicide completion, overt intention, suicide attempt, and suicide ideation. Suicidal behaviour may be considered a domain of psychological disturbance and is associated with potentially severe mental and/or physical health outcomes. Suicidal behaviour can be plotted on a continuum varying in severity from ideation through intent and attempt to completion. Therefore, suicide ideation constitutes but one aspect of suicidal behaviour (Reynolds, 1991a). Research about suicide ideation may be viewed as an important and critical component in evaluating and promoting adult mental health. A strong association exists between suicide ideation and suicide (Jin & Zhang, 1998).

Suicide ideation, which refers to the thoughts and cognitions about suicidal behaviour and intent, may be considered an early marker of more serious suicidal behaviour (Bonner & Rich, 1987; Reynolds, 1991a; Shea, 1998). Suicide ideation may be characterised as ranging from relatively mild, general thoughts and wishes that one were dead to serious ideation about specific plans and means of taking one's life. Reynolds (1991a) defines suicide ideation as the domain of thoughts and ideas about death, suicide and serious self-injurious behaviour, and includes thoughts related to the planning, conduct and outcome of suicidal behaviour, particularly as the latter relates to thoughts about the response of others. Individuals measuring high on suicide ideation wish they had never been born, feel life is not worth living, wish they were dead, and think that others would realise their worth when they are dead. They have thoughts of killing themselves, as well as thoughts on specific methods they can use and times or places at which to kill themselves. Schotte and Clum (1982) as well as Bonner and Rich (1987) found a relationship between the frequency of suicide ideation and the likelihood of attempts at suicide. Suicide ideation is consistent with a cognitive-behavioural focus and may be viewed as a domain of self-statements.

It is clear from the description above that suicide of members of the SAPS is a problem. The SAPS needs to intervene to increase and/or maintain the psychological health and decrease the suicidal behaviour of police members. However, only a few ex post facto studies have been conducted regarding suicidal behaviour of SAPS members. Although these studies provide useful information regarding the suicide prone police officer, it is lacking in the sense that it does not provide a view of the national situation, and might not be useful in predicting police suicides before they occur. It is possible that regional variations and special circumstances might affect rates of police suicide (Armour, 1996; Curran, Finlay & McGarry, 1988).

Only two studies regarding suicide ideation of police members have been conducted in one of the nine provinces of South Africa (see Rothmann & Strijdom, 2002; Rothmann & Van Rensburg, 2001). These studies showed that 10,58% of the uniformed police members showed significant levels of suicide ideation. Coetzee (1992) reported that the highest level of suicide is among Black police members, while an anonymous source (Anon, 1994) states that in only 11% of police suicides a reason could be found. These reasons included refused transfers, accidents with government vehicles, family murders, marital problems, death of a loved one or incidents at work. The literature regarding attempted suicide and suicide ideation in police populations is sparse (Janik & Kravitz, 1994; Lennings, 1995), and certainly, South Africa is no exception. Hem, Berg and Ekeberg (2001) also recommended that attempted suicide and suicide ideation be investigated in police populations.

Interpol (2000) reports that South Africa measures unacceptably high with regard to violence (e.g. murder, rape, robbery and assault) when compared to the 90 other countries listed in the report. Nearly 60% of reported serious crime in SA is made up of thefts (23,1%), assault (20,1%) and housebreaking, both residential and business premises (15,7%) (SAPS, 2001). Provincial differences occur in the prevalence of crime, for example, high to moderate levels of assault are reported in the Diamondfield, Southern Free State, Karoo, Uitenhage and Port Elizabeth area. The Diamondfield, Southern Free State and Karoo area, however, do not show high murder levels. In contrast, the Durban North and South, Midlands, Tugela, and Umfolozi areas of KwaZulu-Natal, and East London and Queenstown areas show low levels of assault, but a high murder rate. Murder rates are very high to moderate in Johannesburg and its surrounding areas, namely Soweto, Vaalrand, East Rand, North Rand, as well as the Cape Town metropolitan area. The highest levels of robbery and motor vehicle theft occur in

the three Metropolitan areas, namely Gauteng, Greater Durban and Greater Cape Town. Differences in exposure to stressful events due to geographical location have been demonstrated (Biggam, Power, MacDonald, Carcary & Moodie, 1997; Cain, 1973). It is postulated that this differential exposure to stressful events could impact on the suicide ideation of police members. Differential exposure could result from differences in management practices, the availability of social support (both organisational and personal), and levels of urbanisation, which can all affect members' coping skills, and thus their suicide ideation.

Many factors may contribute to suicidal behaviour of police members, including stressors in the work situation, factors outside the work situation and personality dimensions, as well as the interaction between these variables (Jacobs, 1998; Rossouw, 1998; Schmidtke et al., 1999). Rothmann and Strijdom (2002) and Rothmann and Van Rensburg (2001) found police members who took more than 14 alcoholic drinks per week (compared to those who took fewer drinks) to have more dysfunctional coping strategies, less job satisfaction and higher suicide ideation. These results confirmed findings by Anshel (2000) and Burke (1993). It could be deduced that members who suffered from medical conditions and who tended to abuse alcohol presented an early point of intervention for the management of suicide ideation. It was also found that suicide ideation was higher in the case of police members who were working in police stations than in the case of those who were in training.

Since no information regarding the suicide ideation of police members is available for South Africa as a whole, the information gathered in this study can make a valuable contribution to the understanding, prevention and management of suicidal behaviour of SAPS members. It would also be significant to study variations in suicide ideation between provinces. Suicide ideation could also vary between race groups, or vary with other demographic variables, at different levels of the organisational hierarchy, or due to varying levels of social support. The objectives of this study were to determine national levels of suicide ideation, variations between provinces, as well as differences between the suicide ideation of various demographic groups.

This research can thus contribute to an understanding of police suicide, by virtue of studying this phenomenon in a non-American context, with a population that includes a greater representation of African peoples, and a different sociocultural context than previous studies.

If one considers the high police suicide statistics, South Africa also seems to present a unique environment to study this phenomenon. Variables that could be of importance in discriminating among high and low suicide ideation candidates are race, medical conditions, HIV status, smoking and drinking habits, age, marital status, quality of relationships with significant others, previous attempts at suicide, levels of education and levels of social support.

Demographic variables, social support and suicide ideation

Available studies of suicide ideation suggest a variety of risk factors, most of which have been identified in previous research on suicidal behaviour and deaths (Vilhjalmsson, Kristjansdottir & Sveinbjarnardottir, 1998). Thoughts of suicide appear to be unrelated to gender (Friedman, Asnis, Boeck & DiFiore, 1987; Sorenson & Rutter, 1991) and educational attainment (Kinkel, Bailey & Josef, 1988; Sorenson & Rutter, 1991), and shows a higher prevalence among unmarried and younger individuals (Sorenson & Rutter, 1991). Higher suicide ideation has been shown for those who are depressed, dissatisfied, pessimistic and hopeless (Breslau, 1992; Kandel, Raveis & Davies, 1991; Kinkel et al., 1988; Smith & Crawford, 1986; Sorenson & Rutter, 1991), experience frequent pains, such as stomach pain or headache or migraine (Breslau, 1992; Ingersoll, Grizzle, Beiter & Orr, 1993), or abuse alcohol or drugs (Slap, Vorters, Chaudhuri & Centor, 1981; Smith & Crawford, 1986; Sorenson & Rutter, 1991; Topol & Reznikoff, 1982), or engage in illegal activities (Kandel et al., 1991; Kinkel et al., 1991). Furthermore, life stress in general, and family stress in particular, is associated with suicide ideation (De Man, Leduc & Labreche Gauthier, 1992; Kandel et al., 1991; Kinkel et al., 1988; Smith & Crawford, 1986).

Maris, Berman, Maltzberger and Yufit (1991) found suicide ideation and prior suicide attempts to rank third and fourth among the 15 most common single predictors of suicide. Jin and Zhang (1998, p. 402) state that depression is the best single predictor of suicide ideation, but for considerations of brevity a questionnaire to assess levels of depression could not be included.

Two studies investigated gay adults' suicide ideation and found that persons with Human Immunodeficiency Virus (HIV) were at greater risk of depression and attempted suicide than the general population (Morrison, 1991; Schoenfeld, 1992). Several other studies reported

that respondents who scored high on suicide ideation were more likely to have poor self-rated, poor perceived, or poor self-reported health (De Man & Leduc, 1995; Kandel et al., 1991; Lewinsohn, Rohde & Seeley, 1994).

Janik and Kravitz (1994) found that marital problems and job suspension were important contributing factors to police officers' decisions to attempt suicide. Supportive families can buffer and diminish the occupational stresses that police officers experience (Graf, 1986). Alcohol abuse accelerates their isolation from both family and administrative relationships. Generally, most studies predict a life-long suicide rate of 15% for alcoholics. Approximately 80% of those attempting suicide were drinking alcohol at the time (McCafferty, McCafferty & McCafferty, 1992).

Anshel (2000) states that alcohol or drug intake might serve as a means of coping with stress, but that it is not effective. Evens and Coman (1992) found a tendency towards ineffective coping among police officers who reported being unsentimental and emotionally detached and refused to share their emotional reactions to job stressors with others (such as their partners or families). Burke (1993) found high levels of use of alcohol, drugs, cigarettes and physical isolation from others to be methods of coping with job-related stress among police officers. Social isolation has been shown to be a positive correlate of suicide ideation (De Man, 1988, Rich, Kirkpatrick-Smith & Bonner, 1992). Research by Hageman (1978) has shown that non-coping with stressors in the work environment may be related to suicide ideation. Schotte and Clum (1987, p. 53) found suicide ideators to be not only less able to generate possible solutions to problems, but also to be compounding their difficulties by being less likely to implement these solutions once generated.

Social support has been found to moderate the effects of stress in predicting suicidal behaviour (Bonner & Rich, 1987, 1988a, 1988b; Dubow, Kauch, Blum, Reed & Bush, 1989; Rudd, 1990; Trout, 1980). Social support is defined as resources (actual or perceived by a focal person) available from one or more others to assist the focal person in the management of stress experiences and to increase the experience of well-being (McIntosh, 1991, p. 202). People who suffer high levels of stress but have supportive social relationships have been found to suffer less strain than those without supportive social relationships. When stress is low, supportive social relationships have little effect on the amount of strain experienced (Stotland & Pendleton, 1989).

Social support is likely to be very important in an occupational context in which workers are at risk of traumatic experiences. It has been suggested that people at work are an important source of support for coping with work-related stress (Beehr, 1985; House, 1981). White, Lawrence, Biggerstaff and Grubb (1985) found that the greater an officer's sense of lack of support, the greater the report of the dimensions of emotional exhaustion and feelings of depersonalisation as measured in burnout. Furthermore, Stephens, Long and Miller (1997) reported a negative relation between post-traumatic stress disorder (PTSD) symptoms and social support. This included social support from peers, supervisors and from outside work. Peer support, which included the ease of talking about trauma, showed the strongest impact on PTSD symptoms. According to Graf (1986), peers are the most important source of support for the police.

Brewer, Wilson and Beck (1994) have called for police supervisors to provide officers with social support and resources to improve emotional functioning and performance. Praise and constructive critical feedback are essential for providing positive reinforcement of skills and the need for perceived competence and an inherent component of motivation (Lazarus, 1990; McCrae, 1992).

Almost all of the studies on police suicide have been conducted in limited, specific police populations, particularly in the United States of America (Hem et al., 2001, p. 225). This overlooks the fact that local and regional variations and special circumstances, for example, the civil disorder and rioting in Northern Ireland (Armour, 1996; Curran et al., 1988), might affect police suicide rates. The main finding of Hem et al. (2001) is the inconclusive results of previous research. The three recent nationwide studies from France (Bourgoin, 1997), Germany (Schmidtke et al., 1999), and England and Wales (Kelly & Bunting, 1998) do not show increased rates. Since most study populations were from first-world countries, it is not possible to generalise the results to police in other parts of the world, especially third world countries that surely present a different socio-political dynamic. Police officers are subjected to sudden and unexpected situations, violence and the potential death of others or themselves. This threat may have psychological consequences, such as post-traumatic stress disorder or burnout (Paton & Violanti, 1996; Paton & Violanti, 1999; Territo & Vetter, 1981). Both these phenomena are assumed to contribute to suicidal behaviour (Armour, 1996; Lester, 1993; McCafferty et al. 1992; Schmidtke et al., 1999; Violanti, 1995).

METHOD

Research design

A cross-sectional survey design, by means of which a sample is drawn from a population at a particular point in time (Shaughnessy & Zechmeister, 1997), was used to achieve the research objectives. This design can be used to assess interrelationships among variables within a population.

Study population

Random samples ($N = 2396$) were taken from police stations in the Limpopo Province, Gauteng, Mpumalanga, Free State, Northern Cape, Western Cape, Eastern Cape, Natal and North-West Province. The following formula proposed by Kerlinger and Lee (2000) was used to determine the sample size for this study:

$$n' = \frac{n}{1 + \frac{n}{N}}$$

and

$$n = \frac{z^2 \times SD^2}{d^2}$$

where n' = estimated sample size; n = the estimated sample size using the formula; N = the size of the population; z = standard score corresponding to the specified probability of risk; SD = the standard deviation of the population, and d = the specified deviation.

The values for z , SD and d have been determined in previous studies of suicide ideation in the SAPS (Rothmann & Strijdom, 2002; Rothmann & Van Rensburg, 2001). Stations were divided into small (fewer than 25 staff members), medium (25–100 staff members) and large (more than 100 staff members). All police members in randomly identified small and medium stations in each of the provinces, were asked to complete the questionnaire. In the large

stations stratified random samples were taken according to sex and race. Table 1 presents some of the characteristics of the participants.

The mean age of the participants is 35,54 years. The average length of service is 13,02 years, while the average length of time in the current position is 4,29 years. Participants' mean overall job satisfaction (measured on a 5-point scale) is 3,66 and the mean self-rating of job performance is 4,20 (measured on a 5-point scale). Table 2 gives details of the study population.

Table 2

Characteristics of the Study Population (N = 2396)

Item	Category	Frequency	Percentage
Race	White	830	35,27
	Black	1091	46,37
	Coloured	329	13,98
	Indian	85	3,61
	Other	18	0,76
Rank	Constable	222	9,81
	Sergeant	507	22,39
	Inspector	1100	48,72
	Captain	369	16,30
	Superintendent	57	2,12
Province	Senior Superintendent	11	0,66
	North West	287	11,80
	Gauteng	271	11,14
	Mpumalanga	176	7,24
	Limpopo	207	8,51
	Kwazulu-Natal	272	11,18
	Free State	333	13,69
	Eastern Cape	307	12,62
	Northern Cape	238	9,79
Western Cape	341	14,02	
Size of Station	Small (less than 25 officers)	674	31,48
	Medium (between 26 and 100 officers)	815	38,07
	Large (more than 100 officers)	652	30,45
Level of Education	Grade 10 (Standard 8)	240	11,37
	Grade 11 (Standard 9)	113	5,36
	Grade 12 (Standard 10)	1185	56,16
	Technical college diploma	61	2,89
	Technikon diploma	422	20,00
	University degree	44	2,09
	Postgraduate degree	45	2,13
Sex	Male	1944	80,87
	Female	460	19,13
Marital status	Single	408	19,26
	Married	1125	53,12
	Divorced	514	24,27
	Separated	45	2,12
	Remarried	26	1,23

Table 2 shows that 80,87% of the sample consisted of males. The sample was mostly made up of Black and White police members (together 81,64% of the total sample). Inspectors constituted nearly half the sample (48,72%). The Western Cape made up the largest part of the sample (14,02%), and Mpumalanga the smallest (7,24%). Looking at the distribution of station sizes, it can be seen that sample sizes are relatively equal for small, medium and large stations.

Table 3 gives details of health behaviours as reported by the study population.

Table 3

Health Behaviours of the Participants

Item	Category	Frequency	Percentage
Use of Prescription Medicine	Yes	424	20,58
	No	1636	79,42
Medicine used for	Depression/ Post-traumatic stress	63	20,00
	Blood pressure	44	13,97
	Diabetes	15	4,76
	Asthma	12	3,81
	Allergy/ Sinus	23	7,30
	Heart	15	4,76
	Headache/ Pain	89	28,25
	Epilepsy	3	0,95
	Other	51	16,19
Alcohol Consumption	0 – 4 drinks per week	1221	68,71
	5 – 7 drinks per week	290	16,32
	8 – 14 drinks per week	132	7,43
	15 or more drinks per week	134	7,54
Smoke	Yes	759	36,02
	No	1348	63,98
Medical Conditions suffered from	Stress	50	15,43
	Depression	31	9,57
	Physical injury or problem	79	24,38
	Blood pressure	33	10,19
	Diabetes	32	9,88
	Asthma	11	3,40
	Heart condition	8	2,47
	Post-traumatic stress	13	4,01
	Ulcer	7	2,16
	Other	60	18,52
Previous Attempt at Suicide	Yes	90	4,29
	No	2010	95,71
Means of Attempt	Gas poisoning	2	2,44
	Hanging	7	8,54
	Pills	25	30,49
	Gun	33	40,24
	Car crash	1	1,22
	Other/ Unspecified	14	17,07

A total of 49,85% of the participants indicated that they did not exercise at all, or that they exercised once a week. Furthermore, 30,03% indicated that they exercised three days per week or more. One participant indicated the use of marijuana and one participant indicated

the use of Ecstasy tablets. A total of 266 participants (14,97%) indicated that they took more than eight alcoholic drinks per week. In the total sample, only six people indicated that they were HIV positive. Nearly 5% of the participants had attempted suicide previously, with firearms being the most preferred means (40,24%).

Measuring instruments

Three questionnaires were used to gather data for this study, namely the Adult Suicide Ideation Questionnaire (Reynolds, 1991a), a questionnaire to gather biographical information, and a measure of social support that was devised by the researchers.

- The *Adult Suicide Ideation Questionnaire* (ASIQ) (Reynolds, 1991a) was used to measure participants' current level of suicide ideation. Each of the items measures a specific suicidal behaviour or thought. A score of 6 indicates that participants have this thought almost every day, and a score of 0 indicates that the person has never had the thought. Reynolds (1991a) reported that the internal consistency (coefficient alpha) of the ASIQ is 0,96, while Osman et al. (1999) found an alpha coefficient of 0,98. The test-retest reliability of the ASIQ varies between 0,86 and 0,95 (Reynolds, 1991b). Reynolds (1991a) provided evidence for the content, construct and criterion-related validity of the ASIQ. Osman et al. (1999) found that the ASIQ differentiated significantly between suicide attempt and psychiatric control groups. In the North West Province, the ASIQ showed internal consistencies of 0,98 for Whites and 0,95 for Blacks (Rothmann & Strijdom, 2002; Rothmann & Van Rensburg, 2001).
- A questionnaire was developed to gather information about the demographic characteristics of the participants. This questionnaire gave participants the option of supplying their name and service number. Other information that was gathered included: province and station, age, gender, years of service, years in current position (to assess advancement), educational qualifications, marital status, satisfaction with relationship with significant other, language, history of disciplinary action, self-rated performance, self-rated job satisfaction, medical conditions, use of prescription and over-the-counter medicine, reasons for medication, number of alcoholic drinks per week, smoking

behaviour, number of cigarettes per day, other drug use, exercise behaviour and previous suicide attempts.

- Social support was measured with a scale devised by the researchers. In line with recommendations by McIntosh (1991, p. 202), the number of providers, the amount of the resources available, and the perceived adequacy of the resources were measured. The scale firstly listed nine possible sources of support (the public, the SAPS in general, the Psychological Services of the SAPS, top management, the direct commander, colleagues, family, friends outside the SAPS, and religious affiliation). The participant should indicate with a yes or no answer whether he/she felt supported by the listed sources. The second scale listed the same sources, and asked participants to rate the amount of the perceived support. Answers ranged from 1 (Supports me a little) to 5 (Supports me a lot). Adequacy of the perceived social support was rated on a third scale of 1 (not enough) to 5 (enough). A fourth scale again listed the sources of social support, and asked participants to indicate the availability of that source of support. Answers ranged from 1 (easy) to 5 (difficult).

Statistical analysis

The statistical analysis was carried out with the help of the SAS program (SAS Institute, 2000). Cronbach alpha coefficients, inter-item correlation coefficients and exploratory and confirmatory factor analysis were used to assess the reliability and validity of the measuring instruments (Clark & Watson, 1995). Descriptive statistics (e.g. means, standard deviations, skewness and kurtosis) and inferential statistics were used to analyse the data. Statistical significance was set at $p < 0,05$.

T-tests and one-way analysis of variance (ANOVA) were used to determine differences between the sub-groups in the sample. Tukey Studentized Range tests were done to indicate which groups differed significantly when ANOVAS were done. The following formula was used to determine the practical significance of differences (d) when t-tests were used (Steyn, 1999):

$$d = \frac{Mean_A - Mean_B}{SD_{MAX}}$$

where

$Mean_A$ = Mean of the first group

$Mean_B$ = Mean of the second group

SD_{MAX} = Highest standard deviation of the two groups

The following formula was used to determine the practical significance of difference in means between two groups (Steyn, 1999):

$$d = \frac{Mean_A - Mean_B}{\text{Root MSE}}$$

where

$Mean_A$ = Mean of the first group

$Mean_B$ = Mean of the second group

Root MSE = Root Mean Square Error

A cut-off point of 0,50 (medium effect, Cohen, 1988) was set for the practical significance of differences between means.

Pearson product-moment correlation coefficients were used to specify the relationships between the variables. In the case where the distribution of scores is skew, Spearman correlation coefficients were computed. A cut-off point of 0,30 (medium effect, Cohen, 1988) was set for the practical significance of correlation coefficients.

RESULTS

The descriptive statistics for the ASIQ are given in Table 4.

Table 4

Descriptive Statistics of the ASIQ

Item	Mean	SD	Skewness	Kurtosis
I thought it would be better if I were not alive	0,67	1,27	2,56	6,56
I thought about killing myself	0,41	0,96	3,34	12,70
I thought about how I would kill myself	0,36	0,92	3,66	15,24
I thought about when to kill myself	0,26	0,81	4,44	22,47
I thought about what to write in a suicide note	0,24	0,84	4,57	22,93
I thought about telling people I plan to kill myself	0,17	0,70	5,50	33,98
I thought that people would be happier if I were not around	0,53	1,22	3,01	9,17
I thought how people would feel if I killed myself	0,53	1,25	3,09	9,57
I wished I were dead	0,40	1,01	3,63	14,62
I thought about how easy it would be to end it all	0,41	1,05	3,49	13,13
I thought that killing myself would end my problems	0,40	1,01	3,68	14,84
I thought that others would be better off if I killed myself	0,41	1,08	3,531	13,17
I wished I had the nerve to kill myself	0,36	1,01	3,81	15,58
I wished that I had never been born	0,39	1,01	3,63	14,59
I thought that if I had the chance I would kill myself	0,28	0,84	4,28	21,03
I thought about ways people kill themselves	0,85	1,52	2,22	4,28
I thought about killing myself, but would not do it	0,45	1,05	3,42	13,10
I thought about having a bad accident	0,47	1,12	3,21	11,00
I thought that life was not worth living	0,50	1,16	3,18	10,71
I thought that my life was too rotten to continue	0,40	1,06	3,58	13,66
I thought that the only way to be noticed was to kill myself	0,22	0,81	4,94	27,05
I thought that if I killed myself people would realise I was worth caring about	0,29	0,95	4,33	20,17
I thought that no one cared if I lived or died	0,37	1,02	3,69	14,87
I wondered if I had the nerve to kill myself	0,32	0,99	3,90	16,91
I thought that if things did not get better I would kill myself	0,31	0,93	4,24	19,75

Table 4 shows that the scores on the items were extremely negatively distributed. Therefore, scores on the items of the ASIQ were transformed by using a formula to normalise substantially negative scores (Tabachnick & Fidell, 2001).

Principal components extraction was used to estimate the number of factors, presence of outliers and factorability of the correlation matrices of the ASIQ. The eigenvalues (>1) and scree plot were studied to determine the number of factors. The scree plot and factor analysis indicated that all 25 items loaded onto one factor.

Descriptive statistics for the amount, adequacy and availability of social support are given in Table 5. This table also indicates whether respondents felt supported by specific sources of social support.

Table 5
Descriptive Statistics for the Social Support Scale

Item	Support		Amount		Adequacy		Availability	
	Yes (%)	No (%)	Mean	SD	Mean	SD	Mean	SD
The public	61,08	38,92	3,01	1,34	2,85	1,43	3,12	1,38
The SAPS in general	57,36	42,64	2,92	1,30	2,70	1,38	3,17	1,34
Psychological Services	42,37	57,63	2,47	1,35	2,43	1,38	3,14	1,37
Top management	40,41	59,59	2,56	1,39	2,44	1,41	3,43	1,42
Direct commander	74,63	25,37	3,52	1,30	3,43	1,36	2,63	1,43
Colleagues	85,30	14,70	3,76	1,37	3,64	1,19	2,54	1,35
Family	94,07	5,93	4,53	0,87	4,43	0,97	2,27	1,60
Friends	88,85	11,15	4,07	1,07	4,03	1,12	2,44	1,45
Religion	81,31	18,69	3,89	1,29	3,87	1,32	2,50	1,51

An inspection of Table 5 shows that more officers indicated that they did not feel supported by Psychological Services (57,63%) and Top Management of the SAPS (59,59%). However, most respondents indicated that their families, friends, direct commanders and religion support them. Furthermore, looking at the amount, availability and adequacy of support, a similar pattern emerges. Keeping in mind that the availability scale was scored in the opposite direction of the amount and adequacy scales, it can be seen that these two sources of support were consistently rated negatively. For every facet of social support more than 50% of responses were below average if 3 is taken to be the average.

Next, an analysis was done regarding participants' experiences of social support in the various provinces in South Africa. Table 6 indicates the differences in the perceived amount of support for the nine provinces.

Table 6

Differences in the Amount of Social Support for Provinces

Item	GT	MP	NP	KZN	FS	EC	NC	WC	Root MSE	<i>p</i>
Public	2,65 ^{bc}	3,32 ^d	3,38 ^a	2,95	3,17	2,95	3,09	2,69 ^b	1,32	0,00
SAPS in general	2,78	3,23 ^b	3,39 ^b	2,84	3,06	2,87	2,83	2,56 ^a	1,28	0,00
Psych. Services	2,40 ^b	3,15 ^a	2,68	2,27 ^b	2,50	2,17 ^b	2,49 ^b	2,25 ^b	1,32	0,00
Top management	2,35 ^{bc}	3,06 ^d	3,13 ^a	2,51	2,86 ^f	2,28 ^{bc}	2,37 ^{bc}	2,06 ^{bch}	1,35	0,00
Direct commander	3,48	3,80	3,58	3,53	3,45	3,55	3,44	3,47	1,30	0,15
Colleagues	3,81	3,93	3,87	3,70	3,58	3,96	3,70	3,63	1,37	0,01
Family	4,60	4,56	4,63 ^a	4,57	4,17 ^{bc}	4,63 ^d	4,64 ^a	4,54	0,86	0,00
Friends	4,01	4,15	4,14	4,11	3,80	4,16	4,19	4,09	1,07	0,00
Religion	3,81	4,08	4,17	3,67	3,66	3,94	4,05	3,93	1,28	0,00

NW= North West Province (*n* = 287); GT= Gauteng (*n* = 271); MP= Mpumalanga (*n* = 176); NP= Limpopo Province (*n* = 207); KZN= Kwazulu Natal (*n* = 272); FS= Free State (*n* = 333); EC= Eastern Cape (*n* = 307); NC= Northern Cape (*n* = 238); WC= Western Cape (*n* = 341).

- a Practically significant difference between provinces in row where b (medium effect, *d* larger or equal to 0,50) or c (large effect, *d* larger or equal to 0,80) are indicated
d Practically significant difference between provinces in row where e (medium effect, *d* larger or equal to 0,50) or f (large effect, *d* larger or equal to 0,80) are indicated
g Practically significant difference between provinces in row where h (medium effect, *d* larger or equal to 0,50) or i (large effect, *d* larger or equal to 0,80) are indicated

When looking at the amount of social support, the Limpopo Province differed significantly from Gauteng and the Western Cape regarding the perceived amount of support from the public, while Mpumalanga differed practically significant from Gauteng. Regarding the SAPS in general, the Western Cape showed less support than the Limpopo Province and Mpumalanga. For Psychological Services, Mpumalanga differed significantly from Gauteng, Kwazulu/Natal, the Eastern, Northern and Western Cape. The Limpopo Province differed significantly from Gauteng, Eastern, Northern and Western Cape regarding the amount of support from top management and Mpumalanga showed a significant difference from the Eastern, Northern and Western Cape. The Free State measured higher than the Western Cape. Regarding the amount of support received from the family, the Limpopo Province and the Eastern and Northern Cape measured higher than the Free State.

The descriptive statistics, alpha coefficient and mean inter-item correlation of the ASIQ are indicated in Table 7.

Table 7

Descriptive Statistics, Alpha Coefficient and Mean Inter-item Correlation Coefficient of the ASIQ

Item	Mean	SD	rMean	α
Total ASIQ	10,49	20,56	0,58	0,97

Table 7 shows that the alpha coefficient of the ASIQ is acceptable compared to the guideline of $\alpha > 0,70$ (Nunnally & Bernstein, 1994). However, the mean inter-item correlation coefficient is somewhat higher than the guideline of 0,58 (Clark & Watson, 1995).

One-way analysis of variance (ANOVA) with the Tukey Studentized Range test was carried out using SAS PROC GLM to determine whether significant differences exist between various demographic groups. The significance of differences between the suicide ideation of different race groups is given in Table 8.

Table 8

Differences in ASIQ Scores of Race Groups

Factor	White (n = 830)	Black (n = 1091)	Coloured (n = 329)	Indian (n = 85)	Other (n = 18)	Root MSE	p
Total score	10, 65	10, 28	8, 58	14, 10	17, 61	20, 21	0, 09

Table 8 shows that no statistically significant differences regarding the ASIQ were found for different race groups. However, the results show that the mean ASIQ score for Indian police members was somewhat higher than the scores of the other race groups.

The significance of differences between the suicide ideation of different ranks are given in Table 9.

Table 9

Differences in ASIQ Scores of Ranks

Item	Constable	Sergeant	Inspector	Captain	Superintendent	Sr. Superintendent	Root MSE	p
Total score	11, 33	11, 87	9, 87	10, 08	6, 38	2, 30	20, 29	0, 14

Table 9 shows that no statistically significant differences were found regarding suicide ideation of different ranks.

Table 10 shows the statistical significance of differences between the suicide ideation of language groups.

Table 10

Differences in ASIQ Scores of Language Groups

Item	A	E	SE	SO	SET	SW	VE	ND	XH	ZL	Root MSE	<i>P</i>
Total score	10,19	12,15	12,17	13,37	8,87	7,89	16,60	5,53	8,47	7,94	20,24	0,05*

A= Afrikaans (*n* = 1069); E= English (*n* = 239); SE= Sepedi (*n* = 206); SO= SeSotho (*n* = 206); SET= Setswana (*n* = 246) SW= IsiSwati (*n* = 28); VE= Tshivenda; (*n* = 39); ND= IsiNdebele (*n* = 25); XH= IsiXhosa (*n* = 147); ZL= IsiZulu (*n* = 191).

* Statistically significant difference (*p* < 0,05)

Table 10 shows that a statistically significant difference between the suicide ideation of different language groups exists. However, the Tukey Studentized test did not show any significant differences between specific language groups. Clearly, the Tshivenda and Sesotho groups showed the highest mean scores on the ASIQ. However, these differences were not statistically or practically significant, probably because of the large variation within the sample (as indicated by the Root MSE).

Table 11 reports the significance of differences between the suicide ideation of police members in different provinces.

Table 11

Differences in ASIQ Scores of Police Members in Different Provinces

Item	NW	GT	MP	NP	KZN	FS	EC	NC	WC	Root MSE	<i>p</i>
Total score	11,19	13,45 ^{WC}	8,46 ^{WC}	13,03	9,91	13,14 ^{WC}	8,27	10,15	7,22*	20,47	0,00*

NW= North West Province (*n* = 287); GT= Gauteng (*n* = 271); MP= Mpumalanga (*n* = 176); NP= Limpopo Province (*n* = 207); KZN= Kwazulu Natal (*n* = 272); FS= Free State (*n* = 333); EC= Eastern Cape (*n* = 307); NC= Northern Cape (*n* = 238); WC= Western Cape (*n* = 341).

* Statistically significant difference (*p* < 0,05). Difference from province is indicated in superscript.

Table 11 shows that the Western Cape scored statistically significantly lower than Gauteng, Mpumalanga and the Free State. However none of these differences had practically significant effects, probably because of the large variance in the total sample (as can be seen from the Root MSE).

Since few differences were found among demographic variables regarding levels of suicide ideation, Table 12 gives the descriptive statistics of those members who scored above 31 on the ASIQ. This cut-off point represents the 97th percentile (Reynolds, 1991a).

Table 12
Descriptive Statistics for High ASIQ Scorers (N=207)

Item	Mean	SD	Skewness	Kurtosis
Age	33,76	6,19	0,57	1,21
Years in police	11,98	5,60	0,55	1,22
Years in position	4,40	2,96	1,25	1,90
Satisfaction with relationship	3,72	1,40	-0,65	-0,93
Job satisfaction	3,34	1,43	-0,38	-1,11
Total ASIQ	65,96	31,03	1,07	0,32

Table 12 shows that the mean age of officers who scored high on the ASIQ is 33,76 years, and the mean years in the SAPS was almost 12 years. Not shown in the table are the age range (27–40), and the service years range (6 – 17 years).

The characteristics of police members who scored high on the ASIQ are reported in Table 13.

Table 13

Frequencies for High ASIQ Scorers (N=207)

Item		Frequency	Percentage
Race	White	61	31,28
	Black	96	49,23
	Coloured	23	11,79
	Indian	11	5,64
Rank	Constable	19	10,00
	Sergeant	63	33,16
	Inspector	77	40,53
	Captain	30	15,79
	Superintendent	1	0,53
Province	North West Province	27	13,04
	Gauteng	29	14,01
	Mpumalanga	12	5,80
	Limpopo Province	22	10,63
	Kwazulu Natal	22	10,63
	Free State	49	23,67
	Eastern Cape	15	7,25
	Northern Cape	19	9,18
	Western Cape	12	5,80
	Size	Small	69
Medium		69	37,78
Large		43	23,89
Sex	Male	172	84,73
	Female	31	15,27
Marital status	Single	38	21,35
	Married	96	53,93
	Divorced	38	21,35
	Separated	4	2,25
	Remarried	2	1,12
Language group	Afrikaans	83	41,71
	English	22	11,06
	Sepedi	16	8,04
	Sesotho	28	14,07
	Setswana	17	8,54
	IsiSwati	1	0,50
	Tshivenda	8	4,02
	IsiXhosa	9	4,52
	IsiZulu	10	5,03
	IsiNdebele	2	1,01

Table 13

Frequencies for High ASIQ Scorers (N=207) (continued)

Suffering from medical condition	Yes	42	23,86
	No	134	76,14
Previously charged	Yes	57	28,08
	No	146	71,92
Previous attempt	Yes	34	19,21
	No	143	80,79
Alcohol	0-4 drinks per week	87	57,24
	5-7 drinks per week	26	17,11
	8-14 drinks per week	19	12,50
	15 or more drinks per week	20	13,16

Table 13 shows that the highest frequency of high ASIQ scorers is found among Blacks, although this might be because of the larger sample size for this group. Regarding rank, the highest scores were recorded for sergeants and inspectors. The Free State had a very high frequency of high ASIQ scorers. Gauteng and the North West Province constitute the second and third highest respectively. It can be seen that small and medium stations present higher frequencies than large stations. High ASIQ scorers are primarily male, although this could also be an effect of sample size. When one looks at the frequency of alcohol consumed, this group might be regarded as moderate drinkers.

Table 14 indicates results of t-tests for having been previously charged in terms of the disciplinary code and having made a previous attempt at suicide.

Table 14

T-Test Results

Item	<i>p</i>	<i>d</i>
Having been previously charged	0,02*	0,99+
Having made previous suicide attempt	0,00*	1,37+

* Statistically significant ($p < 0,05$)

+ Practically significant – large effect ($d > 0,80$)

The results of t-tests indicate that having been previously charged in terms of the disciplinary code and having made a previous attempt at suicide are significant predictors of suicide ideation, both practically significant with large effect.

DISCUSSION

The current research shows a lower level of suicide ideation in the SAPS at a national level than what was previously reported for the North West province (8,64% vs. 10,58%) (Rothmann & Strijdom, 2002; Rothmann & Van Rensburg, 2001). This study replicates some previous research showing that suicide ideation is unrelated to gender (Friedman et al., 1987; Sorenson & Rutter, 1991) and educational attainment (Kinkel et al., 1988; Sorenson & Rutter, 1991). Contrary to previous research, (Rothmann & Strijdom, 2002; Rothmann & Van Rensburg, 2001) alcohol use had no effect on ASIQ scores. Differences were found between races, ranks, language groups and provinces, although none of these showed any practically significant effect. This perhaps points to a far worse situation than was originally anticipated at the outset of this research. These results seem to suggest that the prevalence of suicide ideation is permeated throughout the entire police organisation. If this is indeed the case, suicide prevention programmes should be focused on all races, ranks and language groups and in all provinces included in this study.

However, the results of t-tests do give some direction in identifying officers who might be more predisposed to committing suicide. Having previously been charged in terms of the disciplinary code and having made a previous attempt at suicide are significant predictors of suicide ideation, both with large effect. Both of these actions could lead to the relevant officer becoming victimised through stigmatisation. As such, fellow officers could greatly benefit from sensitivity training, and becoming more supportive of the particular officer. Disciplinary hearings can sometimes carry on for periods of up to over a year. The SAPS can alleviate the stress on the charged officer by speeding up the process of internal investigations, since job suspension has already been linked to suicide ideation (Janik & Kravitz, 1994).

Suicide ideation has also been shown to be more prevalent for persons with Human Immunodeficiency Virus (HIV) than healthy individuals (Morrison, 1991; Schoenfeld, 1992). In the current sample only six people indicated that they had been infected with this disease, which probably rather reflects the stigma still attached to it than the actual rate of infection,

since South Africa has one of the highest rates of HIV infection in the world (Situation Report, 1997). It is thus suggested that police officers living with HIV further present a case of interest in the prevention of police suicide.

Tentative recommendations can be made on the grounds of the frequencies reported for those who scored above the 97th percentile regarding suicide ideation. The officer most vulnerable to suicide ideation appears to be a Black male sergeant or inspector, who is most likely serving at a small or medium station. Provinces that might warrant special attention are the Free State, Gauteng and the North West.

The current situation regarding social support seems ambivalent. Although participants reported feeling supported by the public, the SAPS in general, their direct commander, colleagues, family, friends and religion, they obviously feel unsupported by psychological services and top management. Ironically, work sources of support have been suggested as being the most important (Beehr, 1985; House, 1981; Graf, 1986; White et al., 1985). Jacobs (1998, p. 4) states that the biggest problem in the SAPS is the perception of a lack of confidentiality of psychological and social work services that prevent personnel from utilizing these services. Baker and Baker (1996) also refer to the fact that officers fear that if help is sought, employment and economic security will be threatened. The results of this study showed psychological services and top management of the SAPS to consistently perform poorly regarding the amount, adequacy and availability of social support. Clearly, the perception in the SAPS exists among its members that psychological services and top management are not supportive. The case of psychological services seems especially problematic, since this is the first place the officer in need is supposed to turn to for help. These two sources of social support would do well to make their interest in the members they serve better known.

Although this study goes some way towards addressing the lacunae in police suicide ideation research identified in the literature (Hem et al., 2001; Janik & Kravitz, 1994; Lennings, 1995), it does have certain limitations. Limitations of this study include that it was done in a singular occupational group, namely police officers, which does not allow for generalisations to other occupations regarding suicide ideation to be made. Self-report measures and the cross-sectional design are further limitations.

RECOMMENDATIONS

For the SAPS, it is recommended that current suicide prevention programmes be taken under review to ensure that it addresses all members at all levels within the organisation. It is also suggested that psychological services and top management urgently embark on an internal relations campaign to improve their image and perceived support among members. Officers with previous suicide attempts, who have previously been charged in terms of the disciplinary code, and who are HIV positive, present a clear starting point for suicide prevention. Special care should be taken, perhaps by means of sensitivity training or the development of a peer support system, to prevent these officers from being further victimised.

Future research regarding suicide ideation of police should aim at the application of longitudinal and intervention research, in order for clear pathways to suicide ideation to be identified. The relationship between suicide ideation and suicide should also be researched by employing a longitudinal research design. With regard to the measuring instruments, the social support scale yielded interesting results. It is recommended that it be adjusted and applied to other occupational contexts in future research as well.

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CHAPTER 3

RESEARCH ARTICLE 2

THE INTERNAL CONSISTENCY AND CONSTRUCT VALIDITY OF THE POLICE STRESS INVENTORY IN THE SOUTH AFRICAN POLICE SERVICE*

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ABSTRACT

Policing has been described as a stressful occupation. The objectives of this study were to validate a measure that could be used by the South African Police Service (SAPS) to identify the frequency and intensity of job stressors. A cross-sectional design was used. Stratified random samples ($N = 2145$) were taken of police members of nine provinces in South Africa. The Police Stress Inventory was developed as measuring instrument. Three internally consistent factors were extracted through Principal Component factor analysis with a varimax rotation. These factors were labelled Job Demands, Lack of Job Resources and Inherent Police Stressors. The most important stressors identified were other officers not doing their job, inadequate or poor quality equipment, inadequate salaries, and seeing criminals go free. Analysis of variance showed differences in stress for rank and race groups.

OPSOMMING

Polisiëring is beskryf as 'n besonder stresvolle beroep. Die doelstellings van hierdie studie was om 'n meetinstrument te valideer wat deur die Suid-Afrikaanse Polisie diens (SAPD) gebruik kan word om die frekwensie en intensiteit van werkstressors te meet. 'n Dwarsdeursnee-ontwerp is gebruik. Gestratifiseerde ewekansige steekproewe ($N = 2145$) is geneem van polisieledes in nege provinsies van Suid Afrika. Die Polisie stres-opname is as meetinstrument ontwikkel. Drie intern konsekwente faktore is onttrek na hoofkomponent-faktoranalise met 'n varimax-rotasie. Hierdie faktore was Taakeise, Gebrek aan Taak-hulpbronne en Inherente Poliestressors. Die belangrikste stressors is geïdentifiseer as lede wat nie hul werk doen nie, ontoereikende toerusting of toerusting van swak kwaliteit, ontoereikende salarisse en om kriminele vry te sien gaan. Variansie-analise het verskille in stres vir verskillende range en rassegroepe getoon.

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The physical and psychological signs of work stress have been well documented. Stress has been related to heart disease, hypertension, upper respiratory tract infections, peptic ulcers, reduced immunity, migraines, alcoholism, depression, suicidal tendencies, anxiety, as well as other mental disorders (DeCarlo & Gruenfeld, 1989; Lord, Gray & Pond, 1991; Muntaner, Tien, Eaton & Garrison, 1991). Within the organisation, these effects translate into decreased performance and motivation, increased health care costs, disability payments, sick leave, absenteeism and turnover (Aldana, Sutton, Jacobson & Quirk, 1996; Slate, Johnson & Wells, 2000).

Stress is not a factor that resides in the individual or the environment; rather, it is embedded in an ongoing process that involves individuals contracting with their environments, making appraisals of those encounters, and attempting to cope with the issues that arise. At the heart of the transactional definition is the idea that stress is a dynamic cognitive state (Cooper, Dewe & O'Driscoll, 2001, p. 12). It is a disruption in homeostasis or an imbalance that gives rise to a requirement for resolution of that imbalance or restoration of homeostasis (Dewe, Cox & Ferguson, 1993).

Since policing is generally accepted as being a highly stressful occupation, it presents an appealing context for the study of the effects of work stress (Anshel, 2000). Besides being a typical organisation with typical problems of hierarchy and administrative ineffectiveness, police organisations present a further unique challenge. This challenge comes in the form of potentially traumatic experiences such as life-threatening physical assault or witnessing disturbing images of death (Stephens & Long, 2000).

Anshel (2000) highlighted three underlying postulates in stress research with police officers. Firstly, extreme or unusual external stimuli that are perceived as threatening will be stressful and cause significant changes in psychological, physiological and behavioural responses. Highly intense acute stress could influence officers' thoughts and actions, for example, the speed and accuracy of information processing, and thus their response. The second stress postulate is that the failure to cope effectively with short-term sudden stress leads to long-term, chronic stress, which might in turn inhibit the body's immune system, leading to an array of medical illnesses and diseases. Lastly, sources of police stress that are ongoing and long-term will result in burnout, reduced motivation, poor performance, and eventual dropout from the police profession (Violanti & Aron, 1993). Acute stress differs from chronic stress

in that it is derived from sudden events that may be of relatively short duration and which provoke an almost immediate psychological reaction (Newton, 1989), and acute stressors require large amounts of physical and psychological adaptation, while chronic stressors do not (Farmer, 1990).

Two broad categories of work stressors in policing have been identified (Alexander, Walker, Innes & Irving, 1993; Biggam, Power, MacDonald, Carcary & Moodie, 1997; Brown & Campbell, 1990, 1994). The first category to present a significant source of stress is the organisational aspects of police work, such as a lack of confidence in management, lack of internal communication, and continuous organisational change. Secondly, the nature of police work, such as physical threat, force, exposure to danger, facing the unknown, and shift work come into play. The most prominent of these stressors has been identified as the organisational factor. Thomas (1988) also showed organisational stressors controlled by managers to be more important in understanding work stress than personal background. Other police research has demonstrated the importance of the organisational context over the work itself in determining psychological outcomes (Crank & Caldero, 1991; Crowe & Stradling, 1993; Evans & Coman, 1993; Hart, Wearing & Headey, 1995; Kop & Euwema, 2001; Sigler & Wilson, 1988).

Studies making use of factor analyses to determine factors specific to police work have recovered different numbers of factors. Crowe and Stradling (1993, p. 20) report five factors of police stress in an English sample. These factors were described as having to deal with death and distressed relatives, routine low-stress deployments, a "people not like us" factor (alluding to rape victims and drug users), incomprehensible violent disturbance and public disorder. Hart et al. (1995) extracted eight factors, namely dealing with victims (of road accidents, or abused children), organisational activity (shift work), external factors (courts, media), workload, danger, frustration, driving and complaints. Mitchell, Cowan and Hamilton (1998) found a three-factor solution made up of injury and physical danger, consequences of one's actions (e.g. complaints from the public), and an "incident getting out of control" factor. Brown et al. (1999) also extracted a three-factor solution, being a traumatic factor (death and disaster), routine (violence and injury) and vicarious (sexual crimes). Two factors seem relevant to all these studies, namely one having to do with dealing with the organisation, and the other having to do with the performance of duties as a police officer, which could include scenes of death and violence.

If one considers the socio-economic and political turmoil of the past thirty years, and the major changes resulting from the dissolution of apartheid, police work is probably particularly stressful in South Africa (Gulle, Tredoux & Foster, 1998). Various potential stressors, such as a high crime level, organisational transformation and a lack of resources, challenge members of the police service. Increased rates of illness, post-traumatic stress, medical boarding, burnout, alcohol abuse and suicides, as well as decreased levels of job satisfaction and job performance, as compared to norms for the general population, are reported in research with police members (Anshel, 2000; Nel & Burgers, 1998; Nel, 1994; Rothmann & Agathagelou, 2000; Rothmann & Strijdom, 2002). On any given day, nearly 10 000 police officers are absent from work nationally because of dangerously high stress levels, and nearly 450 police officers leave the force every month, according to 1998 statistics (Pretorius, 1998).

Gulle et al. (1998) showed that in comparison to American stressors, which were all inherent in the nature of the job, South African police stressors were more organisationally oriented. Koortzen (1996, p. 62) indicated that the three most prominent individual police stressors in a South African sample were a lack of supervisory and management skills, inappropriate sentences handed down by the courts and emotional detachment from the family. In more recent work, Peltzer (2001) found duty-related violent injury (i.e. shooting), pursuit of an armed suspect and response to a scene involving the death of a child as the three most stressful incidents relating to emotional intensity in a South African sample. The results of the above-mentioned studies taken together could suggest that a shift in emphasis has taken place from organisational stressors to more inherent characteristics of the job, including the death and violence factor mentioned earlier. This should come as no surprise, since South Africa is considered one of the most murderous countries in the world (Nedcor Project, 1996, p. 7), and more police officers are murdered in South Africa than in any other country not at war (Le Roux, 1997).

The need for effective and accurate stress assessment in police services has been highlighted. Hart (1999) demonstrated the possibility of a crossover effect between the work and non-work domains of police officers' lives regarding satisfaction. Findings of Roberts and Levenson (2001) also suggest the crossover effect, with job stress dampening the positive quality of marital interaction. Hart (1999) further demonstrated the importance of making a distinction between the context-free and domain-specific aspects of psychological well-being

when investigating the effects of stress. A large body of research has examined stressors specific to the policing environment (Anon, 1986; Bartol, Bergen, Volckens & Knoras, 1992; Biggam et al., 1997; Brown & Campbell, 1990; Brown, Cooper & Kirkcaldy 1996; Brown & Fielding, 1993; Brown et al., 1999; Crank & Caldero, 1991; Kirkcaldy, Cooper & Ruffalo, 1995; Koortzen, 1996; Kop & Euwema, 2001; Kop et al., 1999; Loo, 1984; Patterson, 1992; Terry III, 1981; Violanti & Aron, 1994; Wexler & Logan, 1983; White, Lawrence, Biggerstaff & Grubb, 1985), while stress in policing has been conceptualised as a self-reported negative impact (Biggam et al., 1997; Brown & Campbell, 1990; Marmot & Madge, 1987).

Spielberger and Vagg (1999) state that the identification of major sources of stress in the workplace can significantly benefit management and employees in a twofold manner. Firstly, it could lead to changes in the work environment that reduce stress and increase productivity, and secondly it could facilitate the development of effective interventions that could reduce the aforementioned negative effects of work stress. Worker well-being is not only important to the vitality and health of the organisation, but also forms a relevant variable in the management of health-care costs (Landy, Quick & Kasl, 1994). In the SAPS, health-care costs could escalate, with South African law now recognising Post-Traumatic Stress Disorder (PTSD) as an injury on duty, allowing members to sue for compensation (De Wet, 2000; South Africa, 1993)

In an occupation that has been identified as one of the most stressful in the world, the researchers are of the opinion that a valid measure of stress could be an important instrument for the early identification and successful treatment of stress within the police service. Discovering which stressors are most pertinent to police officers could lead to these stressors being addressed, keeping in mind that organisational stressors are more easily addressed and changed than inherent ones (Gulle et al., 1998). Recently, Van Zyl (2002) highlighted factors contributing to ineffective human resource management in the SAPS. These include the fact that human resource management is not included in strategic planning, over-centralisation and restrictive middle management. It is also pointed out that the SAPS is still a highly hierarchical structure, leading to unaccountability for actions. Kop et al. (1999) state that job stress in policing is produced first and foremost by the organisation and management and to a lesser degree by task-related factors or routine operational duties. It is postulated that factors such as those highlighted by Van Zyl will ratify previous international results in the current

research in showing that organisational factors are more salient stressors in the South African Police Service than inherent duties.

Since no valid measure of police stress exists in the South African context, the objective of this study was to develop a stress measure specific to the policing environment, by focussing on typical work stressors that have been identified in previous research with police. In South Africa, differential exposure to stressors due to varying levels of crime in different provinces (SAPS, 2001) can have an effect on the experienced stress of police officers (e.g. car theft in metropolitan areas). Also, different provinces present different levels of urbanisation, and since working in an urban environment presents a greater presence of potential stressors (Biggam et al., 1997), this could also influence stress levels. Previous research has also shown rank (Kaufmann & Beehr, 1989) and years of service (Violanti, 1983) to affect police officer stress, and these variables are examined in the current analysis.

The development of a tool that could successfully identify the most important sources of stress in the SAPS would serve as a first step in addressing the debilitating effects of work stress on a workforce under obvious strain. The development of such an instrument would also benefit both the organisation and individual members. In line with recommendations by Biggam et al. (1997, p. 130) this study addressed both the severity and frequency of stressors. Spielberger and Vagg (1999) and Thomas (1988) also refer to frequency and intensity of stressors. Besides frequency and intensity having been established as two different dimensions, the suggestion has been made that the frequency of experiencing stressors might also be indicative of the stress intensity (Anshel, Robertson & Caputi, 1997).

Variables affecting police stress

The important issue concerning perceived stress is that stress is only evident if the officer detects the event or stimulus (Anshel, 2000). Also, the meanings that stressors have for individuals are of key importance in determining the experience of distress (Dick, 2000; Payne, Jabri & Pearson, 1988; Payne & Morrison, 1999). The subjective stress environment has been shown to be more important than the objective environment as a predictor of strain (Caplan, Cobb, French, Van Harrison & Pinneau, 1980). Additionally, it has been argued that these meanings are located within and influenced by the broader social and organisational context, and as such are at least partly socially constructed (Meyerson, 1994). Thus, it is both

the perception and the existence of a stressor, as well as its meaning, that are key in the experience of felt distress (Dewe, 1991; Eden, 1990; Large & Marcusson, 2000).

Kaufmann and Beehr (1989) found that police supervisors experienced less job stress and more instrumental support than did front-line police officers. Burke (1989) found no difference with regard to stress responses among ranks, although constables experienced more work alienation, less job satisfaction, more work-related family conflict, and a greater inclination to leave their jobs. Length of service is also a potentially important consideration in the study of job stress and health. As the length of service increases, so does exposure to the particular stresses of the job, and Caplan et al. (1980) suggest that those who best learn to cope with the demands of the job might be the ones who remain in it. Violanti (1983) related job experience to stress and found officers with the least and most job experience to show the lowest stress scores, thus the relationship is a curvilinear one.

As far as gender is concerned, it has been found that female officers were more likely to deal with sexual crime than male officers, while men were more likely to be deployed with respect to incidents involving violence or the potential for injury (Brown et al., 1999). Exposure to individuals who are the victims of sexual assault may result in the police officer becoming a secondary victim of the incident (Brown et al., 1999). Women serving in detached beats, which are often solo appointments in rural areas, are especially susceptible to increased risk of distress when dealing with sexual offences. Policewomen might be more susceptible to a process of secondary trauma, since they show more empathy with the victims of sexual offences than their male counterparts (Martin, McKean & Veltkramp, 1986). Women officers also have to deal not only with the threat and reality of the dangers, but also with additional stressors associated with sexual prejudices and discrimination (Brown & Fielding, 1993). Kroes (1982) reported that the major source of difficulty for female officers was sexual harassment.

Female officers working in rural areas and solely responsible for an identified geographical area experienced the greatest likelihood of distress (Brown et al., 1999). Social stressors in the rural context refer to the absence of anonymity officers experience, both on and off patrol. Like those of other residents of a small community, the habits and behaviours of law enforcement officers are open to public scrutiny (Bartol et al., 1992). According to Sandy and Devine (1978) a majority of small-town and rural officers have been born and raised within

the community, which might necessitate them to enforce the law against people they have known all their lives, producing dilemmas that may be highly stressful.

McLaren, Gollan and Horwell (1998) found no difference in the amount of perceived stress among police, correctional services and ambulance officers. Simmons, Cochran and Blount (1997) found older and married probation officers to be prone to reflect more occupational satisfaction and lower occupational stress. Female probation officers reported higher levels of occupational stress.

Police officers further report varying amounts of work stressors based upon rank (Brown & Campbell, 1990; Brown et al., 1996), years of experience in the police service (Anshel et al., 1997; Burke, 1989; Larsson, Kempe & Starrin, 1988), race and ethnicity (Violanti & Aron, 1995), and gender (Wexler & Logan, 1983). Cooper and Bramwell (1992) also showed potential sources of stress to vary between different subcultures and status groups within the same organisation; while Terry and Calan (1997) have indicated that those higher in the organisational hierarchy experience higher levels of perceived stress. Since it has been noted that perceptions of stress can be influenced by these variables, these variables are also included in the present study. It is possible that any, none at all, or completely different stressors than those previously identified in police research might be operating in the SAPS.

Meyerson (1994, p. 628) has indicated that the meaning of work stressors cannot be studied without taking into account the context in which they occur. In this regard Nel and Burgers (1998, p. 22) hypothesised that diagnoses of PTSD or other stress-related diagnoses have become acceptable in the SAPS. It has become almost a stereotype that police officials should be suffering from stress, given the extent and regularity of exposure to traumatic situations. Officials seeking a way out of difficult organisational and internal political changes could exaggerate symptoms of PTSD and other stress-related ills.

METHOD

Research design

A cross-sectional survey design (Shaughnessy & Zechmeister, 1997) was used to achieve the research objectives. This design allows for the description of the population at a specific

point in time, and can thus indicate current levels of stress in participants (Shaughnessy & Zechmeister, 1997). This design is also suited to the development and validation of questionnaires.

Study population

Random samples ($N = 2145$) were taken from police stations in the Limpopo Province, Gauteng, Mpumalanga, Northern Cape, Western Cape, Eastern Cape, Natal and Free State.

The following formula proposed by Kerlinger and Lee (2000) was used to determine the sample size for this study:

$$n' = \frac{n}{1 + \frac{n}{N}}$$

and

$$n = \frac{z^2 \times SD^2}{d^2}$$

where n' = estimated sample size; n = the estimated sample size using the formula; N = the size of the population; z = standard score corresponding to the specified probability of risk; SD = the standard deviation of the population, and d = the specified deviation.

The values for z , SD and d used for the previous studies of suicide ideation in the SAPS (Rothmann & Strijdom, 2002; Rothmann & Van Rensburg, 2001) were also used in the current research. Stations were divided into small (fewer than 25 staff members), medium (25–100 staff members) and large (more than 100 staff members). All police members at randomly identified small and medium stations in each of the provinces were asked to complete the questionnaire. Student and civilian members were not included in this study. In the large stations stratified random samples were taken according to sex and race. Table 1 presents some of the characteristics of the participants.

Table 1

Characteristics of the Study Population (N = 2145)

Item	Category	Percentage
Race	White	37,19
	Black	42,05
	Coloured	15,80
	Indian	4,96
Rank	Constable	7,42
	Sergeant	20,90
	Inspector	50,08
	Captain	18,48
	Superintendent	2,37
	Senior superintendent	0,76
Province	Gauteng	12,63
	Mpumalanga	8,21
	Limpopo Province	9,65
	KwaZulu-Natal	12,68
	Free State	15,52
	Eastern Cape	14,31
	Northern Cape	11,10
	Western Cape	15,90
Size of Station	Small	31,48
	Medium	38,07
	Large	30,45
Level of Education	Grade 10	11,37
	Grade 11	5,36
	Grade 12	56,16
	Technical college diploma	2,89
	Technikon diploma	20,00
	University degree	2,13
	Postgraduate degree	2,09
Sex	Male	79,92
	Female	20,08
Marital status	Single	19,26
	Married	53,12
	Divorced	24,27
	Separated	2,12
	Remarried	1,23

Table 1 shows that nearly half the sample was made up of Black members (42,05%). Mostly, inspectors were included (50,08%). The Free State and Western Cape contributed the largest samples, with roughly equal numbers of officers from small and large stations, and a little

more from medium stations. The sample is predominantly made up of males, and most officers are married. More than half the sample (56,16%) have Grade 12 schooling, equal to 12 years of formal schooling.

Measuring instruments

Two questionnaires were used to address the research objectives of this study, namely the Police Stress Inventory, which is the main focus, and a questionnaire to gather biographical information.

- The *Police Stress Inventory* (PSI) consists of 88 items and was developed for the purpose of this study. A number of research studies have been published regarding stressors specific to the policing environment (Anon, 1986; Bartol et al., 1992; Biggam et al., 1997; Brown & Campbell, 1990; Brown & Fielding, 1993; Brown et al., 1996; Crank & Caldero, 1991; Kirkcaldy et al., 1995; Koortzen, 1996; Kop & Euwema, 2001; Kop, Euwema & Schaufeli, 1999; Loo, 1984; Patterson, 1992; Terry III, 1981; Violanti & Aron, 1994; Wexler & Logan, 1983; White et al., 1985). These sources were used in the construction of the current instrument. In line with recommendations by Biggam et al. (1997, p. 130) this study addressed both the severity and frequency of stressors. Firstly, participants rated each of 44 items regarding the intensity of stress on a 9-point scale. Secondly, the frequency part of the questionnaire asked "how many times in the last six months" the source of stress had been experienced.
- A questionnaire was developed to gather information about the biographical characteristics of the participants. This questionnaire gave participants the option of supplying their name and service number. Other information that was gathered included: province and station, age, gender, years of service, years in current position (to assess advancement), educational qualifications, marital status, satisfaction with relationship with significant other, language, self-rated performance and self-rated job satisfaction.

Statistical analysis

The statistical analysis was carried out with the help of the SAS program (SAS Institute, 2000). Principal factor extraction with varimax rotation was performed through SAS FACTOR on the 44 intensity items of the PSI for a sample of 2145 police officers. Principal component extraction was used prior to principal factor extraction to estimate the number of factors, presence of outliers and factorability of the correlation matrices. Descriptive statistics (means, standard deviations, skewness and kurtosis) were also used to analyse the data.

Cronbach alpha coefficients and inter-item correlations were used to assess the internal consistency of the measuring instrument (Clark & Watson, 1995). Coefficient alpha conveys important information regarding the proportion of variance contained in a scale. According to Clark and Watson (1995), the average inter-item correlation coefficient (which is a straightforward measure of internal consistency) is a useful index to supplement information supplied by coefficient alpha. However, simply focusing on the mean inter-item correlation cannot ensure unidimensionality of a scale – it is necessary to examine the range and distribution of these correlations as well,

One-way analysis of variance (ANOVA) was used to determine differences between the sub-groups in the sample. Tukey Studentized Range tests were done to indicate which groups differed significantly when ANOVAS were done.

The following formula was used to determine the practical significance of difference in means between two groups (Cohen, 1988; Steyn, 1999):

$$d = \frac{Mean_A - Mean_B}{\text{Root MSE}}$$

where

$Mean_A$ = Mean of the first group

$Mean_B$ = Mean of the second group

Root MSE = Root Mean Square Error

A cut-off point of 0,50 (medium effect, Cohen, 1988) was set for the practical significance of differences between means.

Pearson product-moment correlation coefficients were used to specify the relationships between the variables. A cut-off point of 0,30 (medium effect, Cohen, 1988) was set for the practical significance of correlation coefficients.

RESULTS

The results of the factor analysis of the Police Stress Inventory are shown in Table 2. Loadings of variables on factors, communalities and percent of variance and covariance are shown. Variables are ordered and grouped by size of loading to facilitate interpretation. Zeros represent loadings that were under 0,45 (20% of variance). Labels for each factor are suggested in a footnote. Oblique rotation showed inter-factor correlations between Factor 1 and Factor 2 ($r = 0,38$), and between Factor 2 and Factor 3 ($r = 0,41$). Although these correlations were significant, it was decided to continue with orthogonal rotation for the purpose of this research, which in part is the identification of stress factors specific to the policing environment.

Table 2

Factor Loadings, Communalities (h^2), Percentage Variance and Covariance for Principal Factor Extraction and Varimax Rotation on PSI items

Item	F_1^a	F_2	F_3	h^2
Frequent changes from exciting activities to boredom	0,66	0,00	0,00	0,54
Deadlines that have to be met	0,63	0,00	0,00	0,50
Being assigned more responsibility	0,63	0,00	0,00	0,47
Having to make critical and immediate decisions	0,60	0,00	0,00	0,54
Having to deal with crisis situations	0,59	0,00	0,00	0,47
Lack of personal time (for example: for lunch)	0,57	0,00	0,00	0,42
Being given new duties, or duties not previously performed	0,57	0,00	0,00	0,39
Having to work shift work	0,56	0,00	0,00	0,35
More paperwork than you can handle	0,55	0,00	0,00	0,46
Attending to incidences of domestic violence	0,53	0,00	0,00	0,46
Too much supervision	0,50	0,00	0,00	0,34
Having to do someone else's work	0,50	0,00	0,00	0,48
Having to work overtime	0,50	0,00	0,00	0,29
Being frequently interrupted	0,50	0,00	0,00	0,49
Having to perform tasks that are not part of your job description	0,49	0,00	0,00	0,42
Noisy work area	0,47	0,00	0,00	0,38
Reorganisation and transformation within the organisation	0,46	0,00	0,00	0,37
Lack of officers to handle specific tasks	0,00	0,68	0,00	0,58
Inadequate or poor quality equipment	0,00	0,66	0,00	0,52
Lack of recognition for work well done	0,00	0,64	0,00	0,49
Other officers not doing their job	0,00	0,62	0,00	0,49
Supervisor's support is lacking	0,00	0,61	0,00	0,43
Negative attitudes experienced towards the organisation	0,00	0,60	0,00	0,49
Lacking opportunities for advancement	0,00	0,60	0,00	0,41
Other officers poorly motivated	0,00	0,58	0,00	0,52
Supervision is poor or inadequate	0,00	0,58	0,00	0,49
Inadequate salary	0,00	0,56	0,00	0,39
Staff shortages	0,00	0,51	0,00	0,39
No participation in policy-making decisions	0,00	0,50	0,00	0,46
Strong competition for advancement	0,00	0,49	0,00	0,41
Difficult relationship with supervisor	0,00	0,47	0,00	0,35
Fellow officer killed in the line of duty	0,00	0,00	0,80	0,75
Killing someone in the line of duty	0,00	0,00	0,75	0,62
Forced arrest or being physically attacked	0,00	0,00	0,71	0,67
Having to handle a large crowd/mass demonstration	0,00	0,00	0,67	0,62
Racial conflict	0,00	0,00	0,60	0,53
Delivering a death message or bad news to someone	0,00	0,00	0,53	0,44
Seeing criminals go free	0,00	0,00	0,50	0,45
Having to deal with the media	0,00	0,00	0,48	0,45
Squared multiple correlations (SMC)	0,87	0,85	0,87	
Percentage variance	19,73	18,90	12,02	
Percentage covariance	38,94	37,31	25,74	

a Factor labels: F₁ Job Demands F₂ Lack of Job Resources F₃ Inherent Police Stressors

Inspection of Table 2 shows that three factors were extracted, accounting for 49,48 % of the total variance in the data. As indicated by the SMC's, all factors were internally consistent and well defined by the variables. Variables were also reasonably well defined by this factor solution. Communality values, as seen in Table 2, tend to be moderate to high. With a cut-off of 0,45 for inclusion of a variable in interpretation of a factor, 5 of 44 variables did not load on the three factors. This included one item dealing with personal insults from the public or other police officers, one relating to periods of inactivity, another to inter-departmental conflict, one with having to go to court and the fifth dealt with being assigned unpleasant duties.

Items loading on the first factor relate to job demands in the policing environment. It deals with, amongst other things, personal time, personal responsibility, the unpleasant nature of administrative tasks, and the time spent at work. The second factor seems to address a lack of organisational support or, stated otherwise, a lack of job resources. The items that loaded on this factor are related to the equipment being used, the opportunities for advancement, poor pay, lack of cooperation and motivation among officers and a lack of staff. The third factor consists of stressors mostly only found in a police environment, including death (of either a civilian or fellow officer), having to deal with violent or potentially violent situations, and having to handle conflict.

Descriptive statistics for the intensity part of the PSI are given in Table 3.

Table 3

Descriptive Statistics of Stressor Intensity Items

Variable	Mean	SD	Skewness	Kurtosis
Having to work overtime	4,58	2,52	0,21	-1,04
Lacking opportunities for advancement	5,65	2,54	-0,28	-1,03
Being given new duties, or duties not previously performed	4,60	2,27	0,11	-0,88
Other officers not doing their job	6,16	2,49	-0,60	-0,79
Supervisor's support is lacking	5,56	2,51	-0,26	-1,02
Having to deal with crisis situations	5,09	2,34	-0,08	-0,94
Lack of recognition for work well done	5,79	2,51	-0,37	-0,98
Having to perform tasks that are not part of your job description	5,07	2,55	0,04	-1,15
Inadequate or poor quality equipment	6,06	2,55	-0,54	-0,86
Being assigned more responsibility	4,93	2,32	0,02	-0,89
Difficult relationship with supervisor	4,62	2,53	0,17	-1,07
Negative attitudes experienced towards the organisation	5,12	2,44	-0,05	-1,01
Lack of officers to handle specific tasks	5,75	2,48	-0,32	-0,99
Having to make critical and immediate decisions	4,70	2,29	0,09	-0,86
No participation in policy-making decisions	5,08	2,38	-0,04	-0,93
Inadequate salary	6,23	2,83	1,96	41,18
Strong competition for advancement	5,13	2,36	-0,00	-0,89
Supervision is poor or inadequate	5,15	2,53	-0,08	-1,11
Noisy work area	4,51	2,58	0,25	-1,11
Being frequently interrupted	5,02	2,45	0,01	-1,00
Frequent changes from exciting activities to boredom	4,52	2,30	0,22	-0,82
More paperwork than you can handle	5,37	2,50	-0,17	-1,05
Deadlines that have to be met	4,82	2,40	0,07	-0,98
Lack of personal time (for example: for lunch)	4,55	2,60	0,26	-1,08
Having to do someone else's work	5,23	2,49	-0,11	-1,06
Other officers poorly motivated	5,61	2,49	-0,03	-1,01
Having to work shift work	4,20	2,62	0,39	-1,02
Too much supervision	4,52	2,58	0,24	-1,08
Delivering a death message or bad news to someone	4,72	2,56	0,13	-1,19
Attending to incidences of domestic violence	4,90	2,55	0,00	-1,13
Reorganisation and transformation within the organisation	4,84	2,48	0,09	-1,00
Staff shortages	4,46	2,59	-0,77	-0,64
Killing someone in the line of duty	5,28	3,17	-0,17	-1,57
Fellow officer killed in the line of duty	6,09	3,05	-0,60	-1,22
Racial conflict	5,54	2,81	-0,29	-1,25
Having to handle a large crowd/mass demonstration	4,80	2,59	0,05	-1,13
Forced arrest or being physically attacked	5,24	2,66	-0,16	-1,20
Having to deal with the media	3,91	2,45	0,44	-0,09
Seeing criminals go free	6,42	2,62	-0,77	-0,63

Table 3 shows that the highest means were recorded for items dealing with other officers not doing their job, inadequate or poor quality equipment, inadequate salary, fellow officers killed in the line of duty and seeing criminals go free. The responses to most items show a normal distribution, although the distribution was skew on one item (relating to an inadequate salary).

Descriptive statistics for the frequency part of the PSI are given in Table 4.

Table 4

Descriptive Statistics of Frequency Items

Variable	Mean	SD	Skewness	Kurtosis
Having to work overtime	4,51	3,27	0,09	-1,40
Lacking opportunities for advancement	4,11	3,27	0,23	-1,34
Being given new duties, or duties not previously performed	3,69	3,00	0,42	-1,00
Other officers not doing their job	5,43	3,23	-0,34	-1,28
Supervisor's support is lacking	3,97	3,23	0,27	-1,31
Having to deal with crisis situations	4,46	3,10	0,08	-1,25
Lack of recognition for work well done	4,68	3,31	-0,03	-1,41
Having to perform tasks that are not part of your job description	4,92	3,24	-0,11	-1,36
Inadequate or poor quality equipment	5,34	3,26	-0,28	-1,35
Being assigned more responsibility	4,56	3,04	0,05	-1,20
Difficult relationship with supervisor	3,02	2,98	0,68	-0,78
Negative attitudes experienced towards the organisation	4,31	3,26	0,14	-1,36
Lack of officers to handle specific tasks	5,13	3,26	-0,18	-1,37
Having to make critical and immediate decisions	4,08	3,08	0,23	-1,17
No participation in policy-making decisions	3,77	3,14	0,35	-1,18
Inadequate salary	5,36	3,38	-0,36	-1,36
Strong competition for advancement	3,90	3,17	0,30	-1,21
Supervision is poor or inadequate	3,53	3,15	0,46	-1,10
Noisy work area	3,52	3,27	0,47	-1,18
Being frequently interrupted	4,53	3,24	0,05	-1,35
Frequent changes from exciting activities to boredom	3,98	3,10	0,30	-1,15
More paperwork than you can handle	5,34	3,23	-0,30	-1,30
Deadlines that have to be met	4,54	3,22	0,03	-1,39
Lack of personal time (for example: for lunch)	4,05	3,34	0,25	-1,37
Having to do someone else's work	4,47	3,17	-0,02	-1,33
Other officers poorly motivated	5,14	3,23	-0,22	-1,32
Having to work shift work	3,43	3,38	0,50	-1,24
Too much supervision	3,26	3,17	0,55	-1,05
Delivering a death message or bad news to someone	2,57	2,90	0,98	-0,23
Attending to incidences of domestic violence	3,79	3,26	0,37	-1,24
Reorganisation and transformation within the organisation	3,63	3,10	0,45	-1,05
Staff shortages	5,97	3,27	-0,59	-1,14
Killing someone in the line of duty	1,69	2,85	1,54	0,96
Fellow officer killed in the line of duty	2,17	3,06	1,19	-0,03
Racial conflict	3,13	3,21	0,66	-0,95
Having to handle a large crowd/mass demonstration	2,48	2,92	1,00	-0,21
Forced arrest or being physically attacked	2,71	3,00	0,84	-0,55
Having to deal with the media	2,12	2,80	1,23	0,34
Seeing criminals go free	4,56	3,43	0,02	-1,49

Frequency items that showed the highest means in Table 4 dealt with other officers not doing their job, inadequate or poor quality equipment, lack of officers to handle specific tasks, inadequate salary, a high load of paperwork, the poor motivation of other officers and staff shortages.

An integration of the means of the intensity and frequency items of the PSI is given in Table 5.

Table 5

Comparison of Means of Intensity and Frequency Items of the PSI

Variable	Intensity	Frequency	Intensity	Frequency
Having to work overtime	4,58	4,51	Moderate	Moderate
Lacking opportunities for advancement	5,65	4,11	Moderate	Low
Being given new duties, or duties not previously performed	4,60	3,69	Moderate	Low
Other officers not doing their job	6,16	5,43	High	Moderate
Supervisor's support is lacking	5,56	3,97	Moderate	Low
Having to deal with crisis situations	5,09	4,46	Moderate	Moderate
Lack of recognition for work well done	5,79	4,68	Moderate	Moderate
Having to perform tasks that are not part of your job description	5,07	4,92	Moderate	Moderate
Inadequate or poor quality equipment	6,06	5,34	High	Moderate
Being assigned more responsibility	4,93	4,56	Moderate	Moderate
Difficult relationship with supervisor	4,62	3,02	Moderate	Low
Negative attitudes experienced towards the organisation	5,12	4,31	Moderate	Moderate
Lack of officers to handle specific tasks	5,75	5,13	Moderate	Moderate
Having to make critical and immediate decisions	4,70	4,08	Moderate	Moderate
No participation in policy-making decisions	5,08	3,77	Moderate	Low
Inadequate salary	6,23	5,36	High	Moderate
Strong competition for advancement	5,13	3,90	Moderate	Low
Supervision is poor or inadequate	5,15	3,53	Moderate	Low
Noisy work area	4,51	3,52	Moderate	Low
Being frequently interrupted	5,02	4,53	Moderate	Moderate
Frequent changes from exciting activities to boredom	4,52	3,98	Moderate	Low
More paperwork than you can handle	5,37	5,34	Moderate	Moderate
Deadlines that have to be met	4,82	4,54	Moderate	Moderate
Lack of personal time (for example: for lunch)	4,55	4,05	Moderate	Moderate
Having to do someone else's work	5,23	4,47	Moderate	Moderate
Other officers poorly motivated	5,61	5,14	Moderate	Moderate
Having to work shift work	4,20	3,43	Moderate	Low
Too much supervision	4,52	3,26	Moderate	Low
Delivering a death message or bad news to someone	4,72	2,57	Moderate	Low
Attending to incidences of domestic violence	4,90	3,79	Moderate	Low
Reorganisation and transformation within the organisation	4,84	3,63	Moderate	Low
Staff shortages	4,46	5,97	Moderate	Moderate
Killing someone in the line of duty	5,28	1,69	Moderate	Low
Fellow officer killed in the line of duty	6,09	2,17	High	Low
Racial conflict	5,54	3,13	Moderate	Low
Having to handle a large crowd/mass demonstration	4,80	2,48	Moderate	Low
Forced arrest or being physically attacked	5,24	2,71	Moderate	Low
Having to deal with the media	3,91	2,12	Low	Low
Seeing criminals go free	6,42	4,56	High	Moderate

An inspection of Table 5 shows that items with a high intensity and a moderate frequency include other officers not doing their job, inadequate or poor quality equipment, inadequate salary and seeing criminals go free. Only one item showed a high intensity with low frequency, being a fellow officer killed in the line of duty. Items that showed moderate intensity and frequency include the following:

- having to work overtime;
- having to deal with crisis situations;
- lack of recognition for work well done;
- having to perform tasks that do not form part of the job description;
- being assigned more responsibility;
- experiencing negative attitudes towards the organisation;
- lack of officers to handle specific tasks;
- having to make critical and immediate decisions;
- frequent interruptions;
- more paperwork than you can handle;
- meeting deadlines;
- lack of personal time;
- having to do other officers' work;
- poorly motivated fellow officers, and
- staff shortages.

Only one item showed both low intensity and low frequency, which related to having to deal with the media.

The descriptive statistics, alpha coefficients and inter-item correlations coefficients for the extracted PSI factors are reported in Table 6.

Table 6

Descriptive Statistics, Alpha Coefficients and Mean Inter-item Correlation Coefficients of the PSI Factors

Item	Mean	SD	Skewness	Kurtosis	r-Mean	α
Job Demands	81,52	27,48	-0,14	-0,36	0,41	0,92
Lack of Resources	78,32	24,23	-0,40	-0,30	0,44	0,92
Police Stressors	41,97	16,54	-0,29	-0,85	0,50	0,89

Table 6 shows that the alpha coefficients of the three extracted factors of the PSI are highly acceptable compared to the guideline of 0,70 (Nunnally & Bernstein, 1994). The values can be considered high and thus explain a large proportion of the variance in the different scales (Clark & Watson, 1995). The mean inter-item correlation coefficients are in the recommended range ($0,15 < r < 0,50$) and thus confirm the internal consistency of the factors of the PSI.

Next analyses of the differences between stress of various demographic groups were analysed. Table 7 shows the differences on factors of the PSI for different ranks.

Table 7

Differences between PSI Factors of Ranks

Factor	CST (1)	SRT (2)	INS (3)	CPT (4)	SUP (5)	SNR (6)	Root MSE	p
Job Demands	73,54 ^b	82,00 ⁽¹⁾	82,86 ⁽¹¹⁾	82,68 ⁽¹¹⁾	87,29 ^a	73,67	27,30	0,00*
Lack of Job Resources	70,22 ^(3,4)	75,97 ⁽⁴⁾	79,65 ⁽⁵⁾	81,93	90,48 ^a	81,69	23,82	0,00*
Inherent Police Stressors	38,68 ⁽⁴⁾	40,45	42,71	43,64	44,70	47,76	16,34	0,00*

CST= Constable; SRT= Sergeant; INS= Inspector; CPT= Captain; SUP= Superintendent; SNR= Senior Superintendent.

* Statistically significant – $p < 0,05$ (difference indicated by number of rank in superscript)

a Practically significant difference between ranks in row where b (medium effect, d larger than or equal to 0,50) or c (large effect, d larger than or equal to 0,80) are indicated

The results of the analysis of the differences between the ranks in Table 7 show that constables measure lower than superintendents regarding Job Demands (practically significant, medium effect). Regarding a Lack of Job Resources, constables measured lower than superintendents (practically significant, large effect) and sergeants measured lower than superintendents (practically significant, medium effect). No practically significant differences

regarding Inherent Police Stressors were found for ranks, although captains measured statistically significantly higher than constables.

Table 8 shows differences on the PSI factors for different race groups.

Table 8
Differences between PSI Scores of Race Groups

Factor	White (1)	Black (2)	Coloured (3)	Indian (4)	Other (5)	Root MSE	<i>p</i>
Job Demands	81,61	82,31	77,68 ^{a1}	88,58	91,80	27,50	0,00 [*]
Lack of Job Resources	83,93 ^a	75,12 ^{a1, a2}	72,15 ^b	85,50 ^a	79,42	23,79	0,00 [*]
Inherent Police Stressors	45,60	38,73 ^{b1}	40,77 ^{a1, a2}	47,49 ^a	41,94	16,18	0,00 [*]

* Statistically significant – $p < 0,05$ (difference indicated by number of race group in superscript)

a Practically significant difference between ranks in row where b (medium effect, d larger than or equal to 0,50) or c (large effect, d larger than or equal to 0,80) are indicated

Table 8 shows that Coloured police officers measured statistically significantly lower than Indian officers on Job Demands. Coloured police officers scored lower than White and Indian police officers regarding a Lack of Job Resources (practically significant, medium effect). Regarding Inherent Police Stressors, Black police officers obtained a lower score than Indian police officers (practically significant, medium effect).

Table 9 shows differences regarding the PSI factors between different language groups.

Table 9
Differences between PSI Factors of Language Groups

Item	A (1)	E (2)	SE (3)	SO (4)	SET (5)	SW (6)	VE (7)	ND (8)	XH (9)	ZL (10)	Root MSE	<i>p</i>
Job Demands	80,43	83,19	82,95	83,60	80,02	83,62	85,06	84,70	76,61	84,46	27,43	0,25
Lack of Job Resources	80,16 ^(4, 9)	82,66 ^(4, 9)	77,57	73,77	73,23	77,30	74,01	72,80	71,57	78,12	24,07	0,00 [*]
Inherent Police Stressors	44,05 ^(3, 4, 9, 10)	45,95 ^(3, 4, 5, 9, 10)	38,76	38,79	38,16	41,65	37,18	38,67	38,15	38,74	16,28	0,00 [*]

A= Afrikaans; E= English; SE= Sepedi; SO= Sotho; SET= Setswana; SW= IsiSwati; VE= Tshivenda; ND= IsiNdebele; XH= IsiXhosa; ZL= IsiZulu.

* Statistically significant – $p < 0,05$ (difference indicated by number of language group in superscript)

a Practically significant difference between ranks in row where b (medium effect, d larger than or equal to 0,50) or c (large effect, d larger than or equal to 0,80) are indicated

Table 9 shows that no practically significant differences exist between the Job Demands scores of language groups. Regarding a Lack of Job Resources, the Afrikaans- and English-speaking police officers obtained statistically significantly higher scores than both the Sesotho- and IsiXhosa-speaking police officers. For Inherent Police Stressors the Afrikaans-speaking group scored statistically significantly higher than the Sepedi-, Sesotho-, IsiXhosa-, and IsiZulu-speaking groups. On the same factor, the English-speaking groups scored higher than the Sepedi, Sesotho, Setswana, IsiXhosa and IsiZulu speakers.

Differences between the PSI scores of police officers in different provinces are given in Table 10.

Table 10
Differences between PSI Factors of Provinces

Factor	GT (1)	MP (2)	NP (3)	KZ (4)	FS (5)	EC (6)	NC (7)	WC (8)	Root MSE	<i>p</i>
Job Demands	81,29	82,89	85,55	85,14 ⁽⁴⁾	82,15	78,07	79,32	79,55	27,41	0,01 [*]
Lack of Job Resources	78,80	80,88 ⁽⁵⁾	78,02	81,38 ⁽⁵⁾	73,76	76,78	79,32	79,50 ⁽⁵⁾	24,15	0,00 [*]
Inherent Police Stressors	43,61	42,62	38,96 ⁽⁸⁾	40,95 ⁽⁸⁾	39,64 ⁽⁵⁾	41,74	42,26	45,33	16,45	0,00 [*]

GT= Gauteng; MP= Mpumalanga; NP= Limpopo Province; KZ= KwaZulu-Natal; FS= Free State; EC= Eastern Cape; NC= Northern Cape; WC= Western Cape.

* Statistically significant – $p < 0.05$ (difference indicated by number of province in superscript)

Table 10 shows that KwaZulu-Natal scored statistically significantly higher than the Eastern Cape on Job Demands. For a Lack of Job Resources, the Free State scored statistically significantly lower than Mpumalanga, KwaZulu-Natal and the Western Cape. Regarding Inherent Police Stressors, the Western Cape scored statistically significantly higher than the Limpopo Province, KwaZulu-Natal and the Free State.

Table 11 shows differences between the PSI scores of police officers in different-sized police stations.

Table 11

Differences between PSI Factors of Police Officers in Small, Medium and Large Police Stations

Item	Small (S)	Medium (M)	Large (L)	<i>p</i>
Job Demands	80,12	83,10	80,99	0,09
Lack of Job Resources	76,73 ^(L)	77,93	80,56	0,01*
Inherent Police Stressors	39,97 ^(L)	42,59	43,311	0,00*

* Statistically significant – $p < 0,05$ (difference indicated by letter of size of station in superscript)

Table 11 shows that no practically significant differences exist regarding the difference in means for different sized stations. However, members in small stations do differ statistically significantly from members in large stations with regard to Lack of Job Resources and Inherent Police Stressors.

DISCUSSION

In the South African sample a three-factor solution to describe police stress best fitted the data. The factors that were extracted show some broad similarity to factors previously extracted in other studies of police stress (Alexander et al., 1993; Biggam et al., 1997; Brown & Campbell, 1990, 1994; Brown et al., 1999; Gulle et al., 1998; Mitchell et al., 1998). Factors that were extracted showed internal consistency, which point to the utility of the instrument developed in the current research.

The first factor emphasises the demands placed on the individual in the fulfilment of his/her tasks as police officer, and thus the factor was labelled *Job Demands*. The items loading on this factor refer to internal transformation, characteristics of the officers' duties, and the demands that the job makes in terms of energy and responsibility. The second factor seemingly relates to the role the organisation has in supporting and helping officers in the fulfilment of their duties, and was thus labelled *Lack of Job Resources*. Items included in this factor relate to the work relationships, inadequate numbers of officers in general and for specific tasks, and lacking advancement, salary and recognition. Taken together, results obtained in this research present an interesting solution. It is suggested that the organisational factor identified in previous research of police stress (Alexander et al., 1993; Biggam et al.,

1997; Brown & Campbell, 1990, 1994) might consist of two components. The first deals with the organisational demands made on the individual, while the second alludes to the organisational demands that stem from the lack of resources.

The third factor is a partial replication of one earlier identified (Brown et al., 1999; Mitchell et al., 1998). These items had to do with events that would only take place in the performance of a job as a police officer and was accordingly labelled *Inherent Police Stressors*. Most of these factors showed a moderate intensity and low frequency. Following Anshel et al. (1997), it is concluded that an inverse relationship exists between the frequency and intensity of Inherent Police Stressors. Though these are a source of acute stress, the relative infrequency with which they are experienced reduce their effect.

In a broad sense, two of the current factors correspond to previously identified factors of police stress in South Africa (Gulle et al., 1998), namely the organisational factor and the inherent characteristics factor.

In analysing the influence of different ranks on the measurements, it came to the fore that constables measured lower than superintendents regarding Job Demands. For a Lack of Job Resources, constables and sergeants measured lower than superintendents. Captains measured higher than constables regarding Inherent Police Stressors. Superintendents and senior superintendents might thus be more exposed to the job stressors identified in this research. These ranks could be regarded as middle management in the SAPS, and it is interesting that these officers typically show the extra strain associated with this level of management, which has been identified as one under particular stress (Harnish, 1999; Jaffe & Scott, 1997; O'Driscoll & Cooper, 1996). It is perhaps also indicative of the double burden of the administrative and operational functions that these higher ranks have to fulfil. The finding that captains measured higher than constables regarding Inherent Police Stressors is somewhat more ambiguous. It would have been expected that the front-line police would suffer higher exposure to these kinds of stressors, and thus score higher.

For different races, Coloured police officers were less stressed than Indian police officers regarding Job Demands, and less stressed than both Whites and Indians on a Lack of Job Resources. Coloured participants thus feel fewer job demands, while also experiencing greater access to job resources. For Inherent Police Stressors, Black police officers were less

stressed than Indians. Inherent Police Stressors included items such as racial conflict, delivering bad news, seeing criminals go free, and killing someone in the line of duty. Because Indian police members make up a small percentage of the police service, it could be expected that they would experience stress because of these aspects. More research is needed to clarify this finding.

The results for different language groups can be summarised as follows. Afrikaans- and English-speaking members experienced more stress than other language groups because of Lack of Job Resources. These two groups also measured higher on Inherent Police Stressors. These language groups could be made up predominantly of the once ruling (under apartheid) minority. In the new South Africa, however, these are the groups who most severely suffer the effects of affirmative action and lacking opportunities for advancement. It could be that these groups are subjected to more stress because of being at the short end of internal transformation, which in turn could lead to heightened sensitivity to inherent police stressors. The police officer facing higher organisational stress will react more severely to being subjected to acute stressors.

Compared with police members in other provinces, police members in the Limpopo Province experienced more stress because of Job Demands. This might be explained by the fact that police in this province cover a large area, which is mostly made up of what in this research could be classified as small and medium stations. The need to spread little resources thinly could aggravate job demands. Police members in KwaZulu/Natal experienced more stress because of Lack of Job Resources. Possibly the police organisation in this province especially needs to provide its members with greater support. Police officers in the Western Cape seem to experience more stress because of the inherent nature of police work. A possible explanation for this is that police members in this province are regularly confronted by attacks on them from militant vigilante groups in the community (e.g. "People against Gangsterism and Drugs" or PAGAD). The need of having to deal with urban terrorism and gang violence, fuelled by poverty and drug trading, is surely not routine work for police officers, and presents a special case of an inherent police stressor.

Compared to police members in large police stations, police members in small stations showed less stress regarding Lack of Job Resources and Inherent Police Stressors. This is in accordance with Biggam et al. (1997), who also found that working in an urban environment

presents greater exposure to possible sources of stress. Results of the current research suggest that police officers working in small stations have greater access to job resources and are less exposed to inherent police stressors.

In the total sample, stressors that could be regarded as serious include other officers' not doing their job, inadequate or poor quality equipment, inadequate salary and seeing criminals go free. The first item relates to the motivation of police officers, and might be addressed by discovering sources of demotivation, and addressing these in a training programme. As is the case with other governmental institutions, the SAPS is also plagued by a lack of funds to fight crime in a transforming society which is characterised by a high crime level. This may explain the stress caused by inadequate or poor quality equipment. A lack of equipment has been shown to give rise to feelings of uncertainty and frustration (Van Graan, 1981). In a situation already fraught with stress because of poor motivation, low pay and a legal system perceived as inadequate, feelings of ineffectiveness are exacerbated by poor quality equipment. This equipment presents physically what the officers are experiencing internally. Seeing criminals go free could be more related to the current judicial system, where such aspects as debate around the death penalty are still rife. Most likely the police organisation can ensure that members are well trained in procedural law matters to avoid criminals being pardoned on technical matters.

Items that showed medium intensity as well as medium frequency can typically be placed under the description of chronic stresses. Except for two items (having to deal with crisis situations and having to make critical and immediate decisions), these items deal exclusively with events that can be considered as daily occurrences in the police organisation, for example, having to work overtime, lack of recognition, being assigned more responsibility, more paperwork than you can handle, meeting deadlines, lack in personal time, having to do other officers' work, poorly motivated fellow officers and staff shortages. Gulle et al. (1998) stated that organisational stressors might more easily be addressed and changed than inherent ones; however, officers are also more likely to appraise stressful occupational events as unchangeable (Violanti & Paton, 1999). These chronic stressors need to be addressed internally – senior officers could do well to recognise contributions and lighten the administrative burden, while items like staff shortages (which probably gives rise for the need to work overtime), should be addressed by the organisation.

Items that showed medium intensity but low frequency might be considered sources of stress, but because of the low frequency, these might not warrant immediate attention. Interestingly, most of the items that formed the factor of Inherent Police Stressors fell in this category. This echoes previous research (Alexander et al., 1993; Biggam et al., 1997; Brown & Campbell, 1990, 1994) that found the police organisation to be mostly like any other organisation, but with the added factor of stressors associated with the nature of the job.

Only one item showed both low intensity and low frequency, which related to having to deal with the media. It is possible that the SAPS has better media relations than other police services studied in previous research that found this item troublesome. It is suggested that this item might be omitted from the inventory.

RECOMMENDATIONS

It is suggested that the SAPS focus on providing officers with the resources they need, both organisationally and personally. Sources of stress that should be a first priority for stress management programmes have been identified, and these programmes should be aimed especially at large police stations (i.e. more than 100 members). This perhaps places the onus on government for the provision of additional funding, but such funding could contribute directly to the internal stability of the country and the economy.

This study is the first step in developing a comprehensive profile of police stress, in that it identified operant stressors in the SAPS. The next step would be to study stress holistically (both work and non-work domains) and the additive and interactive effects of stressors (Cooper et al., 2001). It is further suggested that the equivalence of stress factors be studied in different racial and language groups. The results currently obtained regarding racial differences are circumspect, without investigation into the cultural equivalence of the factors identified. It is also recommended that personality and police stress be studied in conjunction, in order to clarify the dimensions underlying the organisational factor of police stress.

The instrument that was developed in this research needs to be further refined and retested in other police samples, and possibly other Southern African police. It would be interesting to see if similar factors are extracted for surrounding SADC countries. Illustrating concurrent validity by using it in conjunction with other measures of stress is also recommended.

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CHAPTER 4

RESEARCH ARTICLE 3

COPING STRATEGIES IN THE SOUTH AFRICAN POLICE SERVICE*

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ABSTRACT

The objective of this research was to determine the internal consistency, construct validity, structural equivalence and item bias of the Coping Orientations to the Problems Experienced Questionnaire (COPE), and to determine the differences between coping strategies of various demographic groups in the South African Police Service. A cross-sectional survey design was used. A random, stratified sample ($N = 1431$) was taken of uniformed police members in eight South African provinces. The COPE and a biographical questionnaire were administered. Four internally consistent factors were extracted, namely Active Coping, Avoidance, Seeking Emotional Support and Turning to Religion. These factors showed structural equivalence for all races of police members and no items were biased. Differences in coping strategies were found for different ranks, races, provinces and according to size of station.

OPSOMMING

Die doelstelling van hierdie navorsing was om die interne konsekwentheid, konstruegeldigheid, strukturele ekwivalensie en itemsydigheid van die Coping Orientations to the Problems Experienced Questionnaire (COPE) te bepaal, en om vas te stel of daar verskille bestaan in die coping-strategieë van verskillende demografiese groepe binne die Suid-Afrikaanse Polisie. 'n Dwarsdeursnee-ontwerp is gebruik. 'n Ewekansig gestratifiseerde steekproef ($N = 1431$) is geneem van uniformdraende polisieledes in agt Suid-Afrikaanse provinsies. Die COPE en 'n biografiese vraelys is as meetinstrumente gebruik. Vier intern konsekwente faktore is onttrek, naamlik Aktiewe Coping, Vermydning, Soek van Emosionele Ondersteuning en Gebruik van Religie. Hierdie faktore het strukturele ekwivalensie getoon vir polisieledes van alle rasse, en geen item het sydigheid getoon nie. Verskille is gevind tussen die coping-strategieë van verskillende rang, rasse, provinsies en na aanleiding van die grootte van stasies.

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The level of stress an individual experiences in his or her organisational context, and the extent to which adverse effects such as psychological and other strains occur, depend on how effectively the individual copes with stressful organisational situations (Bhagat et al., 2001). There is a growing body of research that supports the contention that the ways people cope with stress and daily living affect their psychological, physical and social well-being (Ben-Zur, 1999; Cohen & Lazarus, 1979; Friedman & Vandenberg, 1992; Greenglass, 1996; Violanti & Paton, 1999). In a recent review of personality and stress, Vollrath (2001) states that coping dispositions predict a variety of human faculties. These include information processing, attentive orientation and emotional processing in demanding, ambiguous, anxiety-provoking, or irritating situations.

Coping strategies represent the efforts, both behavioural and cognitive, that people invest in in order to deal with stressful encounters (Lazarus & Folkman, 1984). Coping has been differentially conceived in several ways (Livneh, Antonak & Gerhardt, 2000, p. 236): 1) both as personality trait and situationally determined response; 2) dynamic process and as static construct; 3) a strategy, that is mature, adaptive and flexible, but also a reaction, that is neurotic, maladaptive and rigid; and 4) a global, generally dichotomous concept, but also an intricate, hierarchically structured, multilevel concept.

The most familiar and widespread coping taxonomy is the one proposed by Folkman and Lazarus (1980). These authors described coping as either problem-focused or emotion-focused. Parker and Endler (1992) demonstrated that these dimensions have been recovered in nine out of 13 studies. Problem-focused coping strategies aim at actively dealing with the problem. In contrast, emotion-focused coping is directed at dealing with the emotional distress that is evoked by the problem. Endler and Parker (1990) suggest that the third basic strategy that may be used in coping with stress is avoidance. Avoidance can include either person-oriented or task-oriented strategies. Avoidance differs from problem- and emotion-focused coping in that avoiding a situation actually removes the person from the stressful situation, whereas problem- and emotion-focused coping might help the person manage the stressful situation while he or she remains in it (Kowalski & Crocker, 2001).

In the police stress literature, Evans, Coman, Stanley and Burrows (1993, p. 238) define effective coping as "(a) the efficacy with which the individual deal with their emotional responses to stressors and act to resolve the stressors, and (b) the cost of their effectiveness to

the individual". The important issue is the extent to which police officers emphasize the use of one strategy over the other (Billings & Moos, 1984; Headey & Wearing, 1990; Hart, Wearing & Headey, 1995).

Studies on coping of police members have conceptualised and measured coping strategies in various ways, but several significant patterns have emerged (Patterson, 1999). Maladaptive behaviours such as excessive alcohol intake, drug use, smoking and overeating have been found to be ineffective and maladaptive as coping strategies among the police (Burke, 1993; Dietrich & Smith, 1984). It has also been stated that poor coping skills appear to be a significant factor in determining the intensity with which stress is experienced in police work (Anshel, 2000). The use of maladaptive coping skills in police work leads to the experience of chronic, long-term stress (Hurrell, 1995; Nordlicht, 1979), and often results in job burnout and police members leaving the profession (Burke & Deszca, 1986; Malloy & Mays, 1984).

Evans et al. (1993) showed that police officers tend to use more problem-focused coping strategies (aimed at changing stressful occupational events), and less emotion-focused coping strategies (aimed at regulating their distress). Violanti (1992) found that the use of emotion-focused coping strategies result in higher levels of psychological distress, while the use of problem-focused coping strategies resulted in lower levels of psychological distress. Police officers probably compound stress by using less emotion-focused strategies, and when using such strategies, it only acts to exacerbate psychological stress.

Culture could dictate coping strategies to some extent (Slavin, Rainer, McCreary & Gowda, 1991). The nature and context of a stressor, the range of coping responses available and the emotional reaction of individuals might also be influenced by the differing role that race plays in their lives (Coyne & Gottlieb, 1996). Dominant cultural scripts concerning coping through self-reliance, support seeking and religiosity could have an effect on coping strategies. In this regard, some variability has been demonstrated due to subculture and ethnicity (Ball, Warheit, Vandiver & Holzer, 1980; Vaux, 1985).

Since most coping instruments were developed in White middle-class populations, they reflect the cultural values, cultural scripts and culture-specific response sets of this population, and might therefore not be as relevant for individuals from different cultures (Prellow, Tein, Roosa & Wood, 2000). While the Coping Orientations to the Problems

Experienced Questionnaire (COPE) (Carver, Scheier & Weintraub, 1989) has been studied in a variety of international contexts, such as Italy (Sica, Novara, Dorz & Sanavio, 1997), Croatia (Hudek-Knezevic & Kardum, 1996; Hudek-Knezevic, Kardum & Vukmirovic, 1999; Kardum & Hudek-Knezevic, 1995) and Estonia (Kalasmaa & Pulver, 2000), it has been shown that only seven of the COPE's subscales (Restraint Coping, Seeking Social Support for Emotional Reasons, Seeking Social Support for Instrumental Reasons, Acceptance, Denial, Focus On and Venting of Emotion and Humour) appear to have similar factor structures and are likely to measure the same underlying coping constructs in different cultural groups (Prellow et al., 2000). The Active Coping, Planning, Positive Reinterpretation and Growth, and Mental Disengagement subscales did not demonstrate item equivalence.

In a cross-cultural comparison of managers, Bhagat et al. (2001) showed that South African managers experience higher levels of psychological strains than American managers, who experienced higher levels of organisational stress. Emotion-focused coping acted as a moderator in the relationship between organisational stress and psychological strain for South African managers.

Little scientific research has to date been done regarding the coping strategies used in the SAPS, and as has been noted from the literature, police populations are infamously bad at coping. The South African Police Service (SAPS) presents a unique environment to study coping strategies, both because the police force in question has to deal with one of the highest crime levels in the world (Nedcor Project, 1996), and members of the SAPS are seemingly not coping well, as reflected in reported rates of illness, post-traumatic stress, medical boarding, burnout, alcohol abuse, suicides, decreased levels of job satisfaction and job performance, and high levels of absenteeism and resignation (Anshel, 2000; Nel & Burgers, 1998; Nel, 1994; Pretorius, 1998; Rothmann & Agathagelou, 2000; Rothmann & Strijdom, 2002).

South Africa is a multicultural society and the SAPS employs individuals of diverse cultural backgrounds. Within the South African context it cannot be taken for granted that scores obtained in one culture can be compared across cultural groups. Before comparing scores across cultural groups, equivalence and bias should be tested (Van de Vijver & Leung, 1997). Without a test of equivalence and bias it is impossible to know to what extent scores or constructs underlying an instrument can be compared across cultures.

It might be anticipated that the factor structures would differ considerably across race groups. Sica et al. (1997) state that the comparison of coping strategies in different countries may reveal differences in coping taxonomy and possibly uncover cultural peculiarities. Meaningful comparative studies of coping processes across populations can only be conducted when there are reasonable assurances that the instruments used in the study are equivalent across the populations (Hui & Triandis, 1985; Knight & Hill, 1998; Prelow et al., 2000).

Some authors regard the most notable feature in coping literature as the problems experienced with the psychometric properties of tools employed in coping research (Hardy et al., 1996; Schwarzer & Schwarzer, 1996). A central psychometric issue relates to the dimensions underlying coping inventories, because these dimensions operationalize coping as a conceptual scheme and thereby influence coping theory (Cook & Heppner, 1997). For any psychometric measure of coping, the consistency and validity of its performance in measurement are thus of paramount importance. The objective of this article was to determine the construct validity, internal consistency, structural equivalence and item bias of the COPE in the SAPS and to examine differences in coping strategies of different ranks, different sizes and geographically differently located stations.

Coping

A more theoretical conceptualisation than the dichotomy of problem- and emotion-focused coping was developed at the end of the eighties by Carver et al. (1989). These authors developed an instrument for the measurement of coping that conceived it in terms of 14 different subscales. Since the origin of this instrument more than a decade ago, however, factor analyses of the items have resulted in varying underlying structures. Studies based on factor analyses produced taxonomies consisting of three (Ben-Zur, 1998b; Bishop et al., 2001; Cook & Heppner, 1997; Hudek-Knežević et al., 1999; Ingledew, Hardy, Cooper & Jemal, 1996; Kallasmaa & Pulver, 2000; Lyne & Roger, 2000; Laurent, Catanzaro & Callan, 1997; Mitchell & Hastings, 2001), four (Carver et al., 1989; Phelps & Jarvis, 1994; Ferguson, 2001; Fortune, Richards, Griffiths & Main, 2002; Ward & Kennedy, 2001) and five (Finch, Panter & Caskie, 1999; Sica et al., 1997) factors. Apart from finding different numbers of factors, factor structures also do not replicate consistently across studies. Table 1 lists studies reporting on factor analyses of the COPE.

Table 1

Results of Studies Reporting Factor Analyses of the COPE

Authors	Items	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	No loading	Method of factor analysis
Carver, Scheier and Weintraub (1989)	53	Task	Emotion	Avoidance	Cognitive coping			
		Active coping	Seeking social support for emotional reasons	Denial	Acceptance			
		Planning		Mental disengagement	Restraint coping			
		Suppression of competing activities	Seeking social support for instrumental reasons Focus on and venting of emotions	Behavioural disengagement	Positive reinterpretation and growth			
Phelps and Jarvis (1994) [Situational]	60	Active coping	Avoidant coping	Emotion-focused coping	Acceptance coping			
		Active coping	Denial	Seeking social support for emotional reasons	Restraint coping	Turning to religion	Exploratory principal components	
		Planning	Behavioural disengagement	Focus on and venting of emotions	Positive reinterpretation and growth	Humour		
		Suppression of competing activities	Alcohol/Drug disengagement		Acceptance			
Ingledew, Hardy, Cooper and Jemal (1996)	?	Problem-focused coping	Avoidance	Lack of emotion-focused coping				
		Active coping	Denial	Seeking social support for emotional reasons			Principal-axis factoring	
		Planning	Behavioural disengagement	Seeking social support for emotional reasons				
		Suppression of competing activities	Mental disengagement	Focus on and venting of emotions				
		Positive reinterpretation and growth	Humour					
		Acceptance						
Sica, Novara, Dorz and Sanavio (1997)	60	Social support/venting emotions	Avoidance	Positive attitude	Planning/ activity	Turning to religion		
		Seeking social support for emotional reasons	Denial	Acceptance	Active coping	Turning to religion	Principal components	
		Seeking social support for instrumental reasons	Behavioural disengagement	Restraint coping	Planning			
		Focus on and venting of emotions	Mental disengagement	Positive reinterpretation and growth	Suppression of competing activities			
		Humour						
		Alcohol/Drug disengagement						

Table 1

Results of Studies Reporting Factor Analyses of the COPE (continued)

Authors	Items	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	No loading	Method of factor analysis
Cook and Heppner (1997)	60	Problem engagement	Social/ emotional	Avoidance				
		Active coping	Seeking social support for emotional reasons	Denial			Turning to religion	Exploratory
		Planning	Seeking social support for instrumental reasons	Behavioural disengagement				
		Suppression of competing activities	Seeking social support for instrumental reasons	Mental disengagement			Humour	
		Positive reinterpretation and growth		Alcohol/Drug disengagement				
		Restraint coping						
Laurent, Catanzaro and Callan (1997)	60	Problem-focused coping	Support-seeking coping	Avoidant coping				
		Active coping	Seeking social support for instrumental reasons	Denial				Principal components
		Planning	Seeking social support for emotional reasons	Behavioural disengagement				
		Suppression of competing activities	Seeking social support for emotional reasons	Mental disengagement				
		Restraint coping	Focus on and venting of emotions					
		Positive reinterpretation and growth						
Ben-Zur (1998b) Reported in Ben-Zur (1999)	60	Problem/ accommodation	Support/ emotion	Avoidance/ disengagement				
		Active coping	Seeking social support for instrumental reasons	Mental disengagement				
		Planning	Seeking social support for emotional reasons	Denial				
		Acceptance	Seeking social support for emotional reasons					
		Positive reinterpretation and growth	Focus on and venting of emotions					
		Restraint coping						
Finch, Panter and Caskie (1999)	53	Problem-focused coping	Avoidant coping	Support seeking	Reframing	Distancing		
		Active coping	Denial	Seeking social support for instrumental reasons	Turning to religion	Acceptance		Exploratory
		Planning	Behavioural disengagement	Seeking social support for emotional reasons	Positive reinterpretation and growth			
		Suppression of competing activities	Mental disengagement	Seeking social support for emotional reasons				
		Restraint coping	Alcohol/Drug disengagement	Focus on and venting of emotions				
		Active coping	Denial	Seeking social support for instrumental reasons	Turning to religion	Acceptance		Confirmatory
Planning	Mental disengagement	Seeking social support for emotional reasons	Positive reinterpretation and growth					

Table 1

Results of Studies Reporting Factor Analyses of the COPE (continued)

Authors	Items	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	No loading	Method of factor analysis
Hudek-Knežević, Kardum and Vukmirović (1999)	64	Problem oriented coping	Emotion oriented coping	Disengagement				
		Active coping	Seeking social support for emotional reasons	Denial				Confirmatory
		Planning	Seeking social support for instrumental reasons	Behavioural disengagement				
		Suppression of competing activities	Focus on and venting of emotions	Mental disengagement				
		Positive reinterpretation and growth		Alcohol/Drug disengagement				
		Acceptance		Humour				
		Restraint coping		Turning to religion				
Kallasmaa and Pulver (2000)	60	Task	Avoidance	Social/ Emotional				
		Active coping	Denial	Seeking social support for emotional reasons			Alcohol/ Drug disengagement	Principal components
		Planning	Behavioural disengagement					
		Suppression of competing activities	Mental disengagement	Seeking social support for instrumental reasons				
		Positive reinterpretation and growth	Acceptance				Turning to religion	
		Humour		Focus on and venting of emotions				
		Restraint coping						
Lyne and Roger (2000)	52	Rational/ Active coping	Emotion coping	Avoidance coping/ Helplessness				
		Active coping	Behavioural disengagement	Denial	Turning to religion			Principal components
		Planning		Mental disengagement				
		Suppression of competing activities						
		Restraint coping						
		Acceptance						
		Positive reinterpretation and growth						
Seeking support for instrumental reasons								
Ferguson (2001)	60		Neurotic introvert COPE	Extroversion COPE	Psychoticism coping			
		Active coping	Denial	Seeking social support for emotional reasons	Humour			Principal components
		Planning	Behavioural disengagement		Turning to religion (-)			
		Suppression of competing activities	Mental disengagement	Seeking social support for instrumental reasons	Alcohol/Drug Disengagement			
		Restraint coping						
		Acceptance		Focus on and venting of emotions				
		Positive reinterpretation and growth						
Bishop, Tong, Diong, Enkelmann and Why (2001)	52	Problem solving	Avoidance coping	Positive reappraisal				
		Active coping	Denial	Seeking social support for emotional reasons				Principal components
		Planning	Behavioural disengagement					
		Suppression of competing activities	Mental disengagement	Turning to religion				
		Restraint coping	Focus on and venting of emotions	Positive reinterpretation and growth				
		Seeking social support for instrumental reasons		Acceptance				

Table 1

Results of Studies Reporting Factor Analyses of the COPE (continued)

Authors	Items	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	No loading	Method of factor analysis
Ward and Kennedy (2001) [Situational]	48	Approach	Avoidance	Acceptance	Social support			
		Active coping	Denial	Acceptance	Seeking social support for instrumental reasons			
		Planning	Behavioural disengagement	Restraint coping				
		Suppression of competing activities	Mental disengagement		Seeking social support for emotional reasons			
			Focus on and venting of emotions					
			Positive reinterpretation and growth					
Mitchell and Hastings (2001) [Situational]	60	Adaptive coping	Disengagement coping	Denial coping				
		Active coping	Behavioural disengagement	Denial				Principal components
		Planning	Mental disengagement	Religion				
		Seeking social support for instrumental reasons	Alcohol/Drug disengagement					
		Seeking social support for emotional reasons						
		Positive reinterpretation and growth						
		Acceptance						
Fortune, Richards, Griffiths, and Mann (2002) [Situational]	60	Problem-focused coping	Avoidance coping	Emotion-focused coping	Distancing reappraisal			
		Active coping	Denial	Seeking social support for instrumental reasons	Humour			
		Planning	Behavioural disengagement	Seeking social support for emotional reasons	Turning to religion			
		Suppression of competing activities		Seeking social support for emotional reasons				
		Acceptance		Focus on and venting of emotions				
		Restraint coping						
		Positive reinterpretation and growth						

Table 1 lists only the highest loadings reported in each study (in other words, secondary loadings are disregarded), and unless indicated otherwise, the studies employed the dispositional version of the questionnaire. The comparison of situational and dispositional versions of the questionnaire might prove to be controversial, because they are supposed to measure conceptually distinct approaches to coping. However, Carver et al. (1989) found reasonable correlations between dispositional and situational versions, and concluded that coping dispositions play a complementary rather than competing role in situational coping. A look at Table 1 also shows that the general distribution of scales was replicated for dispositional and situational versions.

When comparing subsequent factor analyses to the one originally reported by Carver et al. (1989), interesting results emerge. For one, the factors of task and cognitive coping originally produced have subsequently emerged as a single factor in various studies (Ingledeew et al., 1996; Cook & Heppner, 1997; Ferguson, 2001; Fortune et al., 2002; Hudek-Knežević, Kardum & Vukmirović, 1999). This combined factor has also been reproduced in other studies, with the extra scales of Seeking Social Support for Instrumental Reasons (Lyne & Roger, 2000), and Turning to Religion (Laurent et al., 1997).

The emotion factor has been reproduced in subsequent factor analyses (Ben-Zur, 1998; Ferguson, 2001; Finch, Panter & Caskie, 1999; Fortune et al., 2002; Hudek-Knežević et al., 1999; Ingledeew et al., 1996; Kallasmaa & Pulver, 2000; Laurent et al., 1997; Sica et al., 1997), but also without Seeking Social Support for Instrumental Reasons (Phelps & Jarvis, 1994) and without Focus On and Venting of Emotions (Cook & Heppner, 1997; Ward & Kennedy, 2001).

The avoidance factor has been reproduced with the scales originally proposed (Ferguson, 2001; Laurent et al., 1997), but also loads the subscales of Alcohol/Drug Disengagement (Cook & Heppner, 1997; Finch, Panter & Caskie, 1999; Hudek-Knežević et al., 1999; Phelps & Jarvis, 1994; Sica et al., 1997), Humour (Hudek-Knežević et al., 1999; Ingledeew et al., 1996; Sica et al., 1997), Turning to Religion (Hudek-Knežević et al., 1999), the Acceptance scale (Kallasmaa & Pulver, 2000), Focus On and Venting of Emotions (Bishop et al., 2001; Ward & Kennedy, 2001), as well as Positive Reinterpretation and Growth (Ward & Kennedy, 2001).

Turning to Religion has come to the fore as a separate factor (Lyne & Roger, 2000; Sica et al., 1997), but also with Positive Reinterpretation and Growth (Finch, Panter & Caskie, 1999), Denial (Mitchell & Hastings, 2001) and Humour (Fortune et al., 2002). Zeidner and Hammer (1992, p. 740) postulate spiritual resources to help people cope with stress primarily through the appraisal process, by providing a perceptual framework that can help establish the meaning of a stressor in a larger context and also help prescribe acceptable coping techniques. By looking at the other subscales typically loading with Turning to Religion, it might be postulated that this factor can be thought of as one primarily emerging in the

attribution of meaning to stressful events. Denying, reinterpreting or laughing about a stressful event helps the individuals manage their reaction.

The above-mentioned results suggest a four-factor structure underlying the COPE Questionnaire. The first factor could be labelled *active coping*, which includes either the three scales (Active Coping, Planning, Suppression of Competing Activities) as originally proposed, or an assortment of the added scales from the cognitive coping factor. The second factor could be labelled as *social/emotional coping*, which includes the three scales originally proposed (Seeking Social Support for Emotional Reasons, Seeking Social Support for Instrumental Reasons and Focus On and Venting of Emotion), and has been recognised as the most frequently reproduced (Kalasmaa & Pulver, 2000). The third factor deals with *avoidance coping* and typically includes the three scales originally proposed (Denial, Behavioural Disengagement and Mental Disengagement), but has also loaded on Alcohol/Drug Disengagement in six subsequent studies (Cook & Heppner, 1997; Finch et al., 1999; Hudek-Knežević et al., 1999; Mitchell & Hastings, 2001; Phelps & Jarvis, 1994; Sica et al., 1997). The fourth factor is made up by Turning to Religion and/or Humour, which might be such specific coping strategies that they cannot be defined as exclusively *active*, *social/emotional* or *avoidant*, for they probably serve the purpose of all of these. It could also be a case of specificity regarding the function this coping strategy serves for the user.

According to Cox and Ferguson (1991), in addition to the conventional dichotomy of problem- and emotion-focused coping, two other dimensions might be considered, one concerned with reappraisal and the other with avoidance. This literature review suggests religion and humour to serve the reappraisal function, perhaps by removing the person psychologically or physically, or even morally (as in the case of religion) from the problem. Kalasmaa and Pulver (2000) state that, at a minimum, three secondary COPE factors are required for an adequate explanation of the variance in the data on coping studies.

Demographic factors such as race and sex have been emphasised as influential in coping responses (Coyne & Downey, 1991, Kessler, Price & Wortman, 1985), and in reported sources of work stress (Patterson, 2000), whereby coping is indirectly influenced. Furthermore, demographic factors have been shown to interact with age (Folkman, Lazarus, Pimley & Novacek, 1987) and sex (Folkman & Lazarus, 1980) to affect coping responses among individuals.

Fain and McCormick (1988) found no differences between rural deputies and police officers in a municipal community with regard to their use of adaptive and coping mechanisms. Larsson, Kempe and Starrin (1988) found that police commanders were more likely to use problem-focused coping strategies than ordinary police officers. Brown and Campbell (1990) indicate that the type of stress an officer is exposed to differs according to rank, so it can be anticipated that the coping strategies employed to deal with different stressors will also differ.

In their sample of Singaporean police officers, Bishop et al. (2001) found the most commonly used coping strategies to be Positive Reinterpretation and Growth, Planning, Acceptance, and Seeking Social Support for Instrumental Reasons. The least endorsed strategies were Denial, Behavioural disengagement, Mental disengagement and Focusing on and Venting of Emotions.

Recent South African research (Rothmann & Strijdom, 2002; Rothmann & Van Rensburg, 2001) examining coping in a policing context found police members to achieve the highest scores on Turning to Religion and Planning as coping strategies. It was noted as a concern that police members scored low on the venting of emotions. This tendency may be the result of emotional detachment due to the nature of their work and their lack of trust in the organisation (Rothmann, Sieberhagen & Cilliers, 1998). It could be expected that police members will refuse to share their emotional reactions to job stressors with others, which may isolate them from social support at work as well as home (Evans & Coman, 1992).

In both combat veterans and civilians, a positive relationship has been established between the severity of Post Traumatic Stress Disorder (PTSD) following combat and post-war stress and emotion-focused coping, and a negative relation with problem-focused coping (Nezu & Carnevale, 1987; Solomon, Avitzur & Mikulincer, 1989; Solomon, Mikulincer & Avitzur, 1988; Zeidner & Ben-Zur, 1994). In policing, well-being is affected by how individuals cope following exposure to stressful events (Violanti & Paton, 1999).

The importance of selecting police candidates who are well adjusted and have good coping skills has been highlighted (Beutler, Storm, Kirkish, Scogin & Gaines, 1985; Inwald, 1985; Scogin & Beutler, 1985). Considering the major organisational changes faced by the SAPS in the form of affirmative action and internal transformation, and the positive relation of

problem-focused coping with both organisational change (Terry, Callan & Sartori, 1996) and general work stress (Terry, Tonge & Callan, 1995), the measurement of prevailing coping dispositions, and differences regarding these, are inevitable in maintaining worker health. The contribution of the current research is twofold. Firstly, factor analyses of the COPE have been reviewed, indicating what to expect from this instrument, and secondly broad coping factors in the SAPS have been identified. This could aid in the selection of police officers and could also give direction in the development of life-skills courses for enhancing and developing police officers' coping skills.

When measures are applied to different cultural groups, issues of measurement bias and equivalence become important (Van de Vijver & Tanzer, 1997). According to Van de Vijver and Leung (1997), equivalence and bias of measuring instruments should be computed in each study that takes place in a multicultural or cross-cultural context.

Van de Vijver and Leung (1997) made a hierarchical distinction of three types of equivalence. The first type, namely construct equivalence, indicates the extent to which the same construct is measured across all cultural groups studied. When an instrument measures different constructs in different cultures (i.e. when cultural equivalence does not exist), no comparison can be made. The same construct is measured in the case of construct equivalence (also labelled structural equivalence). The second type of equivalence is called measurement unit equivalence and can be obtained when two metric measures have the same measurement unit but have different origins. The third type of equivalence is called scalar equivalence and can be obtained when two metric measures have the same measurement unit and the same origin. Equivalence cannot be assumed but should be established and reported in each study (Van de Vijver & Leung, 1997). Construct equivalence is the most frequently studied type of equivalence. Although no studies of construct equivalence of the COPE have previously been done in South Africa, the researchers are of the opinion that high levels of reciprocal acculturation might have the effect of showing acceptable construct equivalence for different race groups.

Item bias should also be computed. An item is an unbiased measure of a theoretical construct, for example of coping, if persons from different cultural groups who use a certain strategy equally have the same average score on the item (Van de Vijver & Leung, 1997). Persons with an equal standing on the theoretical construct underlying the instrument should have the

same expected score on the item, irrespective of group membership. The definition of bias does not stipulate that the averages of cultural groups should be identical, but only that these averages should be identical across cultural groups for persons who use specific coping strategies equally.

Item bias can be produced by sources such as incidental differences in appropriateness of the item content and inadequate item formulation. Bias will lower the equivalence of a measuring instrument. Two types of item bias are distinguished, namely uniform bias and nonuniform bias (Van de Vijver & Leung, 1997). Uniform bias refers to influences of bias on scores that are more or less the same for all score levels. Nonuniform bias refers to influences that are not identical for all score levels.

METHOD

Research design

A survey design was used to achieve the research objectives. The specific design was the cross-sectional design, by means of which a sample is drawn from a population at a particular point in time (Shaughnessy & Zechmeister, 1997). Information collected is used to describe the population at that time. This design can be used to assess interrelationships among variables within a population. This design is suited to the current investigation in describing current prominent coping strategies in the police, and for investigating differences across race groups as they currently exist.

Sample

Random samples ($N = 1431$) were taken from police stations in the Limpopo Province, Gauteng, Mpumalanga, Northern Cape, Western Cape, Eastern Cape, Natal and Free State. This research formed part of a larger project regarding suicide ideation and stress involving all provinces in South Africa. Since the North West Province's levels of suicide ideation (Rothmann & Strijdom, 2002; Rothmann & Van Rensburg, 2001) had been determined prior to the current project, the data on coping in that province is not included because of the time lapse between assessments.

The following formulae proposed by Kerlinger and Lee (2000) were used to determine the sample size for this study:

$$n' = \frac{n}{1 + \frac{n}{N}}$$

and

$$n = \frac{z^2 \times SD^2}{d^2}$$

where n' = estimated sample size; n = the estimated sample size using the formula; N = the size of the population; z = standard score corresponding to the specified probability of risk; SD = the standard deviation of the population, and d = the specified deviation.

The same values for z , SD and d as for the previous studies of suicide ideation in the SAPS were used in the current research.

Stations were divided into large (more than 100 staff members), medium (25–100 staff members) and small (fewer than 25 staff members). Student and civilian members of the police were not included in this study. All functional police members at randomly identified small and medium stations in each of the provinces were asked to complete the questionnaire. At the large stations, stratified random samples were taken according to sex and race. Table 2 presents some of the characteristics of the participants.

Table 2

Characteristics of the Study Population (N = 1431)

Variable	Category	Frequency	Percentage
Race	White	574	41,15
	Black	559	40,07
	Coloured	206	14,77
	Indian	56	4,01
Rank	Constable	110	7,69
	Sergeant	278	19,43
	Inspector	775	54,16
	Captain	223	15,58
	Superintendent	35	2,45
	Senior Superintendent	10	0,70
Province	Gauteng	152	10,62
	Mpumalanga	175	12,23
	Limpopo	134	9,36
	KwaZulu-Natal	180	12,58
	Free State	238	16,63
	Eastern Cape	177	12,37
	Northern Cape	154	10,76
	Western Cape	221	15,44
Size of Station	Small (fewer than 25 officers)	464	32,42
	Medium (between 26 and 100 officers)	556	38,85
	Large (more than 100 officers)	411	28,72
Level of Education	Grade 10 (Standard 8)	140	9,78
	Grade 11 (Standard 9)	71	4,96
	Grade 12 (Matric)	835	58,35
	Technical college diploma	42	2,94
	Technikon diploma	289	20,20
	University degree	30	2,10
	Postgraduate degree	24	1,68
Sex	Male	1172	81,90
	Female	259	18,10
Marital status	Single	283	19,78
	Married	787	55,00
	Divorced	322	22,50
	Separated	26	1,82
	Remarried	13	0,91
Home language	Afrikaans	711	49,69
	English	169	11,81
	Sepedi	87	6,08
	Sesotho	136	9,50
	Setswana	44	3,07
	IsiSwani	25	1,75
	Tshivenda	27	1,89
	IsiNdebele	16	1,12
	IsiXhosa	69	4,82
	IsiZulu	135	9,43

Table 2 shows that the sample consisted of almost equal parts Black and White participants, with Indian and Coloured people making up less than 19% of the total sample. The sample was predominantly made up of sergeants, inspectors and captains (89,17%), with inspectors forming the largest component (54,16%). The Western Cape and Free State made the largest contribution to the sample, while more medium stations than large and small stations were included, the latter two sizes being almost equally represented in the sample. Almost 60% of the sample (58, 35%) had Grade 12 qualifications. The sample contained mostly married and male officers.

Measuring battery

Two questionnaires were used in this research, namely the Coping Orientations to Problems Experience Questionnaire (COPE) (Carver et al., 1989), and a biographical questionnaire compiled by the researchers.

- The *Coping Orientations to the Problems Experienced Questionnaire* (COPE) (Carver et al., 1989) was designed to measure both situational and dispositional coping strategies. In the present study, the dispositional version consisting of 53 items was used. Response choices were from 1 (I usually don't do this at all) to 4 (I usually do this a lot). The COPE measures 14 coping strategies, namely, Active Coping, Planning, Suppression of Competing Activities, Restraint Coping, Seeking Social Support for Instrumental Reasons, Seeking Social Support for Emotional Reasons, Focusing on and Venting of Emotion, Behavioural Disengagement, Mental Disengagement, Alcohol and Drug Disengagement, Denial, Positive Reinterpretation and Growth, Acceptance, and Turning to Religion. The version used for this study included only the single item for Alcohol/ Drug Disengagement, and the extra items for Humour were not included. In previous South African research, Storm and Rothmann (in press) found acceptable alpha values, with inter-item correlation coefficients varying between 0,25 (Acceptance) and 0,65 (Turning to Religion), showing acceptable levels of internal consistency for this questionnaire.
- A questionnaire was developed to gather information about the biographical characteristics of the participants. This questionnaire gave participants the option of

supplying their name and service number. Other information that was gathered included: province and station, age, sex, years of service, years in current position (to assess advancement), educational qualifications, marital status, satisfaction with relationship with significant other, language, history of disciplinary action, self-rated performance, self-rated job satisfaction, medical conditions, use of prescription and over-the-counter medicine, reasons for using medication, number of alcoholic drinks per week, smoking behaviour, number of cigarettes per day, other drug use and exercise behaviour.

Statistical analysis

The statistical analysis was carried out with the help of the SAS program (SAS Institute, 2000). To evaluate the construct validity of the COPE, Principal factors extraction with varimax rotation was performed through SAS FACTOR on 53 items of the COPE. Principal components extraction was used prior to principal factors extraction to estimate the number of factors, presence of outliers and factorability of the correlation matrices. The criterion for factors was an eigenvalue greater than or equal to one after varimax rotation. The scree plot was also employed.

Internal consistencies of the measuring instrument were assessed by Cronbach alpha coefficients and inter-item correlations (Clark & Watson, 1995). Coefficient alpha conveys important information regarding the proportion of variance contained in a scale, while the average inter-item correlation coefficient (which is a straightforward measure of internal consistency) is a useful index to supplement information supplied by coefficient alpha (Clark & Watson, 1995). However, simply focusing on the mean inter-item correlation cannot ensure unidimensionality of a scale – it is necessary to examine the range and distribution of these correlations as well.

Construct (structural) equivalence was used to compare the factor structures of the COPE for different race groups. Exploratory factor analysis and target (Procrustean) rotation were used to determine construct equivalence (Van de Vijver & Leung, 1997). According to Van de Vijver and Leung (1997), it is not acceptable to conduct factor analyses for different cultural groups to address the similarity of factor-analytical solutions because the spatial orientation of factors in factor analysis is arbitrary. Rather, prior to an evaluation of the agreement of factors in different cultural groups, the matrices of loadings should be rotated with regard to

each other (i.e., target rotations should be carried out). The factor loadings of separate groups are rotated to a joint common matrix of factor loadings. After target rotation had been carried out, factorial agreement was estimated using Tucker's coefficient of agreement (Tucker's phi). This coefficient is insensitive to multiplications of the factor loadings, but is sensitive to a constant added to all loadings of a factor. The following formula is used to compute Tucker's phi:

$$p_{xy} = \frac{\sum x_i y_i}{\sqrt{\sum x_i^2 y_i^2}}$$

This index does not have a known sampling distribution; hence it is impossible to establish confidence intervals. Values higher than 0,95 are seen as evidence for factorial similarity, whereas values lower than 0,85 are taken to point to non-negligible incongruities (Van de Vijver & Leung, 1997). This index is sufficiently accurate to examine factorial similarity at a global level. However, if construct equivalence is not acceptable, bias analyses should be carried out to detect inappropriate items.

An extension of Cleary and Hilton's (1968) use of analysis of variance was applied to identify item bias (Van de Vijver & Leung, 1997). Bias was examined for each item separately. The item score was the dependent variable, while race groups (four levels) and score levels were the independent variables. Score groups were composed on the basis of the total score on the COPE. A total of ten score levels were obtained by making use of percentiles identified through SAS UNIVARIATE. This made it possible to use score groups with at least 50 persons each. Two effects were tested through analysis of variance, namely the main effect of race, and the interaction of score level and race. When both the main effect of race and the interaction of score level and race are non-significant, the item is taken to be unbiased.

Descriptive statistics (means, standard deviations, skewness and kurtosis) and inferential statistics were also used to analyse the data. One-way analysis of variance (ANOVA) was used to determine differences between the sub-groups in the sample. Tukey Studentized Range tests were done to indicate which groups differed significantly when ANOVAS were done.

The following formula was used to determine the practical significance of difference in means between two groups (Steyn, 1999):

$$d = \frac{Mean_A - Mean_B}{\text{Root MSE}}$$

where

$Mean_A$ = Mean of the first group

$Mean_B$ = Mean of the second group

Root MSE = Root Mean Square Error

A cut-off point of 0,50 (medium effect, Cohen, 1988) was set for the practical significance of differences between means.

Pearson product-moment correlation coefficients were used to specify the relationships between the variables. A cut-off point of 0,30 (medium effect, Cohen, 1988) was set for the practical significance of correlation coefficients.

RESULTS

The 14 scales of the COPE was subjected to a confirmatory factor analysis and internal consistency analyses. However, because the current factor structures were not confirmed and many alpha coefficients were lower than the cut-off point of 0,70 (Nunnally & Bernstein, 1994) it was decided to proceed with exploratory factor analysis.

The results of the exploratory factor analysis of the COPE items are shown in Table 3. Loadings of variables on factors, communalities and percent of variance and covariance are shown. Variables are ordered and grouped by size of loading to facilitate interpretation. Zeros represent loadings that were under 0,45 (20% of variance). Labels for each factor are suggested in a footnote.

Oblique rotation showed inter-factor correlations for Factors 1 and 3 ($r = 0,44$) and 1 and 4 ($r = 0,41$). The other inter-factor correlations were below the cut-off of 0,30. Therefore it was decided to proceed with principal factor analysis with a varimax rotation.

Table 3

Factor Loadings, Communalities (h^2), Percentage Variance and Covariance for Principal Factors Extraction and Varimax Rotation on COPE Items

Item	F_1	F_2	F_3	F_4	h^2
Make a plan of action	0.67	0.00	0.00	0.00	0.50
Concentrate efforts on doing something about it	0.66	0.00	0.00	0.00	0.51
Come up with a strategy	0.65	0.00	0.00	0.00	0.53
Do what has to be done	0.65	0.00	0.00	0.00	0.48
Accept the reality of the fact	0.65	0.00	0.00	0.00	0.44
Think about steps to take	0.64	0.00	0.00	0.00	0.46
Learn from experience	0.62	0.00	0.00	0.00	0.46
Think about best way to handle	0.61	0.00	0.00	0.00	0.46
Prevent other things from interfering	0.60	0.00	0.00	0.00	0.42
Not act too soon	0.58	0.00	0.00	0.00	0.37
Look for something good	0.55	0.00	0.00	0.00	0.36
Take direct action	0.54	0.00	0.00	0.00	0.34
Keep self from getting distracted	0.53	0.00	0.00	0.00	0.37
Try to make it more positive	0.53	0.00	0.00	0.00	0.35
Restrain self from action	0.52	0.00	0.00	0.00	0.34
Grow as a person	0.52	0.00	0.00	0.00	0.32
Take additional action	0.52	0.00	0.00	0.00	0.32
Learn to live with it	0.50	0.00	0.00	0.00	0.27
Get used to the idea	0.48	0.00	0.00	0.00	0.26
Accept that it has happened	0.48	0.00	0.00	0.00	0.28
Give up attempt	0.00	0.65	0.00	0.00	0.43
Give up	0.00	0.64	0.00	0.00	0.42
Pretend it hasn't happened	0.00	0.64	0.00	0.00	0.41
Daydream	0.00	0.60	0.00	0.00	0.39
Act as if it hasn't happened	0.00	0.60	0.00	0.00	0.40
Express emotional distress	0.00	0.56	0.00	0.00	0.35
Say: this isn't real	0.00	0.55	0.00	0.00	0.35
Reduce effort to solve problem	0.00	0.55	0.00	0.00	0.34
Quit trying	0.00	0.54	0.00	0.00	0.31
Refuse to believe it has happened	0.00	0.54	0.00	0.00	0.30
Get upset	0.00	0.53	0.00	0.00	0.32
Let out emotions	0.00	0.51	0.00	0.00	0.31
Drink alcohol or use drugs	0.00	0.51	0.00	0.00	0.29
Discuss feelings with someone	0.00	0.00	0.67	0.00	0.62
Talk to someone about feelings	0.00	0.00	0.64	0.00	0.52
Get emotional support from friends/relatives	0.00	0.00	0.64	0.00	0.51
Sympathy and understanding from someone	0.00	0.00	0.48	0.00	0.43
Seek God's help	0.00	0.00	0.00	0.74	0.66
Find comfort in religion	0.00	0.00	0.00	0.70	0.62
Pray more than usual	0.00	0.00	0.00	0.63	0.51
Put trust in God	0.00	0.00	0.00	0.48	0.42
Squared Multiple Correlations	0.89	0.88	0.78	0.78	
Percentage variance	2.02	2.00	1.77	1.77	
Percentage covariance	26.73	26.43	23.42	23.42	

a: Factor labels F1: Active Coping F2: Avoidance F3: Seeking Emotional Support F4: Turning to Religion

Inspection of Table 3 shows that four factors were extracted, accounting for 43,29% of the total variance in the data. As indicated by the SMCs, all factors were internally consistent and well defined by the variables. Variables were reasonably well defined by this factor solution. Communality values, as seen in Table 3, tend to be moderate. With a cut-off of 0,45 for inclusion of a variable in interpretation of a factor, 9 of 53 items did not load on the four factors, while another 3 were discarded due to significant secondary factor loadings.

The first factor dealt with approaching the problem, redefining it as something positive or a learning experience, and accepting that it has happened. Hence, this factor was labelled *Active Coping*. The second factor had items that related to avoidance, such as daydreaming, and items related to ignoring the fact. This factor was labelled *Avoidance*. The third factor was made up by the four items measuring Seeking Social Support for Emotional Reasons (Carver et al., 1989), and was labelled *Seeking Emotional Support*. The *Turning to Religion* (Carver et al., 1989) items made up the fourth factor.

The items that failed to load on the four factors included focusing on dealing with the problem, holding of action till the situation permits, waiting for the right time to act, putting aside other activities, taking one's mind of things, sleeping more than usual, letting out feelings and asking other people who have had similar experiences. The items that showed secondary loadings were all items that measure Seeking Social Support for Instrumental Reasons, and all these items loaded on the Active Coping as well as Seeking Emotional Support factors. The highest loadings were shown for the Seeking Emotional Support factor, but loadings on Active Coping were also significant. These items were removed from subsequent analyses, and were: getting advice from someone, talking to someone to find out more about the situation, and talking to someone who could do something concrete about the problem.

Descriptive statistics for the COPE items are given in Table 4.

Table 4

Descriptive Statistics of COPE Items

Item	Mean	SD
Refuse to believe it has happened	1,97	0,95
Grow as a person	3,11	0,97
Take additional action	2,94	1,00
Get used to the idea	2,82	1,00
Talk to someone about feelings	2,85	1,08
Think about best way to handle	3,24	0,93
Put trust in God	3,48	0,88
Drink alcohol or take drugs	1,60	0,95
Quit trying	1,95	1,01
Get emotional support from friends/relatives	2,67	1,07
Say: this isn't real	2,07	1,01
Try to make it more positive	2,77	0,96
Not act too soon	2,86	1,02
Prevent other things from interfering	2,87	0,96
Make a plan of action	3,15	0,92
Learn to live with it	2,91	1,03
Do what has to be done	3,15	0,90
Pray more than usual	2,92	0,98
Give up attempt	2,11	1,04
Let out emotions	2,18	1,03
Sympathy and understanding from someone	2,47	1,03
Pretend it hasn't happened	1,99	1,01
Look for something good	2,85	0,96
Restrain self from action	2,70	0,97
Take direct action	2,87	0,97
Accept that it has happened	2,79	1,04
Come up with a strategy	3,07	0,88
Find comfort in religion	2,97	1,00
Reduce effort to solve problem	2,29	0,99
Express emotional distress	2,32	1,01
Act as if it hasn't happened	2,18	1,05
Learn from experience	3,15	0,89
Concentrate efforts on doing something about it	2,96	0,88
Keep self from getting distracted	2,69	0,95
Think about steps to take	3,09	0,92
Accept the reality of the fact	3,06	0,93
Discuss feelings with someone	2,84	1,06
Give up	1,99	1,08
Seek God's help	3,22	0,98
Daydream	2,22	1,02
Get upset	2,42	1,02

Table 4 shows that the item measuring Alcohol/Drug Disengagement showed the lowest mean of all items. The item showing the highest mean is "Put trust in God". Standard deviations are similar for all items.

Table 5 shows the descriptive statistics, alpha coefficients and mean inter-item correlation coefficients for the extracted COPE factors.

Table 5

Descriptive Statistics, Alpha Coefficients and Mean Inter-item Correlation Coefficients of the COPE Factors

Factor	Mean	SD	Skewness	Kurtosis	r-Mean	α
Active Coping	59,06	12,01	-0,82	0,84	0,37	0,92
Avoidance	27,25	8,18	0,47	-0,26	0,32	0,86
Seeking Emotional Support	10,83	3,36	-0,35	-0,74	0,50	0,80
Turning to Religion	12,60	3,13	-0,92	0,20	0,55	0,83

Table 5 shows that the scores on the COPE are relatively normally distributed. The alpha coefficients of the COPE factors are acceptable compared to the guideline of $\alpha > 0,70$ (Nunnally & Bernstein, 1994). The mean inter-item correlation coefficients are within the range of 0,15 – 0,50 proposed by Clark and Watson (1995), and thus indicate the internal consistency of the factors of the COPE.

Next, exploratory factor analysis and target (Procrustean) rotation were used to determine construct equivalence of the COPE. The factor loadings of race groups were rotated to one target group. After target rotation had been carried out, factorial agreement was estimated using Tucker's coefficient of agreement (Tucker's phi). The Tucker's phi-coefficients for the four race groups are given in Table 6.

Table 6

Construct Equivalence of the COPE for Different Race Groups

Group	Percentage of sample	Tucker's phi – Active Coping	Tucker's phi – Avoidant Coping	Tucker's phi – Seeking Emotional Support	Tucker's phi – Turning to Religion
White	41,15	0,99	0,99	0,99	0,99
Black	40,07	0,99	0,99	0,99	0,99
Coloured	14,77	0,99	0,99	0,99	0,99
Indian	4,01	0,97	0,99	0,99	0,98

Inspection of Table 6 shows that the Tucker's phi coefficients for White, Black, Coloured and Indian police members were all acceptable ($>0,95$). Therefore, it can be deduced that the four factors of the COPE were equivalent for the four race groups.

The results of the item bias analyses that were carried out through analysis of variance for the 41 items of the COPE are reported in Table 7.

Table 7

Item Bias Analysis of the COPE

Item	Tot_SS	Df_g	SS_g	F_g	Eta square	Df_i	SS_i	F_i	Eta square
Active Coping									
20	869.40	3	0.80	0.70	0.00	27	20.10	1.70	0.02
45	792.50	3	2.30	2.00	0.00	27	19.80	1.90	0.03
35	803.00	3	1.40	1.20	0.00	27	15.20	1.40	0.02
23	871.90	3	2.30	1.80	0.00	27	24.20	2.10	0.03
48	922.10	3	9.60	6.60	0.01	27	18.90	1.40	0.02
47	888.40	3	4.80	3.40	0.01	27	12.30	1.00	0.01
43	830.90	3	0.90	0.70	0.00	27	15.00	1.30	0.02
9	930.80	3	1.80	1.20	0.00	27	13.90	1.10	0.02
19	998.90	3	23.20	15.40	0.02	27	22.40	1.70	0.02
18	1104.40	3	9.90	5.40	0.01	27	19.10	1.20	0.02
30	1022.00	3	6.30	3.70	0.01	27	17.00	1.10	0.02
32	1064.40	3	1.90	1.00	0.00	27	21.80	1.40	0.02
46	1010.90	3	3.50	2.00	0.00	27	16.10	1.00	0.02
17	990.90	3	0.50	0.30	0.00	27	16.30	1.10	0.02
31	1066.30	3	4.50	2.50	0.00	27	21.80	1.30	0.02
3	1091.90	3	19.90	10.70	0.02	27	21.30	1.30	0.02
6	1112.90	3	1.50	0.80	0.00	27	29.20	1.60	0.03
21	1243.20	3	32.70	15.20	0.03	27	21.70	1.10	0.02
7	1152.50	3	6.20	2.90	0.01	27	21.10	1.10	0.02
33	1267.00	3	6.90	3.00	0.01	27	19.40	0.90	0.02
Avoidance									
26	1105.40	3	3.00	1.70	0.00	27	18.90	1.20	0.02
50	1210.40	3	5.20	2.70	0.00	27	16.50	1.00	0.01
29	1107.00	3	0.90	0.50	0.00	27	17.10	1.10	0.02
52	1173.80	3	1.00	0.50	0.00	27	12.30	0.70	0.01
42	1194.80	3	13.10	6.90	0.01	27	18.90	1.10	0.02
40	1127.70	3	2.70	1.50	0.00	27	18.70	1.10	0.02
16	1140.10	3	38.00	20.60	0.03	27	27.50	1.70	0.02
39	1085.30	3	5.40	2.90	0.01	27	28.80	1.70	0.03
13	1183.10	3	4.20	2.10	0.00	27	18.90	1.00	0.02
2	1014.10	3	1.60	0.90	0.00	27	14.80	0.90	0.02
53	1209.50	3	35.40	18.70	0.03	27	26.90	1.60	0.02
27	1232.30	3	36.60	18.00	0.03	27	32.50	1.80	0.03
12	1114.80	3	25.60	14.10	0.02	27	31.10	1.90	0.03
Seeking Emotional Support									
49	921.80	3	1.90	1.90	0.00	27	10.10	1.10	0.01
8	1016.60	3	4.10	3.20	0.00	27	24.20	2.10	0.02
15	1009.40	3	6.00	4.70	0.01	27	11.20	1.00	0.01
28	980.60	3	6.10	4.60	0.01	27	28.90	2.40	0.03
Turning to Religion									
51	724.00	3	1.50	2.00	0.00	24	6.30	1.10	0.01
37	785.40	3	3.90	4.40	0.01	24	6.30	0.90	0.01
24	794.20	3	2.40	2.50	0.00	24	11.20	1.50	0.01
10	608.30	3	0.30	0.30	0.00	24	6.10	0.80	0.01

Table 7 shows no significant eta square values for the COPE items. Therefore, it seems that the means of the race groups for the different score levels do not differ from zero in a systematic way. It is clear that the COPE shows no uniform or non-uniform bias for different race groups in the SAPS.

Next, the coping strategies of various demographic groups were investigated. Table 8 shows the differences in COPE factors for different race groups in the SAPS.

Table 8
Differences in COPE Factors for Races

Factor	White (W)	Black (B)	Coloured (C)	Indian (I)	<i>p</i>
Active Coping	58,80	60,11	58,25	56,88	0,06
Avoidance	25,18 ^{B, I, b}	29,48 ^a	26,99 ^B	27,79	0,00 [*]
Seeking Emotional Support	9,98 ^{B, b}	11,97 ^a	10,38 ^B	9,95 ^{B, b}	0,00 [*]
Turning to Religion	12,51	12,63	12,79	12,21	0,55

* Statistically significant difference ($p < 0,05$). Letter in superscript indicates difference from race group.

a Practically significant difference between provinces in row where b (medium effect, d larger or equal to 0,50) or c (large effect, d larger or equal to 0,80) are indicated

Table 8 shows that a practically significant difference was recorded for Avoidance, with Whites scoring lower than Blacks. Coloured people also showed a statistically significant lower mean than Blacks. Regarding Seeking Emotional Support, Blacks scored higher (practically significant, medium effect) than both Whites and Indians, while Coloureds obtained a statistically significant lower score than Blacks.

Table 9 indicates the differences found for the COPE factors for different ranks.

Table 9

Differences in COPE Factors for Ranks

Factor	CST	SRT	INS	CPT	SUP	SNR	<i>p</i>
Active Coping	59,16	57,69	58,92	60,81	60,09	64,50	0,06
Avoidance	27,04 ^b	29,97 ^c	26,71	26,36	25,69	21,90 ^a	0,00 [*]
Seeking Emotional Support	11,14	11,14	10,74	10,70	10,00	11,00	0,28
Turning to Religion	12,15	12,40	12,72	12,48	13,31	13,40	0,20

CST= Constable; SRT= Sergeant; INS= Inspector; CPT= Captain; SUP= Superintendent; SNR= Senior Superintendent.

* Statistically significant ($p \leq 0,05$)

a Practically significant difference between provinces in row where b (medium effect, d larger or equal to 0,50) or c (large effect, d larger or equal to 0,80) are indicated

Table 9 shows that a statistically and practically significant difference in the means of constables, sergeants and senior superintendents exist regarding Avoidance. Senior superintendents scored lower than constables (practically significant, medium effect) and sergeants (practically significant, large effect).

Table 10 gives the differences recorded for the COPE factors for different sized stations.

Table 10

Differences in COPE Factors according to Size of Station

Factor	Small (S)	Medium (M)	Large (L)	<i>p</i>
Active Coping	58,99	58,99	59,24	0,94
Avoidance	28,01 ^L	27,66	25,84	0,00 [*]
Seeking Emotional Support	10,92	11,01 ^L	10,47	0,04 [*]
Turning to Religion	12,52	12,70	12,55	0,61

* Statistically significant difference ($p < 0,05$). Letter in superscript indicates difference from size of station.

Table 10 shows that police members in small stations showed a statistically significant difference from large stations on Avoidance. Regarding Seeking Emotional Support, police members in medium-sized stations obtained a statistically significantly higher score than police members in large stations.

Differences in the COPE factors for different language groups are given in Table 11.

Table 11

Differences in COPE Factors of Different Language Groups

Item	A	E	SE	SO	SET	SW	VE	ND	XH	ZL	Root MSE	<i>p</i>
Active Coping	58,25 ^{zz}	59,03	61,40	57,89	59,68	58,04	63,22	56,94	58,52	62,20	11,96	0,02 [*]
Avoidance	25,78 ^{hSEZL}	25,45 ^{hSEZL}	29,59 ^d	31,17 [*]	27,90	29,80	30,37	28,00	27,86	29,13	7,94	0,00 [*]
Emotional Social Support	10,10 ^{ch}	9,98 ^{ch}	12,18 [*]	11,47 ^{gE}	11,20	11,76	13,19 [*]	11,25	11,42	12,59 ^d	3,22	0,00 [*]
Turning to Religion	12,66	12,19	13,21	12,06	13,32	12,92	13,19	12,31	12,07	12,70	3,12	0,14

A= Afrikaans ($n = 713$); E= English ($n = 152$); SE= Sepedi ($n = 88$); SO= SeSotho ($n = 143$); SET= Setswana ($n = 45$); SW= IsiSwati ($n = 25$); VE= Tshivenda ($n = 27$); ND= IsiNdebele ($n = 16$); XH= IsiXhosa ($n = 69$); ZL= IsiZulu ($n = 135$).

* Statistically significant difference ($p < 0,05$). Italic letter of language in superscript indicates difference between language groups.

- a Practically significant difference between provinces in row where b (medium effect, d larger or equal to 0,50) or c (large effect, d larger or equal to 0,80) is indicated
d Practically significant difference between provinces in row where e (medium effect, d larger or equal to 0,50) or f (large effect, d larger or equal to 0,80) is indicated
g Practically significant difference between provinces in row where h (medium effect, d larger or equal to 0,50) or i (large effect, d larger or equal to 0,80) is indicated

Table 11 shows that a statistically significant difference exists between Afrikaans and IsiZulu-speaking persons regarding Active Coping, with the Afrikaans group measuring lower. The Afrikaans-speaking group obtained a statistically significantly lower score on Avoidance compared with Sepedi and IsiZulu speakers. A statistically significant difference exists between the English- and IsiZulu-speaking groups, with the former measuring lower. The Sesotho speakers measured higher on Avoidance (practically significant, medium effect) than both the Afrikaans and English speakers. Speakers of Sepedi measured higher regarding Avoidance than the English-speaking group (practically significant, medium effect).

A statistically significant difference exists between Sesotho and Afrikaans and English speakers for Seeking Emotional Support, with Sesotho speakers scoring higher. Speakers of Tshivenda measured higher (practically significant, large effect) than Afrikaans and English speakers regarding Seeking Emotional Support. Speakers of IsiZulu measured higher than speakers of Afrikaans (practically significant, medium effect), and higher than speakers of English (practically significant, large effect) regarding Seeking Emotional Support. Sepedi speakers measured higher than English and Afrikaans speakers on Seeking Emotional Support (practically significant, medium effect). Language groups showed no differences regarding Turning to Religion.

Table 12 gives the differences found in COPE factors for the police members of different provinces.

Table 12

Differences in COPE Factors of Police Members in Different Provinces

Item	GT (2)	MP (3)	NP (4)	KZ (5)	FS (6)	EC (7)	NC (8)	WC (9)	Root MSE	<i>p</i>
Active Coping	59,61	60,52	61,51 ^{7a}	61,03 ^{7a}	55,38 ^{b3}	57,19	59,34 ^b	59,70 ^{b,2}	11,87	0,00 ⁷
Avoidance	25,82 ^d	28,38 ^{b7,9}	29,28 ^d	27,79	30,17 ^d	25,67 ^{b4}	26,01 ^{b,4}	24,67 ^{b,c}	7,97	0,00 ⁷
Seeking Emotional Support	10,61 ^d	11,29 ^{7,9}	11,96 ^d	11,39 ^d	10,75 ^d	10,16 ^{b,c}	10,71 ^d	10,15 ^b	3,32	0,00 ⁷
Turning to Religion	12,45	15,17 ^b	13,37 ^{b,5}	12,21	11,68 ^a	12,50	13,36 ^{b,5}	12,62 ^b	3,08	0,00 ⁷

GT= Gauteng (*n* = 152); MP=Mpumalanga (*n* = 176); NP= Limpopo Province (*n* = 136); KZN= KwaZulu-Natal (*n* = 180); FS= Free State (*n* = 247); EC= Eastern Cape (*n* = 177); NC= Northern Cape (*n* = 155); WC= Western Cape (*n* = 221).

* Statistically significant difference (*p* < 0,05). Difference from province is indicated by italic number of province in superscript

- a Practically significant difference between provinces in row where b (medium effect, *d* larger or equal to 0,50) or c (large effect, *d* larger or equal to 0,80) is indicated
- d Practically significant difference between provinces in row where e (medium effect, *d* larger or equal to 0,50) or f (large effect, *d* larger or equal to 0,80) is indicated

Table 12 shows that a statistically significant difference exists between KwaZulu-Natal and the Free State and the Eastern Cape for Active Coping, with KwaZulu-Natal measuring higher. A statistically significant difference exists between the Eastern Cape, and a practically significant difference (medium effect) between the Free State, and the Limpopo Province for Active Coping, with the Limpopo Province measuring higher. A statistically significant difference exists between Mpumalanga and the Free State on Active Coping, with Mpumalanga measuring higher. Statistically significant differences also exist for Active Coping regarding the Northern and Western Cape and the Free State, with the Free State measuring lower. The Western Cape also differed statistically significantly from Gauteng, with the Western Cape measuring lower.

On Avoidance, the Free State measured higher (practically significant, medium effect) than the Eastern, Northern and Western Cape and Mpumalanga. The Limpopo Province measured higher (practically significant, medium effect) than the Western Cape on Avoidance. A statistically significant difference exists between the Limpopo Province, Gauteng and the Eastern and Northern Cape, with the Limpopo Province measuring lower. Regarding

Avoidance, the Eastern and Western Cape show a statistically significant difference from Mpumalanga, with Mpumalanga measuring higher.

The Limpopo Province measured higher (practically significant, medium effect) than the Eastern and Western Cape for Seeking Emotional Support. Statistically significant differences exist between the Limpopo Province and Gauteng, the Free State, and Northern Cape, regarding Seeking Emotional Support, with the Limpopo Province measuring higher. KwaZulu-Natal measured higher (practically significant, medium effect) than the Eastern Cape regarding Seeking Emotional Support. A statistically significant difference exists between Mpumalanga and both the Eastern and Western Cape regarding Seeking Emotional Support, with Mpumalanga measuring higher.

A statistically significant difference exists between Mpumalanga and the Free State and the Western Cape regarding Turning to Religion, with Mpumalanga measuring lower. A statistical difference exists between KwaZulu-Natal, the Limpopo Province and the Northern Cape regarding Turning to Religion, with KwaZulu-Natal measuring lower. The Limpopo Province and the Northern Cape measured higher (practically significant, medium effect) than the Free State for Turning to Religion.

DISCUSSION

The factor analysis of the COPE items yielded a four-factor solution, namely Active Coping, Avoidance, Seeking Emotional Support and Turning to Religion. The original proposition by Carver et al. (1989) was also four factors, and the current study bears some resemblance to that. The resemblance can be found in the social/emotional, avoidance and active coping (task- or problem-directed) factors. These factors are also a close resemblance of three identified by Amirkhan (1990). Strong support thus exists for the conclusion of Kalasmaa and Pulver (2000) that a minimum of three factors is needed to explain coping data adequately.

However, direct comparison of the current results with those of Carver et al. is impossible, because the item loadings on the proposed primary factors were not reported. The first and second factors extracted in this study reflect the known styles of Active Coping and Avoidance. The second factor clearly deals with an avoidant type of approach, loading on items that refer to giving up, denying the reality of the situation/problem, letting emotions out

and using alcohol or drugs to cope. The four items measuring Seeking Social Support for Emotional Reasons (Carver et al., 1989) made up the third factor. Only two other studies reviewed in the literature section of this paper found Seeking Social Support for Instrumental and Seeking Social Support for Emotional Reasons to load on different factors (Bishop et al., 2001; Phelps & Jarvis, 1994). Items measuring Seeking Social Support for Instrumental Reasons also loaded strongly on the first factor, Active Coping. This subscale has been associated with active coping in previous research (Lyne & Roger, 2000), and specifically in the policing context (Bishop et al., 2001). The current findings are in agreement with Bishop et al. (2001) who found Seeking Social Support for Instrumental Reasons to load on the active coping factor for a police sample. These findings suggest that in a policing context, Seeking Social Support for Instrumental Reasons is an active strategy with a problem focus. Turning to Religion items made up the fourth factor, which replicates previous research findings (Lyne & Roger, 2000; Sica et al., 1997) in showing this subscale to emerge as a fourth factor.

The findings of this study support a proposition originally put forward by Cox and Ferguson (1991), that coping dimensions could be classified as problem-focused, emotion-focused, reappraisal and avoidance. The factor identified as Active Coping in this study probably overlaps with problem-focused coping (and seems to be a cognitive-behaviour coping strategy). It would include active efforts at cognitively and behaviourally dealing with the source of stress. The second factor extracted in this study, namely Avoidance has to do with cognitive and behavioural disengagement and avoidance. Seeking Emotional Support, the third factor extracted in this study is related to the affective dimension of human beings, and dealings with the emotional reactions evoked by the stressful situation. The fourth coping strategy, namely Turning to Religion taps into the religious dimension of police members and may affect their appraisal processes (see Zeidner & Hammer, 1992). By means of religion, stressors can be made meaningful by reappraising them within a perceptual framework that guides acceptable coping strategies. Unpleasant experiences derive meaning from being “acts of God”, and therefore not in need of reasonable explanation.

Alpha coefficients of the COPE factors were acceptable, indicating that the extracted factors explained acceptable proportions of variance. The factors also showed internal consistency. The factors extracted showed structural equivalence for the four race groups included in this study, as demonstrated by Tucker's phi coefficients. The latter finding is of special

importance, since no studies were previously conducted regarding structural equivalence of the COPE for different race groups in South Africa. Although generalisations would be premature, without the extraction of these factors in other occupations, these results indicate that the extracted coping factors are valid across race groups within the SAPS. Furthermore, no evidence was found which proved either uniform or non-uniform bias of the items of the COPE.

An interesting result from the comparison of factor analyses of the COPE was that the factors of Task and Cognitive Coping originally produced have subsequently emerged as a single factor in various studies (Cook & Heppner, 1997; Ferguson, 2001; Fortune et al., 2002; Ingledew et al., 1996; Knežević et al., 1999). This combined factor has also been reproduced in other studies, with the extra scales of Seeking Social Support for Instrumental Reasons (Lyne & Roger, 2000), and Turning to Religion (Laurent et al., 1997). Acceptance, Restraint Coping and Positive Reinterpretation and Growth can thus be thought of as Active Coping strategies together with Active coping, Planning and Suppression of Competing Activities.

The emergence of Turning to Religion as a separate factor is of interest. This confirms the finding of Rothmann and Strijdom (2002) and Rothmann and Van Rensburg (2001) that Turning to Religion seems to be an important coping strategy in the SAPS. Since the SAPS employ chaplains as part of their permanent members, it can be understood why this strategy was rated highest in a national sample, if the context that actively endorses religion as coping strategy is taken into account. The question that should however be investigated goes to the function and effectiveness of this coping strategy.

For different race groups, Blacks scored higher on Avoidance than both Whites and Coloured people. Regarding the Seeking of Emotional Support, Blacks measured higher than Whites, Indians and Coloured people. These findings show that Black members of the SAPS are more inclined to seek emotional support, and have a more avoidant coping strategy. When looking at different language groups, the main effect that came to the fore was that languages that can be considered traditionally indigenous (Sepedi, IsiZulu and Sesotho) measured higher on Avoidance. The same effect was observed for Seeking Emotional Support, this time with Sesotho, Tshivenda, IsiZulu and Sepedi measuring the highest. This is a duplication of the findings made for race, as language groups can be divided along racial lines. It could be that these findings are a reflection of cultural differences, with Black people having closer-knit

family units and being more concerned with the status of groups than that of the individual. The SAPS would benefit from programmes enhancing the interpersonal relationships and social support networks among its members. The fact that no language groups showed any differences regarding Turning to Religion is also of interest, since religion certainly has different levels of importance to different cultural groups.

Senior superintendents were shown to score lower on Avoidance than both constables and sergeants. This effect might be explained by the nature of the work these different ranks have to perform. While the senior superintendent is often the station manager, and thus in charge of a wider array of functions, the constable and sergeant can be considered front-line, and more exposed to hands-on police work. Feelings of ineffectiveness and frustrated goals on the side of constables and sergeants could account for more avoidant coping.

Small stations measured higher on Avoidance. Smaller stations (fewer than 25 members) are typically in rural areas that might not have such ready access to the resources or support that larger stations in cities have regarding provincial management. This could explain a higher tendency to resort to avoidant coping. The rural police officer is also open to more public scrutiny (Bartol, Bergen, Volckens & Knoras, 1992; Sandy & Devine, 1978), which makes law enforcement against people the officer knows personally a delicate matter. This difficulty proposes a further explanation for higher avoidant coping in rural areas. Regarding the Seeking of Emotional Support, medium stations measured statistically higher than large stations, while small stations also have a higher mean. The smaller numbers of people in small towns might lead to closer human contact than in cities, which in turn could lead to a greater need for seeking emotional support.

In analysing different provinces the Free State stood out clearly, measuring the lowest on Active coping and Turning to Religion, and the highest on Avoidance. This province thus seems to present a serious problem regarding the coping strategies of members, with a lack of Active Coping being confounded with more Avoidance and a general tendency to avoid the religious resources provided by the organisation. It was shown that the Limpopo Province measured the highest regarding Seeking Emotional Support.

RECOMMENDATIONS

It is recommended that the COPE be factor-analysed at the item level in subsequent research, because of the variations found for subscale analyses. Especially with regard to cross- and inter-cultural comparisons, this seems a valid recommendation. The variability of subscales in previous research in loading on secondary factors acts only to complicate interpretation.

The content of items should guide future researchers in distinguishing coping strategies. It would also be strongly recommended that a standardised measure be made generally available, so that future studies can make use of the same version of the questionnaire. This is an ideal solution, because the utility of the subscales originally proposed by Carver et al. (1989) can only really be determined with the comparison of equivalent versions of the questionnaire in future. It is proposed that future research should look for four factors in coping, namely an active, avoidant/ passive, social/ emotional and a religion and/or humour factor.

In general, it can be said that members of the SAPS show constructive coping strategies. Black members, particularly in the ranks of constable and sergeant, and members situated in rural areas could benefit from a training program in coping skills. The effectiveness of such training depends upon whether any change in individual coping strategies will be adequate to reduce the amount of strain the individual actually experiences, either short or long term (Cooper, Dewe & O'Driscoll, 2001). It is therefore necessary to investigate coping strategies in conjunction with factors leading to stress. The Free State could be used as a pilot site for testing the effectiveness of such a program, for this province shows the most dysfunctional coping skills. Future studies could also investigate the effect of language groups on cultural equivalence, because different race groups can still be subdivided into language groups.

Following other researchers (Kowalski & Crocker, 2001), it is also recommended here that studying the functions and effectiveness of coping strategies would facilitate a more complete understanding of coping. In the SAPS this is of special relevance to Turning to Religion, since it is a coping strategy actively endorsed by the organisation. Future studies of police coping should be done in conjunction with personality measures, to clarify the relationship between personality variables and coping dispositions.

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CHAPTER 5

RESEARCH ARTICLE 4

SUICIDE IDEATION, STRESS AND COPING IN THE SOUTH AFRICAN POLICE SERVICE*

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ABSTRACT

The objective of this research was to determine whether suicide ideation in the South African Police Service could be predicted based on demographic variables, coping strategies and stress. A cross-sectional survey design was used. A random, stratified sample ($N = 1431$) was taken of uniformed police members in eight South African provinces. The Adult Suicide Ideation Questionnaire, the Police Stress Inventory, the COPE, a measure of social support and a biographical questionnaire were administered. Results of a stepwise discriminant analysis showed that previous suicide attempts, coping strategies (turning to religion, avoidance and non-active coping), insufficient social support, marital status, scholastic education, job satisfaction, province, race and physical exercise can be used to predict suicide ideation in the SAPS.

OPSOMMING

Die doelstelling van hierdie navorsing was om vas te stel of selfmoord-denkebeeldvorming in die Suid-Afrikaanse Polisie (SAPD) op grond van demografiese veranderlikes, coping-strategieë en stres voorspel kan word. 'n Dwarsdeursnee-ontwerp is gebruik. 'n Gestratifiseerde ewekansige steekproef ($N = 1431$) is geneem uit uniformdraende lede in agt Suid-Afrikaanse provinsies. Die Volwasse Selfmoord-denkebeeldvormingsvraelys, die Poliestres-opname, die COPE, 'n meetinstrument van sosiale ondersteuning en 'n biografiese vraelys is afgeneem. Resultate van die stapsgewyse diskriminant-analise het aangetoon dat vorige selfmoordpogings, coping-strategieë (gebruik van religie, vermyding en nie-aktiewe coping), onvoldoende sosiale ondersteuning, huwelikstatus, skoolopleiding, werkstevredenheid, provinsie, ras en fisiese oefening selfmoord-denkebeeldvorming in die SAPD voorspel.

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Suicide ideation should be considered as the first warning sign of more serious suicidal behaviour (Bonner & Rich, 1987; Reynolds, 1991a; Schotte & Clum, 1982; Shea, 1998). Suicide ideation constitutes but one aspect of suicidal behaviour, and is defined as the domain of thoughts and ideas about death, suicide and serious self-injurious behaviour. It includes thoughts related to the planning, conduct and outcome of suicidal behaviour, particularly as the last relates to thoughts about the response of others (Reynolds, 1991a). In the light of South Africa's exceptionally high suicide rate, a growing emphasis is placed on the early identification of police members at risk of suicidal behaviour (see Pienaar & Rothmann, in press; Rothmann & Strijdom, 2002; Rothmann & Van Rensburg, 2001). Research about possible causes of suicide ideation may be viewed as a critically important component in assessing and promoting the mental health of police officers.

Many factors may contribute to suicidal behaviour of police members, including stressors in the work situation, factors outside the work situation and personality dimensions, as well as the interaction between these variables (Jacobs, 1998; Rossouw, 1998; Schmidtke et al., 1999). Some of the variables that have been related to suicidal behaviour of police members include authoritarian structure, lack of participation in decision-making, poor interpersonal relationships with supervisors, lack of administrative support, unfair discipline, unfair promotion, the nature of police work, irregular working hours, poor working conditions, constant fear and trauma, low salaries, marital problems and job suspension (Janik & Kravitz, 1994; Kruger, 1996; Lott, 1995; Maynard, Maynard, McCubin & Shao, 1980; McCafferty, 1992; Rothmann & Strijdom, 2002). Notably, most of these factors are organisational in nature.

Policing in South Africa is probably particularly stressful, keeping in mind the socio-economic and political turmoil of the past thirty years under apartheid rule, and the major political changes since its abolition (Gulle, Tredoux & Foster, 1998). The constant confrontation of SAPS members with crime and excessive violence causes them to become the victims of crime themselves (Roosendaal, 2002). Since the dissolution of apartheid in the mid-nineties, most state departments and state-funded organisations, including the police, have undergone major transformation in the form of downsizing, affirmative action and general restructuring. These changes have surely affected the internal solidarity of the organisation; former political enemies having become work colleagues, for example. The

organisational change, coupled with one of the highest crime rates in the world and which creates further stress, presents a volatile situation regarding mental health in the SAPS.

In South African studies of police stress, Koortzen (1996, p. 62) has previously indicated the three top individual stressors to be lack of supervisory and management skills, inappropriate sentences handed down by the courts and emotional detachment from the family. Gulle et al. (1998) showed that in comparison to stressors in the United States of America, which were all inherent in the nature of the job, SAPS stressors were more organisationally oriented. However, Peltzer (2001) found inherent stressors in the SAPS (such as violent injury, pursuit of an armed suspect, and response to a scene involving the death of a child) to be most prevalent and emotionally intense. Though surely a complex issue, Roosendal (2002, p. 23) identified disinterested commanding officers, lacking opportunities for career development and promotion, financial pressure, the working conditions and lacking support systems as factors contributing to negativity in the SAPS.

In a study in the SAPS in the North West Province, Rothmann and Van Rensburg (2001) found that police members who took more than 14 alcoholic drinks per week (compared to those who took fewer drinks) had more dysfunctional coping strategies, less job satisfaction and higher suicide ideation. Higher levels of suicide ideation were also shown for functional police members, compared to those in training. Discriminant analysis showed that low sense of coherence, low planning and suppressing of competing activities and medical problems predicted high suicide ideation. By means of these variables almost 82% of police members who measured high on suicide ideation were classified correctly.

Hem, Berg and Ekeberg (2001) recommend that, in addition to completed suicide, attempted suicide and suicide ideation also have to be investigated in studies of police suicide. It is of importance to determine the contribution of a range of factors and possible mechanisms that protect against the translation of suicidal ideation into suicidal acts (Hawton & Vislisel, 1999). No scientific data regarding the causes of suicide ideation in the SAPS exist. Only the frightful statistics attest to the number of completed suicides. The main objective of this study was to determine the relationship between coping strategies, stress and suicide ideation in the SAPS and to determine which factors could predict the suicide ideation of police members. Rothmann and Van Rensburg (2001) also recommend that future research about suicide ideation in the SAPS should include the relationship between coping and suicide ideation,

while Biggam, Power, MacDonald, Carcary and Moody (1997) note a paucity of studies concerning police stress. Hart (1999) notes that stress can only be understood by assessing complex systems of variables and establishing the inter-relation of these variables to one another over time.

Suicide ideation, coping and stress

An indispensable issue in the suicidal behaviour domain is coping (Beehr, Johnson & Nieva, 1995). Coping refers to perceptual, cognitive or behavioural responses that are used to manage, avoid or control situations that could be regarded as difficult (Folkman & Lazarus, 1984; Moos, 1994; Zeidner & Endler, 1996). In the police stress literature, Evans, Coman, Stanley and Burrows (1993, p. 238) define effective coping as "(a) the efficacy with which the individuals deal with their emotional responses to stressors and act to resolve the stressors, and (b) the cost of their effectiveness to the individual". Total coping scores have been directly related to mental health (Kirkcaldy, Cooper & Brown, 1995). Poor coping skills also appear to be a significant factor in determining the intensity with which stress is experienced in police work (Anshel, 2000).

Police officers who use maladaptive coping skills (e.g. excessive alcohol intake, drug use, smoking, overeating), or fail to interpret work-related events accurately and react in a rational manner, will experience chronic, long-term stress (Hurrell, 1995; Nordlicht, 1979). Several studies (Billings & Moos, 1984; Hart, Wearing & Headey, 1995; Headey & Wearing, 1990) found that emotion-focused strategies were maladaptive, whereas problem-focused strategies were adaptive. Ben-Zur (1999) suggests that the use of a versatile type of coping in everyday encounters with stressful reality will determine emotional as well as performance outcomes. Larsson, Kempe and Starrin (1988) allude to the possibility that police officers internalise a stable set of "if – then" rules regarding appraisal of coping options, due to training and repeated exposure to different situations. Beehr et al. (1995) showed that problem-focused coping strategies were negatively related to thoughts of suicide among police officers. Emotion-focused coping strategies were related to every police strain except the abuse of alcohol. Regarding police officers, the issue seems to be which strategy is emphasised over, or at the expense of, another.

Cohen and Wills (1985) made the case for social support to act as an intervening variable in the stress process. An individual who has internalised a sense of being valued (socially supported) is less apt than others to appraise a situation as threatening. Reviewers of longitudinal studies have concluded that social support is causally related to well-being (Cohen & Wills, 1985; Thoits, 1982). Within the SAPS, internal political transformation has eroded social support networks, while inability to utilise support at home was probably a problem to begin with – police typically deny emotional reactions, and show resistance toward admitting either professional or personal difficulties (Brown, Cooper & Kirkcaldy, 1996; Brown & Grover, 1998; Kop & Euwema, 2001; Reiner, 1985; Young, 1984). Workplace mores of non-disclosure to protect the larger group from the damaging effects of too much disclosure is found in police organisations (Stephens & Long, 2000).

Social support has been found to moderate the effects of stress in predicting suicidal behaviour (Bonner & Rich, 1987, 1988a, 1988b; Dubow, Kauch, Blum, Reed & Bush, 1989; Rudd, 1990; Trout, 1980). Durkheim's (1897/1951) proposition that the more social support a person receives from the family or community, the less he or she experiences suicide ideation has received wide support (De Man & Labreche-Gauthier, 1991; De Man, Labreche-Gauthier & Leduc, 1993; De Man & Leduc, 1995; Hirsch & Ellis, 1995; Howard-Pitney, LaFromboise & Basil, 1992; Whatley & Clompton, 1992; Yang & Clum, 1994). The importance of social support in preventing adverse long-term psychological and physical health disorders following trauma has also received validation (Boscarino, 1995; Cook & Bickman, 1990; Joseph, Yule, Williams & Andrews, 1993; Joseph, Andrews, Williams & Yule, 1992; Solomon, Mikulincer & Waysman, 1991; Solomon & Mikulincer, 1990; Solomon, Mikulincer & Habershaim, 1990; Solomon, Mikulincer & Avitzur, 1988; Stephens & Long, 2000). This evidence demonstrates positive effects for social support; the more social support resources individuals report, the less likely they are to show long-term adverse health effects. A low level of social support has also been found to be a significant predictor of depression following severe trauma (Galea et al., 2002).

Social support can come from many sources, such as supervisors, co-workers, family and friends, but it has been suggested that the people at the work site are the most important for relieving the effects of work-related stress (Beehr, 1985; House, 1981; LaRocco, House & French, 1980). Caplan, Cobb, French, Van Harrison and Pinneau (1980) found social support to be a variable of major importance to the psychological well-being of the workers in their

sample. Stephens and Long (1999) have shown low support from supervisors and others at work to be associated with job dissatisfaction as well as depression. The relationship of traumatic experiences to Post Traumatic Stress Disorder (PTSD) scores was significantly reduced if there was greater social support from peers or more positive attitudes towards expressing emotions. Unfortunately, Jacobs (1998, p. 4) states that the biggest problem in the SAPS is the perception of a lack of confidentiality of psychological and social work services that prevent personnel from utilising these services. These services should constitute a primary social support resource in the police organisation. Baker and Baker (1996) also refer to the fact that officers fear for employment and economic security if help is sought.

Cantor, Tyman and Slater (1995, p. 502) found that 36,5% of officers who had committed suicide had suffered from a physical condition, while persons with Human Immunodeficiency Virus (HIV) have also shown greater suicide ideation than the general population (Morrison, 1991; Schoenfeld, 1992). Alcohol abuse has been associated with suicide risk (McCafferty, McCafferty & McCafferty, 1992; Osgood, 1992). Police officers are typically "symptomatic drinkers" who use alcohol for the relief of psychological strain (Jellinek, 1952). Violanti, Marshall and Howe (1985) mentioned that the failure of other coping strategies is a factor that influences the use of alcohol. When other coping fails, alcohol is a convenient "back-up" device to manage existing stress. Police officers have shown a tendency to self-medicate, using alcohol as a mechanism to relax and cope with stress (Davey, Obst & Sheehan, 2001). Zantra, Maxwell and Reich (1981) found that, compared to peers with fewer health problems, those who reported many health difficulties also suffered greater anxiety, suicide ideation, and psychological distress. Being a female police officer, or being from a visible minority, might also act as additional complicating factors in understanding police suicide, since these categories are new to what can be considered a traditionally male-dominated profession (Loo, 1999).

It has been suggested (Biggam & Power, 1996) that working in an urban environment may contribute to negative affectivity, due to the greater presence of potential stressors. Separated and divorced officers have shown higher negative affectivity than officers in the "single" or "married/cohabiting" categories (Biggam & Power, 1996).

More positive affectivity has been reported by higher ranks, while lower ranks reported more negative affectivity. Terry and Calan (1997) report that managers experience more perceived

stress during large-scale organisational change than those lower in the organisational hierarchy. A range of reasons has been listed as causes of ineffective human resource management in the SAPS. Van Zyl (2002) blames the exclusion of Human Resource Management from strategic planning, over-centralisation, restrictive middle management, unaccountability and the highly hierarchical structure of the SAPS.

Kebede and Alem (1999), in an Ethiopian sample, found no difference for the prevalence of suicide ideation among the sexes. Kuo, Gallo and Tien (2001) found an insignificant difference for African Americans in the incidence of suicide ideation. These authors also found younger age to be related to suicide ideation, and gender to be unrelated. A lack of self-disclosure of suicidal feelings may contribute to the research data suggesting that ethnic minority clients have lower rates of suicide ideation, attempts and completions (Morrison & Downey, 2000, p. 376).

METHOD

Research design

A cross-sectional survey design (Shaughnessy & Zechmeister, 1997) was used to achieve the research objectives. This design allows for the description of the population at a specific point in time, and can thus indicate current levels of suicide ideation, stress and coping of participants (Shaughnessy & Zechmeister, 1997).

Study population

Random samples ($N = 1431$) were taken from police stations in the Limpopo Province, Gauteng, Mpumalanga, Northern Cape, Western Cape, Eastern Cape, Natal and Free State. Only complete data sets were used for this article, in other words, only where an officer had completed all questionnaires, the data were used for analysis. This research formed part of a bigger project regarding suicide ideation and stress involving all provinces. Since the North West province's levels of suicide ideation (Rothmann & Strijdom, 2002; Rothmann & Van Rensburg, 2001) had been determined prior to the current project, it was excluded from the current investigation.

The following formula proposed by Kerlinger and Lee (2000) was used to determine the sample size for this study:

$$n' = \frac{n}{1 + \frac{n}{N}}$$

and

$$n = \frac{z^2 \times SD^2}{d^2}$$

where n' = estimated sample size; n = the estimated sample size using the formula; N = the size of the population; z = standard score corresponding to the specified probability of risk; SD = the standard deviation of the population, and d = the specified deviation. It was attempted to solicit equal amounts of responses from all provinces to make up the total sample.

The values for z , SD and d as for the previous studies of suicide ideation in the SAPS were used in the current research.

Stations were divided into small (fewer than 25 staff members), medium (25–100 staff members) and large stations (more than 100 staff members). All police members at randomly identified small and medium stations in each of the provinces were asked to complete the questionnaire. Student and civilian members were not included in this study. In the large stations stratified random samples were taken according to sex and race. Table 1 presents the characteristics of the participants.

Table 1

Characteristics of the Study Population (N = 1431)

Item	Category	Frequency	Percentage
Race	White	574	41,15
	Black	559	40,07
	Coloured	206	14,77
	Indian	56	4,01
Rank	Constable	110	7,69
	Sergeant	278	19,43
	Inspector	775	54,16
	Captain	226	15,58
	Superintendent	35	2,45
	Senior Superintendent	10	0,70
Province	Gauteng	152	10,62
	Mpumalanga	175	12,23
	Limpopo Province	134	9,36
	KwaZulu-Natal	180	12,58
	Free State	238	16,63
	Eastern Cape	177	12,37
	Northern Cape	154	10,76
	Western Cape	221	15,44
Size of station	Small	464	32,42
	Medium	556	38,85
	Large	411	28,72
Education	Grade 10	140	9,78
	Grade 11	71	4,96
	Grade 12	835	58,35
	Technical college diploma	42	2,94
	Technikon diploma	289	20,20
	University degree	24	2,10
	Postgraduate degree	30	1,68
Sex	Male	1172	81,90
	Female	259	18,10
Status	Single	283	19,78
	Married	787	55,00
	Divorced	322	22,50
	Separated	26	1,82
	Remarried	13	0,91

Table 1

Characteristics of the Study Population (continued)

Item	Category	Frequency	Percentage
Language	Afrikaans	711	49,69
	English	169	11,81
	Sepedi	87	6,08
	Sesotho	136	9,50
	Setswana	44	3,07
	IsiSwati	25	1,75
	Tshivenda	27	1,89
	IsiNdebele	16	1,12
	IsiXhosa	69	4,82
	IsiZulu	135	9,43
	Other	12	2,10
Previously charged in terms of disciplinary code	Yes	296	20,68
	No	1135	79,32
Suffering from a medical condition	Yes	192	13,42
	No	1239	86,58
Alcohol	0 – 4 drinks per week	1058	73,93
	5 – 7 drinks per week	194	13,56
	8 – 14 drinks per week	93	6,50
	15 or more drinks per week	86	6,01
Smoker	Yes	519	36,27
	No	912	63,73
Previous suicide attempt	Yes	60	4,19
	No	1371	95,81

It can be seen from Table 1 that the sample was made up of more or less equal numbers of White and Black members. Inspectors made up more than half the sample (54,16%). The Free State and Western Cape made the largest contributions to the sample, and the Limpopo Province the smallest. Somewhat more officers were sampled from medium than from small or large stations. Almost 60% of the sample had Grade 12 qualifications, which is equal to 12 years of formal schooling. Officers in this sample were predominantly male, and mostly married. Most officers indicated Afrikaans as their home language. Of the officers in the current sample, 20,68% indicated that they had previously been charged in terms of the disciplinary code, while 13,42% answered positively when asked whether they were suffering currently from a medical condition that could affect their job performance. Of the total

sample 36,27% indicated that they were smokers, and 4,19% had made previous suicide attempts.

The mean age of participants ranged from 28,19 to 40,51 years. The average amount of years officers had been in the police service was 12,84, with a standard deviation of 6,62. Average years in the current position were 4,33. On a 5-point scale, officers rated their marital satisfaction at a 4,37 average, and job satisfaction at a 3,17 average.

Measuring instruments

The measuring instruments used in this research included the Adult Suicide Ideation Questionnaire (Reynolds, 1991a), the Police Stress Inventory, the COPE (Carver, Scheier & Weintraub, 1989), a measure of social support and a biographical questionnaire.

- The *Adult Suicide Ideation Questionnaire* (ASIQ) (Reynolds, 1991a) was used to measure participants' current level of suicide ideation. Each of the items measures a specific suicidal behaviour or thought. Reynolds (1991a) reported that the internal consistency (coefficient alpha) of the ASIQ is 0,96, while Osman et al. (1999) found an alpha coefficient of 0,98. The test-retest reliability of the ASIQ varies between 0,86 and 0,95 (Reynolds, 1991b). Reynolds (1991a) provided evidence for the content, construct and criterion-related validity of the ASIQ. Osman et al. (1999) found that the ASIQ differentiated significantly between suicide attempt and psychiatric control groups. In the North West Province, the ASIQ showed internal consistencies of 0,98 for Whites and 0,95 for Blacks (Rothmann & Strijdom, 2002; Rothmann & Van Rensburg, 2001). Pienaar and Rothmann (in press, a) found an alpha value of 0,97 for the ASIQ in a police sample.
- The *Police Stress Inventory* (PSI) consists of 88 items and was developed for the purpose of this study. A number of research studies have been published regarding stressors specific to the policing environment (Anon, 1986; Bartol, Bergen, Volckens & Knoras, 1992; Biggam et al., 1997; Brown & Campbell, 1990; Brown & Fielding, 1993; Brown et al., 1996; Crank & Caldero, 1991; Kirkcaldy, Cooper & Ruffalo, 1995; Koortzen, 1996; Kop & Euwema, 2001; Kop, Euwema & Schaufeli, 1999; Loo, 1984; Patterson, 1992;

Terry, 1981; Violanti & Aron, 1994; Wexler & Logan, 1983; White, Lawrence, Biggerstaff & Grubb, 1985). These sources were used in construction of the current instrument. In line with recommendations by Biggam et al. (1997, p. 130) this study addressed both the severity and frequency of stressors. Firstly, participants rated each of 44 items regarding the intensity of stress on a 9-point scale. The frequency part of the questionnaire asked "how many times in the last six months" did you experience the source of stress. Pienaar and Rothmann (in press, b) subjected the PSI to a principal components factor analysis with a varimax rotation. Three internally consistent factors were extracted, namely Job Demands ($\alpha = 0,92$), Lack of Job Resources ($\alpha = 0,92$), and Inherent Police Stressors ($\alpha = 0,89$). Acceptable alpha values ($\alpha > 0,70$, Nunnally & Bernstein, 1994) indicate the internal consistency of the factors of the PSI. Test-retest reliability varied from 0,46 to 0,86 and from 0,42 tot 0,89 (applied after two weeks).

- The *Coping Orientations to Problems Experienced* (COPE) (Carver et al., 1989) was designed to measure both situational and dispositional coping strategies. In the present study, the dispositional version consisting of 53 items was used. Response choices were from 1 (I usually don't do this at all) to 4 (I usually do this a lot). Although the original questionnaire measures 14 different coping strategies, Pienaar and Rothmann (in press, c) subjected the COPE to a principal components factor analysis with a varimax rotation. Four internally consistent factors were extracted, namely Active Coping ($\alpha = 0,92$), Avoidance ($\alpha = 0,86$), Seeking Emotional Support ($\alpha = 0,80$) and Turning to Religion ($\alpha = 0,83$). The alpha coefficients of the four scales are acceptable ($\alpha > 0,70$, Nunnally & Bernstein, 1994), and thus indicate the internal consistency of the factors of the COPE.
- Social support was measured with a scale devised by the researchers. In line with recommendations by McIntosh (1991, p. 202) the number of providers, the amount of the resource available, and the perceived adequacy of the resource was measured. The scale firstly listed nine possible sources of support (the public, the SAPS in general, Psychological Services of the SAPS, top management, the direct commander, colleagues, family, friends outside the SAPS, and religious affiliation). The participant had to indicate with a yes or a no answer whether he/she felt supported by the listed sources. The second scale listed the same sources, and asked participants to rate the amount of the perceived support. Answers ranged from 1 (Supports me a little) to 5 (Supports me a lot).

Adequacy of the perceived social support was rated on a third scale of 1 (not enough) to 5 (enough). A fourth scale again listed the sources of social support, and asked participants to indicate the availability of that source of support. Answers ranged from 1 (easy) to 5 (difficult).

- A questionnaire was developed to gather information about the demographic characteristics of the participants. This questionnaire gave participants the option of supplying their name and service number. Other information that was gathered included: province and station, age, sex, years of service, years in current position (to assess advancement), educational qualifications, marital status, satisfaction with relationship with significant other, language, history of disciplinary action, self-rated performance, self-rated job satisfaction, medical conditions, use of prescription and over-the-counter medicine, reasons for medication, number of alcoholic drinks per week, smoking behaviour, amount of cigarettes per day, other drug use, exercise behaviour and previous suicide attempt.

Statistical analysis

The statistical analysis was carried out with the help of the SAS program (SAS Institute, 2000). Cronbach alpha coefficients, inter-item correlation coefficients, exploratory and confirmatory factor analysis were used to assess the reliability and validity of the measuring instruments (Clark & Watson, 1995). Descriptive statistics (e.g. means, standard deviations, skewness and kurtosis) and inferential statistics were used to analyse the data. Statistical significance was set at $p < 0,05$.

Pearson product-moment correlation coefficients were used to specify the relationships between the variables. In the case where the distribution of scores is skew, Spearman correlation coefficients were computed. A cut-off point of 0,30 (medium effect, Cohen, 1988) was set for the practical significance of correlation coefficients.

A discriminant analysis was carried out to determine which combination of independent variables could be used to classify police members into groups who obtained low versus high suicide ideation scores. The resulting discriminant function separates the members of the groups maximally. The assumption of discriminant analysis is that the independent variables

are continuous but that the dependent variable is categorical (Kerlinger & Lee, 2000). A stepwise multiple regression analysis was used to determine the proportion of variance in the dependent variable (suicide ideation) that is explained by the independent variables.

RESULTS

Table 2 shows the descriptive statistics, Cronbach alpha coefficients and inter-item correlation coefficients of the ASIQ, PSI and COPE.

Table 2

Descriptive Statistics, Inter-Item Correlation Coefficients and Cronbach Alpha Coefficients of the Measuring Instruments (N = 1431)

Item	Mean	SD	Skewness	Kurtosis	r - Mean	α
COPE						
Active Coping	59,06	12,01	-0,82	0,84	0,37	0,92
Avoidance	27,25	8,18	0,47	-0,26	0,32	0,86
Seeking Emotional Support	10,83	3,36	-0,35	-0,74	0,50	0,80
Turning to Religion	12,60	3,13	-0,92	0,20	0,55	0,83
Police Stress Inventory						
Job Demands	81,26	27,21	-0,16	-0,30	0,58	0,92
Lack of Job Resources	78,88	24,09	-0,46	-0,20	0,40	0,92
Inherent Police Stressors	42,16	16,27	-0,32	-0,79	0,44	0,89
ASIQ total	9,49	18,45	3,64*	16,70*	0,49	0,97

* High Skewness and Kurtosis

Table 2 shows that acceptable Cronbach alpha coefficients ($\alpha > 0,70$) were obtained for all of the scales (see Nunnally & Bernstein, 1994). The mean inter-item correlations of all the scales are also acceptable ($0,15 \leq r \leq 0,50$, Clark & Watson, 1995). The confirmatory factor analysis resulted in acceptable loads on the various factors, which confirm their construct validity. It is evident from Table 2 that most of the various measuring instruments are relatively normally distributed, with low skewness and kurtosis. The only exception is the ASIQ, which shows relatively high skewness and kurtosis.

The product correlation coefficients between the ASIQ, PSI and COPE factors are reported in Table 3. In the case of the correlation between the ASIQ and the other measuring

instruments, Spearman correlation coefficients were computed because of the skew distribution of suicide ideation scores. The scores on the other measuring instruments are normally distributed and Pearson correlation coefficients were computed.

Table 3

Item	AC	AV	SES	TTR	JD	LJR	IPS
Avoidance	0,26 [*]	-	-	-	-	-	-
Seeking Emotional Support	0,57 ⁺⁺	0,34 ⁺	-	-	-	-	-
Turning to Religion	0,53 ⁺⁺	0,20 ⁺	0,43 ⁺	-	-	-	-
Job Demands	0,07 ⁺	0,27 ⁺	0,04	0,08 ⁺	-	-	-
Lack of Job Resources	0,14 ⁺	0,06 ⁺	0,01	0,11 ⁺	0,75 ⁺⁺	-	-
Inherent Police Stressors	0,13 ⁺	0,06 ⁺	0,01	0,11 ⁺	0,59 ⁺⁺	0,63 ⁺⁺	-
ASIQ	-0,13 ⁺	0,18 ⁺	-0,07 ⁺	-0,07 ⁺	0,18 ⁺	0,15 ⁺	0,09 ⁺

Correlation Coefficients between COPE Factors, PSI Factors and ASIQ

AC= Active Coping; AV= Avoidance; SES= Seeking Emotional Support; TTR= Turning to Religion; JD= Job Demands; LJR= Lack of Job Resources; IPS= Inherent Police Stressors; ASIQ= Adult Suicide Ideation Questionnaire total.

- Statistically significant correlation: $p \leq 0,05$
- + Practically significant correlation (medium effect): $r \geq 0,30$
- ++ Practically significant correlation (large effect): $r \geq 0,50$

Table 3 shows a statistically significant correlation (practically significant, large effect) between Active Coping and Turning to Religion. Avoidance correlates with Seeking Emotional Support (practically significant, medium effect). Seeking Emotional Support correlates with Turning to Religion (practically significant, medium effect). Job Demands showed correlations with Lack of Job Resources and Inherent Police Stressors (practically significant, large effect). Lack of Job Resources correlated with Inherent Police Stressors (practically significant, large effect). The ASIQ showed statistically significant negative correlations with Active Coping, Seeking Emotional Support and Turning to Religion. The ASIQ showed statistically significant positive correlations with Avoidance, Job Demands, Lack of Job Resources and Inherent Police Stressors.

The correlation coefficients between the ASIQ, PSI, COPE and Amount of Social Support are reported in Table 4. In the case of the ASIQ and the other measuring instruments, Spearman correlation coefficients were computed because of the skew distribution of suicide ideation scores. Pearson correlation coefficients were computed for other measuring instruments as their scores are normally distributed.

Table 4

Correlations between Amount of Social Support and Other Constructs

Item	Amount								
	Public	SAPS	Psychological Services	Top Management	Direct Commander	Colleagues	Family	Friends	Religion
Job Demands	-0,10*	-0,18*	-0,06*	-0,11*	-0,10*	-0,10*	-0,07*	-0,07*	-0,05*
Lack of Job Resources	-0,16*	-0,25*	-0,11*	-0,24*	-0,16*	-0,08*	0,03	-0,03	-0,05
Inherent Police Stressors	-0,13*	-0,12*	-0,06*	-0,12*	-0,00	-0,02	0,04	-0,00	0,02*
Active Coping	0,14*	0,04*	0,05	0,13*	-0,03*	-0,00*	-0,12*	-0,06*	-0,03*
Avoidance	0,16*	0,13	0,11	0,15*	0,08	0,06	0,10*	0,15*	0,12
Seeking Emotional Support	0,16*	0,13*	0,11*	0,15*	0,08*	0,06*	0,10*	0,15*	0,12*
Turning to Religion	0,05	0,07*	0,03	0,07*	0,05	0,01	0,13*	0,13*	0,30*
ASIQ	-0,13*	-0,13*	-0,03*	-0,11*	-0,11*	-0,08*	-0,12*	-0,14*	-0,15*

* Statistically significant correlation: $p \leq 0,05$

+ Practically significant correlation (medium effect): $r \geq 0,30$

++ Practically significant ant correlation (large effect): $r \geq 0,50$

Table 4 shows that the Amount of Support received from Religion showed a correlation with the COPE factor of Turning to Religion (practically significant, medium effect). The ASIQ showed statistically significant negative correlations with the Amount of Support received from the Public, the SAPS in general, Psychological Services, Top Management, Direct Commander, Colleagues, Family, Friends and Religion.

The correlation coefficients between the ASIQ, PSI, COPE and the Adequacy of Support are reported in Table 5. In the case of the ASIQ and the other measuring instruments, Spearman correlation coefficients were computed because of the skew distribution of suicide ideation scores. The scores on the other measuring instruments are normally distributed and Pearson correlation coefficients were computed.

Table 5

Correlations between Adequacy of Social Support and Other Constructs

Item	Adequacy								
	Public	SAPS	Psychological Services	Top Management	Direct Commander	Colleagues	Family	Friends	Religion
Job Demands	-0,10*	-0,16*	-0,07*	-0,13*	-0,15*	-0,14*	-0,10*	-0,08*	-0,06*
Lack of Job Resources	-0,20*	-0,26*	-0,14*	-0,26*	-0,20*	-0,13*	0,00	-0,03	-0,04
Inherent Police Stressors	-0,15*	-0,14*	-0,08*	-0,14*	-0,04	-0,03	0,03	-0,01	0,02
Active Coping	0,05*	0,06*	0,03	0,06*	0,11*	0,13*	0,07*	0,14	0,13
Avoidance	0,15*	0,10*	0,04	0,13*	-0,04	-0,01	-0,15*	-0,07	-0,05
Seeking Emotional Support	0,14*	0,14*	0,09*	0,17*	0,09*	0,10*	0,05*	0,14	0,12
Turning to Religion	0,05*	0,06*	0,03	0,07*	0,05*	0,04	0,09*	0,10*	0,29*
ASIQ	-0,15*	-0,15*	-0,06*	-0,12*	-0,12*	-0,10*	-0,14*	-0,15*	-0,17*

* Statistically significant correlation: $p \leq 0,05$

+ Practically significant correlation (medium effect): $r \geq 0,30$

++ Practically significant correlation (large effect): $r \geq 0,50$

In Table 5, the ASIQ showed statistically significant negative correlations with the Adequacy of support received from the Public, the SAPS in general, Psychological Services, Top Management, Direct Commander, Colleagues, Family, Friends and Religion.

The correlation coefficients between the ASIQ, PSI, COPE and the Availability of support are given in Table 6. In the case of the ASIQ and the other measuring instruments, Spearman correlation coefficients were computed because of the skew distribution of suicide ideation scores. The scores on the other measuring instruments are normally distributed and Pearson correlation coefficients were computed for them.

Table 6

Correlations for Availability of Social Support with Other Instruments

Item	Availability								
	Public	SAPS	Psychological Services	Top Management	Direct Commander	Colleagues	Family	Friends	Religion
Job Demands	0,09*	0,13*	0,10*	0,09*	0,06*	0,02	-0,03	0,01	0,02
Lack of Job Resources	0,11*	0,16*	0,08*	0,17*	0,05*	-0,04	-0,11*	-0,04	-0,02
Inherent Police Stressors	0,07*	0,09*	0,03	0,10*	-0,05	-0,07*	-0,08*	-0,03	-0,04
Active Coping	-0,00	-0,01	-0,01	-0,01	-0,06*	-0,07*	-0,06	-0,08	-0,03
Avoidance	-0,04	0,00	0,09*	-0,08*	0,10*	0,07*	0,12*	0,11*	0,10*
Seeking Emotional Support	-0,02	-0,03	-0,01	-0,06*	0,02*	0,01	0,02*	-0,02*	0,01
Turning to Religion	-0,02	-0,02	-0,02	-0,01	-0,01	-0,03	-0,04	-0,07*	-0,10*
ASIQ	-0,00	0,06*	0,02	0,04	0,05*	-0,01	0,01	0,02	0,02

* Statistically significant correlation: $p \leq 0,05$

+ Practical significant correlation (medium effect): $r \geq 0,30$

++ Practical significant ant correlation (large effect): $r \geq 0,50$

In Table 6, the ASIQ showed statistically significant negative correlations with the Availability of Support from the Public and Colleagues. The ASIQ showed statistically significant positive correlations with the Availability of Support received from the SAPS in general, Psychological Services, Top Management, Direct Commander, Family, Friends and Religion.

Table 7 indicates correlations between the measuring instruments and biographical information of the participants.

Table 7

Correlations for Biographical Information and Measuring Instruments

Item	Age	YSAPS	YPOS	SR	SP
Job Demands	0,02	0,03	-0,02	-0,03	-0,19*
Lack of Job Resources	-0,02	0,05	0,03	-0,01	-0,27*
Inherent Police Stressors	-0,04	0,03	0,01	0,01	-0,13*
Active Coping	0,05*	0,03	0,02	-0,03*	0,12*
Avoidance	0,09*	0,00	0,02	0,11	0,07*
Seeking Emotional Support	0,02	-0,07*	-0,03	-0,03*	0,15*
Turning to Religion	0,03	-0,00	0,03	0,14*	0,10*
ASIQ	-0,07	-0,06	-0,00	-0,20	-0,14

YSAPS= Years in the SAPS; YPOS= Years in current position; SR= Satisfaction with relationship with significant other; SP= Job Satisfaction.

* Statistically significant correlation: $p \leq 0,05$

Table 7 shows that no practically significant correlations exist between biographical variables and any of the measuring instruments.

Next a stepwise discriminant analysis was performed in order to determine which variables discriminate between police members with a high and those with a low level of suicide ideation. The resulting linear discriminant function for members with low and high suicide ideation is given in Table 8.

Table 8

The Linear Discriminant Function for Police Members with Low and High Suicide Ideation

Variable	High Suicide Ideation	Low Suicide Ideation
Constant	-190.99	-204.42
Province	1.84	1.94
Race	2.36	2.12
Rank	0.97	0.92
Age	1.94	1.94
Size	1.11	1.05
Years in police service	-1.18	-1.15
Years in current position	0.25	0.24
Education level	1.41	1.56
Sex	12.60	12.82
Status	3.23	3.53
Language	-0.17	-0.13
Previously charged in terms of disciplinary code	9.11	8.74
Marital satisfaction	1.91	2.12
Self-rated performance	5.31	5.45
Job satisfaction	3.95	4.15
Suffering from a medical condition	16.17	16.38
Alcoholic drinks per week	6.36	6.26
Smoke	7.72	7.98
Exercise	0.71	0.60
Attempt	48.48	52.64
Support from The Public	4.48	4.75
Support from SAPS in general	2.29	2.52
Support from Psychological Services	0.36	1.02
Support from Top management	6.19	6.51
Support from Direct commander	-0.46	-0.70
Support from Colleagues	6.44	6.36
Support from Family	12.73	12.74
Support from Friends	4.53	3.60
Support from Religion	4.89	4.82
Job Demands	-0.03	-0.04
Lack of Job Resources	0.15	0.15
Inherent Police Stressors	0.05	0.06
Active Coping	0.13	0.16
Avoidance	0.42	0.35
Seeking Emotional Support	-0.17	-0.13
Turning to Religion	0.50	0.63

By applying the discriminant analysis, it was found that all the above listed variables should be retained for the discriminant analysis. Table 9 summarises the frequencies and percentages of police members that can be classified as belonging to the high or low suicide ideation groups (based on these variables).

Group	High Suicide Ideation	Low Suicide Ideation	Total
High Suicide Ideation	70 (65,42%)	37 (34,58%)	107 (100%)
Low Suicide Ideation	231 (17,93%)	1057 (82,07%)	1288 (100%)

Table 9

Classification of Membership of High/Low Suicide Ideation Groups

Table 9 shows that the combination of variables of police members classifies correctly 65,42% of the high suicide ideation cases and 82,07% of the low suicide ideation cases. A total of 34,58% of the high and 17,93% of the low suicide ideation cases are classified incorrectly.

Finally a stepwise discriminant analysis was conducted. The variables that best predict suicide ideation of police members are given in Table 10.

Table 10

Variables that Predict Suicide Ideation in Police Members

Variables	Partial R-Square	F-Value
Attempt	0,05	71,19
Turning to Religion	0,02	34,18
Avoidance	0,02	31,55
Active Coping	0,01	17,07
Social Support: Psychological Services	0,01	9,34
Marital satisfaction	0,01	7,47
Social Support: Friends not in SAPS	0,00	6,70
Marital status	0,00	3,60
Education	0,00	2,72
Job satisfaction	0,00	3,02
Province	0,00	2,69
Race	0,00	2,90
Exercise	0,00	2,59

Table 10 shows that the following variables can be used to predict suicide ideation of police members: previous suicide attempt, Turning to Religion, Avoidance, Active Coping, whether the officer feels supported by Psychological Services of the SAPS, marital satisfaction, whether the officer feels supported by friends not members of the SAPS, marital status, education, job satisfaction, the province the officer is in, race and amount of exercise.

DISCUSSION

Cronbach alpha coefficients and mean inter-item correlations for all instruments indicated their internal consistency. The confirmatory factor analysis resulted in acceptable loadings on the various factors, which confirm their construct validity.

A majority of officers indicated that they did not feel supported by Psychological Services and Top Management of the SAPS. Furthermore, these sources of support scored poorly for the amount, availability and adequacy of support. This finding presents some empirical support to contentions of previous South African writers in the police service (Jacobs, 1998; Roosendal, 2002) that lacking support systems is a major contributing factor to negativity in the SAPS. Pretorius (1998) reports that there are 90 psychologists employed in the SAPS to handle the 131 000 members (ratio – 1: 1456). Even the complete helping professions (including psychometrists and lay counsellors), amounts to a ratio of 1: 266 (Meiring, personal communication, 2 December, 2002). Clearly, the capability of registered psychologists to handle the amount of possible clients is limited. The result of this is that members in rural areas often do not have direct access to psychological counselling when it becomes needed. The inexperience of newly appointed psychologists with the intricate stresses experienced in the policing environment must also play a role in this regard. Jacobs (1998) states that a problem exists regarding the perception of lack of confidentiality of psychological services. Police officers fear that seeking psychological counselling will be noted in their personnel files, which might have a negative influence regarding future decisions about their promotion and job security. Rothmann, Sieberhagen and Cilliers (1998) also noted a lack of trust in the organization on behalf of police officers.

The perception that the support of top management is lacking can be attributed to the highly hierarchical structure of the SAPS. Police stations report to area management, who have to report to provincial management, who in turn have to report to national management. Van Zyl (2002) states that this structure only leads to middle management becoming restrictive, while those lower in the hierarchy simply relinquish responsibility to those higher up. The effect of this highly hierarchical structure on communication is to render it ineffective. Even if top management is highly supportive of individual members at station level (which it surely is), the ineffective organisational structure leads to a perception that it is not. Early research on the topic showed work sources of support to be the most important (Beehr, 1985; House, 1981; Graf, 1986; White, Lawrence, Biggerstaff & Grubb, 1985), and therefore the issue of lacking support from psychological services and top management presents a problem in need of urgent attention within the SAPS. Psychological services constitutes the primary support resource within the organisation, while the concern of top management for individual members can be considered as important in contributing to the intrinsic motivation of police officers.

Suicide ideation was negatively related to active coping strategies, coping by seeking emotional support and turning to religion. Members, who actively engage and confront the stresses they experience, mobilize the emotional support they need, and find meaning for events within a religious framework thus actively combat the effects of negative work experiences, and the translation thereof into suicide ideation. The positive relation of suicide ideation to avoidance coping and stress because of job demands, lack of job resources and inherent police stressors, indicates that disengaging from negative work events by cognitively or behaviourally avoiding the events, coupled with the sources of stress presented in the policing context, predisposes the officer to suicide ideation. Previous research (Horesh et al., 1996) has shown that suicide risk could be predicted by coping styles.

It is postulated that active coping strategies, coping by seeking emotional support, and the use of religion, protects the police officer from suicide ideation, by involving them in the solution of a problem experienced, providing an opportunity for the acknowledgement of emotional distress and the finding of a deeper meaning for negative events by means of religion. Storm and Rothmann (in press), showed the use of active coping strategies and utilization of

emotional support from friends or relatives to decrease officers' level of emotional exhaustion, thus supporting this postulate.

Avoiding stressors and experiencing stress because of job demands, lack of job resources and inherent police stressors could contribute to suicide ideation. Storm and Rothmann (in press) showed those police officers that used avoidance as coping strategy and who reported high job demands and a lack of resources, to experience higher emotional exhaustion. Denying problems, while becoming emotionally exhausted and constantly being confronted with organizational stress, will deplete individual resources in fighting suicide ideation.

Regarding the Amount of support, a correlation pattern emerged suggestive of two underlying factors, namely support in the work place and support outside the work place. Support in the work place includes support from the Public, the SAPS in general, psychologists, management, the direct commander and colleagues. Support outside the work place includes the family, friends and religion. Regarding adequacy, the support received from colleagues was related to support from the family, friends, and religion. Regarding availability, support from the direct commander and colleagues were related to support from colleagues, family, friends, and religion.

The ASIQ showed negative correlations with all of the amount and adequacy of support scales, indicating that the amount and adequacy of support received from the public, the SAPS in general, psychological services, top management, direct commander, colleagues, family, friends and religion act to influence levels of suicide ideation.

Suicide ideation showed statistically significantly negative correlations with availability of social support from the public and colleagues, and positive correlations with the availability of social support from the saps in general, psychological services, top management, the direct commander, family, friends and religion. Without studying the dimensions of support three-dimensionally, these findings seem ambiguous. A logically possible interpretation to offer at this point is that availability of social support does indeed influence levels of suicide ideation. When support is not available, levels of suicide ideation will increase, and when it is available, levels of suicide ideation will decrease. The amount and adequacy of such support are important in this regard.

The current research can be added to a list of previous research that found support for the proposition that the more social support a person receives from the family or community, the less he or she experiences suicide ideation (De Man & Labreche-Gauthier, 1991, De Man, Labreche-Gauthier & Leduc, 1993; De Man & Leduc, 1995; Hirsch & Ellis, 1995; Howard-Pitney, LaFromboise & Basil, 1992; Whatley & Clompton, 1992; Yang & Clum, 1994).

Results of the stepwise discriminant analysis indicated that a previous suicide attempt/s, coping strategies (including the use of religion, avoidance and non-active coping), lack of support (from psychological services in the SAPS as well as friends outside the police), marital status, marital dissatisfaction, education, job satisfaction, province, race and amount of physical exercise could be used to predict the suicide ideation of police officers. These variables correctly identified 65,42% of the high suicide ideation cases and 82,07% of the low suicide ideation cases.

Research has shown that a clear majority of suicide attempters (over 60%) have had a previous suicide attempt at least once before (Vilhjalmsson et al., 1998). Findings of this study confirm these previous results by showing previous suicide attempt to be the best predictor of current suicide ideation. Results of the current analysis strongly deviate from McCafferty (1992) in showing that suicide ideation of police members is completely unaffected by stressors at work. None of the identified stress factors were included in the stepwise discriminant analysis. Turning to Religion as strongest predicting coping strategy in suicide ideation can be explained by the context in which it manifests itself. The SAPS employs chaplains as part of its permanent work force, while the helping professions is made up of psychological, social and spiritual services. A strong culture exists within the organisation of using religion as a coping mechanism. Avoidance proves to be a stronger predictor of suicide ideation than active coping. It seems logical that the coping strategy of avoidance would be a strong predictor of suicide ideation, since maladaptive coping in police work has been shown to lead to the experience of chronic, long-term stress (Hurrell, 1995; Nordlicht, 1979), and often results in job burnout and leaving the profession (Burke & Deszca, 1986; Malloy & Mays, 1984).

It is of interest that police officers' satisfaction with their current marital status was more important than their actual marital status. Separated and divorced officers have shown higher negative affectivity than officers in the "single" or "married/cohabiting" categories (Biggam

& Power, 1996), while Janik and Kravitz (1994) found that marital or relationship problems operate as antecedent behaviour for depression, and are therefore an important focus in predicting suicide attempts among police.

Biggam and Power (1996) suggested that working in an urban environment presents a greater presence of potential stressors. This finding is indirectly reflected in current results that indicate province (with different provinces presenting different levels of urbanisation) to be indicative of suicide ideation.

RECOMMENDATIONS

The SAPS needs to attend to the suicide ideation of police members and possible correlates thereof. Previous suicide attempt, avoidance coping, the support of psychological services, job satisfaction, province, race and amount of exercise were shown to be important variables in predicting suicidal behaviour of members. Avoidance coping, support from psychological services, job satisfaction and amount of exercise are all factors that the organisation can address by means of either stress management, physical health programmes and organisational development interventions.

The SAPS could help to prevent suicidal thoughts and eventually suicide by implementing programmes which would help police officers to cope constructively with work-related problems and relationship difficulties. The help of psychologists should be made available to significant others of police members. Maladaptive coping mechanisms should be examined and methods found to neutralise the negative effects that follow the use of these behaviours. Programmes could include individual therapy as well as training and development programmes which focus on self-development, stress, coping and team building. Although the SAPS implemented a suicide awareness training programme, the effectiveness of this programme should be evaluated, because it focuses only on knowledge of suicide symptoms and causes and little is done regarding coping styles and behaviour of individual utilising relevant training methodologies. However, these interventions will be more successful if they are supported by organisational changes in the SAPS.

A solution to the perception of lacking support from psychological services and top management would be the strengthening of psychological services by appointing better qualified and more experienced psychological staff. However, this strategy will not work effectively if changes in other organisational practices applicable to support staff (e.g. recruitment, selection, training and development, and remuneration) are not implemented. On an organisational level, management and organisational development interventions should be implemented to improve the quality of management in the SAPS, to increase the levels of trust in the organisation, to optimise the organisational structure and to ensure a balance between job demands and job resources.

More research is needed regarding the relationship between personality dimensions, coping strategies, stress and suicide ideation in the SAPS. As showed by Rothmann and Van Rensburg (2001), personality characteristics of police members should not be the sole focus of research about suicide ideation. Already much money is invested in selecting police members who have the required abilities and personality characteristics for positions in the SAPS. The focus should rather be on how a healthy work place could be created in the SAPS, considering the effects of job demands, (un)availability of resources and the development of more effective coping strategies.

Kop et al. (1999) point out that attention needs to be paid to the positive aspects of policing. This is important, as these can be expected to compensate for the stressful aspects (Siegrist, 1996). The fact that the current study focused on stressful events can be regarded as a limitation. Further limitations include the study design and the use of self-report measures.

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CHAPTER 6

CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

In this chapter, conclusions are drawn regarding the specific objectives of this study. The limitations of the research are discussed, followed by recommendations for the organisation and future research.

6.1 CONCLUSIONS

Next, conclusions are made based on the specific research objectives.

The first research objective was to determine national levels of suicide ideation, variations between provinces and differences between the suicide ideation of various demographic groups (ranks, races, language groups and different-sized stations).

The results in Article 1 showed a lower level of suicide ideation in the SAPS at a national level than that previously reported for the North West Province (8,64% vs 10,58%) (Rothmann & Strijdom, 2002; Rothmann & Van Rensburg, 2001). In the current sample ($N = 2396$), this percentage translates to 207 police members with serious levels of suicide ideation (scoring above the 97th percentile). If suicide ideation is to be considered a precursor to actual suicide, although most studies report on completed suicide, these figures are far above what is reported for other populations. It is also above the 130 actual suicides per 100 000 reported in the year 2000. Although the questionnaire which was used probably resulted in an over-identification of possible suicide cases, the results are still alarming. Furthermore, although this population demonstrates unusually high levels of suicide, the translation of ideation into behaviour might not be as distinct as previously postulated.

The organisational cost of having nearly 10% of the workforce preoccupied with suicidal thoughts is great. The negativity that festers within the organisation can only lead to low productivity, ineffective policing, corruption and staff turnover. When ideation translates into behaviour, the cost to the organisation rises exponentially in terms of a loss of technical and cognitive skill, manpower, and the trauma suffered by other police officers. A loss of

productivity and trained police officers put further strain on other officers, who now have even more work to handle. The trauma suffered by other officers can again lead to higher levels of suicide ideation, creating a vicious circle. The devastation of families who have lost a member to suicide will inevitably lead to blame being placed on the police organisation, breeding further negativity in the community, resulting in the further erosion of social support networks for police members.

Previous findings regarding suicide ideation were confirmed in this research, showing it to be unrelated to gender and educational attainment. The discriminant analysis showed that race and province play a role in predicting suicide ideation. Other variables (e.g. rank, language group and alcohol use) which were related to suicide ideation in previous studies (Armour, 1996; Curran, Finlay, & McGarry, 1988; Rothmann & Strijdom, 2002; Rothmann & Van Rensburg, 2001) were not related to suicide ideation in this study.

The results showed that previous charges in terms of the disciplinary code and previous suicide attempts are significant predictors of suicide ideation. Having previously been charged in terms of the disciplinary code might lead to the officer being victimised by fellow officers, or the organisation (e.g. being passed over for promotion), which could lead to feelings of frustration, lacking personal accomplishment, and eroding social support. Being suspended while an internal investigation is under way places further strain on the officer, and job suspension has been linked to police suicide (Janik & Kravitz, 1994).

Previous research has highlighted the importance of prior suicide attempts in predicting suicide (Maris, Berman, Maltzberger & Yufit, 1991; Vilhjalmsson et al., 1998). A previous suicide attempt could in the culture easily be interpreted as a sign of weakness, and an inability to handle the pressures of the job. It could happen that fellow officers will stigmatise the weaker officer, which denies the officer vital collegial support. The confrontation of police officers with death and violence serve as a reminder of the ability to end their own life. Considering South Africa's pandemic rates of HIV infection, it is postulated that this variable will play an ever-increasing role in the translation of suicide ideation into suicidal behaviour. Based on frequencies for those scoring above the 97th percentile, Black male sergeants or inspectors, and those who indicated Afrikaans as home language, who are situated in small or medium stations, present the greatest risk of suicidal behaviour. Provinces that might warrant special attention are the Free State, Gauteng and the North West.

The second research objective was to develop a valid measure of police stress in the South African context, by focussing on typical work stressors that have been identified in previous research on police.

In Article 2, a three-factor solution for the South African sample was extracted in describing police stress. The factors that were extracted showed some broad similarity to previously identified factors in studies of police stress (Alexander et al., 1993; Biggam et al., 1997; Brown & Campbell, 1990, 1994; Brown, Fielding & Grover, 1999; Gulle et al., 1998; Mitchell, Cowan & Hamilton, 1998). The factors that contribute to job stress in the police were described as follows:

- Job demands, which emphasises the demands placed on the individual in performing his/her tasks as a police officer.
- Lack of job resources, which relates to the role the organisation has in supporting and helping officers in the fulfilment of their duties, by supplying resources in the forms of human resources, supervision, material support and organisational participation.
- Inherent Police Stressors, which is a partial replication of a factor found in previous research in the police (Brown, Fielding & Grover, 1999; Mitchell, Cowan & Hamilton, 1998), and which deals with events that would only take place in the performance of a job as a police officer. This factor typically loaded on items that showed a high emotional intensity but low frequency (Anshel, Robertson & Caputi, 1997), suggesting a relationship between the frequency and intensity of inherent police stressors. Because high-intensity stressors are experienced relatively infrequently, this factor acts to negate their effect.

The alpha coefficients of the three extracted factors of the PSI were highly acceptable and the mean inter-item correlation coefficients were in the recommended range, which confirm the internal consistency of the factors of the PSI. The three extracted factors explained 49,48% of the total variance in the data, which can be considered as high, bearing in mind the exploratory nature of the analysis.

The third research objective was to determine the factors that contribute to stress, variations between provinces and differences between stressors for various demographic groups (ranks, races, language groups and size of police stations).

Sources of stress that were the most serious were other officers' not doing their job, inadequate or poor quality equipment, inadequate salary and seeing criminals go free. All these sources of stress can to some extent be addressed by the organisation. Sources of stress that in this research can be defined as chronic include having to deal with crisis situations, having to make critical and immediate decisions, having to work overtime, lack of recognition, being assigned more responsibility, paperwork, meeting deadlines, lack of personal time, having to do other officers' work, poorly motivated fellow officers and staff shortages. The sources of stress that would typically be described as acute showed low frequencies in this research and were typically sources of stress associated only with the police profession.

Regarding stress, differences were found between different ranks for job demands and lack of job resources, with lower ranks demonstrating lower levels of these sources of stress. It is suggested that this finding is indicative of higher ranks having to fulfil both managerial (administrative) and operational functions. As such, these ranks also have to answer to those higher up and lower down in the organisational hierarchy, and in case of miscommunication, are most likely blamed from both sides. The lack of job resources probably resulted from having to face higher job demands. Higher ranks need more resources, because they are confronted with a wider range of tasks to fulfil. Van Zyl (2002) argues that this level of management has become obsolete in the SAPS, their regulating and controlling of information-function having been replaced by modern technology. This stress can also be reflected in the current findings.

Coloured police officers experienced fewer job demands than Indian police officers, and less stress because of a lack of job resources than both Whites and Indians. For inherent police stressors, Black police officers were less stressed than Indians. Coloured and Indian people might be thought of as the new marginalized groups. These groups were previously oppressed under apartheid-rule, while new affirmative action policies firstly benefit Blacks. Indian people, being the race group with the shortest South African history and the smallest representation in the SAPS, might feel even more vulnerable than Coloured people.

Perceiving themselves as having the lowest job demands and a lack of job resources might just be a reflection on behalf of Coloured people to "suffer in silence". The fact that Black people measured the lowest on the inherent police stressors can reflect the fact that this group of people mostly grew up in poverty, under oppressive laws, which were violently enforced. Scenes of violence have become commonplace for them.

Afrikaans- and English-speaking members differed from other language groups, showing more stress because of a lack of job resources and inherent police stressors. These language groups can be said to consist mostly of White South Africans. Being the ones who benefited most from Apartheid, they are surely the ones suffering the greatest adjustment in benefits under the new political order. Especially with affirmative action policies in place, these groups will find opportunities for advancement within the organisation ever decreasing, while they may be experiencing more negative attitudes towards and feelings of reverse discrimination by the organisation than any other language group.

The Limpopo Province differed from other provinces, in demonstrating a higher level of job demands. It was argued in Article 2 that the geography of this province might play a role in this finding. The province is mostly rural, which makes the management thereof problematic. With limited numbers of police officers, it seems likely that officers will have to make more critical decisions and take responsibility for them, will have to work more overtime and will be more likely to have to do someone else's work.

Police members in KwaZulu-Natal experienced more stress because of a lack of job resources. It could be argued that this province presents the greatest inter-cultural and religious differences, with the population mostly made up of Whites, Blacks and Indians. The police population surely reflects this diversity, creating opportunities for interpersonal difficulties, and leading to perceptions of lacking support, recognition and poor supervision. Since this is also the province with the highest rate of HIV infection, absenteeism might be expected to be higher, which would explain perceptions of staff shortages.

Police officers in the Western Cape experience more stress because of inherent police stressors. This province is especially troubled by gang violence and incidents of urban terrorism. These uncommon stressors, typically characterised by shooting incidents, could account for this finding. Police members in small stations showed less stress regarding a lack

of job resources and inherent police stressors. Rural police stations by their very geography are not subjected to as many inherent police stressors as metropolitan stations for example. There simply is less crime in the country than in the city. Fewer members also make better supervision and better interpersonal relationships possible, while salary might not be such an issue because of cheaper rural lifestyles.

The fourth research objective was to validate a measure of coping in the SAPS, and to determine the construct equivalence as well as the bias of the items of the questionnaire.

In Article 3, the alpha coefficients of the COPE factors were found to be acceptable compared to the guideline of $\alpha > 0,70$ (Nunnally & Bernstein, 1994). The values can be considered high and thus explain a large proportion of the variance in the different factors. The mean inter-item correlation coefficients are within the range of 0,15 – 0,50 proposed by Clark and Watson (1995), and thus indicate the internal consistency of the factors of the COPE. The four factors extracted accounted for 43,29% of the total variance in the data, which is acceptable. The factors recovered demonstrated structural equivalence, as indicated by Tucker's phi coefficients, for the four race groups included in this study. The latter finding is of special importance, since no such research has previously been undertaken in the South African context. These results indicated that the recovered coping factors are valid across racial groups within the SAPS. It is also a strength of this study that analysis was done at the item level, because previous subscale analysis has shown differences for different racial groups (Prelow, Tein, Roosa & Wood, 2000).

The fifth research objective was to investigate differences between different provinces, ranks, races, language group and different-sized stations on the COPE.

The factor analysis of the COPE items yielded a four-factor solution. The first factor was described as Active Coping, and the second factor was labelled Avoidance. The items measuring Seeking Social Support for Emotional Reasons (as proposed by Carver, Scheier & Weintraub, 1989) made up the third factor and the Turning to Religion (Carver et al., 1989) items made up the fourth factor. The separate factor of Turning to Religion has previously been identified (Lyne & Roger, 2000; Sica, Novara, Dorz & Sanavio, 1997). These factors

corresponded to those proposed by Cox and Ferguson (1991), namely problem-focused and emotion-focused coping, reappraisal and avoidance.

The first factor can be thought of as an active cognitive-behavioural approach to coping. Items loading on this factor typically related to cognitively redefining the event and taking action as remedy. The second factor describes a passive cognitive-behavioural approach, and translates into cognitively and behaviourally disengaging and avoiding the problem. It also included items related to expressing the emotional distress associated with the problem. The third factor was clearly one of affective coping. This is a positive finding for the current sample, since police typically deny emotional reactions, and resist admitting either professional or personal difficulties (Brown, Cooper & Kirkcaldy, 1996; Brown & Grover, 1998; Kop & Euwema, 2001; Reiner, 1985; Stephens & Long, 2000; Young, 1984). The sources this support is sought from (personal or professional), and their actual utility, would affect the contribution to mental health. However, it is encouraging that such a factor emerged, indicating that the expression of emotional difficulties is acceptable in certain contexts. The final factor is one of using religion as a coping mechanism. This finding can in part be explained by the SAPS providing spiritual support for its members by means of chaplains in Spiritual Services (Article 3). It is also argued that religion works as a coping strategy primarily by providing a means of reappraising the stressful event and attributing meaning to it.

Regarding coping, Black police members differed from White and Coloured colleagues, showing a more avoidant coping strategy. Regarding the seeking of support for emotional reasons, Black members were also more predisposed than Whites, Indians and Coloured people. This finding was mirrored in different language groups, with traditionally indigenous languages (Sepedi; IsiZulu; Sesotho) measuring higher on avoidance coping and the seeking of emotional support (Sesotho; Tshivenda; IsiZulu and Sepedi). This finding indicates that Black members are more likely to disengage cognitively and behaviourally and avoid the problems they experience. The factor of Avoidance also included items related to expressing the emotional distress associated with the problem, and Black members also show a higher tendency actively to seek social sources toward which they can express their emotional distress. In conjunction these findings could be taken to indicate that Black police members have the least effective coping strategies, since cognitive and behavioural disengagement and

avoidance, coupled with more expression of affective distress, will lead to little change in the problems experienced.

Higher ranks differed from lower ranks, with lower ranks showing more avoidance. It can be deduced that higher-ranking members have been in the police organisation for longer periods of time. It is likely that these members have learnt more relevant coping strategies to the policing environment, and therefore make less use of avoidance. Small stations also showed more avoidant coping, compared to medium and large stations. This finding has been explained in terms of rural police officers being open to more public scrutiny (Bartol, Bergen, Volckens & Knoras, 1992; Sandy & Devine, 1978). Small stations are naturally also further removed from the decision-making power and access to resources found in larger stations that are physically closer to provincial or area management. Feelings of being marginalized by management, coupled with the possibility of personally knowing the perpetrators of crime, present officers with an opportunity to disengage and avoid stressful situations.

In analysing different provinces the Free State showed the least active coping and use of religion as a means of coping. This province also showed the highest use of avoidance coping. Low active coping will be exacerbated by a higher tendency to disengage and avoid the problem. Since religious support can be thought of as a resource supplied by the SAPS, the Free State presents the most dysfunctional coping in measuring the lowest on this resource as well. These findings are reflected in the province showing the highest percentage of high ASIQ scorers (see Article 1).

The next research objective was to study possible causes of suicide ideation in the SAPS by highlighting those demographic variables, coping strategies and sources of stress that play a mediating or moderating role in the translation of stress into suicidal behaviour.

As regards the demographic variables included in this study, the results indicated that having previously been charged in terms of the disciplinary code and having made a previous attempt at suicide are significant predictors of suicide ideation. On the grounds of the frequencies reported for those who scored above the 97th percentile regarding suicide ideation, small and medium stations in the Free State, Gauteng and the North West are most vulnerable to suicide ideation. In the Free State and North West Province, which are not really urbanised areas, small and medium stations would typically suffer isolation, which

could easily contribute to feelings of loneliness and depression in police members. Article 4 also alluded to the effect of the SAPS' highly hierarchical structure on internal communication and perceptions of support. Many levels of management impede communication up and down the hierarchy. It has also been noted that following disciplinary hearings, officers are sometimes placed in rural areas away from their families and established support networks, exacerbating this effect. Gauteng is a highly urbanised area where the high crime rate might be especially troublesome in areas where small stations are located, because fewer people present a better opportunity for committing crime.

Article 4 showed suicide ideation to be negatively related to active coping strategies, coping by seeking emotional support and turning to religion. From this it can be deduced that members, who actively engage and confront the stresses they experience, find ways to mobilize their needed emotional support, and use religion to give meaning to the events they experience, actively contest the effects of negative work experiences, and the translation thereof into suicide ideation. The positive relation of suicide ideation to avoidance and the stress caused by job demands, a lack of job resources and inherent police stressors, indicate that disengaging from negative work events by cognitively or behaviourally avoiding the events, coupled with the sources of stress presented by the policing context, predisposes the officer to suicide ideation. Denying problems, while being confronted with organizational stress, will undermine the individual's ability of resisting suicide ideation.

Results in Article 4 support a hypothesis of two important categories of social support, namely support in the work place and support from outside the work place. Support in the work place includes support from the Public, the SAPS in general, psychologists, management, the direct commander and colleagues. Support outside the work place includes the family, friends and religion. Suicide ideation was negatively related to the amount and adequacy of all sources of social support, indicating the importance of these factors in protecting the individual against suicide ideation. Of the three dimensions of social support studied in this research, Availability performed most poorly. It is suggested that the relationship of Availability of social support to suicide ideation is mediated through the Amount and Adequacy of such support.

Results of the stepwise discriminant analysis indicated that previous suicide attempt, Turning to Religion, Avoidance, Active Coping, whether the officer feels supported by Psychological

Services of the SAPS, marital satisfaction, whether the officer feels supported by friends not members of the SAPS, marital status, education, job satisfaction, the province the officer is in, race and amount of exercise can be used to predict the suicide ideation of police officers. These variables correctly identified 65,42% of the high suicide ideation cases and 82,07% of the low suicide ideation cases.

6.2 LIMITATIONS

Limitations of this study include that it was done in a single occupational group, namely police officers, which does not allow for the making of generalisations to other occupations regarding suicide ideation.

The use of self-report measures can be considered a limitation. If it were possible to conduct interviews with all those members who scored above the 97th percentile for suicide ideation, valuable information regarding their experiences in the police organisation could have elucidated the current findings. The use of open questions could also have allowed for quantitative analysis of data.

Critique that can be levelled against the measure of social support is that what it attempts to measure is so obvious that answers could have been influenced by social desirability. However, the results obtained were in the expected direction, and concurred with previous literature, thus indicating that social desirability might not be a problem for this instrument in the current research. Two of the measures used in this research (the measure of Social Support and the Police Stress Inventory) were developed in the current project and therefore retest reliabilities with greater time lapses and the application of the measures in different samples would add to the validity of these instruments.

The design of the research, namely the cross-sectional design, makes the drawing of casual relationships impossible. The results obtained are rather a description of the population at this specific point in time than it is able to predict future behaviour and inter-relationships.

6.3 RECOMMENDATIONS

6.3.1 Recommendations to address the problems

The first and foremost recommendation stemming from this research is that the SAPS takes current suicide prevention programmes under review. The findings of this study, namely that suicide ideation was unrelated to gender, level of education and alcohol use, highlight the difficulty of identifying a "typical" suicide-prone officer. The differences found between races, ranks and provinces do however give guidelines for adjusting the aim of suicide prevention programmes. Black male sergeants or inspectors, serving at small or medium stations, present the greatest risk, and thus an entry point in the prevention of suicidal behaviour. Provinces that warrant special attention are the Free State, Gauteng and the North West. The effectiveness and comprehensiveness of current programmes in including all members at all levels needs to be reassessed, to ensure that these address the needs of all levels of the organisation. Previous suicide attempts and having been previously charged in terms of the disciplinary code are two clear warning signs of possible suicidal behaviour. It is also suggested here that officers who are HIV positive will show higher levels of suicide ideation.

Findings in the current research clearly highlighted the perceived support of Psychological Services and Top Management of the SAPS to be lacking. Causes of these perceptions need to be investigated, and these two sources have to actively and urgently endeavour to change this perception. The perception that a problem exists is probably also indicative of a real problem. Especially the confidentiality of psychological problems of individual officers needs to be a priority. The current system, where this information is included in personnel files, might have to be rethought. The SAPS can immediately address the problem by employing more psychologists. Regarding top management, the SAPS might need to enter a process of organisational restructuring that would lessen the levels within the organisation. Since this will be a long-term process, what is needed is to immediately improve communication. A possible short-term solution would be to allow provincial- and area management greater decision-making and discretionary powers.

Sources of stress that should be a first priority for stress management programmes have been identified (other officers' not doing their job, inadequate or poor quality equipment, inadequate salary and seeing criminals go free), and stress management programmes can address these stressors by including aspects like motivation, and training in matters of procedural law. The organisation needs to find ways to support its members with the necessary equipment (perhaps by turning to government or the business sector for funding) and the fair distribution of wages. Chronic organisational stressors also need to be addressed – these particularly include sources of demotivation that need to be identified, the need for officers to be able to make critical and immediate decisions, lightening the administrative burden and the need to be trained to be more sensitive toward subordinates and colleagues and recognise their contributions.

In light of the results of the literature review on coping, it is recommended that the COPE be factor-analysed at the item level in subsequent research, because of the variations found for sub-scale analyses. The content of items should act to guide future researchers in distinguishing coping strategies, although a four-factor solution including problem-focused, emotion-focused, avoidant and reappraising factors ought to be sought.

The Free State Province, Black police members, lower ranks and small police stations could benefit greatly from a coping programme, because these showed the most dysfunctional coping skills.

6.3.2 Recommendations for future research

The following recommendations are made for future research:

- It is recommended that the phenomenon of suicide ideation in police be studied in a longitudinal design, in order for the relationships between stress, coping and suicide ideation to be elucidated. The relationship between suicide ideation and actual suicide rates also need to be investigated, since it was shown that levels of suicide ideation are far above actual suicide rates.

- South Africa's exceptionally high rate of HIV infection will surely affect suicide ideation of police employees. Although HIV status is a delicate matter because of the stigma attached to the disease, research could highlight the importance of this variable in suicidal behaviour.
- Future research needs to study individual differences in stress, coping and suicide ideation by including a measure of personality. All the variables that were analysed have been related to personality dimensions in previous research.
- With regard to the measuring instruments, it is recommended that the social support scale be adjusted and applied to other occupational contexts in future research as well. A limitation of the social support scale in its current form is that it did not provide officers with the opportunity to list sources of support not given in the instrument. The measure of police stress needs to be retested in other police samples, especially Southern African (SADC) samples. Illustrating concurrent validity by using it in conjunction with other measures of stress would further enhance the utility of this instrument.
- Future studies of police stress should also aim to do this holistically, by including both work and non-work domains of eustress and distress, and studying the additive and interactive effects of stressors.
- Both the function and effectiveness of Turning to Religion as coping strategy in the SAPS needs further investigation.
- Future research should also aim at the application of intervention research, in order for clear successful strategies in suicide prevention to be identified.
- The current training programme to prevent suicide in the SAPS should be evaluated. Research should be conducted regarding alternative training contents and methodologies for the current suicide prevention programme.

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