ORIGINAL ARTICLE

Generic and Police-Specific Occupational Risk Factors of Mental Health and Well-Being Among Urban and Sub-Urban Malaysian Traffic Police Officers

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ABSTRACT

Introduction: Mental health in policing has been widely studied but incidence of mental health illnesses among them keep increasing. This study aimed to analyse generic and specific work stressors among police officers and their differences between urban and sub-urban police population. **Methods:** This was a cross-sectional study conducted in Kuala Lumpur and in nine sub-urban provinces in Pahang and Negeri Sembilan which involved 328 traffic police officers recruited by universal sampling. Data was collected by using self-administered questionnaire consisted of Police Stress Questionnaire (PSQ), the Job Content Questionnaire (JCQ), the Work Family Conflicts (WFC), the International Union against Tuberculosis and Lung Disease (IUATLD), and the General Health Questionnaire (GHQ-12). **Results:** The response rate was 71.30%. Majority of respondents were male (86.59%) with average age of 38.84 years old. The prevalence of probable mental health illnesses was 29.80% in sub-urban and 44.30% in urban. Job demand, role ambiguity, family to work conflicts and almost all specific works stressors were significantly higher among urban respondents. For urban, results showed that the most significant stressor was perceived air pollution ($p<0.01$) followed by age ($p=0.01$), job control ($p=0.01$), and operational stressors ($p=0.03$). While in sub-urban, the most significant stressors determined were the presence of chronic diseases ($p=0.03$) and organizational stressors ($p=0.01$). **Conclusion:** The prevalence of probable mental health illnesses was high in both study areas and each area had its own unique work stressors. Intervention strategies prioritizing on these factors are therefore recommended.

Keywords: Work stressors, Traffic-police officers, Urban, Suburban

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INTRODUCTION

Mental health problems in policing have been well documented worldwide. These problems ranged from minor stress, depression, anxiety to suicide ideation. Several psychosocial work factors were identified to be consistently significant in predicting mental health among police officers. These factors can be divided into two main categories which were the generic and specific job factors. Regarding the generic job factors, the Job-Demand-Control-Support model (D-C-S) is one of the most widely used theory to explain work stressors in various occupations (1). This theory suggested that high job demand, low job control and low social support at work are the main factors reducing mental health status among workers. This theory was confirmed by several studies in policing (2, 3).

Meanwhile, the specific job factors are those that are unique to police work and might not be relevant to other occupation including confrontation with criminals, critical incidents, threat appraisal and dealing with court system. McCreary and Thompson (4) classified these police job factors into operational and organisational factors. Organisational work stressors are those associated with the organisation and culture within which the police officers perform their jobs and operational work factors are those associated with doing their jobs. McCreary and Thompson also developed the Police Stress Questionnaire (PSQ) to assess these two groups of police-specific job stress factors.

Several organizational work stressors in policing were consistently found significant in predicting mental health including staff shortage (5), organizational support (6), decision latitude (7), and workload (8). According to Ma et al. (9), more police-specific operational work stressors were identified than organizational work stressors including shiftwork, negative public image, critical incidents, and threat appraisal. For example, since police officers have frequent personal contact with the

public in the course of performing their duties, they are more open than most other occupations to scrutiny and criticism from the community in relation to their work which tarnish their public image (10) and effect their mental health (11).

In Malaysia, the total number of police officers was 102,037 with 4,760 in the Traffic Branch (12). The Royal Malaysian Police structure has four levels: the Federal level; the Contingent level, which is allocated to each state; the District Police Offices; and Police Stations. The Traffic Branch, which is the focus of the current study, is assigned to every level (12). The role of the Traffic Branch, is "to regulate, control and divert any traffic, to keep order on public roads, streets, thoroughfares and landing places, and at other places of public resort and places to which the public have access, and to prevent obstruction on the occasions of assemblies and processions" (13). The Traffic Branch is also responsible for investigating traffic cases, escorting the vehicles of officials, and collecting road accident data for all related agencies (13).

Working environment for police officers is dangerous and stressful, and it is one of the major challenges in police work. (14) In New Zealand, 75% of police officers were reported to have experienced at least one traumatic event, and almost half of the study samples (N= 512) were physically assaulted within one year of recruitment (15). Significant association between critical incidents and mental health and well-being was reported in Finland among 1,993 police officers (16). In this study, it was found that the odds ratio of distress for 'physically violent acts' was 1.67 and for 'threats or assaults with a deadly weapon', it was 1.62. Similarly, significant association was found between critical incident exposure and traumatic symptoms among police officers in Brazil (N = 202, R2 = 0.45) (17). Whilst previous researches provided abundant useful information about generic and police-specific job factors of mental health in policing, there are however, some gaps in our understanding of which factors are more dominant between these two groups. This study hypothesized that organizational job factors are more prominent than operational job factors in predicting mental health among police officers considering that their duties strictly abide the detail standard operating procedure formulated by the police institution.

It is also noteworthy that the majority of studies in policing investigated mental health among general police officers rather than specific department or work task. Traffic police for example, has a unique work task where they are frequently being outdoor and exposed to air pollution and noise from vehicles. In places where roads are consistently congested, they have to spend long hours on the road for controlling traffic as what have been experienced by those in Malaysia, India and Thailand. (18) (19) In the 'Business Case in a Nutshell' model (20), physical factors of an unhealthy workplace are hypothesized to have a direct effect on workers' mental health and well-being. Evidence on the relationship between physical environment and mental health have been found among Indian police, where 32.3% of traffic police (N = 68) perceived that air pollution and noise were among the main causes of their work stress (21). In Iran, 73% of traffic police officers reported that they suffered from stress-related insomnia due to occupational exposure to traffic-related noise (N = 79) (22). Given the likely impact of physical environment on mental health, this is a field worthy of increased attention. This study is therefore aims to enhance the understanding of both psychosocial and physical risk factors of mental health among police officers by considering those in both urban and sub-urban areas. This study hypothesized that the relationship between environmental physical factors with mental health can be influenced or exacerbated by the related physical health factors. Despite of some evident available on the respiratory health problems related to air pollution among police officers (19) (23), there is paucity of data on the effect of these physical health on mental health among them.

MATERIALS AND METHODS

This was a cross sectional study conducted in Kuala Lumpur and in nine sub-urban provinces of two neighbouring states, Pahang and Negeri Sembilan. Kuala Lumpur was chosen as the city with the most intense traffic jam in Malaysia and sub-urban provinces of Pahang and Negeri Sembilan were selected as the sub-urban town were less developed, and thus less polluted by motor-vehicles sources. The sampling population was traffic police officers who were working in traffic branch of the Royal Malaysian Police. A minimum sample size of 264 was required to detect small effect size (f2 = 0.03) with 80% power and alpha 0.05 based on the prevalence of occupational stress among 329 Malaysian government servants. (24) All police officers in the study location were invited to participate by distributing 460 survey together with information sheet, consent form and sealed envelope. Participant will return the completed questionnaire in the provided sealed envelope to the researchers to ensure the confidentiality of the information.

Paper and pen self-administered survey was used as the main research instrument. The survey was translated into Malay and its accuracy was confirmed by back translation. The survey consisted of questions on socio-demographic data and three standardized questionnaires; Police Stress Questionnaire (PSQ) (4), the Job Content Questionnaire (JCQ) (25), the Work Family Conflicts (WFC) (24), the International Union against Tuberculosis and Lung Disease (IUATLD) (27), and the General Health Questionnaire (GHQ-12) (28).

The PSQ was used to assess the police-specific

psychosocial work factors, where it was further divided into operational (PSQ-Op) and organizational (PSQ-Org) police work stressors (4). Unlike the other questionnaire on measuring work stress, this questionnaire was developed specific for police tasks and its reliability has been tested in several previous studies among police officers (4). PSQ-Op was related to the way the police do their work and PSQ-Org refers to the organization's characteristics and culture. PSQ is highly reliable (α = 0.93 for PSQ-Op and 0.92 for PSQ-Org). It contains 35 items using a seven-point-Likert Scale from no stress at all to a lot of stress.

The IUATLD was used to screen for asthma-like respiratory symptoms for the past 12 months with yes/no choices of answer. It is a widely used standardized questionnaire to measure the asthma-like respiratory symptoms among adults (27). It measures wheezing and chest tightness, shortness of breath, cough and phlegm, allergic and asthma. It also contains questions on smoking status and allergic response. It has good validity (sensitivity = 0.56-0.98 and specificity = 0.72-0.98) (29) and inter-rater reliability (Kappa index = 0.70-0.95). (27) The GHQ-12 (30) was used to measure the mental health status of respondents. This is a widely used questionnaire which contains 12 questions. The total scores was classified into cases (have probable mental health illnesses) and non-cases (have no probable mental illnesses) based on the threshold level of 11/12 (31). Answers were in a form of 4 point Likert scale from 1 = much less than usual to 4 = much more than usual. GHQ-12 has good reliability (α > 80). (28) Participants returned their completed survey in a secured box provided at each station. Investigator collected the survey every two weeks for three months. Data entry and analyses were conducted via SPSS software version 21.

The scale of family interference with work (FIW), was adapted from the Work Family Conflict (WFC) questionnaire. FIW measures the influence of family demand on stress of the respondents. The scale has three subscales; time-based FIW, strain-based FIW and behaviour-based FIW. The WFC questionnaire uses a five-point Likert Scale (1=strongly disagree, 2=disagree, 3=neutral, 4=agree and 5=strongly agree). It has acceptable levels of internal consistency reliability, which are 0.79 for time-based FIW, 0.87 for strain-based FIW and 0.85 for behaviour-based FIW (32).

Three scales were adopted from NIOSH Generic Job Factors questionnaire to measure other generic work stressors of the traffic police officers' job, (e.g. role conflicts and role ambiguity). Each scale has acceptable internal consistency reliability (Cronbach's alpha coefficient is 0.82 for role conflicts, 0.74 for role ambiguity and 0.62 for responsibility for people) (33). These scales use a seven-point Likert scale (1= very inaccurate, 2 = mostly inaccurate, 3= slightly inaccurate, 4= uncertain, 5= slightly accurate, 6= mostly accurate and 7= very accurate) (33).

RESULTS

The total number of respondents were 328 and the response rate was 71.30%. The average age was 38.84 years old (20-59 years old). The majority of respondents were male (86.59%), had highest education level of upper secondary school, and smoking. More than half of them assigned to work outdoor and has been working as traffic police for an average of 12.12 years (Table I). Difference in socio-demographical characteristic was statistically controlled.

Table I: Socio-demographical characteristics

Variables	f	%
Age (years)		
Sex		
Male	284	86.59
Female	44	13.41
Total	328	100
Educational levels		
Lower secondary	41	12.80
Upper secondary	264	82.20
Tertiary	16	5.00
Total	321	100
Smoking status		
Never	153	46.93
Occasionally	38	11.66
Every day	135	41.41
Total	326	100
Study location		
Sub-urban	127	38.72
Urban	201	61.28
Total	328	100
Department		
Fieldwork	160	57.76
Administrative	117	42.24
Total	277	100

Mental Health

It is reported that there was a significant difference of between mental health and study location (urban versus sub-urban) in which 29.80% of respondents from sub-urban were classified as having probable mental health illnesses and higher prevalence (44.30%) was found among respondents from urban (Table II).

Police-specific psychosocial work stressors

Psychosocial stressors were identified and divided into two groups; the police specific psychosocial work stressors and the generic psychosocial work stressors. The five most stressful police-specific psychosocial work stressors reported were staff shortages, inadequate equipment to do their job, leaders over-emphasized

Table II: Mental health among urban and sub-urban respondents

Mental Health	Sub-urban		Urban		Total (100%)
	f	%	f	%	
non cases	62	44.30	78	55.70	140
cases	37	29.80	87	70.20	124

$p = 0.02$, $\chi 2 = 5.86$

the negatives (e.g. supervisor evaluations, public complaints), and constant changes in policy/legislation and lack of resources. T-tests were conducted to see the difference of mean for police-specific work stressors between urban and sub-urban respondents. Urban were found to have higher level of police specific-work stressors for all variables than sub-urban respondents and most of these differences were significant (Table III and IV).

Generic psychosocial work-stressors

Eight generic psychosocial work stressors were assessed in this study. Results show that factors of job demand, role ambiguity and family to work conflicts were significantly higher among respondents working in urban than those working in sub-urban (Table V).

Table III: Difference in mean for operational work stressors between urban and sub-urban study participants

Operational stressors	M sub-urban	M urban	t
Shift work	3.40	3.76	-1.82
Working alone at night	3.58	4.16	-2.82**
Overtime demands	4.06	4.57	-2.55*
Risk of being injured on the job	4.25	4.88	-2.88**
Work-related activities on days off, (e.g. court and community events)	3.82	4.32	-2.32*
Traumatic events (domestic violence, death, injury and witness tragic accidents)	3.70	4.37	-3.20**
Managing your social life outside work	2.83	3.17	-1.86
Paperwork	3.30	3.56	-1.30
Eating healthily at work	2.36	2.55	-1.03
Finding time to stay in good physical condition, (e.g. exercise)	2.59	2.77	-0.91
Fatigue	3.93	4.87	-4.57***
Occupational related health issues, (e.g. back pain, neck pain, joint pain)	3.87	4.98	-5.52***
Lack of understanding from family and friends about your work	3.28	3.66	-2.05*
Making friends outside the job	2.54	2.74	-1.24
Upholding a higher image in public	2.83	3.40	-2.65**
Negative comments from the public	3.94	4.47	-2.52*
Limitation to your social life	3.71	3.93	-1.08
Feeling like you are always on the job	3.61	4.10	-2.21*
Friends /family feel the effects of the stigma associated with your job	3.73	4.12	-1.93

Note: * = $p < 0.05$; ** = $p < 0.01$; ***$p<0.001$

Table IV: Difference in mean for organisational work stressors between urban and sub-urban study participants

Organisational stressors	M sub-urban	M urban	t
The feeling that different rules apply to different people, (e.g. favouritism)	3.92	4.32	-1.85
Feeling like you always have to prove yourself to the organisation	3.33	3.78	-2.33*
Excessive administrative duties	3.63	4.13	-2.37*
Constant changes in policy/legislation	4.02	4.66	-2.96**
Staff shortages	4.56	4.89	-1.59
Too much computer work	3.34	3.77	-2.15*
Lack of training on new equipment	3.60	3.97	-1.96
Perceived pressure to volunteer free time	3.37	4.28	-4.94***
Inconsistent leadership style of the superior	3.93	4.55	-3.04**
Lack of resources	4.01	4.52	-2.84**
Unequal sharing of work responsibilities	3.82	4.27	-2.34*
If you are sick or injured your co-workers seem to look down on you	3.43	3.93	-2.35*
Leaders over-emphasise the negatives, (e.g. supervisor evaluations, public complaints)	4.14	4.59	-2.05*
Internal investigations	3.50	4.01	-2.59*
Dealing with the court system	3.26	3.75	-2.43*
The need to be accountable for doing your job	3.27	3.66	-2.07*
Inadequate equipment	4.33	4.73	-1.97

Note: * = $p < 0.05$; ** = $p < 0.01$

Table V: Generic psychosocial work stressors

Generic work stressors	M urban	M sub-urban	t-value	p-value
Job demand	63.83	61.60	2.40	0.02*
Supervisor support	12.20	12.12	0.36	0.72
Co-worker support	12.24	12.26	0.09	0.93
Job Control	52.87	52.49	0.36	0.72
Role ambiguity	5.84	6.12	3.34	<0.01*
Role conflicts	4.01	3.84	1.27	0.20
Family to work conflicts	2.50	2.22	3.48	<0.01*
Perceived environmental quality	2.64	2.5	1.81	0.07

Note: * = $p < 0.05$; ** = $p < 0.01$

Relationship between psychosocial work factors and mental health and well-being

There was significant different of means for majority of psychosocial variables between urban and sub-urban respondents. Urban respondents also had significantly higher number of cases than sub-urban respondents. Therefore, multiple regression were conducted to predict mental health separately for urban

and rural respondents. Variables other than socio-demographical characteristics which were found to be significant in bivariate analyses were included in the multiple regression analyses. Variables which were not significantly associated in bivariate analyses but were found significant in previous studies were also included in the analyses. Operational and organizational work stressors were strongly associated to each other and thus violated the assumption of multicollinearity. Therefore only one of them was added in the model. Operational police stressor was included as it was found in bivariate analyses to be significantly correlated with mental health among urban respondents ($r = 0.21$, $p < 0.05$) while organizational stressors were not significant. For urban respondents, the best model yielded for predicting mental health among them explains 21.6%, $F(13, 134)$, $p < 0.01$, of the variance in mental health after controlling for socio-demographical characteristics data, perceived air pollution, family to work conflicts and selected psychosocial factors. Results indicated that the most significant factors found was perceived air pollution followed by age, job control and operational stress factors. Higher level of perceived air pollution, younger and lower level of job control were significantly associated with lower level of mental health and well-being (Table VI).

For sub-urban study participants, the best model obtained explains 23.6%, $F(12, 78)$, $p = 0.03$, of the variance in mental health. Organizational police stressor was found to be significantly correlated with mental health among sub-urban respondents ($r = 0.21$, $p < 0.05$) in bivariate analyses while operational police stressors were not significant. Therefore, organizational police stressor was included in the model instead of operational police stressor. The most significant factors determined were the presence of chronic diseases and organizational police stressors (Table VII).

Table VI: Multiple Regression predicting mental health among urban traffic police officers (N = 201)

	B	SE	β	t	p-value	CI (95%)	
(Constant)	3.19	10.23		0.31	0.76	-17.04	23.41
Age	-0.22	0.08	-0.29	-2.66	0.01*	-0.38	-0.06
Education level	2.36	1.88	0.11	1.25	0.21	-1.36	6.08
Marriage	-1.39	0.96	-0.14	-1.45	0.15	-3.27	0.50
Chronic disease	0.86	0.60	0.11	1.43	0.15	-0.33	2.04
Sex	-1.92	1.85	-0.09	-1.03	0.30	-5.58	1.75
Job position	1.19	0.91	0.12	1.31	0.19	-0.61	2.98
Job demand	-0.10	0.08	-0.10	-1.16	0.25	-0.26	0.07
Job control	0.19	0.07	0.24	2.62	0.01*	0.05	0.33
PSQ Operational	0.07	0.03	0.19	2.16	0.03*	0.01	0.13
Role ambiguity	-0.73	0.83	-0.08	-0.88	0.38	-2.37	0.91
Role conflicts	-0.03	0.57	0.00	-0.05	0.96	-1.16	1.10
Perceived environmental quality	-1.32	0.37	-0.31	-3.61	<0.01*	-2.04	-0.60
Family to work conflict	1.07	0.87	0.11	1.23	0.22	-0.65	2.80

Significant at $p < 0.05$

Table VII: Multiple Regression predicting mental health among sub-urban respondents (N = 127)

	B	SE	β	t	Sig.	CI (95%)	
(Constant)	5.09	11.40		0.45	0.66	-17.61	27.80
Age	0.09	0.10	0.13	0.90	0.37	-0.11	0.28
Educational levels	0.68	1.63	0.05	0.42	0.68	-2.57	3.93
Marriage	2.76	1.36	0.25	2.03	0.05	0.06	5.46
Chronic disease	-4.78	2.16	-0.25	-2.21	0.03*	-9.08	-0.48
Sex	0.58	2.06	0.03	0.28	0.78	-3.51	4.68
Job position	-0.24	0.86	-0.03	-0.28	0.78	-1.95	1.47
Job Demand	0.01	0.10	0.02	0.14	0.89	-0.18	0.21
Job Control	0.00	0.07	0.00	-0.03	0.98	-0.14	0.14
PSQ-Organizational	0.09	0.04	0.33	2.59	0.01*	0.02	0.16
Role ambiguity	-0.80	1.27	-0.08	-0.63	0.53	-3.34	1.74
Role conflicts	0.65	0.70	0.11	0.94	0.35	-0.73	2.04
Family to work conflict	-2.45	1.27	-0.23	-1.93	0.06	-4.97	0.07

Significant at $p < 0.05$

DISCUSSION

Findings of this study showed that there was a significant difference of work stressors between urban and sub-urban respondents. Most of the level of police-specific stressors were found significantly higher among urban respondents than sub-urban respondents. With regards to generic work factors, the level of job demand and role ambiguity were found to be significantly higher among urban respondents than sub-urban respondents. One example of the work demand was they have to work fast with excessive amount of work. These findings concluded that the work of urban respondents were more stressful than that of sub-urban respondents. These findings were further supported by the results of the presence study on mental health status among respondents where the prevalence of probable mental health problem was significantly higher among urban respondents than sub-urban respondents. There are limited number of studies comparing work stress factors between urban and sub-urban or rural police officers. Though, the findings of previous studies in USA (34) and Norway (35) were consistent with those of the presence study. Both research teams suggested that this difference can be attributed to the fact that urban is more populated areas and presumed to be involved with heavier workloads, more violent crimes and greater danger. This suggestion supports the findings of Muhammad Amin et al (36) who concluded that the crime rate in Malaysia is higher in more developed areas than in less developed areas.

With regards to operational versus organizational work stressors. Higher level of operational work stressors were significantly correlated with lower level of mental health status among urban respondents. Meanwhile, higher level of organizational were significantly correlated with lower level of mental health status among sub-urban respondents. These relationship continued to be significant after controlling for other study variables. By looking at the work task, it is obvious that urban traffic police had heavier workload than rural traffic police. For example, traffic police in Kuala Lumpur need to be on the road to control heavy traffic every day for almost eight hours in total apart from other task including patrolling, report writing and handling road traffic offenders. Whereby, rural traffic police officers only have to be on the road when there is a big event which involved a large crowd of people and vehicles organized in the small town of the rural areas. Their work is more on road offense inspection and patrolling. The traffic branch in rural area is much smaller which consisted of not more than 20 traffic police officers in each district compared to 500 traffic police officers in Kuala Lumpur. Workers in small institution with less job rotation like the rural traffic branch tend to be close to each other. They are also close to the local community and therefore they are more likely to be pressured to volunteer their free time to do things that are not really their job scope. For example, helping elderly to cross the roads, looking for lost pets, attending ceremony or invitation from community and many more. They also needs to do different duties including administrative work due to less of job division.

In the multiple regression, other than operational work stressors, perceived environmental quality, age and job control was found significant in predicting mental health among urban respondents. Air pollution level in urban area, Kuala Lumpur is high especially during heavy traffic hours. The primary source of pollution comes from millions of moving motor vehicles in Kuala Lumpur and the main content of the air pollutant are carbon monoxide, sulfur dioxide and nitrogen oxide (37). Traffic police in Kuala Lumpur is directly exposed to vehicular air pollution especially while controlling traffic on the roads. Long term daily exposure to air pollutants not only make them uncomfortable with the smell and the view but also might affect their physical health. These findings are consistent with that of Claeson et al (38) who found that perceived pollution and health risk perception play important roles in predicting environmentally induced annoyance and health symptoms.

The other factors that was found significant was age where younger urban respondents had higher level of stress. These findings collaborate with previous studies among police officers in USA (39) and in India (40). More senior officers were used to the job and they had higher level of mastery and self-esteem to solve problems than the younger officers and thus having less work stress compared to the younger officers.

In the present study, job control was only significant in predicting mental health among urban respondents but not among sub-urban respondents in which lower job control significantly associated with lower mental health level. In Kuala Lumpur, the number of departments and unit and the number of police officers were more than those in sub-urban. In a large organization, the span of control is narrowed with more management layers, and the decision making is decentralized to lower level of managers. Hence, the amount of specialization is higher and the job scope is more focused.

CONCLUSION

Findings indicated that both respondents in urban and sub-urban areas reported high prevalent of probable mental health illnesses. Respondents in urban areas showed significantly higher level of probable mental health illnesses and all police-specific work stressors were recorded higher than those in sub-urban areas. Those in urban areas claimed that they were stressed due to low job control, high level of air pollution and high level of stressors related to them operating their work. Those in sub-urban areas reported that they were stressed due to them suffering from chronic diseases

and stressors related to the management. Psychological health screening supported by a good psychological support system are therefore appears to be beneficial in protecting and control the mental and psychological health of police officers.

Moreover, findings of this study add in the knowledge of the difference of work stressors perceived between traffic police officers and sub-urban police officers. Since this was a cross-sectional study by using survey, detail understanding on workplace stressors in traffic police officers were not sufficiently embraced. Therefore, in addition to intervention studies focusing on the unique police stressors in urban and sub-urban areas, future study needs to incorporate the qualitative study for better understanding the root detail of the workplace stressors among traffic police officers. A larger sample size that include all different departments in the Royal Malaysian Police appeared to be worth studying.

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REFERENCES

1. Johnson JV, Hall EM, & Theorell T. Combined effects of job strain and social isolation on cardiovascular disease morbidity and mortality in a random sample of the Swedish male working population. Scandinavian Journal of Work, Environment, and Health. 1989;15(4):271-279.
2. Smoktunowicz E, Baka L, Cieslak R, Nichols CF, Benight CC, & Luszczynska A. Explaining counterproductive work behaviors among police officers: The indirect effects of job demands are mediated by job burnout and moderated by job control and social support. Human Performance. 2015; 28(4):332-350.
3. Houdmont J, Kerr R, & Randall R. Organisational psychosocial hazard exposures in UK policing: Management standards indicator tool reference values. Policing.2012; 35(1):182-197.
4. McCreary DR, & Thompson MM. Development of two reliable and valid measures of stressors in policing: The Operational and Organisational Police Stress Questionnaires. Int J Stress Manage. 2006;13(4):494-518.
5. Summerlin Z, Oehme K, Stern N, & Valentine C. Disparate levels of stress in police and correctional officers: Preliminary evidence from a pilot study on domestic violence. J Hum Behav Soc Environ. 2010;20(6):762-777.
6. Tyagi A, & Lochan Dhar R. Factors affecting health of the police officials: Mediating role of job stress. Policing.2014;37(3):649-664.
7. Padyab Mojgan, Susann Backteman-Erlanson, and Christine Brulin. Burnout, coping, stress of conscience and psychosocial work environment among patrolling police officers. J Police Crim Psychol. 2016; 31(4): 229-237.
8. Humayon AA, Raza S, Amir H, & Hussain MS. Assessment of Work Stress among Police in Pakistan. J. Appl. Environ. Biol. Sci. 2018; 8(2):68-73.
9. Ma CC, Andrew ME, Fekedulegn D, Gu JK, Hartley TA, Charles LE, & Burchfiel CM. Shift work and occupational stress in police officers. Saf Health Work. 2015;6(1):25-29.
10. Davey JD, Obst L, & Sheehan MC. Demographic and workplace characteristics which add to the prediction of stress and job satisfaction within the police workplace. J Police Crim Psychol. 2001;16(1):29-39.
11. Parsekar SS, Singh MM, & Bhumika TV. Occupation-related psychological distress among police constables of Udupi taluk, Karnataka: A cross-sectional study. Int J Occup Environ Med. 2015; 19(2): 80.
12. Royal Malaysian Police. (2013). Jabatan-jabatan (Departments) Retrieved 23 April, 2013, from http://www.rmp.gov.my/base.cfm?path=about/about.cfm?mod=8
13. Parliament of Malaysia. (2006). Police Act 1967. In R. M. Police. (Ed.), Act 344 (Vol. Part VII, pp. 17-37). Kuala Lumpur: Percetakan Nasional Berhad.
14. Violanti JM, Fekedulegn D, Hartley TA, Charles LE, Andrew ME, Ma CC, & Burchfiel CM. Highly rated and most frequent stressors among police officers: gender differences. Am J Crim Justice. 2016; 41(4): 645-662.
15. Huddleston LM, Stephens C, & Paton D. An evaluation of traumatic and organisational experiences on the psychological health of New Zealand police recruit. Work. 2007; 28(3):199-207.
16. Leino T, Selin R, Summala H, & Virtanen M. Violence and psychological distress among police officers and security guards. Occup Med. 2011;61:400-406.
17. Maia DB, Marmar CR, Henn-Haase C, Nybrega A, Fiszman A, Marques-Portella C, Figueira I. Predictors of PTSD symptoms in Brazilian police officers: The synergy of negative affect and peritraumatic dissociation. Rev Bras Psiquiatr. 2011;33(4):362-366.
18. Irniza R, Saliluddin SM. Are Malaysian police really stressed? Understanding their potential stress factors. Int J Public Health and Clinical Sciences. 2015;2(5):45-53.
19. Gupta S, Mittal S, Kumar A, & Singh KD. Respiratory effects of air pollutants among nonsmoking traffic policemen of Patiala, India. Lung India.2011; 28(4):253-256.
20. World Health Organization. WHO healthy workplace: Framework and model. Background

and supporting literature and practice. Geneva: World Health Organization; 2009.
21. Deb, S., Chakraborty, T., Chatterjee, P., & Srivastava, N. (2008). Job-related stress, causal factors and coping strategies of traffic constables. J. Indian Acad. Appl. Psychol. 34(1); 19-28.
22. Omidvari M, & Nouri J. Effects of noise pollution on traffic policemen. Int J Environ Res. 2009;3(4): 645-652.
23. Karita K, Yano E, Tamura K, & Jinsart W. Effects of working and residential location areas on air pollution related respiratory symptoms in policemen and their wives in Bangkok, Thailand. Eur J Public Health. 2004;14:24-26.
24. Jasmani MY, Mahajar AJ. Stress and psychological well-being of government officers in Malaysia. The Journal of Human Resource and Adult Learning. 2011:7(2): 40.
25. Karasek R, Kawakami N, Brisson C, Houtman I, & Bongers P. The Job Content Questionnaire (JCQ). An instrument for internationally comparative assessment of psychological job characteristic. J Occup Health Psychol. 1998;3(4): 322-355.
26. Carlson SD, Kacmar KM, & Williams LJ. Construction and initial validation of a multidimensional measure of work family conflict. J Vocat Behav. 2000;56:249-276.
27. Burney PG, Laitinen LA, Perdrizet S, Huckauf H, Tattersfield AE, Chinn S, Jones T. Validity and repeatability of the IUATLD (1984) bronchial questionnaire : An international comparison. Eur Respir J. 1989;2(10):950-945.
28. Banks MC, Clegg CW, Jackson PR, Kemp NG, Stafford ME, & Wall TD. The use of the General Health Questionnaire as an indicator of mental health in occupational studies. J. Occup. Organ. Psychol. 1980;53(3):187-194.
29. Ravault C, & Kauffmann F. Validity of IUATLD (1986) questionnaire in the EGEA study. Int J Tuberc Lung Dis.2001;5(2):191-196.
30. Goldberg DP, & William P. A user's guide to the General Health Questionnaire. Windsor: NFER-NELSON; 1988.
31. Goldberg DP, Gater R, Sartorius N, Ustun TB, Piccinelli M, Gureje O, & Rutter C. The validity of two versions of the GHQ in the WHO study of mental illness in general health care. Psycholo Med. 1997;27:191-197.
32. Carlson SD, Kacmar KM, & Williams LJ (2000). Construction and initial validation of a multidimensional measure of work family conflict. Journal of Vocational Behavior. 56: 249-276.
33. National Institute of Occupational Safety and Health (NIOSH). NIOSH Generic Job Stress Questionnaire. Organization of work. Measurement tools for research and practice. Retrieved 28 April, 2010, from http://www.cdc.gov/niosh/topics/workorg/tools/niosh-job-stress-questionnaire.html
34. Oliver WM, & Meier CA. Stress in small town and rural law enforcement. Am J Crim Justice. 2004;29(1):37-57.
35. Berg AM, Hem E, Lau B, Heseth K, & Ekeberg Ш. Stress in the Norwegian police service. Occup Med. 2005;55(2):113-120.
36. Muhammad Amin B, Mohammad Rahim K, & Geshina Ayu MS. A trend analysis of violent crimes in Malaysia. Health and the Environment Journal.2014;5(2):41-56.
37. Mohamad ND, Ash'aari ZH, & Othman M. Preliminary assessment of air pollutant sources identification at selected monitoring stations in Klang Valley, Malaysia. Procedia Environ Sci. 2015;30:121-126.
38. Claeson AS, Lidйn E, Nordin M, & Nordin S. The role of perceived pollution and health risk perception in annoyance and health symptoms: a population-based study of odorous air pollution. Int Arch Occup Environ. 2013;86(3): 367-374.
39. Taylor A, & Bennell C. Operational and organisational police stress in Ontario Police Department: A descriptive study. Can. J. Police Secur. Serv. 2006;4(4):223-234.
40. Balakrishnamurthy C, & Shankar S. Impact of age and level of experience on occupational stress experienced by non-gazetted officers of the central reserve police force. Ind Psychiatry J, 2009;18(2): 81-83.