Working hours and common mental disorders in English police officers

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ABSTRACT

Background: There is a paucity of evidence on working hours and their psychological correlates in police officers of the federated ranks in England.

Aims: An exploratory study to establish the extent to which a sample of English police officers worked long hours and the association between long working hours and common mental disorder (CMD).

Methods: Officers of the federated ranks (constable, sergeant, inspector) from two English county forces completed a questionnaire to report their typical weekly working hours and symptoms of CMD. We also collected socio- and occupational-demographic data. We defined long working hours as ≥49 hours in a typical week in accordance with 48-hour weekly limit specified in the 1993 European Directive on the Organisation of Working Time. We established associations between long working hours and self-reported CMDs using binary logistic regression to generate ORs and 95% CIs adjusted for potential confounding variables.

Results: 27% (*N*=327/1226) of respondents reported long working hours. The odds ratios for psychological distress (OR 2.05, 95% CI 1.57-2.68), emotional exhaustion (OR 1.99, 95% CI 1.52-2.59), and depersonalisation (OR 1.30, 95% CI 1.00-1.71) were significantly increased for long working hours after adjustment for socio- and occupational-demographic characteristics.

Conclusions: More than one quarter of sampled police officers reported working long hours, and were significantly more likely to report CMD. National and longitudinal

research is required to confirm these findings, which suggest management of working

hours may effectively promote psychological wellbeing.

INTRODUCTION

Long working hours are associated with a range of negative health indices including increased risk of poor mental health, physician-diagnosed conditions, and mortality, [1] depression, anxiety, compromised sleep, coronary heart disease, [2] stroke, [3] and heavy alcohol consumption. [4] While a limited number of studies have profiled working hours within senior police ranks in England [5-6] the extent to which officers of the federated ranks (constable, sergeant, inspector) work long hours is unclear, as are the links between long hours and common mental disorder (CMD).

The UK Office for National Statistics reported that in 2014, officers of constable and sergeant rank worked a median of 41 paid hours per week, [7] 1.7 hours of which was overtime. [8] However, this figure, derived from organisational records, appears at odds with officers' anecdotal reports, highlighting the need for the examination of self-reported working hours. A 1989 study found that more than half the sampled officers of an English force (*N*=954) who reported having worked long hours in the previous six months, perceived this to have had a negative impact on them. [9] Another study explored the issue among constables and sergeants in an English county force (*N*=873). [10] Officers who scored above a caseness threshold for psychological morbidity rated long working hours significantly more stressful than non-cases, though long working hours did not significantly predict caseness in a regression model. Given the fast pace of change in policing, working life, and the social, economic, and political contexts in which policing takes place, it is unclear whether these findings hold in the contemporary policing landscape.

Article 6 of the 1993 European Directive on the Organisation of Working Time required member states of the European Union to introduce legislation to ensure that "the average working time for each seven-day period, including overtime, does

not exceed 48 hours". [11] In Britain the directive was implemented in The Working Time Regulations 1998, which applies to all police officers, although some police activities may be exempted, such as when dealing with civil unrest and terrorism (Reg. 18). Some senior officers may also be exempt (Reg. 20) and individuals may voluntarily opt-out of the Regulations. Therefore it is possible that federated rank police officers work in excess of 48 hours per week.

The first aim of this exploratory study was to profile self-reported working hours of police officers sampled from the federated ranks. The second aim was to assess the association of two indices of common mental disorder (CMD), psychological distress and burnout, with working ≥49 hours in a typical week, target variables selected for their relevance to the health and operational effectiveness of police officers. [12]

METHODS

The study was the first of its kind following unprecedented budgetary cuts to policing in England and Wales that amount to an 18% reduction in real terms since 2010. [13] The sample for this cross-sectional study was police officers from the federated ranks of two English county police forces, whose Police Federation local branch board had commissioned a wellbeing survey. We invited eligible officers of a large Public Protection Unit within force A to complete an online questionnaire in December 2014. In force B, we invited officers across four departments (Public Protection Unit, Crime Investigation, Sexual Offences and Domestic Abuse, Response) to complete an identical questionnaire in March 2015. We emailed officers' force accounts a description of the purpose of the study and ethical rights associated with participation, plus a hyperlink to the questionnaire. We piloted the questionnaire with a small

number of Police Federation representatives to check for errors and ambiguity and to establish its face validity. We made minor adjustments in light of feedback. The questionnaire was available for three weeks. Participation was voluntary and anonymous. The relevant Police Federation Joint Branch Boards approved the study, which followed the British Psychological Society's Code of Ethics and Conduct. [14]

We also collected information on socio- and occupational-demographic variables including age, gender, rank, departmental tenure, and years of police service, through the questionnaire. We asked respondents how many hours they worked in a typical week, excluding overtime, plus the number of hours of overtime. We summed responses to the two items to produce overall weekly working hours. We dichotomized this variable at 48/49 hours in accordance with the 48-hour legislative limit on average weekly working time.

We assessed CMD in terms of psychological distress and three dimensions of burnout. We used the 12-item General Health Questionnaire (GHQ-12) for psychological distress (PD). [15] A sample item is "[over the past few weeks have you] been able to concentrate on whatever you are doing?" Responses are given on a four-point scale of "*better than usual*", "*same as usual*", "*less than usual*", "*much less than usual*". We used the GHQ scoring method (0-0-1-1), as advocated by the test author. [15] We summed points to a global score ranging from 0–12 and we dichotomised responses into non-distressed (GHQ score 0-3) and distressed (GHQ score 4-12). The 3/4 threshold is the most accurate for identifying likely cases of minor psychiatric morbidity in the general UK working population [16-17] and has been widely used by researchers to differentiate between likely cases of minor psychiatric disorder and non-cases. [18-19]

We measured burnout using the human services version of the Maslach

Burnout Inventory (MBI). [20] The human services version of the MBI is designed for application with employees who are "often required to spend considerable time in intense involvement with other people". [20] The inventory includes three sub-scales: emotional exhaustion (EE; feelings of being emotionally overextended and depleted of one's emotional resources; nine items), depersonalisation (DP; negative, cynical attitudes and feelings about one's clients; five items), and reduced personal accomplishment (PA; the tendency to feel unhappy about oneself and dissatisfied with one's accomplishments on the job; eight items). A sample item from each scale is "I feel emotionally drained from my work" (EE), "I worry that this job is hardening me emotionally" (DP), "I have accomplished many worthwhile things in this job" (PA). All items are scored on a seven-point frequency rating scale ranging from "*never*" (0) to "*every day*" (6). A high degree of burnout is reflected in scores in the upper third of the normative distribution, which includes data contributed by police officers. [20] Thus, we dichotomized scores so that high EE was indicated by a score of ≥28, high DP by a score of ≥11, and low PA by a score of ≤33.

We performed analyses in IBM SPSS Statistics V.21. We generated descriptive statistics for each study variable to characterize factors associated with working hours and CMD, using Pearson's χ^2 tests to compare categorical variables. We defined statistical significance as $p<0.05$ throughout. To examine the relationship between long working hours and indices of CMD, we used binary logistic regression to generate odds ratios [ORs] with 95% confidence intervals [CIs], which we adjusted for some potential confounding variables (age, gender, rank, departmental tenure, years of service).

RESULTS

Force A consisted of 714 officers and force B 1830 officers. Across the surveyed departments, the response rate ranged from 45-63%, with an overall rate of 48% (N=1226/2544). Comparison of the composition of the study population and workforce composition records showed that the force A sample was representative of the department from which it was drawn in terms of team membership, rank, gender, and age. Department-level data were not available for force B. However, each of the four surveyed departments and six geographical regions were approximately proportionately represented; for instance, crime investigation officers comprised 25% of the population from which we sampled, and 24% of respondents were from this department.

The descriptive epidemiology of the study variables is shown in Tables 1 and 2. Twenty-seven per cent (N=327/1226) of respondents reported working ≥49 hours in a typical week. Males were significantly more likely than females to report long working hours ($p<0.01$). Senior officers were significantly more likely than junior officers to work long hours ($p<0.001$), with almost three times more inspectors (63%) than constables (24%) working long hours.

[Insert Tables 1 and 2 here]

PD caseness was scored by 52% (N=637/1226) of respondents, while 51% (N=620/1226) scored high EE, 47% (N=573/1226) scored high DP, and 68% scored low PA (N=838/1226). Male officers and younger officers were significantly more likely to score high DP ($p<0.001$ and $p<0.01$). Rank seniority was inversely related to PD caseness ($p<0.05$), high DP ($p<0.05$), and low PA ($p<0.01$), though not EE. Departmental tenure was associated with DP ($p<0.05$), and there was a significant association between overall years of police service and DP ($p<0.01$) and PA ($p<.0.05$) showing that those with long service were less likely than those with mid- or short-

tenure to score DP above the caseness threshold. We used socio- and occupational-demographic factors, significant in univariate analyses, as potentially confounding variables in the binary logistic regression models, resulting in the inclusion of all covariates.

In binary logistic regression analyses, long working hours were associated with significantly increased odds of PD caseness, high EE, and high DP following adjustment for potential confounding variables (Table 3). The odds of PD caseness in the ≥49 hour group were double that of officers in the ≤48 hour group following full adjustment (OR 2.05, 95% CI 1.57-2.68). Similarly, the odds of high EE in the long working hours group were double that of the reference group following adjustment (OR 1.99, 95% CI 1.52-2.59). The OR for high DP was also raised among officers working ≥49 hours in a typical week (OR 1.30, 95% CI 1.00-1.71). Long working hours were not significantly associated with low PA.

[Insert Table 3 here]

DISCUSSION

In this exploratory study 27% of police officers reported that they typically worked beyond the 48-hour legislative limit on weekly working, but the prevalence of long working hours varied considerably by rank, with 24% of constables, 33% of sergeants, and 63% of inspectors respectively working ≥49 hours per week. Long working hours were significantly associated with psychological distress caseness, high emotional exhaustion, and high depersonalization.

The strengths of this study lie in the use of established measurement instruments; the statistical control of several potential socio- and occupational-demographic determinants of wellbeing, which limited confounding bias; and the

large sample size involving officers employed in a range of policing roles. Nevertheless, there are some limitations. The cross-sectional design hampers the interpretation of causality. On the basis of these findings it is not possible to conclude that working hours precede CMD as associations could result from reverse causality or reciprocal relationships. For example, it may be that those experiencing psychological distress worked longer hours to complete tasks that became more difficult for them because of the impact of their symptoms on their work ability. The cross-sectional design also prevented examination of the effects of individual differences (e.g. conscientiousness) over time and the cumulative impact of long-term long working hours. Future studies could include more variables and use a longitudinal design to overcome these limitations.

Officers on sick leave and those who had resigned or retired were not included. These officers may have been affected by long working hours more than those in the study population. This raises the possibility of an under- or over-estimation of the prevalence of the study variables and associations between these. Furthermore, although the four policing roles from which we sampled cover a range of activities, they do not represent the full breadth of policing roles. For example, roads policing, operational support, and custody were not included. Similarly, the two forces may not be representative of the remaining 41 forces in England and Wales. Nationwide research involving the full range of policing roles might establish whether our study findings are representative of policing in England and Wales.

It is also possible that some of those invited to participate had pre-existing physical or mental health conditions that impacted upon their participation or responses. Although we did not screen for this, it would be useful to examine the impact of these conditions on reported working hours and their links to key study

variables. Our analyses controlled for a set of possible confounding variables but there are likely to be other unmeasured factors (such as managerial support, financial and marital status) that we did not include for practical reasons.

The reliability of police officers' self-reports of working hours is unclear. Future working hours research could usefully establish the degree of congruence that exists between self-reports and organisational records, as has been done for occupational variables such as sickness absence. [21] Some consider exclusive reliance on self-reported measures to be a limitation because it could result in overestimation of the associations between variables due to common method variance, but this stance has been refuted. [22] Moreover, internal states such as the CMD constructs measured in this study may best be mapped by means of reports provided by those involved in these experiences. [23] This notwithstanding, it would be valuable for future studies to triangulate self-report measures of working hours with other data sources, such as organisational records.

We found an inverse relationship between rank and working hours, with as few as one in four constables and almost two out of three inspectors reporting long working hours. This finding is consistent with a contemporaneous study conducted in senior officers of the superintendent rank which found that 77% of respondents worked ≥50 hours per week. [5] It is notable that in our study, constables reported the lowest prevalence of long working hours (24%), which was substantially higher than the estimate of 16.5% for the UK workforce generated by the 2010 Fifth European Working Conditions Survey. [24]

The prevalence of CMD was high on all indices. More than half (52%) of respondents scored PD caseness; considerably more than the general adult English population (20%) [19] and the average rate from UK occupation-based studies (32%)

[18]. Benchmarking for PD against other policing studies was hindered by these studies not reporting caseness prevalence rates or applying a contrasting caseness threshold. Further policing research using the GHQ-12 consistently is required to benchmark prevalence. On the burnout dimensions, half of respondents scored high EE (51%) and high DP (47%) while two thirds scored low PA (68%). A high degree of burnout is reflected in scores in the upper third of the normative distribution, suggesting that the prevalence of burnout was high relative to reference data (that includes police officers). Few significant differences in CMD were identified by socio- and occupational-demographic status. In contrast, as Table 3 shows, the links between working hours and various measures of CMD were consistent and strong. Taken together, these findings reinforce the relevance of working hours to CMD in policing.

This high prevalence of CMD could have negative long-term implications for officers' health [25] and operational effectiveness. High burnout in police officers has, for example, been linked to physical aggression, anger, and aggressivity, [26] positive attitude toward and use of force, [27-28] and in-role performance decrements. [29] Forces should consider interventions that support psychological wellbeing, and by extension, work capacity. Our findings suggest that the management of working hours is one way to achieve this.

Officers should be encouraged to consider the implications of long working hours. Previous research has indicated that police officers in England and Wales often choose to work long hours because they believe it is a marker of performance against which they will be judged. [5-6] Our findings suggest that organisational culture change is required concerning long working hours in the sector. Anecdotal evidence suggests that many police officers rely on overtime payments to fulfil domestic

expenditure obligations, so an enforced cap on working hours would need careful consideration and gradual introduction. Working hours are a potentially modifiable characteristic of work that should be carefully managed. This may generate benefits for officers, their families, forces, and the communities they serve.

Key points:

- More than one quarter of responding police officers reported that they typically worked in excess of the legislative limit on working hours.

- Those reporting working hours in excess of the legislative limit were significantly more likely to score at or above the threshold for common mental disorder than those working below this limit.

- Working hours are a modifiable work characteristic and managing them is a potentially effective way to promote police officers' psychological wellbeing, health and work capacity.

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Table 1 Association between socio-demographic characteristics, long working hours, and common mental disorder

Characteristic N (%)	≥49 hours per week N (%)	X^2, df, p value	Psychological distress cases N (%)	X^2, df, p value	Emotional exhaustion cases N (%)	X^2, df, p value	Depersonalisation cases N (%)	X^2, df, p value	Personal accomplishment (low) cases N (%)	X^2, df, p value
Sex										
Male 721 (58.8)	215 (30)	8.87, 1, P<0.01	378 (52)	0.16, 1, NS	367 (51)	0.08, 1, NS	396 (55)	47.12, 1, P<0.001	505 (70)	2.31, 1, NS
Female 505 (41.2)	112 (22)		259 (51)		253 (50)		177 (35)		333 (66)	
Age, years										
≤41 539 (48.4)	160 (27)	0.06, 1, NS	310 (52)	0.05, 1, NS	311 (52)	1.61, 1, NS	299 (50)	6.26, 1, P<0.01	427 (72)	7.09, 1, P<0.01
≥42 633 (51.6)	167 (26)		327 (52)		309 (49)		274 (43)		411 (65)	

Table 2 Association between occupational-demographic characteristics, long working hours, and common mental disorder

Characteristic N (%)	≥49 hours per week N (%)	X^2, df, p value	Psychological distress cases N (%)	X^2, df, p value	Emotional exhaustion cases N (%)	X^2, df, p value	Depersonalisation cases N (%)	X^2, df, p value	Personal accomplishment (low) cases N (%)	X^2, df, p value
Rank										
Constable 990 (80.8)	235 (24)	39.69, 2, P<0.001	531 (54)	7.99, 2, P<0.05	511 (52)	2.25, 2, NS	479 (48)	7.38, 2, P<0.05	706 (71)	21.82, 2, P<0.001
Sergeant 188 (15.3)	62 (33)		89 (47)		87 (46)		79 (42)		108 (57)	
Inspector 48 (3.9)	30 (63)		17 (35)		22 (46)		15 (31)		24 (50)	
Departmental tenure, years										
≤9 1019 (83.1)	270 (27)	1.46, 2, NS	534 (52)	0.89, 2, NS	517 (51)	0.10, 2, NS	459 (45)	7.04, 2, P<0.05	697 (68)	1.24, 2, NS
10-19 184 (15.0)	53 (29)		93 (51)		92 (50)		102 (55)		123 (67)	
20-29 23 (1.9)	4 (17)		10 (44)		11 (48)		12 (52)		18 (78)	
Length of service, years										
≤10 390 (31.8)	99 (25)	0.59, 2, NS	201 (52)	0.15, 2, NS	204 (52)	0.94, 2, NS	201 (52)	9.78, 2, P<0.01	267 (68)	7.38, 2, P<0.05
11-20 568 (46.3)	153 (27)		294 (52)		286 (50)		267 (47)		405 (71)	
21-30 268 (21.9)	75 (28)		142 (53)		130 (49)		105 (39)		166 (62)	

Table 3 Binary logistic regression of long working hours in relation to CMD

			OR (95% CI)	AOR* (95% CI)	AOR† (95% CI)	AOR‡ (95% CI)
	Psychological distress no case *N* (%)	Psychological distress case *N* (%)				
≥49 hours per week	121 (37)	206 (63)	1.85 (1.43-2.40)	1.85 (1.43-2.41)	2.05 (1.57-2.68)	2.05 (1.57-2.68)
≤48 hours per week	468 (52)	431 (48)				
	Emotional exhaustion no case *N* (%)	Emotional exhaustion case *N* (%)				
≥49 hours per week	124 (38)	203 (62)	1.89 (1.46-2.45)	1.89 (1.45-2.45)	2.00 (1.53-2.60)	1.99 (1.52-2.59)
≤48 hours per week	482 (54)	417 (46)				
	Depersonalisation no case *N* (%)	Depersonalisation case *N* (%)				
≥49 hours per week	158 (48)	169 (52)	1.31 (1.02-1.69)	1.21 (0.93-1.57)	1.41 (1.08-1.83)	1.30 (1.00-1.71)
≤48 hours per week	495 (55)	404 (45)				
	Low personal accomplishment no case *N* (%)	Low personal accomplishment case *N* (%)				
≥49 hours per week	108 (33)	219 (67)	0.92 (0.70-1.20)	0.89 (0.68-1.17)	1.02 (0.77-1.35)	0.99 (0.75-1.32)
≤48 hours per week	280 (31)	619 (69)				

*Adjusted for socio-demographic factors (age, gender)

†Adjusted for occupational-demographic factors (rank, departmental tenure, years of police service)

‡ Adjusted for all.

OR, odds ratio; AOR, adjusted odds ratio; CI, confidence interval; reference value = ≤48 hours per week.