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Sources and Assessment of Occupational Stress in the Police

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Abstract: Sources and Assessment of Occupational Stress in the Police: Frédéric DESCHAMPS, *et al.* Department of Occupational Health, Faculté de Médecine, Reims, France—The role of the police in Western society is undergoing a transformation that reflects the economic social and technological changes in the community and the assertion of individual rights within a democracy. The aim of this study is to evaluate level of stress among a group of French policemen and to examine the association between policing, potential stressors and stress levels. The sample is drawn from a large metropolitan police force (n=617). The population extends from the first line policeman to top senior management. Each policeman is matched for age (more or less five years) and sex, to a control. Policemen and controls complete a self administered questionnaire including demographic, occupational and health characteristics, and a stress level assessment with the help of a visual analogue scale. The average age of the two groups is 40 yr. Eighty-four percent are men. The total score for average sources is not statistically significantly different for policemen and controls. Comparison of a police group with a high stress level to a police population with a low and moderate stress level is made. The comparison is done first only with men, and second with the whole population. Policemen with a high stress level (same results only for men and the whole population) belong to the following groups: more than 15 yr service, sergeant, officer and administrative employee rank, divorced experience, age over 30, no leisure-time activities and no hobbies. Multivariate analysis shows that the two last parameters are bound to the stress level. For the whole population, age over 30 has to be added, and for the group of men, length of service over five years should be noted. Stress at work is an ill-health provoking factor. Police from minority groups such as ageing subjects or police officers have been reported to experience greater stress. This population is adversely affected by lack of available manpower and long working hours. In fact sources of stress in the police population are found both in the weariness of the job and private life planning.
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Stress is defined as a self perceived negative or unpleasant impact. Distress is reserved for the experience of specific symptoms such as anxiety or depression[1)].

Stress in the workplace has become a popular target for research. This has been inspired partly by humanitarian motives but probably more by the need to reduce costs and wastage through absenteeism ill-health and underlying rapid staff turnover[2)]. Critical incident stress is the emotional stress that individuals experience after being exposed to a specific incident[3)]. Certain people are exposed to critical or traumatic events as part of their occupational roles as in police work.

The role of the police in Western society is undergoing a transformation that reflects the economic, social, and technological changes in the community and the assertion of individual rights within a democracy. Research has shown that as a consequence, policing is an extremely stressful occupation[4, 5)]. Work has been done to identify the full range of potential stressors acting on policemen at work. Few studies have explored the effects of stressors on both the physical and emotional well-being of policemen. They are among workers whose exposure to potentially traumatic events is part of their professional duty, as they work to help the primary victims of crime, accident or disaster[6)].

The aim of this study was to evaluate the level of stress among a group of policemen and to examine the relationships of a wide variety of policing potential stressors on stress levels.

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Methods

Populations

Policemen: The sample was drawn from a large metropolitan police force in France. The whole police population was included in the study. Any policeman in the town was included. The population extended from first line policeman to top senior management. Occupational medical examination is compulsory for all French policemen under the law. Each subject was matched to a control for sex and age (± 5 yr).

Controls: Non selected independent industrial or administration workers belonging to the same county constituted the control population. In France, all workers (no exception) in the private and public sectors (including administrative employees, bus drivers, welders, etc.) each year have a compulsory medical examination conducted by occupational physicians belonging to independent occupational health departments. Controls were randomly selected from among this miscellaneous population (excluding policemen) with regard only for sex and age ± 5 yr.

Questionnaire

Period of study: The police population and controls were invited during the period June 1st 1999 to May 31th 2000 to complete a self-administered questionnaire focusing predominantly on stress. Policemen and controls gave informed consent to participate in the study after receiving information about the goal and the method of the investigation. Consequently, only volunteer subjects were included in the study. The subjects were told that all data were anonymous and would remain confidential. The Questionnaire took approximately ten minutes to complete and was administered during the annual medical occupational examination.

Demographic characteristics such as age, gender, marital status, level of education and leisure time activities, were collected.

Questions concerned occupational characteristics including rank, length of service, size of police force, administrative and geographical location of their work and duties.

The items used for health measures mainly covered gastro-intestinal and cardiovascular complaints, sleep difficulties, other current and recent illnesses, medication and smoking habit. A few items were omitted, because, for example, in France the real level of alcohol consumption is difficult to determine. The physical activity scale consisted of the following two categories : no regular physical exercise or minimum physical exercise for one hour once a week.

Stress assessment : first, the subjects were asked to rate their global stress level (occupational and personal stress level), second, the psychological strain of their job and thirds their personal stress level on three different visual analogue scales. The occupational practitioner assessed the subject's stress level with a fourth visual analogue scale. On each of the four scales, minimal strain was considered 0 (no strain at all), and maximal possible strain was 100%, and was scored 15 points.

With regard to authors using visual analogue scales, a result over 40% (15 points × 0.4=6 points) is estimated to fit with a high stress level[7, 8]. Consequently, a subject with a score over 6 points (40 % of the maximum score) obtained by the visual analogue scale concerning global stress assessment, belongs to the high stress level group. Data concerning the global stress level (obtained by the visual analogue scale) which represent the best assessment of self-perceived negative or unpleasant impact, were used for multivariate analysis calculation.

Second, we used an adapted depression and stress scale[9] called a questionnaire, including items on physical and psychological stress signs. A few questions came from previous pilot interviews carried out among a small group of policemen (100 subjects) to generate items reflecting potential job stressors. The questions were validated to establish their internal reliability. Each item was accompanied by a four point rating scale ranging from no stress at all to a great deal of stress. This allowed us to calculate the cumulative stress score. The highest total score (30 points) corresponded to the highest level of anxiety.

Physical Examination

The assessment of physical fitness started with an examination by a physician for cardio-respiratory, musculo-skeletal symptoms and over weight.

Statistical Analysis

Data were entered into a personal computer and verified. Statistical analysis were undertaken with the statistical software epi-info 6 (Centers for Disease Control, Atlanta, GA, and World Health Organisation, Geneva, Switzerland). Descriptive measures (mean ± SD) were calculated for all test variables for all groups of participants.

Differences between sub-groups were assessed for significance with the x^2 statistic. The differences were considered statistically significant when $p<0.05$. Multivariate analysis was used to determine the effects of demographic, occupational and health characteristics on the stress level. The S.A.S.(Statistical Analysis System) computer package (S.A.S. institute-version 8) was used for the analyses. Multiple logistic regression analyses were performed. The variables used come from a previous group of parameters with significant statistical results.

Table 1. Demographic characteristics of police population and controls

Variables		Police population n=617		Controls n=617		*p*
Gender	Males	519	(84 %)	519	(84%)	NS
	Females	98	(16%)	98	(16%)	
Age (yr)	20–30	126	(20%)	126	(20%)	NS
	31–40	164	(27%)	164	(27%)	
	41–50	259	(42%)	259	(42%)	
	>50	68	(11%)	68	(11%)	
Level of education	No formal qualification	116	(19%)	95	(15%)	10^{-6}
	School qualification	269	(43%)	358	(58%)	
	A level	148	(24%)	87	(14%)	
	University	84	(14%)	77	(13%)	
Marital status	Single	116	(19%)	153	(25%)	10^{-3}
	Married-cohabiting	437	(71%)	426	(69%)	
	Divorced	64	(10%)	38	(6%)	
Smoking categories	Non smokers	357	(58%)	321	(52%)	0.04
	Light	99	(16%)	89	(15%)	
	Moderate	81	(13%)	107	(17%)	
	Heavy	80	(13%)	100	(16%)	
Leisure-time	Yes	362	(59%)	189	(31%)	10^{-6}
Physical activities	No	255	(41%)	428	(69%)	
Hobbies	Yes	291	(47%)	240	(39%)	10^{-3}
	No	326	(53%)	377	(61%)	

NS: not significant

Table 2. Occupational characteristics of police population

Variables		n=617	%
Length of service (yr)	<5	100	16
	6–10	84	14
	11–15	67	11
	16–20	111	18
	>20	255	41
Rank	Trainees	82	13
	Uniformed constables	148	24
	Sergeants	240	39
	Officers	70	12
	Administration employees	74	12
Shift work	Yes	269	43
	No	348	57

Results

The police group of 617 persons serving an urban population, has not been involved in any extraordinary operational duties, such as racial riots or major industrial disputes. The average age of the police and the control population is 39.9 yr old. Twenty percent are between 20 and 30 yr old, a quarter are 31 to 40 yr old, and half over 41 yr old (Table 1). Eighty-four percent of the sample are males, and most are married (71%). A majority have a school qualification (43%). Almost two thirds (58%) of policemen claim either to have given up smoking or to never have smoked, in comparison with 52% of the control population. Physical activities and hobbies are more

Table 3. Comparison of means and standard derivation of stress scores for police population and controls

Methods used		STRESS SCORES		
		Police population	Controls	
		Means n=617 (± SD)	Means n=617 (± SD)	*p*
VISUAL ANALOGUE SCALES	Assessement of global stress (occupational and personal-maximum : 15 points by subject)	4.7 (± 3.5)	4.9 (± 3.4)	NS
	Assessment of occupational stress level by the subject (maximum : 15 points)	5.6 (± 4.2)	5.7 (± 4.1)	NS
	Assessment of personal stress level by the subject (maximum : 15 points)	3.5 (± 3.01)	3.6 (± 3.2)	NS
	Assessment of global stress level by occupational physician (maximum : 15 points)	4.3 (± 3.5)	4.5 (± 3)	NS
QUESTIONNAIRE SCORE * (maximum : 30 points)		6.8 (± 5.1)	6.5 (± 4.7)	NS

*Adapted depression anxiety and stress scale, NS : not significant

Table 4. Relationship between police stress levels and demographic characteristics for males

Variables		High stress level (33.0 %)		Low or moderate stress level (67 %)		*p*
		n=163	Percentage	n=356	Percentage	
Age (yr)	20–30	15	9.2	83	23.3	0.001
	31–40	45	27.6	84	23.6	
	41–50	86	52.8	147	41.3	
	>50	17	10.4	42	11.8	
Level of education	No formel qualification	27	16.6	71	19.9	0.77
	School qualification	78	47.8	157	44.1	
	A level	38	23.3	81	22.7	
	University	20	12.3	47	13.2	
Marital status	Single	12	7.4	76	21.3	0.0004
	Married-Cohabiting	135	82.8	253	71.1	
	Divorced	16	9.8	27	7.6	

frequent in the police population than in the control group.

Table 2 presents some of the occupational characteristics of the police respondents. Around forty percent of the sample have been in the police twenty years or more and are of middle supervisory police officer rank. The sample are mostly not working shifts.

Table 3 shows the means and standard deviation for the police population and controls of global, occupational and personal stress scores on a visual analogue scale and on an adapted depression anxiety and stress scale. No significant differences emerge between the two groups. The screening questionnaire contains several items designed to assess the occurrence of occupational conflict. Overall, a majority (87%) of police reported satisfaction with their job (84% for controls) although 12% often feel pressure at work. No excess of cardiovascular, digestive, musculo-skeletal problems, sleep disturbances, is found in the police group. Medication uses and prevalence of current illnesses are comparable in the policemen and controls groups. Thirty three % (203 individuals) report

Table 5. Relationships between police stress levels and occupational characteristics for males

Variables		High stress level		Low or moderate stress level		
		n=163	Percentage	n=356	Percentage	*p*
Length of service (yr)	<5	7	4.3	65	18.3	0.0007
	6–10	19	11.7	45	12.6	
	11–15	21	12.9	34	9.5	
	16–20	31	19.0	59	16.6	
	>20	85	52.1	153	43.0	
Rank	Trainees	7	4.3	57	16.1	0.0005
	Uniformed constables	38	23.5	93	26.2	
	Sergeants	78	48.1	152	42.8	
	Officers	28	17.3	32	9.0	
	Administration employees	11	6.9	21	5.9	
Shift work	Yes	74	45.4	182	51.1	0.23
	No	89	54.6	174	48.9	

Table 6. Relationships between police stress level and no occupational activities for males

Coping		High stress level		Low or moderate stress level		*p*
		n=163	Percentage	n=356	Percentage	
Leisure-time, physical activities	Yes	85	52.2	228	64.0	0.01
	No	78	47.8	128	36.0	
Hobbies	Yes	72	44.2	197	55.3	0.02
	No	91	55.8	159	44.7	
Smoking habits	Non smokers	88	54.0	202	56.8	0.67
	1 to 9 cig./d	25	15.3	60	16.8	
	10 to 19 cig./d	22	13.5	47	13.2	
	Over 20 cig./d	28	17.2	47	13.2	

Table 7. Multivariate analysis concerning effects of demographic, occupational and health characteristics(*) on police high stress level for males

	O.R.	I.C. 95 % O.R.	*p*
Length>5 yr	5.72	2.52 ; 12.98	$<10^{-4}$
No hobbies	1.93	1.31 ; 2.85	0.001
No sport	1.53	1.04 ; 2.26	0.030

O.R : ODDS-RATIO

(*) In multiple logistic regression analyses we used only significantly statistical results: age, marital status, length of service, rank, leisure time, physical activities and hobbies.

a high rate of stress.

The comparison of two subsamples of policemen (excluding women to obtain an homogeneous group), first with a high stress level, and second with a low or moderate stress level, is done. It shows that subjects in the first group are older (between 30 and 50 yr old) and more frequently divorced than those in the second (Table 4).

It is found that sergeants, police officers and administration employees are adversely affected by stress. In the same way, the stress level is linked to length of service, over 15 yr (Table 5), no leisure-time, physical activities, and no hobbies (Table 6). The results included in tables 4 to 6 are similar for the whole population (males and females).

Lastly, multivariate analysis (concerning males only) taking into account only parameters with significant statistical results (age, marital status, length of service, rank, leisure time, physical activities and hobbies) displays a significant relationship between the absence of physical activities or hobbies and length of service over 5 yr (Table 7).

Multivariate analysis, concerning the whole population (males and females) and including the same parameters, gives a significant relationship between no hobbies, no sport, and an age over 30 yr.

Discussion

As Selye[10] has suggested, we must remember that stress is the great equaliser of biological activities. If we use the same parts of our bodies or minds over and over again, nature has only stress with which to force us out of the routine. Interest in occupational stress research continues to grow[11], primarily because of the link between the experience of occupational stress and adverse psychological and physical health of individuals and workplace performance difficulties. The term stressor covers some environmental circumstances directly or indirectly affecting the individual. Stress in the present study is measured by means of a self reported degree of unpleasant impact experienced by the individual when exposed to a stressor.

The results presented concern a population for which the phenomena of selection by exclusion over the years could not have been taken into account.

In this study, the scores for men and women in the police did not differ significantly from those of a normative French community sample.

In the same way, Gudjonsson[12] conducted a study of 112 senior British police officers attending promotion courses at Bramskill police Staff training College. These officers report fewer stressful life events than a comparable study of US air traffic controllers.

Our study shows that around one third of police (33%) reported a high stress level. The limit value (over 6 points—40% score—visual analogue scale) which separates high from moderate and low stress level groups, could be discussed. But the results of most other studies using a stress standardised questionnaire find comparable percentages of subjects with a high stress level. Thompson[13] showed that 20% of ambulance workers and 3% of policemen were in the moderate to severe psychological distress category. Richmond et coll.[14] reported that 12% of men and 15% of women feel moderate to severe symptoms of stress. Our results are twice as high, but the screening instrument used was different. In police, sources of occupational stress have been identified as poor police—community relations, erratic and unsocial shift work hours, shortage of manpower, longer working hours, courtroom appearances, and physical danger. Parameters indicated in this study as sources of occupational stress, including length of service and rank, are different. But questionnaire presentation could modify the subjects' answers.

The presence of women in the police reveals that much police activity does not involve physical abilities, but is routine, unexciting, and rather requires interpersonal skills. In common with other women workers, policewomen may also suffer problems related to sex discrimination and prejudice, especially because they are a minority group in a male dominated organisation.

In the present study, these potential situations had no bearing on the stress level. The delicate balance of work and home is a tightrope that many policemen find difficult to walk. Knoes[15], in a survey of married police officers, found that being a police officer has an adverse effect on non police friendships, limits one's private life planning, means that work intrudes into the home and family, and generates frustrations because of the negative public image of police. Excessive paperwork, time pressures and a heavy workload, seem to accelerate the worsening of situations in the personal and private life. In a study of New Zealand police officers, Singer *et al.*[16] counters the claims of previous findings which indicate higher rates of divorce amongst the police. In this study, the rate of divorces is correlated with a high stress level in the police population.

Stress outcome measures are variously defined as increases in drinking, visits to the doctor, satisfaction with job performance or smoking. In this study, the prevalence of smoking among the police population is lower than in the control population. This result is appropriate to the lack of a significant difference between police and controls in the stress level.

Policemen over 30 yr old report in our study higher levels of self perceived stress than younger ones. There are relatively few differences in exposure to organisational stressors except that they often belong to middle and upper-middle supervisory personal. Gudjonsson and Adlam[17], found also that sergeants were amongst the most stressed. There is support for previous finding that the rank of sergeant is associated with the highest overall levels of exposure to stressors and reported feeoings of stress. Sergeants have operational, management, and organizational stressors to contend with. Constables proportionately are more likely to experience police operational stressors[18]. In fact, organizational factors such as work overload, bureaucratic obstacles to police functioning, autocratic management and rapid organizational changes[19, 20], may be potentially damaging to the health and well-being of policemen. Given the very special role played by the police in society, it is important for authorities in charge of maintenance and development of the police service to give serious

consideration to alternative strategies of work redesign and organizational changes[21, 22]. Recent research[23–25] has shown that shift work has one of the most important impacts on psychological outcomes for policemen and may interact with traumatic experiences. In our study, shift work has not been identified as an important factor associated with occupational stress. Shift work organisation (not exceeding 2 to 3 d periods) could explain this result.

Results obtained by multivariate analysis are slightly different for the men's group and the whole population. The differences between the two groups concern age and length of service which are in fact very close parameters. The number of years employed as policeman increases with age. The multivariate analysis results predict that occupational and also private characteristics of life are bound to the stress level. Interaction of job organization with private activities may account for these results. In fact, organisational factors such as work overload, bureaucratic obstacles to police functioning and autocratic management approaches may be potentially damaging to the well-being of policemen with no hobbies and no leisure-time physical activities. Moreover being a policeman or a policewoman with a high stress level could adversely affect the social life by not having the ability to plan one's private life.

Conclusion

The personal characteristics, suggested by our results, to have an impact on police stress level are age over 30, length of services over 5 yr, no hobbies, no leisure-time, activities or physical activities. To prevent the negative manifestation of stress from occurring in the future, it is important to understand the origins of stressors that are currently prevalent among policemen.

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