

Stress and Quality of Life of Senior Brazilian Police Officers

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This study examines levels of occupational stress, quality of life, work-related stressors, and coping strategies among senior police officers in Brazil. A quantitative questionnaire survey conducted among 418 senior members of the São Paulo Police Force reveals that high-ranking Brazilian police officers perceive their profession as being very stressful. A large proportion (43%) of police officers are found to have significant stress symptoms. A greater proportion of females (54%) than males (40%) are found to have stress. The most frequently reported stressor is interaction with other departments within the police force. Quality of life is found to be deficient in the 'professional' and 'health' areas. This study is the first to show a clear association between high levels of emotional stress and poor quality of life in Brazilian police officers. The large number of stress symptoms and poor quality of life identified in the present study indicates that there is a need for preventive actions inside the Brazilian police force to motivate lifestyle changes, improve stress-management skills, and promote a better quality of life among high-ranking police officers.

Keywords: occupational stress; senior police officers; quality of life, coping, stressors.

Este estudio examina los niveles de estrés profesional, calidad de vida, estresores relacionados con el trabajo y estrategias de afrontamiento entre oficiales de policía en Brasil. Un cuestionario-encuesta cuantitativo llevado a cabo entre 418 miembros mayores de la Fuerza de Policía de San Paulo revela que los oficiales brasileños de alto rango perciben su profesión como muy estresante. Se encontró que una gran proporción (43%) de oficiales policiales tienen síntomas significativos de estrés. Y que la proporción de las mujeres (54%) que tienen estrés es mayor que la de los varones (40%). El estresor más frecuentemente mencionado es la interacción con otros departamentos dentro de la policía. Se encontró que la calidad de vida es deficiente en los áreas "profesional" y de "salud". Este es el primer estudio que muestra una clara asociación entre altos niveles de estrés emocional y baja calidad de vida en oficiales de la policía brasileña. El alto número de síntomas de estrés y la baja calidad de vida identificados en el presente estudio indican la necesidad de actuaciones preventivas en la fuerza policial brasileña para motivar cambios en el estilo de vida, mejorar las habilidades de manejo de estrés y promocionar una mejora en la calidad de vida entre los oficiales policiales de alto rango.

Palabras clave: estrés profesional, oficiales de policía mayores, calidad de vida, afrontamiento, estresores.

Occupational stress has received significant attention in the academic literature in recent years (Burke, 2004; Oliveira, 2004; Rossa, 2004). Studies have indicated that occupational stress can have a variety of effects on human functioning that can persist for several years (Leitner, & Resch, 2005); moreover, chronic tension states can affect professional satisfaction (Grebner, Semmer, & Elfering, 2005), family relationships (Matthews, Priore, Acitelli, & Barnes-Farrell (2006), physical health (Pinho, 2005), and quality of life (Lipp, 2005; Diniz, 2006).

In addition to these personal sequelae, Fontana (1991) and Wright and Cropanzano (2000) have noted that stress can diminish productivity as a result of a decreased ability to concentrate, shortened attention span, and a diminished capacity to observe. Depression and a feeling of helplessness can set in as self-esteem decreases. Enthusiasm for work can diminish, leading to absences. Stress can eventually lead the person to a state of 'burnout', which typically occurs among professionals whose activities involve a high level of contact with people (Martinussen, Richardsen, & Burke, 2007; Shirom, Nirel, & Vinokur, 2006).

Although many studies have examined aspects of occupational stress in various occupations, there are few studies that focus on the effects of occupational stress among senior police officers. The present study has attempted to fill this gap by studying the phenomenon of occupational stress among senior Brazilian police officers. The objectives of the study were to assess the causes, incidence, and nature of stress among senior police officers, together with the strategies commonly used by them in dealing with excessive stress.

Kyriacow and Sutcliffe (1981) defined 'occupational stress' as an uncomfortable emotional state that is characterized by tension, frustration, anxiety, and emotional exhaustion associated with aspects of work. Occupational stress occurs when an individual perceives that his or her work responsibilities are onerous and that there are limited opportunities to assert autonomy and control.

Many occupations have been associated with high levels of stress. In particular, studies in Brazil have examined occupational stress among: nurses (Ferreira, 2006; Pafaro, 2002); judges (Lipp, & Tanganelli, 2002); university professors (Servilha, 2005); elementary school teachers (Reinhold, 1997; Rossa, 2004); journalists (Proença, 1998); physicians (Shirom et al., 2006), and police officers (Arzabe, & Socci, 2005; Neto, & Lima, 2003).

Studies of police officers in the United States have been conducted for many years (Brodeur (2005). Violanti, Marshall and Howe (1983) investigated three elements of the stress process—occupational stressors, individual stress, and coping strategies—and found strong positive relationships between depersonalization and stress, as well as between stressors and cynicism and deviance. Data for this study were drawn from questionnaires completed by 500 officers in 21 police departments. Violanti and Aron

(1995), who analyzed police stressors in a sample of 103 police officers, found that killing a person in the line of duty ranked as the highest stressor and that officers with 6–10 years of experience had the highest overall combined stressor mean score.

Other studies that focused on North American police officers have included: (i) Hart, Wearing, & Headley (1995), who studied the personality characteristics and the psychological factors that influence how North American police officers perceive their quality of life; (ii) Violanti and Aron (1995), who investigated variations in perception of stress among police personnel; (iii) Anshel (2000), who developed a coping model to reduce acute and chronic stress among police officers; (iv) Morash, Haarr, & Kwak (2006), who analyzed the multiple influences that determine the stress level of police officers; and (v) Hoover (2005), who studied the differences in the training given to police officers in different countries.

Several studies of stress among police officers have utilized the methodology proposed by Storch and Panzarella (1996). These authors combined a standardized measure of stress with a questionnaire (about job stressors, individual job and career variables, and personal variables) to investigate stress and anxiety in relation to occupational and personal stressors among 79 police officers from three police departments in the United States. Newman and Rucker-Reed (2004) adopted this methodology to investigate stress, anxiety, and stressors among U.S. marshals. Both of these studies found that the main stressors identified by the respondents related to organizational issues (such as problems with management, superior officers, and the work environment).

More recently, Martinussen, Richardsen and Burke (2007) examined burnout among 223 Norwegian police officers and found that job demands and job resources were related to burnout and stress. Buker and Wiecko (2007), in one of the rare studies published in English regarding the issue of police stress in a developing country, also identified organizational issues as the most important causes of stress in policing.

Manning (2005), who reviewed police studies from the United Kingdom, Canada, New Zealand, Australia, and the United States, identified a need for more scientific research on the various dimensions of police work. In this regard, it is interesting to note that few studies have been conducted in Brazil on the stress experienced by police officers. It is unclear why this is so. Wong (2003) noted a lack of studies of police officers in Asia and suggested that the main reason for this was political censorship; however, this does not seem to be the case in Brazil. Another possible reason is the 'closed culture' of Brazilian police forces (whereby the organization deals with its difficulties within its own walls), thus causing researchers difficulty in gaining access to the authorities who could authorize appropriate studies.

Despite these difficulties, some studies have been conducted in Brazil. Silveira, et al. (2005) conducted a comparative study of 'burnout' in two samples of police officers in Rio Grande do Sul—comparing the types of activities undertaken by the two groups within the police force. Minayo and Souza (2003) and Souza, Franco, Meireles, Ferreira and Santos (2007) have investigated the psychological differences between sexes in a sample of 2746 officers from various levels of the police force in the city of Rio de Janeiro. Notwithstanding these studies, little is known about the stress experienced by high-ranking senior police officers; indeed, a search of the literature on stress among this population failed to reveal a single study.

In Brazil, the career path for high-ranking senior police officers is independent of the usual promotion system within the police force. To become a high-ranking police officer, candidates must pass an entrance examination, and only those with a degree in law or social sciences may take the examination. Once on the job, officers undertake various roles from the beginning of their careers—including the administration of other police officers in departments or sectors under their responsibility, leading and directing other police officers, interacting with the people from all social classes in the general public, heading all the investigations under their jurisdiction, and making decisions on whether arrests will be made and criminal charges prosecuted. These officers must therefore be mature and objective persons who are aware of the details of the law, sensitive to various social and cultural habits, free of vested interests, and guided by ethical principles in all their decisions.

Emotional stress is a complex physical reaction that occurs when the individual is forced to face situations that are beyond the person's coping capacity (Lipp, 2005). The reaction develops in four phases: (i) alert; (ii) resistance; (iii) quasi-exhaustion; and (iv) exhaustion (Lipp, 2000). The function of these responses is to enable the individual to adapt to the new situation that has been created by a challenging stimulus, but the reaction can produce adverse symptoms (such as fatigue and muscle tension). These responses can occur in diverse situations—such as changing jobs, constant pressure at work, and excessive work demands (Everly, 1995). Resistance to such challenges is largely determined by the coping strategies present in the repertoire of the individual. In this respect, Folkman, Lazarus, Gruen, and De Longis (1988) have proposed 'coping' as a mediating factor between the challenging stimulus and the development of the stress reaction. These authors emphasised the importance of the mediating value of internal factors in the evaluation of an event as being stressful or not.

The relationship between stress and quality of life has received attention from Brazilian researchers such as Diniz (2006) and Vicentin (2004). People who consider themselves 'happy' attribute their happiness to success in four areas: social, affective, health, and professional (or occupational).

According to Couto (1987), occupational stress interferes with quality of life by modifying the manner in which the individual interacts in the other areas of his or her life. According to Albrecht (1988), stressors at work can be classified into three factors: physical, social, and emotional. Lazarus and Lazarus (1994) identified work overload (having many tasks and insufficient time to accomplish them), constant interruptions, ambiguity regarding priorities, degrees of authority and autonomy, uncertainty regarding the future, and unhappy colleagues as stressing factors associated with occupational stress.

Regarding the sources of occupational stress among Brazilian police officers, Souza et al. (2007) noted the difficulties that female officers face when they enter a male-dominated institution. Apart from this, there has been little research of occupational stress among Brazilian police officers; in particular, there have been no studies focusing on occupational stress among high-ranking senior police officers.

Method

Participants

The sample for the study consisted of 418 high-ranking police officers of the police department of the city of São Paulo, Brazil. The participants, who were from 93 police districts of the city and represented almost all high-ranking senior officers in the police department, had participated in a seminar about stress and quality of life in January 2007. None refused to participate in the study.

Measures

Demographic information

All data in the study were collected as responses to a written questionnaire. Demographic information on the participants (such as gender, marital status, time in job, position, and number of children) was obtained before seeking responses with respect to occupational stress.

Stress levels and associated symptomatology

Stress levels and associated symptomatology were assessed by the Lipp Stress Symptoms Inventory (LSSI) for Adults (Lipp, 2000). The LSSI is composed of different sets of symptoms in accordance with Lipp's (2000) four-phase model (alert, resistance, quasi-exhaustion, and exhaustion). LSSI enables assessment of both cognitive and somatic stress symptoms in terms of the four stress phases. The respondent is asked whether he or she has had a stress symptom (as specified in each chart) in the past day, week, or month. Each of the first two sets (alert and resistance) contains 15 items. The third chart, which assesses stress in the exhaustion phase, contains 23 items. Assessment is made in terms of the percentage tables of the test.

Each respondent is asked to assess the occupational stress of his or her job on a scale from 1 to 10 (in which 10 = 'extremely stressing' and 1 = 'not stressing'). This stress assessment scale has previously been used in studies of self-perception of occupational stress in 19 professions (University of Manchester, 1987) and judges (Lipp, and Tanganelli, 2002).

Quality of life

Quality of life among the respondents was assessed by the Quality of Life Inventory (QLI) (Lipp and Rocha, 1995). The QLI is composed of questions regarding aspects of life in four dimensions: professional, health, social, and affective. The replies indicate the quality of life of the person according to the presence of problems in these areas of functioning. It does not attempt to identify the presence of disease, but it does aim to indicate the presence of indicators that could contribute to the development of health problems. For example, it assesses whether a person relaxes or plays sports frequently, or whether he or she has a healthy diet.

Occupational stressors

To identify the causes of occupational stress among the respondents, a Police Officers Stressors Questionnaire (POSQ) was used. This questionnaire, which was developed for the present study, was based on a review of the literature and the findings of a pilot study conducted among five high-ranking officers. In the POSQ, the main sources of stress were classified into five categories: (i) third-party suffering; (ii) personal and family repercussions of job dedication; (iii) police routine; (iv) feeling that the profession is losing prestige; and (v) interaction with other sectors of the police force.

Coping strategies

With regard to *coping strategies*, the study utilized a Stress Coping Questionnaire (SCQ), which was based on Girdano and Everly's (1986) categories of coping strategies. The categories were: (i) family; (ii) hobbies; (iii) social support; (iv) therapeutic techniques; (v) attention to health; and (vi) use of substances.

Reliability of measures

As shown in Table 1, the reliability of all scales used in the study was verified by high internal consistency.

Procedure

The Head of the Police Department of the State of São Paulo was contacted to explain the scope of the research. On that occasion, it was agreed that a lecture would be given by the researcher to all high-ranking officers attending a training course on stress control. The only officers who did not attend were those involved in emergencies or those on leave; nearly all high-ranking police officers were included in the study.

Before the 60-minute lecture, the police officers were invited to answer the questionnaires. It was emphasized that participation was entirely voluntary and anonymous. All officers in attendance freely agreed to participate, and all signed an informed consent form. In all, approximately 95% of the high-ranking police officers in the force participated in the study.

The questionnaires were distributed and completed as a group, and the completed questionnaires were collected as soon as the respondents had finished answering them.

Data analysis

In general, chi-square was used to compare the categorical variables between the groups, although Fisher's exact test was used for values below five. The Mann-Whitney test was used to compare the numerical variables between the groups.

To assess internal consistency, Cronbach's alpha coefficient was calculated for ordinal data, and KR-20 was used for dichotomic data. Coefficient values above 0.70 indicated high consistency.

To assess the relationships between the main variables and stress, the study used logistic regression analysis (univariate and multivariate models with stepwise selection of variables). To assess the relationships among the main variables, multiple correspondence analysis (MCA) was used.

Table 1

Internal consistency of instruments

Instruments	N° of Items	Coefficients*	Items with lowest Consistency	Correlation with Total**	Coefficient *(After Items are removed)
Coping Strategies Questionnaire	30	.74	Item 11	-.136	.756
			Item 23	-.031	.766
			Item 10	-.035	.775
Occupational stressors Questionnaire	74	.977	—	—	—
Stress Symptoms Inventory (LSSI)	53	.906	—	—	—
Quality of Life Inventory (QLI)	45	.827	—	—	—

* Kuder-Richardson KR20 coefficient for dichotomy scales and Chronbach's coefficient alpha for ordinal scales (Likert).

** correlation of the item with the total of the respective domain without taking into account the item in the total score.

Results

Demographic data

Demographic and clinical characteristics for the group are shown in Table 2, and the statistics computed between the variables are presented in Table 3. A large majority (80%) of the sample was male, which might reflect a male preference for this type of work or discrimination in favour of males in attaining senior positions in this police force.

The average age for the group as a whole was 42 years (ranging from 24 to 69 years of age). Two-thirds (67%) of the female officers were younger than 40 years of age, whereas only about a third (36%) of the male officers were in this age group; conversely, 22% of the male officers but only 9% of the female officers were older than 50 years of age. A significant association was thus found between gender and age, $\chi^2(2, 418) = 27.69, p < 0.001$. This suggests that more women have joined the police force in recent years, but that these women have not yet achieved senior rank.

A significant association was found between marital status and gender (Fisher's exact test, $p < 0.001$): 74% of the male officers were married whereas only 40% of the female officers were married. Only 8% of the men and 11% of the women were divorced. Women showed a tendency to have fewer children than men, which also represented a significant difference ($p < 0.001$). These results suggest that police work had interfered with the personal life of the women in the sample with respect to getting married and having children.

Perceived occupational stress

Each respondent rated the stress generated by his or her professional activity on a scale of 1 to 10. The mean score for the sample was 7.8, which indicates that respondents considered their jobs to be 'highly stressful'. This average rating (7.8%) was slightly greater than that obtained in a previous study (University of Manchester, 1987) for police officers and pilots (7.5), and significantly greater than that for firemen (6.3) in the same study.

Table 2
Demographic and Clinical Characteristics for the Police Officers

Variable	Measures		
Gender	Male	Female	
	80%	20%	
Age (in years)	Mean	SD	Range
	42.06	9.55	24-69
Marital status	Married or partnered (%)	Single	Divorced
	64.99	25.66	9.35
Number of offspring	Mean	SD	
	1.89	1.45	
Years of police work	Mean	SD	
	11.50	7.73	
Stage of emotional stress	Frequency		
No diagnosis of stress (%)	57.00 in Percentages		
Alarm (%)	3.00		
Resistance (%)	35.00		
Quasi-exhaustion (%)	4.00		
Exhaustion (%)	1.00		
Number of stress Symptoms	Mean	SD	Range
	10.00	8.18	4-46
Self-perceived stress (scale of 1 to 10)	Mean		
	7.80		
Good Quality of Life (subscales)	Frequency in Percentages		
Social	86.80		
Affective	84.25		
Professional	41.08		
Health	45.72		

Table 3
Association between variables

Variables	Gender	Age	Stress
Gender	—	$\chi^2 (2,418) = 27.29^*$	—
Marital status	Fisher's Exact Test*		Fisher's Exact Test
No. of Offspring	Mann-Whitney		Mann-Whitney
Stress	$\chi^2 (2,418) = 5.81^{***}$	$\chi^2 (2,418) = 0.15$	—
Number of Stressors	$\chi^2 (9,418) = 16.98^{**}$	$\chi^2 (6,418) = 10.29$	$\chi^2 (6,418) = 19.48^{**}$
Strategies	$\chi^2 (5,418) = 12.63^{***}$	$\chi^2 (5,418) = 6.95$	$\chi^2 (5,418) = .65^{***}$
Success in Quality of life			
Subscale Social	$\chi^2 (1,418) = 0.01$	$\chi^2 (1,418) = .01$	$\chi^2 (1,418) = 17.52^*$
Subscale Affective	$\chi^2 (1,418) = 4.14^{***}$	$\chi^2 (1,418) = 4.61^{***}$	$\chi^2 (1,418) = 10.80^*$
Subscale Professional	$\chi^2 (1,418) = 4.09^{***}$	$\chi^2 (1,418) = 7.01^{**}$	$\chi^2 (1,418) = 22.01^*$
Subscale Health	$\chi^2 (1,418) = 3.85^{***}$	$\chi^2 (1,418) = 2.63$	$\chi^2 (1,418) = 58.59^*$

* $p < .001$. ** $p = .01$. *** $p < .05$.

However, these comparisons should be treated with caution because self-perceptions of stress depend on various personal attributes and traits (Violanti, & Aron, 1995), which were not analyzed in the present research.

Incidence of stress and symptomatology

Figure 1 shows the proportion of respondents with and without stress. It is apparent that 43% of the respondents reported stress symptoms. There was no significant difference with respect to age, $\chi^2 (2, 418) = 0.15$; $p = 0.926$.

Most of the respondents (50%) had psychological symptoms, 39% had physical symptoms, and 11% had both. It was found that 48% of the respondents had muscle tension, 41% felt constantly tired, 40% constantly thought about the same subject, and 38% had a high level of irritability. On average, 10 symptoms of stress were reported by each respondent, but some had as many as 46 symptoms of stress.

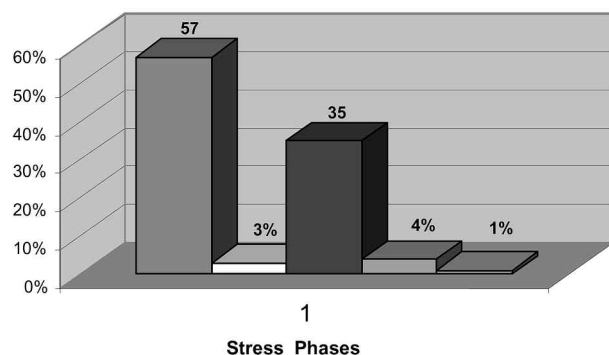


Figure 1. Proportion (%) of respondents with and without stress.

These findings reveal that 35% of these high-ranking police officers were functioning within the resistance phase of stress—in which the person still produces, but with difficulty. This means that many police officers have to exert above-average effort to deal with stressful factors in their lives; indeed, 5% of them were living beyond their capacity in the quasi-exhaustion and exhaustion phases. These findings are significant in the context of the demands placed upon police officers regarding objectivity, emotional control, and decision-making. It is known that excessive stress interferes with logical thinking, memory, and the ability to make decisions (Klein, Faraday, Quigley, & Grumberg, 2004; Lipp, 2005; Park, Mark., & Sun Lee, 2004). It is thus very important to society that stress-prevention measures are put into place to assist high-ranking police officers—not only because this will enhance the health status of the individuals concerned, but also because it might promote a better level of policing service to the population.

The number of years of experience was not associated with stress (Mann-Whitney $p = 0.158$), which differs from the findings of Violanti and Aron (1995) who found that police officers with 6–10 years of experience reported the highest overall combined stressor mean score in their survey. This difference might be due to the selection of participants in the two studies: the respondents in the study by Violanti and Aron (1995) were from a variety of ranks, whereas the present research included only high-ranking officers.

Gender comparison

As shown in Table 4, 54% of the females and 40% of the males suffered from stress. This represented a significant

Table 4
Stress severity by gender

Stress Phases	Gender	
	Female (%)	Male (%)
Without Stress	46	60
Alert	—	2
Resistance	41	35
Quasi-exhaustion.	7	2
Exhaustion	6	1
Total	100%	100%

difference between the sexes: $\chi^2(2, 418) = 5.81, p = 0.016$. A significant difference between the sexes was also apparent with respect to the severity of stress, with more women being in the advanced phases of stress.

These findings are in accordance with research that has revealed a greater incidence of stress among Brazilian women than men (Calais, Andrade, & Lipp, 2003; Souza et al., 2007). The gender differences found in the present study deserve attention, not only for the health of the women surveyed in this study, but also because social conditions might be forcing them to make an extra effort to deal with the dual demands of home life and work life. In this regard, Lipp (2001) has drawn attention to the so-called 'triple work shift', which refers to the fact that many women have a triple role as wife, mother, and careerist. Such women are obliged to attend to the first two roles before beginning the 'third shift', when they can apply themselves to projects or tasks that they have brought home from work. Such a 'third shift' can extend into the late hours of the night, thus depriving the woman of adequate rest for her wellbeing. The result can be a 'vicious cycle' of worsening stress.

Table 5
Most Frequently mentioned stressors

Number	Stressors	Frequency
1	Interaction with other Sectors	31,6%
2	Feeling that the profession is losing its prestige	31%
3	Third-party suffering	30%

Table 6
Most intense occupational stressors

Number	Stressors	% of responses
1	Wages that do not correspond to the responsibility, wearing down and importance of the position	87
2	See a colleague killed while doing his or her job	84,54
3	Political interference in the administration	77,36
4	Not having the right to a defense	73,43
5	Worries with the future of the family due to job demands	71,5

Occupational stressors

To analyze the factors that can precipitate stress, the respondents were asked about 74 situations that had previously been identified in the literature as possible occupational stressors. They were classified into five categories as follows:

- third party suffering;
- personal and family repercussions of the job;
- daily police routine;
- feeling that the profession is losing value; and
- interaction with other sectors.

Table 5 shows the three most frequently mentioned sources of stress. 'Interaction with other sectors of the police force', which was nominated as a stress factor by 31% of the respondents, was the most commonly cited factor. This finding, which was in accordance with those of previous studies (Newman and Rucker-Reed, 2004; Storch and Panzarella, 1996), might indicate that leadership and organizational difficulties existed in the police force studied here.

The second and third most common stressors were a 'feeling that the profession was losing prestige' and 'third-party suffering'. As the number of stress sources mentioned by respondents rose, the number of symptoms also increased, $\chi^2(6, 418) = 19.48, p = 0.003$.

Comparing men and women, the most frequently mentioned stress generator for males was 'interaction with other sectors', whereas 'interference with family life' was most frequently mentioned by females—again reflecting the social reality that women, even in senior career positions, still feel responsible for their families. Women presented a significantly greater number of family-related stressors than men, $\chi^2(9, 418) = 16.98, p = 0.009$. There was no difference in the number of stressors according to age, $\chi^2(6, 418) = 10.29, p = 0.113$.

In terms of the ages of respondents, ‘preoccupation with third-party suffering’ was reported significantly more frequently by respondents older than 40 years. These data suggest that the officers had not become less sensitive to third-party suffering as they became older. ‘Personal and family repercussions of the job’ were more likely to afflict respondents younger than 40 years of age, which probably reflects the demands of young families.

Table 6 shows the intensity (as opposed to the frequency) of sources of stress. Most respondents were more worried about their wages than other stressors. The next most intense stressor was ‘seeing a colleague killed while performing his or her job’. ‘Political interference in the administration’ was identified as being very stressful, followed by ‘not having the right to a defence when accused of any improper action’.

All of these items were mentioned by more than 70% of the respondents, which indicates that these are real issues for high-ranking Brazilian police officers. It is apparent that there is a need for authorities to reflect on current employment policies and administrative actions.

Most frequently used coping strategies

With regard to the coping strategies adopted by the respondents, Figure 2 shows that 43% utilized family and social support to deal with occupational stress. This reliance on family is in accordance with the fact that most of the respondents (65%) were married and only 8% were divorced.

Regarding other strategies, 29% took action regarding their health (such as seeking medical care), whereas 16% spent time on hobbies. It should be noted that 7% of the respondents used a chemical substance to deal with tension and that very few reported the use of ‘therapy’ (such as psychotherapy) to acquire psychological techniques to deal with stress.

There was a significant gender difference, $\chi^2 (5, 418) = 12.63; p < 0.027$, in the strategies used to deal with

stress. Men were more likely to obtain family and social support, whereas women were more likely to utilize hobbies and health care as means of dealing with excessive stress. Age was not significantly associated with the strategies used to deal with stress, $\chi^2 (5, 418) = 6.95, p = 0.225$.

A significant association was found between the use of coping strategies and the presence of symptoms of emotional stress, $\chi^2 (5, 418) = 0.65, p = 0.018$. Participants without stress used family support, had hobbies, and sought health care more often than stressed police officers.

Quality of life

The Quality of Life Inventory (QLI) used in the present study assesses ‘success’ in each of four areas of life—social, affective, professional, and health. A test result of ‘unsuccessful’ in any of the areas indicates that the ‘quality of life’ in that area needs improvement. However, ‘unsuccessful’ in the health area does not necessarily mean that the person is sick; rather, it indicates that the person’s quality of life regarding health is inadequate and that the person might develop a problem in this area. In other words, the data can be used to plan preventive measures.

Overall, 22% of the respondents had an ‘excellent’ quality of life—that is, they were ‘successful’ in all four areas. The remaining respondents were ‘unsuccessful’ in one or more areas.

Figure 3 shows the proportion (%) of respondents with ‘satisfactory’ and ‘unsatisfactory’ quality of life in each area. The ‘social’ area had the highest percentage of success, followed by ‘affective’. Health had a ‘success’ rate of only 46%. Quality of life in the ‘professional’ area was the least ‘successful’. The large proportion of respondents with inadequate quality of life in their professional lives was associated with the high levels of stress perceived by these respondents.

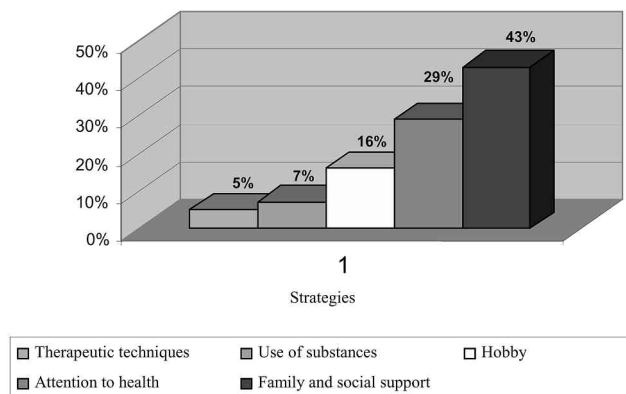


Figure 2. Most frequently used strategies to cope with stress.

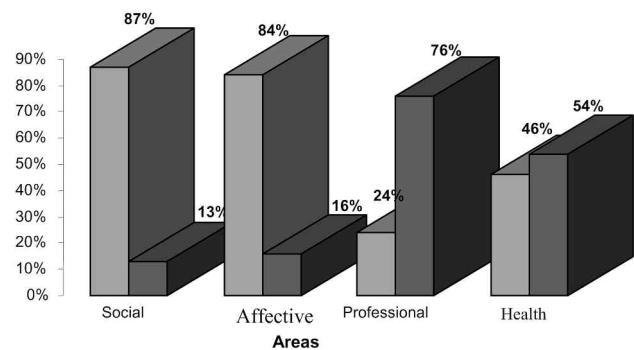


Figure 3. Proportion (%) of respondents with successful and unsuccessful ‘quality of life’ in each area.

Table 7
Percentage of Respondents with Successful Quality of Life per Area and Gender

Gender	Social	Affective	Professional	Health
Male	87	86	44	48
Female	87	77	31	360

Table 7 shows the proportion (%) of respondents with successful quality of life per area and per gender. There was no significant association between gender and success with regard to the 'social' area, $\chi^2(1, 418) = 0.01, p = 0.988$. In all other areas, the proportion of women with a 'successful' quality of life was smaller than that of men. The association between gender and success in the 'affective' area was significant, $\chi^2(1, 418) = 4.14, p = 0.042$, with 86% of the male respondents reporting a 'successful' quality of life against 77% of the females. In the 'professional' area, a greater proportion of men reported a 'successful' quality of life than did the women, $\chi^2(1, 418) = 4.09, p = 0.043$, and in the 'health' area the association between gender and level of quality of life was also significant: $\chi^2(1, 418) = 3.85, p = 0.049$.

In terms of age, those aged more than 40 years were more 'successful' in the 'affective' area: $\chi^2(1, 418) = 4.61, p = 0.032$. The older respondents were also more 'successful' in the 'professional' area, $\chi^2(1, 418) = 7.01, p = 0.008$. The differences were not significant in the other areas.

Association between stress levels and quality of life

Significant associations were found between stress and quality of life in the 'social' area, $\chi^2(1, 418) = 17.52, p = 0.001$, the 'affective' area, $\chi^2(1, 418) = 10.80, p = 0.001$, the 'professional' area, $\chi^2(1, 418) = 22.01, p = 0.001$, and the 'health' area, $\chi^2(1, 418) = 58.59, p = 0.001$. These findings support those of Lipp and Tanganelli (2002), who found a negative relationship between emotional stress and general quality of life among judges.

Limitations of the study

As with all research, the present study had limitations. Data from participants were all self-reported and were thus subject to a variety of reporting biases. In addition, participants answered the questionnaires immediately after a seminar on stress and quality of life, which might have induced a biased mindset among respondents with respect to some variables. Nevertheless, although the validity of some data might be somewhat uncertain, the consistent overall pattern of responses across a variety of subjects suggests that the results are unlikely to have been seriously distorted by these acknowledged limitations.

Conclusions

This study has revealed that the high-ranking Brazilian police officers who took part in the survey perceived their profession as being very stressful. The average self-perceived stress levels in the present study were similar to those obtained in other studies from mine workers, greater than those obtained from pilots, and slightly greater than the scores obtained from police officers and pilots (University of Manchester, 1987). The findings were similar to those obtained for judges in São Paulo (Lipp, & Tanganelli, 2002).

A large proportion (43%) of respondents in the present study had significant stress symptoms; a greater proportion of females (54%) than males (40%) reported having stress. Quality of life of the respondents was 'unsuccessful' in the 'professional' area and the 'health' area, and quality-of-life levels in these two areas were significantly associated with the stress levels detected. The sources of stress reported most frequently were 'interaction with other sectors of the police force' and a 'feeling that the profession was losing prestige'. The fact that interaction with other sectors was so stressful indicates a need to train police officers in interpersonal work relations. In this regard, it is the contention of the present study that inadequate training is provided in the Brazilian Police Academy with regard to leadership, administration, and interpersonal skills. Training in these areas is important for a profession that is frequently in contact with the general public; moreover, much of the work of senior police officers involves administrative duties. Training in these areas is thus most desirable.

The most frequently reported symptoms were muscle tension, tiredness, constantly thinking about the same subjects, and irritability. In view of the demands placed on these officers, especially the need for patience when dealing with the public, the irritability reported by 38% of these officers is a cause for concern. It is apparent that these police officers would benefit from learning strategies that enabled them to relax and put aside their work demands temporarily when off duty. These techniques should be included in stress-management training for Brazilian police officers.

In view of the high stress levels and unsatisfactory quality of life (at least in the 'health' area) found in the present study, it would be desirable for these police officers to engage in stress-management training to learn coping strategies. The results also demonstrate a need for a general modification of work conditions to diminish the stressors inherent in police

work. This is especially the case with regard to the female police officers, whose family commitments outside work increase the stress induced by the occupation itself.

The results of this study are significant because they provide insights into a profession that has an essential role in society. High-ranking police officers must be able to think clearly, have self-control, and be patient if they are to make correct decisions. The excessive stress found in this study is likely to diminish the proficiency of police officers with respect to all of these vital skills.

The significant association found between stress severity and poor quality of life, especially in the health area, indicates that there is a need for preventive actions inside the police force to motivate lifestyle changes, improve stress-management skills, and promote a better quality of life among high-ranking officers in the Brazilian police force.

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