

anales de psicología / annals of psychology 2023, vol. 39, n° 3 (october), 478-486 https://doi.org/10.6018/analesps.522361 © Copyright 2023: Editum. Universidad de Murcia (Spain) ISSN print: 0212-9728. ISSN online: 1695-2294. https://revistas.um.es/analesps



Psychosocial risks factors and burnout in police officers: a network analysis

Ana M^a Ruiz-Ruano García¹, Miguel Ángel Blaya Sánchez², José Luis López Morales³, Ana Isabel Peinado Portero³, César Augusto Giner Alegría², Jorge López Puga^{1,*}, and Francisco J. Moya-Faz²

> 1 Universidad de Granada (Spain) 2 Universidad Católica de Murcia (Spain) 3 Universidad de Murcia (Spain)

Título: Factores psicosociales de riesgo y burnout en policías: un análisis de redes.

Resumen: El estrés laboral crónico ha sido identificado como uno de los riesgos laborales más importantes que afecta a la salud mental de los agentes de policía. Existen ciertos factores psicosociales que incrementan el estrés laboral en la policía y que, a largo plazo, desencadenan síntomas compatibles con el burnout. En este trabajo se ha utilizado una muestra integrada por 323 policías para valorar la relación que se establece entre los factores psicosociales de riesgo y la probabilidad de experimentar síntomas compatibles con el burnout. Las respuestas de los participantes al MBI-GS y al F-PSICO (versión 4.0) fueron examinadas utilizando análisis de redes. Los resultados muestran que existen redes de factores psicosociales de riesgo más cohesionadas cuando los niveles de cinismo y agotamiento emocional son más elevados. Además, se observa mayor nivel de burnout asociados con una baja autonomía, altas demandas psicológicas, conflictos en el desempeño de rol y un bajo apoyo social percibido. Los resultados son discutidos en términos de su implicación teórica y de su utilidad práctica frente al diseño de entornos de trabajo más saludables, así como frente a la intervención psicológica.

Palabras clave: Estrés laboral. Burnout. Policía. Factor de riesgo psicosocial. Análisis de redes.

Introduction

Job stress in police officers and its consequences is attracting the attention of the scientific community both from a descriptive and preventive perspective, as well as from the point of view of intervention (Baek et al., 2021; Bhowmick and Mulla, 2021; Foley and Massey, 2021; Luceño-Moreno et al., 2021; Márquez et al., 2021). Guaranteeing fundamental rights, optimising citizen security, and protecting private property are activities that require considerable psychological effort on the part of police officers. These activities, given the high degree of responsibility involved, tend to generate situations that can trigger stress responses in these professionals. For example, having to work urgently, not having sufficient human or material resources, having total availability for police service, having to work night or weekend shifts and the unpredictability of the work are aspects that have been identified as psychosocial factors that increase the level of stress in police officers (Cieślak, 2020; Díaz et al., 2020; Sherwood et al., 2019).

These working conditions, as well as involving aspects related to social interaction, have to do with job-related aspects. Among the factors related to job-related elements, we

* Correspondence address [Dirección para correspondencia]: Jorge López Puga. Department of Personality, Evaluation and Psychological Treatment, Faculty of Psyhology, Universidad de Granada, Campus de Cartuja, 18071, Granada (Spain). E-mail: jlpuga@ugr.es (Article received: 26-04-2022; revised: 23-09-2022; accepted: 03-11-2022) Abstract: Work stress has been identified as a critical factor affecting mental health in police officers. Psychosocial factors increase the impact of work stress on police officers and, in the long run, contribute to the onset of burnout symptoms. In this research a sample of 323 was studied to study the relationship between psychosocial risk factors and the probability of suffering burnout symptoms. The participant's answers to the MBI-GS and F-PSICO (version 4.0) were analysed by using network analysis. The results show that psychosocial risk factors are strongly associated in network models when higher level of cynicism and emotional exhaustion are observed. Additionally, higher levels of burnout in police officers were observed when lower autonomy, higher psychological demands, role ambiguities and a lower perceived social support were present. Results are discussed considering its theoretical and applied relevance to design healthier work environments and efficient psychological interventions.

Keywords: Work stress. Burnout. Police. Psychosocial risk factor. Network analysis.

can highlight the content, the workload, the working hours, or the place of work. While the more social aspects include organisational culture, interpersonal relationships, the employee's role in the organisation or career development (Leka et al., 2008). These psychosocial factors can play both a positive and a negative role in job performance. When their effect is negative and can impact on the physical and psychological health of workers, they are called psychosocial risk factors (Cox and Griffiths, 2003). Some professions are more likely to be exposed to such factors. This is the case for public safety professionals such as police officers or healthcare workers (Teoh et al., 2020, 2022).

In police work, the presence of psychosocial risk factors has been found to increase the perception of job stress and have an impact on both job satisfaction and performance (Adams and Mastracci, 2018; Galbraith et al., 2021; Garbarino et al., 2013; Hickman et al., 2011; Hoven et al., 2015; Luceño-Moreno et al., 2016; Mushwana et al., 2019; Violanti et al., 2017). Recently, Talavera et al. (2021) added fear of severe acute respiratory syndrome (SARS-Cov-2) to the list of psychosocial risk factors in the police profession.

As previously mentioned, one of the consequences of exposure to psychosocial risk factors is work-related stress. The classic definition provided by Lazarus and Folkman (1984) states that stress is the result of an appraisal process in which the individual perceives that there is an imbalance between the demands of his or her environment and the resources that the individual considers he or she has to cope

with these demands. The theory of job demands and resources (Bakker and Demerouti, 2007, 2013; Bakker and Vries, 2021) has recently been used as a model for understanding burnout as a function of job stress. Some work has shown that this model is useful for understanding fatigue, stress evolution over time, perceived organisational support, mental health, and organisational commitment in police officers from different parts of the world (Hu et al., 2017; Lan et al., 2020; Maran et al., 2020; Raper et al., 2020; Zeng et al., 2020; Zhou et al., 2020). From this theoretical framework it is possible to predict job characteristics (demands and resources) and the consequences of chronic job stress (e.g., absenteeism and job performance). For this model, excessive job demands are the predictors of negative consequences on workers' health, while resources are considered the antecedents of job satisfaction, motivation, and commitment. Thus, when a person perceives that demands are greater than the resources he or she must cope with a certain situation, an episode of stress occurs. When workers continuously experience work-related stress, it can disrupt the smooth functioning of organisations (Queirós et al., 2020), as well as having repercussions on physical and mental health (Kelley et al., 2019; Magnavita et al., 2018).

The concept and definition of burnout has evolved over time to adapt to the working conditions that have characterised different eras (Salanova and Llorens, 2008). According to Maslach and Leiter (2016), Burnout Syndrome "is a psychological syndrome emerging as a prolonged response to chronic interpersonal stressors on the job" (p. 103). This syndrome has been recognised by the World Health Organisation (WHO) as a factor affecting health (WHO, 2022) in the 11th revision of the International Classification of Diseases (ICD-11). In the Spanish version of the classification of diseases it is called Occupational Burnout Syndrome (code QD85) and it is the product of chronic exposure to occupational stress that has not been successfully managed. A recent international study has managed to reach a consensus definition of burnout considering the harmonised criteria of 50 experts from 29 countries. This work suggests that burnout is simply " an exhaustion due to prolonged exposure to work-related problems" (Guseva Canu et al., 2021, p. 104)

Various contributions in recent years (Maslach, 2017; Maslach and Leiter, 2016, 2017; Schaufeli, 2017) have confirmed the relationship between the characteristics of public service, or direct work with citizens, and burnout syndrome. In members of police forces, the syndrome manifests itself in the form of emotional exhaustion, depersonalisation, physical discomfort, insomnia, depressive symptoms, inappropriate consumption of psychotropic/antidepressant medication, or hospitalisation due to the presence of mental disorders (McCarty et al., 2019; Salvagioni et al., 2017). In this group of workers, psychosocial risk factors have the same harmful impact as work-related stress, generating high scores in emotional exhaustion, cynicism, depersonalisation, and low levels of professional efficacy (De la Fuente et al., 2013; McCarty et al., 2019; Padyab et al., 2016; Talavera et al., 2021). Burnout syndrome in police officers has also been studied in relation to certain sociodemographic variables such as marital status or gender (Aguayo et al., 2017; Galbraith et al., 2021; Mushwana et al., 2019; Roberts, 2013). In terms of marital status, several studies indicate that having a partner is a protective factor (Aguayo et al., 2017; Roberts et al., 2013). On the other hand, those in a situation of separation or without a partner showed lower professional efficacy, higher levels of emotional exhaustion, and greater distancing from both work and colleagues. In relation to gender, García et al. (2013) did not observe differences between men and women in levels of work-related stress; however, according to Acquadro et al. (2015), there are high levels of stress in women for organisational reasons and in dealing with violent situations compared to their colleagues.

The present research aims to identify those psychosocial factors that pose a higher risk for police officers. This can be considered as a first step to contribute to the development of appropriate interventions for the prevention of occupational risks derived from high levels of burnout (Galanis et al., 2021). For this purpose, networks of psychosocial risk factors in police officers will be generated. Network analysis is a contemporary application of classical graphical models (Ruiz-Ruano and Puga, 2020) and in the last decade it has received special attention from psychology as an appropriate method to study phenomena of a pathological nature (Borsboom et al., 2011; Cramer et al., 2010; Schmittmann et al., 2013). From this theoretical perspective, the mental disorder is the result of the causal interaction that occurs between the symptoms of a network (Fonseca-Pedrero, 2017, 2018). The aetiology of mental disorder is seen as the result of the increasing interconnectedness of symptoms in networks or statistical graphical models (Borsboom, 2017). In practical terms this means that loosely connected symptom networks highlight the absence of psychological disorders, while highly connected symptom networks would relate to psychopathological problems. Given that, as mentioned above, the WHO (2022) recognises burnout as a syndrome of psychological symptoms occurring in the work context, the relationships between psychosocial risk factors and the components of burnout will be modelled. In other words, networks of psychosocial risk factors will be estimated based on the characteristic profile of burnout (high emotional exhaustion, high cynicism, and low professional efficacy) in order to assess the relationship between these variables. Therefore, it is hypothesised that the psychosocial risk factors appear disconnected, or mostly disconnected, in police officers without a burnout profile. On the other hand, it is hypothesised that more widely connected symptom networks are generated when police officers show a characteristic burnout profile. The aim of this work is, therefore, to use networks of psychosocial risk factors to identify those elements that play a more significant role in the occurrence of burnout. In addition, this research aims to further study the relationship between sociodemographic variables and the risk of suffering

burnout symptoms in local police officers. Although this police force has specific characteristics conditioned by its field of action, the factors studied in this research could be compared with those present in the National Police Force or other State Security Forces and Corps.

Method

Participants

The sample consisted of 323 participants (14.6% of a total of 2211), all of them members of the Local Police forces of the Region of Murcia. Eighty-seven percent of the sample were men, of whom 72.9% were married or living with a partner, 16% said they were single and 11% said they were widowed. Meanwhile, 76.2% of the women were married or cohabiting, 19% were single and 4.8% were widowed. Their ages ranged from 20 to 60 years (M = 42, SD = 8.32). Most of the participants had completed secondary education (48.3%), 41.2% of the sample had a university degree or professional specialisation, 3% of the participants had only completed primary education, and only 7.4% had a master's degree or doctorate. In terms of professional category, 242 were officers, 77 were sub-inspectors, three were inspectors and one was a commissioner. Participants' length of service as police officers ranged from two to 37 years, and the mean length of service of the sample was 16.42 years (SD = 7.79, Mdn = 13). Participants were accessed through a nonprobability sampling procedure based on accessibility and therefore potential participants were not segmented according to hierarchical levels or organisational divisions.

Instruments

A form was used to collect information on sociodemographic variables (age, sex, marital status, level of academic studies, place of work, seniority, and hierarchical scale within the police force), and the questionnaires F-PSICO 4.0 for the assessment of psychosocial risk factors and the Maslach Burnout Inventory-General Survey for the assessment of burnout.

F-PSICO

For the assessment of psychosocial risk factors, the F-PSICO in its 4.0 version was used, which is edited by the National Institute for Safety and Health at Work (Instituto Nacional de Seguridad y Salud en el Trabajo, INSST, 2018). This instrument consists of 44 questions, some of them multiple, so that the number of items amounts to 89. It provides information on nine psychosocial factors: working time (WT): referring to the structure and order of working time as well as rest periods, autonomy (AU): understood as the responsibility, capacity and possibility of the worker to regulate his/her work activity as well as to make decisions, mental workload (W): referring to the amount of tasks that the worker has to face in his/her job, psychological demands (PD): understood as the cognitive demands derived from the task, variety/content (VC): referring to the perceived social usefulness of the job, participation/supervision (PS): referring to the degree of control to which the worker is subjected and his or her involvement in the work activity, interest in the worker/compensation (IWC): referring to the degree to which the company offers promotion or career development incentives to the worker, role performance (RP): referring to the clear definition of the functions required in the job, relationships and social support (RSS): referring to the aspects of social interaction circumscribed to the job.

For each of the factors, McDonald's ω coefficient was obtained to estimate the reliability of the instrument understood as internal consistency (Prieto and Muñiz, 2000). In this study the estimates have been considered satisfactory for the dimensions of this instrument, WT ($\omega = .62, 95\%$ CI [.53, .69]), AU ($\omega = .91, 95\%$ CI [.89, .92]), W ($\omega = .7, 95\%$ CI [.63, .73]), PD ($\omega = .78, 95\%$ CI [.78, .85]), VC ($\omega = .65, 95\%$ CI [.51, .64]), PS ($\omega = .86, 95\%$ CI [CI95% = .85, .9]), IWC ($\omega = .83, 95\%$ CI [.8, .86]), RP ($\omega = .88, 95\%$ CI [.87, .9]) and RSS ($\omega = .7, 95\%$ CI [.64, .9]).

MBI-GS (Maslach Burnout Inventory-General Survey)

In this study we used the Spanish adaptation of the scale developed by Salanova et al. (2000). The response scale used is a 7-point Likert-type scale with which the person has to indicate the degree of agreement with the items presented: (0) never; (1) almost never/few times a year; (2) sometimes/once a month or less; (3) regularly/few times a month; (4) quite often/once a week; (5) almost always/few times a week; and (6) always/every day. The fifteen items that make up the test are grouped into three dimensions that assess the degree to which the person is burned out at work: a) emotional exhaustion, which is focused on on physical and emotional fatigue, b) cynicism, from which information is collected about indifference and detachment from one's work, and c) professional efficacy, which is centred on the subjects' expectations of success.

For the definition of the burnout profile, the cut-off points specified in the scales proposed by Salanova et al. (2000) were considered. Based on these cut-off points, categories of low, medium, and high scores were created for the dimensions of emotional exhaustion, cynicism, and professional efficacy. A person was considered to show a profile compatible with burnout when he/she obtained high scores for emotional exhaustion and cynicism while presenting low scores for professional efficacy. The internal consistency estimates for emotional exhaustion ($\omega = .93$, 95% CI [.92, .94]), cynicism ($\omega = .91$, 95% CI [.9, .93]) and professional efficacy ($\omega = .89$, 95% CI [.86, .9]) are considered acceptable for the purposes of this research.

480

Procedure

Data were collected through an online questionnaire that was administered between March and December 2019. Before answering the questionnaire, participants were informed that the study aimed to determine which psychosocial factors have the greatest impact on work-related stress in local police officers and the assessment of burnout. Participation was voluntary and responses to the electronic form were anonymous. The answers given in the forms were analysed in aggregate form to maintain confidentiality and their management was in accordance with the ethical guidelines of the UCAM Catholic University of Murcia. The data collection procedure, as well as its subsequent analysis, was governed by the ethical standards and good practice guidelines suggested by the American Psychological Association (2020). The only exclusion criterion was not belonging to any Local Police Force in the Region of Murcia. The responses were manually transferred to the computer application F-PSICO version 4.0 (INSST, 2018). Four participants were discarded due to the application of the exclusion criterion.

Data analysis

To estimate the network models, the EBICglasso algorithm (Epskamp et al., 2018; Fonseca-Pedrero, 2018) was used to apply a regularisation method to the models (Lever et al., 2016). The algorithm was run on the correlation matrices to generate networks with weighted and signed (positive or negative) links. Raw centrality measures were estimated and the λ (tuning parameter) of the algorithm was set to the default value of 0.5. The expected influence measures of each node in each network were estimated and interpreted as neat impact of each variable on the network. Expected influence measures are statistics derived from classical measures of centrality in graphical models (Borsboom and Cramer, 2013) and high values indicate higher impact of the variable on the network model. In practical terms these statistics can be used to identify target nodes or variables for psychological intervention. Statistical analyses were conducted with SPSS statistical software version 24 and JASP version 0.16.4 (JASP Team, 2022).

Results

36.2% of the participants showed a response profile compatible with burnout. This percentage of agents fulfils the criteria of risk of suffering burnout considering the questionnaire used (high scores in emotional exhaustion and cynicism, and low scores in professional efficacy). In addition, 53.6% of the sample showed high scores on emotional exhaustion and cynicism. No statistically significant differences were observed in the burnout profile as a function of age ($r_{bp} = .02, p$ = .75, bilateral contrast). There is also no relationship between gender and burnout profile (OR = 0.54, 95% CI [0.26, 1.13], p = .14). This suggests that there is no difference in the proportion of people with burnout when the sample is segmented by men and women. However, there are differences according to marital status. While 58.5% of single people show high levels of burnout ($\chi^2 = 11.21$, p < .001, OR = 1.41, 95% CI [1.21, 1.64]), only 30% of married participants show symptoms compatible with the syndrome ($\chi^2 =$ 74.30, p <.001, OR = 0.43, 95% CI [0.36, 0.50]). Also, it should be noted that there is no significant relationship between job seniority ($r_{bp} = .02$, p = .67) and burnout.

Regarding the relationship established between the rest of the variables studied and the sex of the participants, as can be seen in Table 1, statistically significant differences were obtained in several factors. Women scored significantly higher on the following variables: working time, workload, psychological demands and relationship and social support. However, no statistically significant differences were observed between men and women in the levels of emotional exhaustion, cynicism, and professional efficacy. When analysing the percentage of men and women who score high on the emotional exhaustion component of the scale, no statistically significant differences are observed ($\chi^2 = .76$, p = .38, OR = .75, 95% CI [0.37, 1.51]). Neither is being male or female significantly related to scoring low on the self-efficacy scale ($\chi^2 = 2.22$, p = .14, OR = 0.61, 95% CI [0.30, 1.24]). However, there was a statistically significant relationship between being female and scoring high on the cynicism scale $(\chi^2 = 4.39, p = .28, OR = .47, 95\% CI [0.21, 0.97]).$

Table 1

	Women	Men	t	p	d r		
WT	11.21(2.04)	9.36 (2.33)	4.897***	<.001	.55.26		
AU	37.21 (7.68)	35.20 (7.80)	1.561	.119	.17.09		
W	33.67 (4.44)	31.48 (4.15)	3.147**	.002	.35.17		
PD	23.38 (5.49)	21.53 (5.49)	2.041*	.042	.23.11		
VC	9.79 (1.07)	10.08 (1.71)	-1.506	.136	.17.08		
PS	34.02 (3.71)	34.24 (4.89)	273	.785	.03.02		
DR	30.57 (3.91)	30.50 (3.25)	.115	.909	.01.01		
IWC	18.83 (2.23)	19.44 (2.14)	-1.72	.087	.19.10		
RSS	28.88 (3.89)	27.38 (5.15)	2.201*	.031	.25.12		
Exhaustion	2.72 (1.44)	2.66 (1.46)	.247	.805	.03.01		
Cynicism	3.68 (1.54)	3.55 (1.74)	.457	.648	.05.03		
Professional efficiency	2.95(1.02)	3.21 (1.06)	-1.472	.142	.02.01		
Note. WT: working time, AU: autonomy, W: workload, PD: psychological							
demands VC variety/co	demands VC variety/content PS participation/supervision IWC interest						

demands, VC: variety/content, PS: participation/supervision, IWC: interest in work/compensation, RP: role performance, and RSS: relationships and social support. * p < .05, ** p < .01, and *** p < .001; degrees of freedom: 321 in all comparisons.

As can be seen in Figure 1, as the levels of cynicism and emotional exhaustion increase in the police officers who participated in the study, the sparsity of the networks decreases and the number of links between psychosocial risk factors increases. That is, the higher the level of cynicism and emotional exhaustion in police officers, the higher the degree of association between psychosocial risk factors. Cynicism is the dimension most clearly affected by this phenomenon. While low levels of cynicism produce an unconnected network (zero links and sparsity equal to 1), intermediate levels produce a connected network (sparsity = .53, 17 links) and high levels of cynicism produce a network with the highest number of links (22) and the least sparsity (.39). Similarly, low levels of emotional exhaustion produce a sparser network (sparsity = .56) and containing fewer links (16). Whereas the degree of association between psychosocial factors increases at intermediate (sparsity = .5, 18 links) and high levels of emotional exhaustion (sparsity = .33, 24 links). In the case of professional efficacy this pattern is not so clear since both low and high levels of professional efficacy produce networks with the same sparsity (.47) and the same number of links (19).

Table 2 shows the coefficients of expected influence of each node in the psychosocial risk factor networks for the burnout dimensions. As can be seen, the three factors that are related to worrying levels of cynicism and professional efficacy are the same and in the same order of importance: autonomy, role performance and psychological demands. As can be seen in Figure 1, the expected higher influence of autonomy and role performance can be explained by the large number of connections that these factors have with the rest of the dimensions of the psychosocial factors scale. On the other hand, the high observed influence of psychological demands can be explained, despite its lower number of links with the rest of the nodes, by the very close association that this variable has with workload in both cases (see Figure 1). The three most influential factors for the emotional exhaustion network are role performance, autonomy and the dimension of relationships and social support. In this case, as can be seen in Figure 1, the greater degree of influence of these variables can be explained by the density of connections that these variables have with the rest of the nodes in the model.

Figure 1

Networks of psychosocial risk factors obtained for different levels of exhaustion, cynicism and professional efficacy.



Note: The thickness of the links is proportional to the magnitude of association between the variables. WT: working time, AU: autonomy, WL: workload, PD: psychological demands, VC: variety/content, PS: participation/supervision, IWC: interest in work/compensation, RP: role performance and RSS: relation-ships and social support.

Expected influence (in absolute value) of each node on the estimated networks for high levels of emotional exhaustion, high cynicism and low professional efficacy.							
Factor	High exhaustion ($n = 149, 46.13\%$)	High cynicism (<i>n</i> = 172, 53.25%)	Low professional efficacy ($n = 135, 41.80\%$)				
WΤ	.599	.601	.645				
AU	.888	1.712	1.767				
W	.521	.580	.849				
PD	.357	1.398	1.181				
VC	.641	.235	.397				
PS	.676	.132	.170				
IWC	.572	.356	.338				
PR	1.075	1.481	1.292				
RSS	.820	.156	.614				

Expected influence (in absolute value)	of each node on the estimated networks fo	for high levels of emotional exhaustion, h	high cynicism and low professional efficacy.

Note: WT: working time, AU: autonomy, W: workload, PD: psychological demands, VC: variety/content, PS: participation/supervision, IWC: interest in work/compensation, RP: role performance and RSS: relationships and social support. The number of people in each group and their percentage of the total sample is shown in brackets.

Discussion

Table 2

The results of this study suggest that high scores on emotional exhaustion and cynicism tend to generate more interconnected networks of psychosocial risk factors. This pattern of interconnectedness was not as clear for the professional efficacy dimension. Increased levels of interconnectedness in symptom networks have been considered as an indicator and explanatory phenomenon for the presence of psychological disorders (Borsboom, 2017; Borsboom et al., 2011; Cramer et al., 2010; Fonseca-Pedrero, 2017, 2018; Schmittmann et al., 2013). These results are consistent with the most recent version of the demands-resource theory (Bakker and Vries, 2021) as they show that certain psychosocial risk factors place high demands on police officers, and this may lead to an increased risk of occupational burnout.

On the other hand, the analysis of the expected influence of psychosocial risk factors in the network models for those who scored higher on the burnout dimensions can be used to design organisational/workplace policies aimed at minimising the risk of police officers experiencing problems arising from working conditions. The results suggest that autonomy, role performance and psychological demands are the variables most strongly related to high levels of cynicism and emotional exhaustion. Previous studies have argued in favour of these results. For example, the review by Violanti et al. (2017) suggested that there was a positive relationship between the psychosocial factors of working time, job autonomy and role performance with burnout. Other studies, albeit in a different social context, have also highlighted the relevant role of unclear police roles or reduced social support (Padyab et al., 2016) in generating high levels of stress and burnout in law enforcement agencies. Therefore, all this could be considered when designing and implementing measures aimed at optimising the psychological health of the people who form part of the Security Forces and Corps.

According to De la Fuente et al. (2013) 32.2% of the police officers showed a high level of burnout, 12.5% a medium level and 55.4% a low level. In this study, the results are very similar as 36.2% of the police officers obtained burnout scores considered worrying. The results of this study also point in the same direction as those reported by De la Fuente et al. (2013) on the relationship between psychosocial risk factors and burnout syndrome. However, in this study, a greater weight of the dimensions of emotional exhaustion and cvnicism was observed.

About sociodemographic variables, the results suggest that marital status is related to the occurrence of burnout symptoms, as has been observed in previous research (Aguayo et al., 2017). Taken together, these results suggest that single participants, compared to participants who are in a relationship or married, exhibit higher levels of burnout symptoms such as emotional exhaustion and depersonalisation. This may be because that family has on police officers in terms of emotional support and sharing of family responsibilities. The data do not provide evidence of a positive relationship between length of service and high levels of burnout risk.

Regarding the difference between men and women, the results are in line with recent studies by Mushwana et al. (2019) and Galbraith (2021). In these studies, the dimensions of social support and workload were found to be important stressors for female police officers. However, while the work of Garcia et al. (2013) reported no significant differences in the incidence of stress between women and men, the results suggest such a positive relationship in several factors: time spent on daily work, the workload/volume of their shifts, excessive psychological demands, and lack of social support. The weight of these factors could be decisive in explaining the overall differences observed between men and women (Acquadro et al., 2015). Finally, this study also found a higher proportion of women than men with high levels of cynicism.

Considering the results of the study and the negative consequences of chronic stress on police officers (Adams and Mastracci, 2018; Galbraith et al., 2021; Luceño-Moreno et al., 2021; Mushwana et al., 2019; Violanti et al., 2017), some suggestions could be put forward so that the risks of law enforcement officers suffering from burnout problems could be minimised. The results of the study suggest that lack of autonomy, role-related ambiguities, excessive workload, high psychological demands, and low perceived social support from the organisation are linked to increased risk of occupational burnout in police officers. Therefore, actions to

minimise the impact of these risk factors would improve the psychological health of police officers.

However, the present study suffers from certain limitations in relation to the participants in the study, both because of the difficulties of accessibility to the study population and because of the size of the sample. The influence of more socio-demographic variables (e.g., number of children, work quadrant, history of mood psychopathologies) that could be important in the impact of both psychosocial factors and the experience of stress and burnout have not been assessed and would be interesting to consider for future research. It should be borne in mind, as noted in the introduction, that the study participants belong to a specific type of police force, the local police force, which performs its duties in a specific place and under specific conditions. The results observed may not be generalisable to other police forces, such as the National Police, or to other State Security Forces and Corps. One of the key factors in this regard that has not been addressed in this study is the relationship of hierarchical dependence (e.g., the mayor's office or the State). Future work should shed light on these possible differences. In the sample used, men outnumber women, and this may have affected the results. The coping strategies that the agents use on a regular basis have not been evaluated either. Future work could explore this aspect further in order to identify efficient intervention strategies as suggested by Bakker and Vries (2021).

References

- Acquadro, D., Varetto, A., Zedda, M., & Ieraci, V. (2015). Occupational stress, anxiety and coping strategies in police officers. *Occupational Medicine*, 65(6), 466–47. https://doi.org/10.1093/occmed/kqv060
- Adams, I., & Mastracci, S. (2018). Police body-worn cameras: Effects on officers' burnout and perceived organizational support. *Police Quarterly*, 22(1), 5-30. https://doi.org/10.1177/1098611118783987
- Aguayo, R., Vargas, C., Cañadas, G. R., & De la Fuente, E. I. (2017). Are socio-demographic factors associated to Burnout syndrome in police officers? A correlational meta-Analysis. *Anales de Psicología*, 33(2), 383– 392. https://doi.org/10.6018/analesps.33.2.260391
- American Psychological Association. (2020). Publication manual of the American Psychological Association (7^a ed.). https://doi.org/10.1037/0000165-000
- Baek, H., Choi, N. Y., & Seepersad, R. (2021). The role of job stress and burnout on health-related problems in the Trinidad and Tobago police service. *Policing: An International Journal*, 44(2), 246-260. http://doi.org/10.1108/PIJPSM-11-2019-0177
- Bakker, A. B., & Demerouti, E. (2007). The job demands-resources model: state of the art. *Journal of Managerial Psychology*, 22(3), 309-328. http://doi.org/0.1108/02683940710733115
- Bakker, A. B., & Demerouti, E. (2013). La teoría de la demanda y los recursos laborales [The theory of demand and labor resources]. Journal of Work and Organizational Psychology, 29(3), 107-115. http://doi.org/10.5093/tr2013a16
- Bakker, A. B., & Vries, J. D. (2021). Job demands-resources theory and selfregulation: new explanations and remedies for job burnout. Anxiely, Stress and Coping, 34(1), 1-21. https://doi.org/10.1080/10615806.2020.1797695
- Bhowmick, S., & Mulla, Z. (2021). Who gets burnout and when? The role of personality, job control, and organizational identification in predicting burnout among police officers. *Journal of Police and Criminal Psychology*, 36, 243-255. https://doi.org/10.1007/s11896-020-09407-w

This research is pioneering in Spain with respect to the study of the relationship established between burnout and psychosocial risk factors that generate stress, considering the network analysis methodology used. Despite the characteristics of the sample used, it may be useful to try to implement preventive policies among security professionals to increase their well-being and productivity at work knowing the factors that condition the experience of stress and burnout (De la Fuente et al., 2013). The results of this study point to some of the factors that can be considered to minimise burnout in police officers. Therefore, human resources departments or personnel management sections of police forces can take advantage of these results to design healthier working environments for officers. In addition, it would be important that in cases where prevention is no longer possible, interventions to reduce both stress and burnout at work are implemented. Preventing and, secondly, mitigating burnout in these professionals will favour optimal levels of quality of life, which will result, on the other hand, in greater levels of well-being for society.

Conflict of interest.- The authors of this article declare no conflict of interest.

Financial support.- No funding.

- Borsboom, D. (2017). A network theory of mental disorders. World Psychiatry, 16(1), 5-13. https://doi.org/10.1002/wps.20375
- Borsboom, D., & Cramer, A. O. J. (2013). Network analysis: An integrative approach to the structure of psychopathology. *Annual Review of Clinical Psychology*, 9, 91-121. http://doi.org/10.1146/annurev-clinpsy-050212-185608
- Borsboom, D., Cramer, A. O. J., Schmittmann, V. D., Epskamp, S., y Waldrop, L. J. (2011). The small world of psychopathology. *Plas One*, 6 (11), Artículo e27407. https://doi.org/10.1371/journal.pone.0027407
- Cieślak, I., Kielan, A., Olejniczak, D., Panczyk, M., Jaworski, M., Gałazkowski, R., Pękala, J. R., Iwanow, L., Zarzeka, A., Gotlib, J., & Mikos, M. (2020). Stress at work: The case of municipal police officers. *Work*, 65(1), 145-152. https://doi.org/10.3233/WOR-193067
- Cox, T., & Griffiths, A. (2003). Commentary III: Monitoring the changing organization of work: a commentary. *Sozial- und Präventivmedizin, 48,* 354-355. https://doi.org/10.1007/s00038-003-0028-z
- Cramer, A. O. J., Waldrop, L. J., van der Maas, H. L. J., y Borsboom, D. (2010). Comorbidity: A network perspective. *Behavioral and Brain Sciences*, 33(2-3), 137-510. https://doi.org/10.1017/s0140525x09991567
- De la Fuente, E. I., Aguayo R., Vargas, C., & Cañadas, G. R. (2013). Prevalence and risk factors of burnout syndrome among Spanish police officers. Psicothema, 25(4), 488-493. https://doi.org/10.7334/psicothema2013.81
- Díaz, E. M., Rubio, S., López, M. I., & Aparicio, M. E. (2020). Sleep habits as predictors of psychological health in healthcare professionals. *Anales* de Psicología, 36(2), 242–246. https://doi.org/10.6018/analesps.350301
- Epskamp, S., Borsboom, D., & Fried, E. I. (2018). Estimating psychological networks and their accuracy: A tutorial paper. *Behavioral Research*, 50, 195-212. http://doi.org/10.3758/s13428-017-0862-1
 Foley, J., & Massey, K. L. D. (2021). The 'cost' of caring in policing: From
- Foley, J., & Massey, K. L. D. (2021). The 'cost' of caring in policing: From burnout to PTSD in police officers in England and Wales. *The Police Journal: Theory, Practice and Principles, 94*(3), 298-315. http://doi.org/0.1177/0032258X20917442

- Fonseca-Pedrero, E. (2017). Análisis de redes: ¿Una nueva forma de comprender la psicopatología? [Network analysis: A new way of understanding psychopathology?]. Revista de Psiquiatría y Salud Mental, 10(4), 206-215. http://dx.doi.org/10.1016/j.rpsm.2017.06.004
- Fonseca-Pedrero, E. (2018). Análisis de redes en psicología [Network analysis in psychology]. Papeles del Psicólogo, 39(41), 1-12. https://doi.org/10.23923/pap.psicol2018.2852
- Galanis, P., Fragkou, D., & Katsoulas, T. A. (2021). Risk factors for stress among police officers: A systematic literature review. Work, 68(4), 1255-1272. https://doi.org/10.3233/WOR-213455
- Galbraith, N., Boyda, D., McFeeters, D., & Galbraith, V. (2021). Patterns of occupational stress in police contact and dispatch personnel: implications for physical and psychological health. *International Archives of Occupational and Environmental Health*, 94(2), 231-241. https://doi.org/10.1007/s00420-020-01562-1
- Garbarino, S., Cuomo, G., Chiorri, C., & Magnavita, N. (2013). Association of work-related stress with mental health problems in a special police force unit. *British Medical Journal Open*, 3, Article e002791. http://dx.doi.org/10.1136/bmjopen-2013-002791_
- García, M. Y., Pérez, M. A., & Albacete, A. (2013). Diferencias en riesgos psicosociales y estrés laboral percibido en los cuerpos de policía local atendiendo al género y la antigüedad [Differences in psychosocial risks and perceived work stress in local police forces according to gender and seniority]. *Apuntes de Psicología*, 31(3), 291-298.
- Guseva Canu, I., Marca, S. C., Dell'Oro, F., Balázs, Á., Bergamaschi, E., Besse, C., Bianchi, R., Bislimovska, J., Koscec Bjelajac, A., Bugge, M., Busneag, C. I., Çağlayan, Ç., Cerniţanu, M., Costa Pereira, C., Dernovšček Hafner, N., Droz, N., Eglite, M., Godderis, L., Gündel, H., ... Wahlen, A. (2021). Harmonized definition of occupational burnout: A systematic review, semantic analysis, and delphi consensus in 29 countries. Scandinavian Journal of Work, Environment and Health, 47(2), 97-105. https://dx.doi.org/10.5271/sjweh.3935
- Hickman, M. J., Fricas, J., Strom, K. J., & Pope, M. W. (2011). Mapping police stress. *Police Quarterly*, 14(3), 227–250. https://doi.org/c2kmsc
- Hoven, H., Wahrendorf, M., & Siegrist, J. (2015). Occupational position, work stress and depressive symptoms: a pathway analysis of longitudinal share data. *Journal of Epidemiology Community Health*, 69(5), 447–452. https://doi.org/10.1136/jech-2014-205206
- Hu, Q., Shaufeli, W. B., Taris, T. W. (2017). How are changes in exposure to job demands and job resources related to burnout and engagement? A longitudinal study among Chinese nurses and pólice officers. *Stress* and Health, 33(5), 631-644. https://doi.org/10.1002/smi.2750
- Instituto Nacional de Seguridad y Salud en el Trabajo (2018). F-PSICO 4.0 Método de Evaluación (Version 4.0) [Computer software]. Instituto Nacional de Seguridad y Salud en el Trabajo.
- JASP Team (2022). JASP (Version 0.16.4) [Computer software].
- Kelley, D. C., Siegel, E., & Wormwood, J. B. (2019). Understanding police performance under stress: insights from the biopsychosocial model of challenge and threat. *Frontiers in Psychology*, 10, Article 1800. https://doi.org/10.3389/fpsyg.2019.01800
- Lan, T., Chen, M., Zeng, X., & Liu, T. (2020). The influence of job and individual resources on work engagement among Chinese police officers: a moderated mediation model. *Frontiers in Psychology*. Article 497. https://doi.org/10.3389/fpsyg.2020.00497

Lazarus, R. S., & Folkman, S. (1984). Stress, appraisal, and coping. Springer.

- Leka, S., Cox, T., & Zwetsloot, G. (2008). The European framework for psychosocial risk management (PRIMA-EF), In S. Leka & T. Cox (Eds.), *The European framework for psychosocial risk management: PRIMA-EF* (pp. 1-16). Institute of Work, Health and Organisations.
- Lever, J., Krzywinski, M., & Altman, N. (2016). Regularization. Nature Methods, 13, 803-804. https://doi.org/10.1038/nmeth.4014
- Luceño-Moreno, L., García-Albuerne, Y., Talavera-Velasco, B., & Martín-García, J. (2016). Stress in the Spanish police depending on occupational rank, sex, age and work-shift. *Psicothema*, 28(4), 389-393. https://doi.org/10.7334/psicothema2015.310
- Luceño-Moreno, L., Talavera-Velasco, B., Jaén-Díaz, M., & Martín-García, J. (2021). Occupational stress in Spanish police officers: Validating the effort-reward imbalance questionnaire. *International Journal of Environmen*tal Research and Public Health, 18(4), Article 1393. https://doi.org/10.3390/ijerph18041393

- Magnavita, N., Capitanelli, I., Garbarino, S., & Pira, E. (2018). Work-related stress as a cardiovascular risk factor in *police officers: a systematic review of ev*idence. International Archives of Occupational and Environmental Health, 91(4), 377-389. https://doi.org/10.1007/s00420-018-1290-y
- Maran, D. A., Zito, M., & Colombo, L. (2020). Secondary traumatic stress in Italian police officers: the role of job demands and job resources. Frontiers in Psychology. Article 1435. https://doi.org/khc7
- Márquez, M. A., Galiana, L., Oliver, A., & Sansó, N. (2021). The impact of a mindfulness-based intervention on the quality of life of Spanish national police officers. *Health and Social Care in the Community*, 29(5), 1491-1501. https://doi.org/10.1111/hsc.13209
- Maslach, C. (2017). Finding solutions to the problem of burnout. Consulting Psychology Journal, 69(2), 143-152. https://doi.org/10.1037/cpb0000090
- Maslach, C., & Leiter, M. P. (2016). Understanding the burnout experience: recent research and its implications for psychiatry. World Psychiatry, 15(2), 1–9. https://doi.org/10.1002/wps.20311
- Maslach, C., & Leiter, M. P. (2017). Understanding burnout. In C. L. Cooper & J. C. Quick (Eds.), *The handbook of stress and health. A guide to research and practise*. Wiley. https://doi.org/10.1002/9781118993811.ch3
- McCarty, W. P., Aldirawi, H., Dewald, S., & Palacios, M. (2019). Burnout in blue: An analysis of the extent and primary predictors of burnout among law enforcement officers in the United States. Police Quarterly, 22(3), 278-304 https://doi.org/10.1177/1098611119828038_
- Mushwana, M., Govender, I., & Nel, K. (2019). Stress and coping mechanisms of officers of the South African Police Service based in Tzaneen, Limpopo province, South Africa. South African Journal of Psychiatry, 25, Article a1342. https://doi.org/10.4102/sajpsychiatry.v25i0.1342
- Padyab, M., Backteman-Erlanson, S., & Brulin, C. (2016). Burnout, coping, stress of conscience and psychosocial *work environment among patrolling police officers*. Journal of Police and Criminal Psychology, 31, 229–237. https://doi.org/10.1007/s11896-015-9189-y
- Prieto, G., & Muñiz, J. (2000). Un modelo para evaluar la calidad de los tests utilizados en España [A model to evaluate the quality of the tests used in Spain]. *Papeles del Psicólogo*, 77, 65-72.
- Queirós, C., Passos, F., Bártolo, A., Marques, A. J., da Silva, C. F., & Pereira, A. (2020). Burnout and stress measurement in police officers: Literature review and a study with the Operational Police Stress Questionnaire. Frontiers in Psychology, 11, Article 587. https://doi.org/10.3389/fpsyg.2020.00587
- Raper, M. J., Brough, P., & Biggs, A. (2020). Evidence for the impact of organizational resources versus job characteristics in assessments of occupational stress over time. *Applied Psychology*, 69(3), 715-740. https://doi.org/10.1111/apps.12201
- Roberts, N. A., Leonard, R. C., Butler, E. A., Levenson, R. W., & Kanter, J. W. (2013). Job stress and dyadic synchrony in police marriages: A preliminary investigation. Family Process, 52(2), 271-83. https://doi.org/10.1111/j.1545-5300.2012.01415.x
- Ruiz-Ruano, A. M., & Puga, J. L. (2020). Modelos gráficos y redes en psicología [Graphic models and networks in psychology]. Revista de Historia de la Psicología, 41(4), 24-33. https://doi.org/10.5093/rhp2020a18
- Salanova, M., & Llorens, S. (2008). Estado actual y retos futuros en el estudio del burnout [Current status and future challenges in the study of burnout]. *Papeles del Psicólogo*, 29(1), 59-67.
- Salanova, M., Schaufeli, W. B., Llorens, S., Peiró, J. M., & Grau, R. (2000). Desde el "burnout" al "engagement": ¿Una nueva perspectiva? [From "burnout" to "engagement": A new perspective?]. Revista de Psicología del Trabajo y de las Organizaciones, 16(2), 117-134.
- Salvagioni, D.A.J., Melanda, F.N., Mesas, A.E., González, A.D., Gabani, F.L., & Andrade, SM. (2017). Physical, psychological, and occupational consequences of job burnout: A systematic review of prospective studies. *Plos One*, 12(10): Article e0185781. https://doi.org/gbz2mg
- Schaufeli, W. B. (2017). Burnout: A short socio-cultural history. In S. Neckel, A. Schaffner, & G. Wagner (Eds.), Burnout, fatigue, exhaustion, (pp. 105-127). Palgrave Macmillan, Cham. https://doi.org/10.1007/978-3-319-52887-8_5
- Schmittmann, V. D., Cramer, A. O. J., Waldorp, L. J., Epskamp, S., Kievit, R. A., & Borsboom, D. (2013). Deconstructing the construct: A network perspective on psychological phenomena. *New Ideas in Psychology*, 31(1), 43-53. http://doi.org/10.1016/j.newideapsych.2011.02.007
- Sherwood, L., Hegarty, S., Vallières, F., Hyland, P., Murphy, J., Fitzgerald, G., & Reid, T. (2019). Identifying the key risk factors for adverse psy-

Ana Mª Ruiz-Ruano García et al.

chological outcomes among police officers. A systematic literature review. *Journal of Traumatic Stress*, 32(5), 688-700. https://doi.org/gj87jz Talavera, B., Luceño, L., García, Y., & Martín, J. (2021). Perception of

Falavera, B., Luceño, L., García, Y., & Martín, J. (2021). Perception of health, resilience, and engagement in Spanish police officers during the COVID-19 pandemic. *Psicothema*, 33(4), 556-563. https://doi.org/khdb

- Teoh, K. R. H., Hssard, J., & Cox, T. (2020). Individual and organizational psychosocial predictors of hospital doctors' work-related well-being: a multilevel and moderation perspective. *Health Care Management Review*, 45(2), 162-172. https://doi.org/10.1097/hmr.000000000000207
- Teoh, K. R.-H., Hassard, J., & Cox, T. (2022). Individual and organizational predictors of patient care: A multilevel analysis of the English National Health Service Staff Survey. *International Journal of Stress Management*, 29(1), 97–111. https://doi.org/10.1037/str0000183_
- Violanti, J. M., Charles, L. E., McCanlies, E., Hartley, T. A., Baughman, P., Andrew, M. E., Fekedulegn, D., Ma, C. C., Mnatsakanova, A., &

Burchfiel, C. M. (2017). Police stressors and health: A state-of-the-art review. Policing: An International Journal, 40(4), 642-656. https://doi.org/10.1108/PIJPSM-06-2016-0097

- World Health Organization. (2022, January). International Classification of Diseases (ICD-11th Revision). World Health Organization. https://icd.who.int/en
- Zeng, X., Zhang, X., Chen, M., Liu, J., & Wu, C. (2020). The influence of perceived organizational support on police job burnout: A moderated mediation model. *Frontiers in Psychology*. Article 948. https://doi.org/10.3389/fpsyg.2020.00948
- Zhou, J., wei Zhang, J., yu Xuan, X. (2020). The curvilinear relationship between career calling and work fatigue: A moderated mediating model. *Frontiers in Psychology*. Article 583604. https://doi.org/ghwnrb

486