

Stress in Spanish police force depending on occupational rank, sex, age and work-shift

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Abstract

Background: In the police force, some variables such as occupational rank, sex, age and work-shift are associated with stress in workers. The aim of this paper was to determine possible differences in the perception of occupational stress at work depending on rank, sex, age and work-shift of police agents in the Community of Madrid, Spain. **Method:** A cross-sectional study was conducted in 24 municipalities of the Community of Madrid. A total number of 565 police agents participated. The ranks of the police agents were: constable, corporal, sergeant and police chief. Occupational stress (psychosocial risk factors at work) was assessed with the DECORE Questionnaire. **Results:** All police agents perceived psychosocial risk factors adversely; especially agents of lesser rank perceived less control, fewer rewards and scarce support. There were significant differences in the perception of insufficient rewards between constables and other categories; and between constables and corporals in the perception of insufficient organisational support. No significant differences were found in the perception of psychosocial risk factors in relation to the rest of variables. **Conclusions:** The police rank should be taken into account for the development of preventive measures to reduce stress.

Keywords: Police stress, occupational health, occupational rank, occupational stress.

Resumen

Estrés en policías españoles según rango ocupacional, sexo, edad y turno de trabajo. Antecedentes: en la policía, algunas variables como el rango ocupacional, el sexo, la edad y el tipo de turno se relacionan con estrés en trabajadores. El objetivo de este estudio fue conocer si existían diferencias en la percepción de estrés laboral en policías de la Comunidad de Madrid (España), según el rango ocupacional, el sexo, la edad y el tipo de turno. **Método:** se llevó a cabo un estudio transversal en 24 municipios de la Comunidad de Madrid. Participaron 565 policías. Los rangos evaluados fueron: agente, cabo, sargento y jefe de policía. El estrés laboral (riesgos psicosociales del trabajo) fue evaluado con el cuestionario DECORE. **Resultados:** todos los policías evaluados percibieron los factores de riesgo psicosocial de forma adversa. Específicamente, los que ocupaban rangos inferiores percibieron menos control, escasas recompensas y escaso apoyo. Se encontraron diferencias significativas en la percepción de escasas recompensas entre agentes y el resto de rangos; y entre agentes y cabos en la percepción de escaso apoyo organizacional. No se encontraron diferencias significativas en la percepción de los factores de riesgo psicosocial en el resto de variables. **Conclusiones:** el rango policial debería tenerse en cuenta en el desarrollo de medidas preventivas para reducir el estrés.

Palabras clave: estrés policial, salud laboral, rango ocupacional, estrés laboral.

The activities carried out in the police context, such as reporting infractions, enforcing the law, resolving conflicts among individuals, assisting citizens, seeking suspects or witnessing traumatic events, create stress for the workers (Korre, Farioli, Varvarigou, Sato, & Kales, 2014). Factors like the low control of the demands of the environment in certain situations and frequent contact with citizens make this profession one of the most prone to stress (Gershon, Lin, & Li, 2002). Policing is a psychologically stressful work context filled with high demands, exposure to death and danger (Violanti, 2011). Police agents are also, because of the nature of their work, at risk of falling victim to serious

threats and physical aggression (Andrew et al., 2008). Stressors related to the content of the task are psychosocial risk factors at work. Psychosocial risk factors are specifically defined as those conditions in a work situation that have the capacity to adversely affect both the well-being and health of the worker (Moreno-Jiménez & Báez, 2010). The theoretical models Demand-Control-Social Support (Karasek & Theorell, 1990) and Effort-Reward Imbalance (Fernández-López, Fernández-Fidalgo, & Siegrist, 2005) specify the following psychosocial risk factors related to stress: lack of control, excessive demands, low social support and low rewards in relation to the effort made. The Demand-Control-Social Support model claims that the perception of lack of control, excessive job demands and little support from colleagues and supervisors can produce tension in the worker. On another hand, the Effort-Reward Imbalance model indicates that workers will be more likely to suffer from stress if they do not perceive enough rewards for the effort invested in their work. When workers perceive these psychosocial risk factors, they have

a high probability of suffering occupational stress. Psychosocial risk factors at work are related to poor mental and physical health. In recent years, some meta-analyses, systematic reviews and cross-sectional or longitudinal studies have been carried out. They reveal that aspects such as perception of lack of control at work, interpersonal conflicts, perception of excessive job demands (such as the increase of working hours and the workload), of little support or of organizational injustice are some of the psychosocial risk factors related to health problems like gastrointestinal disturbances, cardiovascular problems, respiratory difficulties (Peltzer, Shisana, Zuma, Van Wyk, & Zungu-Dirwayi, 2009), anxiety, depression (Nieuwenhuijsen, Bruinvels, & Frings-Dresen, 2010) or musculoskeletal disorders (Lang, Oschmann, Kraus, & Lang, 2012). Specifically, in the case of police agents who perceive a lack of organizational support as well as organizational pressure, the risk of developing cardiovascular disorders is high (Hartley et al., 2011). The organizational policy and work overload held a positive correlation whereas perceived organizational support had an inverse correlation with stress in police agents (Tyagi & Lochan-Dhar, 2014).

In addition to psychosocial risk factors at work, some demographic variables of the police profession, such as occupational rank, have also been studied in relation to stress. Depending on the occupational rank, different studies show that low rank is associated with stress, anxiety and depression in workers (Gao et al., 2012a, 2012b; Tsutsumi, Kayaba, & Ishikawa, 2011). No studies have been found on Spanish police investigating the differences in the perception of psychosocial risk factors depending on occupational rank. Likewise, the variable sex has been studied in former research, which has shown that there are differences in the perception of chronic work stress between policemen and policewomen (Backteman-Erlanson, Padyab, & Brulin, 2013). Bowler et al. (2010), after the terrorist attacks on September 11th, 2001, observed that the prevalence of posttraumatic stress was higher in policewomen than in policemen. In general, policewomen experience more work stress than men, although in specific situations, the differences between both sexes are not significant (Kurtz, 2012). Age has also been associated with work stress in the police profession. In a study carried out by Selokar, Nimbarte, Ahana, Gaidhane and Wagh (2011), it was found out that the older the worker is, the more likely he or she is to suffer from work stress. Finally, the type of work shift is another variable of interest in relation to police work. The system of shift work involves a higher risk of suffering work stress (Conway, Campanini, Sartori, Dotti, & Costa, 2008).

Studies with police have been focused especially on burnout. In particular, the Demand-Control model has been applied in samples of police agents in relation to the burnout syndrome, and the results indicate that a perception of high job demands and less control are associated with experiencing emotional exhaustion and low perception of professional self-efficacy (Taris, Kompier, Geurts, Houtman, & van den Heuvel, 2010). In Spain also, the few studies on occupational stress in the police force are focused primarily on the study of burnout (De la Fuente, Aguayo, Vargas, & Cañadas, 2013), which makes the background study difficult. Only two studies in local Spanish police have been found that investigate transformational leadership, regardless of the occupational health of the police agents (Álvarez, Lila, & Castillo, 2012; Álvarez, Lila, Tomás, & Castillo, 2014).

Therefore, the aims of this research were the following:

Objective 1: To describe the levels of work stress in local Spanish police agents. That is, to describe the perception of psychosocial risk that these workers suffer.

Objective 2: To study possible differences in the perception of psychosocial risk at work depending on occupational rank, sex, age and type of shift.

Method

Participants

A total of 565 local police agents of the Community of Madrid, with the ranks of constable, corporal, sergeant and police chief, participated in the study. Stratified random sampling by municipalities was used for the selection of participants. The researchers selected 24 municipalities where all occupational ranks of local police were represented. In order to take part in the study, the police agents needed to have a year of seniority in the post. Those cases in which the agent was on sick leave or on holiday were excluded. The minimum necessary sample size was calculated with the G-Power 3.1 program. The researcher estimated an effect size of between .20 and .40 according to the design type of this research (Cohen, 1988) and a statistical power of .95 to detect differences between the groups, so a sample size of between 335 and 480 subjects was necessary. It was proposed as an aim to evaluate approximately 1000 police agents. Depending on the rank, the percentages to evaluate were the following: 70.61% constables; 14.18% corporals; 10.41% sergeants and 4.80% police chiefs. The total sample consisted of 494 men (87.41%) and 71 women (12.59%) with an average age of 39.74 years. The response rate was 57.62%. From the total number of 565 police agents of the study, 399 were constables, 80 corporals, 59 sergeants and 27 were police chiefs. Regarding the type of shift, 27.43% of the total number worked in the morning shift; 32.52% had the afternoon shift; 24.42% worked in the night shift; finally, 15.63% had rotating shift.

Instruments

In order to collect biographical information, a questionnaire was applied that included information on: sex, age, work shift and years of service. The psychosocial risk factors were assessed with the standard questionnaire DECORE (Luceño & Martín, 2008), consisting of 44 items that assess the perception of psychosocial risk factors: lack of control, little organizational support, lack of rewards and excess (or shortage) of work demands. The items were answered on a five-point Likert scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). On all dimensions, scores are expressed on a standardized S-scale with an average of 50 and standard deviation of 20. For control, organizational support and reward scales, there are four levels of exposure to risk: (1) "emergency" (group average greater than or equal to 64 in the case of the control scale and group average greater than or equal to 71 in the case of the organizational support and reward scales); (2) "alert" (group average between 63 and 50 for the control scale and group average between 70 and 50 for the organizational support and reward scales); (3) "healthy" (control scale: group average between 49 and 37; organizational support and reward scales: group average between 49 and 30); and (4) "excellent" (group average lower than or equal to 36 for the control scale and group average lower than or equal to 29 for the organizational

support and reward scales). The higher the score in the mentioned scales, the higher the employees' perception of these adverse psychosocial risks factors and likelihood of suffering work-related stress. For the work demand scale, three levels of exposure to risk were developed: (1) "positive alert" (group average greater than or equal to 71); (2) "healthy" (group average between 70 and 30); and (3) "negative alert" (group average lesser than or equal to 29). On this scale, it is harmful to perceive both high and low work demands. The DECORE questionnaire is considered an appropriate instrument to assess occupational stress (Luceño, Martín, Rubio, & Díaz, 2010; Moreno-Jiménez & Báez, 2010).

Procedure

The Police Academy helped to contact the police chiefs of the municipalities that participated in the study. These chiefs provided the sample of police agents who took part in the investigation. The Police Directorate, representatives of the workers, and the local police departments were informed of the characteristics of the research and of the voluntary and anonymous nature of participation. After this, before the questionnaires were filled in, a collaborative agreement was signed between the police and the university. The Police Directorate of each municipality organized, together with the researchers, meetings to inform about the study. The researchers went to each police unit during the different shifts to apply the questionnaires, which were completed during working hours. The participants signed a consent form, stating their agreement with the collection of the information. The completion of the questionnaires took about 15 minutes.

Data analysis

Descriptive analysis and multivariate analysis of variance (MANOVA) were computed to determine whether there were statistically significant differences between different ranks, sex, age and work shift in each of the psychosocial risk factors evaluated. The data were processed with the program "SPSS 22.0".

Results

Table 1 shows the descriptive statistics of the total sample (mean, standard deviation, and correlations between psychosocial risk factors).

Regarding the correlations between the DECORE dimensions, these can be considered low, as the highest is .33, between organizational support and control (Table 1).

Considered globally, the evaluated local agents obtained high scores in the studied psychosocial risk factors: they were in an alert state in the control dimension; in organizational support and rewards, they were at the limit between healthy and alert state. In the demands dimension, their score was in the healthy range (Table 1).

A multivariate analysis of variance (MANOVA) was carried out in order to study whether the differences in the evaluated psychosocial risk factors depended mainly on rank, sex, age, type of shift, or on the interactions between these variables. Age was introduced as covariate.

For those cases in which the MANOVA was statistically significant, univariate ANOVAS were carried out for each dependent variable, using the Bonferroni post-hoc test.

In the MANOVA, the occupational rank factor was statistically significant only in the organizational support dimension [F (3, 119) = 2.940; $p < .01$; $\eta^2 = .291$] and the rewards dimension [F (3, 119) = 4.031; $p < .01$; $\eta^2 = .273$].

The double and triple interactions were not statistically significant.

An ANOVA was carried out in order to see the differences that existed in the perception of rewards depending on the occupational rank (Table 2). In the rewards dimension, the constables obtained scores in the alert level, whereas the higher ranks (corporal, sergeant, police chief) were in healthy level. Statistically significant differences were found between the ranks of constable and corporal (DF = 6.61, $p < .05$); constable and sergeant (DF = 13.31, $p < .05$); and constable and police chief (DF = 14.29, $p < .05$). The constables obtained higher scores in the rewards dimension compared to the other occupational ranks.

As there were statistically significant differences in the organizational support dimension depending on the occupational rank, an ANOVA was carried out in order to study those differences. In the organizational support dimension, constables were near the alert state, whereas corporals, sergeants and police chiefs were in the healthy level. The differences between the constables and the corporals were statistically significant (DF = 6.66, $p < .05$).

Table 1
Correlations, means, standard deviations, Cronbach's alpha and number of total sample in the psychosocial risks evaluated

	1	2	3	4
1. Organizational Support	1	.23**	.33**	.16**
2. Rewards		1	.31**	.11**
3. Control			1	.25**
4. Demands				1
<i>M</i>	48.32	49.71	62.63	61.71
<i>SD</i>	16.72	18.45	15.94	14.72
α	.82	.84	.85	.81
<i>N</i>	565	565	565	565

Note: ** $p < .01$

Table 2
One factor ANOVA (occupational rank) in each of the psychosocial risk factors evaluated

	Occupational rank	N	M	SD	F (3,565)	Sig.	η^2
Organizational support	Constable	399	49.92	16.83	4.795	.003**	.324
	Corporal	80	43.21	16.44			
	Sergeant	59	47.43	15.13			
	Police chief	27	42.81	15.33			
	Total	565	48.32	16.72			
Rewards	Constable	399	52.73	12.31	15.115	.000**	.312
	Corporal	80	46.13	20.10			
	Sergeant	59	39.44	17.61			
	Police chief	27	38.43	18.62			
	Total	565	49.71	18.45			

Note: ** $p < .01$

Discussion

The results of this study indicated that, in general, the local Spanish police who participated in the study had high levels of stress regardless of their occupational rank, sex, age and type of shift, and they perceived the evaluated psychosocial risk factors adversely. No significant differences were found in the perception of psychosocial risk factors in relation to sex, age and type of shift. All workers perceived low control of their work, with the rank of constable being the one with the least control. Regarding work demands, all categories had healthy levels. Differentiating by occupational rank, constables received less support from colleagues and supervisors. Similarly, constables perceived less control and fewer rewards in relation to the effort invested in their work (the other ranks perceived adequate rewards). Therefore, police agents with lower rank (constables) had a worse perception of psychosocial risk factors. Comparing by occupational rank, it was noted that constables perceived significantly less rewards compared to the rest. In turn, there were significant differences between constables and corporals in relation to the perceived organizational support (constables perceived the least organizational support). The values of partial eta squared had a medium-size effect for the design used in this study (Cohen, 1988) and they are similar to those obtained in other research in the areas of Work Psychology (Arrogante & Pérez-García, 2013; van der Colff & Rothmann, 2014; Vicente, Oliveira, & Maroco, 2014).

Other research indicates that, in the case of police agents, perceiving pressure to do the job, not perceiving sufficient organizational support, or perceiving incompatible work demands are precedents for work overload and occupational stress (Duxbury, Higgins, & Halinski, 2015). Some studies point to the lack of perceived organizational support as one of the most specific stressors in police staff (Violanti, Mnatsakanova, Andrew, Fekedulegn, & Hartley, 2014). Another study showed that the police agents who perceived a lack of organizational support and few rewards in relation to the invested effort presented a greater number of mental-health related symptoms, compared to those workers who did not perceive an imbalance between efforts and rewards (Garbarino, Cuomo, Chiorri, & Magnavita, 2013). The results of some research indicate that constables perceive significantly less support for public order maintenance than do personnel of higher ranks (Gau & Gaines, 2012).

However, a study concerning an American police sample showed that there were no differences in occupational stress by rank, although they were present when considering different work shifts (Ma et al., 2015). Similarly, another work differs from the present study, indicating that the tasks performed by the middle management positions are often associated with ambiguity, tension and conflict, which negatively affects worker's health (Hogan, Bennell, & Taylor, 2011). Police agents who hold a middle management position have a complex job, as they are exposed to conflicting demands from higher and lower ranks, and their position is one of the most important roles in the

police organization. However, our results differ from the above-mentioned because the constables (lower occupational rank) were the ones who adversely perceived more psychosocial risk factors compared to other middle management and higher positions. In a research carried out with a Malaysian police sample, in general, they perceived few rewards in relation to the effort invested, with the rank of inspector reporting higher levels of stress compared to lower-level police (Masilamani et al., 2013).

Given the disparity of results in different studies, it is considered necessary to conduct further research in this line with the aim of establishing preventive measures, instead of carrying out palliative interventions, that is, when workers suffer the consequences of chronic occupational stress and experience burnout.

In this study, the researchers examined the main psychosocial risk factors included in the Demand-Control-Social Support and Effort-Reward Imbalance theoretical models. Other studies taking the occupational rank into account show that these theoretical models are useful to explain work stress. The perception of lack of rewards in relation to the invested effort and the perception of lack of control at work are related to the effect of the occupational rank on depressive symptoms (Hoven, Wahrendorf, & Siegrist, 2015). A cohort study performed on a multi-occupational sample including 2701 Danish employees led to the following finding: those employees who perceived a lack of rewards in relation to the invested effort and who had a low occupational rank showed a greater risk of having depressive symptoms in comparison to those higher rank employees with the same perception (Rugulies et al., 2012).

Limitations of this study include its cross-sectional nature, as well as the difficulty to find previous studies that compare occupational ranks in the perception of specific psychosocial risk factors. On another hand, there are few studies on work-related stress in Spanish police taking into account the differences in occupational rank. In future research, it would be interesting to conduct further studies with police in different places, either in other provinces of Spain or other countries, because the management and organization of the activities carried out by the police depend on the laws in effect at the time of evaluation. As a main conclusion of our research, it is observed that whereas the occupational rank is a determining factor in the high levels of stress perceived by Spanish police working in the Madrid area, other variables such as sex, age and type of shift seem to have no impact on these stress levels.

These results should be considered in the organizational practices for improving the occupational health of the workers. In addition, the occupational rank has been less studied in comparison with other variables such as sex or age in relation to stress, hence it should be studied in further detail (Hartley, Violanti, Mnatsakanova, Andrew, & Burchfiel, 2013; Kurtz, 2012).

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