

ORIGINAL ARTICLE

Introduction to Customized Occupational Safety and Health Website and Its Effectiveness in Improving Psychosocial Safety Climate (PSC) among Police Officers

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ABSTRACT

Introduction: The prevalence of stress among Malaysian police is high in which 38.8% polices have severe stress related to work resources and workplace environment. Psychosocial safety climate is one of the indicators that can be used to avoid psychosocial health problems. **Objective:** This study was conducted to determine the risk factors of psychosocial safety climate and to measure the effectiveness of a customised safety website in improving the safety climate. **Methodology:** This study involved 105 police officers who were randomly selected from nine different departments in PDRM Bukit Aman. A survey adapted from previous study was used to determine the psychosocial safety climate levels among respondents. Then, occupational safety website was introduced to the respondents and being used for two weeks. Lastly, post survey was done to see the difference of psychosocial safety climate before and after the use of the website. **Results and Discussion:** Findings showed that team psychological safety ($r=0.381$, $p<0.001$) and physical safety climate ($r=0.657$, $p<0.001$) were significantly associated with psychosocial safety climate level. The means before (36.095 ± 5.6202) and after (37.742 ± 4.7069) the introduction of occupational safety website was good. Still, there was a significant improvement of psychosocial safety climate level after the introduction of occupational safety website. **Conclusion:** This study showed that psychosocial safety climate level in an organization can be improved by introducing an informative website specific for police.

Keywords: Psychosocial safety climate, team psychological safety, physical safety climate, occupational safety website

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INTRODUCTION

Police work is among those occupations characterized as having a high prevalence (30% to 80%) of work related mental and psychological health problems (1-3). These problems in policing were identified to be caused by multiple stressors from various sources. The general aspect of police work factors includes managerial structures, policies, work roles, job control, job rank and social support (4,5). The specific work factors focus on operational work such as being the subject of internal affairs investigation, shift work, appearing in court and threat of injury or death (6-11). The significance of these

factors varied between studies even within the same countries.

The effects of those stressors on psychological health can be reduced by improving the psychosocial safety climate (PSC) of such organization. PSC refers to the effectiveness of policies, procedures and practices to protect employees from psychological health and safety problems in an organization (12). It is therefore reflecting the management's commitment and support to prevent stress or psychosocial health problem among employees. Also, it can be a lead indicator for psychosocial risk factors and work related psychological health problems and provide supportive resources that could potentially relieve the psychosocial issue presence in any organization (13). A number of employee's health problems had been found to be related with PSC according to the previous studies such as psychological stress (14), burn out and depression (13).

“Safety climate” was first introduced by Zohar (15) in 1980 with the focus on physical injury and safety risks. However, scholars later suggested that workplace injuries should include psychological injuries whereby PSC was introduced. PSC is characterized by four domains according to Dollard and Bakker (13). First domain is the management support and commitment, whereby the managers or employers are evidently giving support and immediate action to correct problems that related to psychological health. Second, management priority is measured by the priority given to psychological health among the employees versus operational imperatives such as productivity. Third, organizational communication is characterized by the efforts and contributions from the management in order to bring attention of the employees to the issues that affect psychological health and safety. Finally, organizational participation refers to the involvement of all parties in the organization in promoting and sustaining the psychological health.

There are many factors that can influence the PSC level in an organization. For example, high job demand, physical safety climate, challenge demand, perceived organizational support, and team psychological safety. Team psychological safety, refers to employee’s experience in a team that make them feel psychologically safe and feel free to engage in new interpersonal relation, express their opinion and encourage new idea (16). Physical safety climate focused more on physical and well-being of employees rather than psychological health which includes injuries and accidents (17). Organizational support refers to employees’ perception on way of organization values and care about their well-being (18).

Several previous findings identified the positive benefit of good PSC in organization. For example, teachers with high PSC experienced less fatigue than those teachers with lower PSC when job demand increased (19). PSC was also proven to encourage employees to challenge their leaders in a positive way to improve the organization performance (20). In addition, PSC was found to moderate the negative effects of job demands on depression (21). Further, Probst and Estrada (22) revealed that better PSC associated with better workplace accident report and low PSC was associated with more cases of under-reporting. Later, the importance and connection of PSC to prevent health problems and workplace injuries in organization or teams was shown in a previous study (23).

The challenge in any organization to improve the PSC is to identify and control the risk factors of mental and psychological health problem that might presence. One of the best way is to provide basic tools that increase awareness and knowledge about mental and psychological health among workers and employers and help them to determine and manage the risk factors.

Interactive website is one of the latest and inexpensive method in providing a safe communication with publics or workers. It offers more flexible access to content and materials in term of time and places (24). Also, the design and graphic of websites looks more attractive compared to other communication tools such as pamphlet, guidelines and law. It is multimodality that allow for integration of various approaches including audio, video, and image. The effectiveness of websites in increasing knowledge was proven in a limited number of previous studies (25,26).

Based on the mental and psychological health problems in policing reported in previous studies, this study is therefore aims to assess the level of PSC and the effectiveness of newly developed informative website to improve the PSC in the Royal Malaysian Police.

METHODOLOGY

This is a pretest-posttest study design, a type of quasi-experimental research on the effectiveness of the usage of occupational safety website in improving psychosocial safety climate (PSC) among police at Bukit Aman, Kuala Lumpur. The dependent variable, PSC was measured once before the intervention was introduced and once two weeks after it was introduced.

The study population was approximately 3000 police officers in Kuala Lumpur who were working in administration and operational department. They were from nine different division; Administration, Crime Investigation, Narcotic Crime Investigation, Commercial Crime Investigation, Integrity and Compliance Standard, Crime Prevention and Community Safety, Internal Security, Strategic Resources and Technology, and External Branch.

The sample size calculation was done by using Lemeshow, Klar, & Lwanga, 1990 formula and using the prevalence of homogeneity of psychosocial safety climate (PSC) perception within departments from two previous studies which involved general workers (27) and police personnel (28). The minimum sample size required to get valid results was 75. Respondents were recruited randomly based on their name list from all nine departments. Once their name was identified, they were approached personally and were given the link to the website, research questionnaires, information sheets and consent forms. Those who claimed that they were professionally being diagnosed as having clinical depression was excluded from this study.

Questionnaire

A structured questionnaire was adapted from Idris (14), which were divided into three sections; a) socio demographic factors, b) others factors affecting PSC and c) psychosocial Safety Climate (PSC). This questionnaire was designed in Bahasa Malaysia which contain 43

items. Some questions have been edited for police community. The reliability test was done and the resulted Cronbach's Alpha value was 0.834. In Section A, a set of socio-demographical variables including years of working, managerial position and distress status was included. Items in Section B were related to safety construct factors; team psychological safety (16), physical safety (14) and perceived organizational support (29). These factors were selected by referring to previous study which are considered as important (14). All questions are force choice type of question with 4-point scale range was used. The 4-point scale ranged from 1 (strongly disagree) to 4 (strongly agree). In Section C, a 12-item PSC (PSC-12) scale was used to measure the psychosocial safety climate (21). The PSC-12 was proven previously to be significantly associated with psychosocial risk factors (e.g., job demands, job resources), worker engagement and health, and work related outcomes (21). Questionnaire were distributed personally and collected after two days before the introduction of the website. Two weeks later, for post-intervention which was after the introduction of the customized website, the same set of questionnaire were re-distributed to the same respondents and completed questionnaire were collected after two days.

Occupational Safety Website

In this study, the main tools use to determine the difference of psychosocial safety climate after intervention was occupational safety website. This website contained basically all information in occupational safety and health specific to police work which they can easily relate those information with their real work life situation. The website was prepared in Malay as it is the formal language in all Malaysian government institutions. Psychosocial and mental health was the main content and other work safety issues including ergonomic, noise and heat were added. The link to the website was given to each respondent. On the main page, for the first time log-in respondents need to insert their detail for tracking purpose in this study. Later, they can enter the website using their log-in identification that they have provided in the first time log-in. All their details could only be seen by researchers. On the same main page, video related to stress was played automatically to ensure that respondents would grab the important part of the present study which was psychology and mental health. This video was prepared using image and cartoon characters customized to Malaysian police aiming to increase polices understanding on stress and how to manage this problem that might arise in their daily work life. Respondents have access to the website 24-hours for two weeks by logging-in and logging-out.

Statistical Analyses

Data was analysed by using the SPSS software. Correlation, Chi-square, t-test and ANOVA statistical analyses were conducted between socio-demographical data and other factors with PSC by using SPSS software.

Liner multiple regression test was conducted to explore the association between physical safety climate and team psychological safety with PSC including socio-demographical factors, job rank and departments as independent variables. Wilcoxon Signed Rank test was carried out to find the difference of PSC level before and after the intervention.

RESULTS

The response rate was 63.2% in which 105 respondents involved from nine different departments under one organization that include both high rank and lower rank police (ratio of 51:54). High rank police were inspector and constable while lower rank police were junior police. Most of the respondents were Malay (87.6%) and some of them were Chinese (2.9%), Indian (3.8%) and other races such as Iban and Khadazan (5.7%). The ages of respondents ranged from 21 years to 58 years old ($\bar{x} = 35.08 \pm 8.819$). In this sample, 53.3% of the respondents were female and 46.7% were male. This sex proportion matched with the whole population in PDRM (55% female; 45% male). There were 50.5% of respondents has at least diploma and the rest completed their highest education in primary or secondary schools. See Table 1.

Factors associated with psychosocial safety climate

There was no significant relationship between socio-demographical data on PSC. There was also no significant association between the ranks of respondents and PSC levels. Better team psychological safety ($r=0.381$, $p < 0.001$) and physical safety climate ($r=0.657$, $p < 0.001$) were found to be significantly correlated with better PSC. Liner multiple regression test was conducted to explore the association between physical safety climate and team psychological safety with PSC after considering the socio-demographical factors and job rank. The test produces a model which explained 51.8% ($F(8, 95) = 12.76$) of the variance in PSC levels. Results indicated that only physical safety climate makes the strongest unique contribution to explaining the PSC ($\beta = 0.68$, $p < 0.01$). See Table 2.

Comparison of PSC before and after the introduction of occupational safety website

Wilcoxon Signed Rank test was carried out to test this study hypothesis. The result showed a significantly different of PSC level before and after the introduction of occupational safety website in PDRM organization ($w = -6.372$, $p = < 0.001$). The level of existing PSC assessed before intervention was good ($\bar{x} = 36.095$, $SD = \pm 5.6202$). After respondents being introduced to occupational safety website for 2 weeks, their level of PSC showed a significant increase of mean ($\bar{x} = 37.742$, $SD = \pm 4.7069$). See Table 3.

Table 1. Socio-demographical characteristics of respondents (N = 105)

Variables	f (%)	Mean (± SD)	Min-Max
Age (years)		35.08 (± 8.819)	21-58
Gender			
Female	56 (53.3)		
Male	49 (46.7)		
Race			
Malay	92 (87.6)		
Chinese	3 (2.9)		
Indian	4 (3.8)		
Others	6 (5.7)		
Education levels			
Primary/Secondary School	52 (49.5)		
Tertiary	53 (50.5)		
Ranks			
Lower	54 (51.4)		
Higher	51 (48.6)		

Table 2. Linear Multiple Regression to predict PSC levels among respondents (N=105)

Independent variables	B	SE	β	p-value
(Constant)	-2.23	6.32		0.73
Age	<0.01	0.05	0.01	0.94
Sex	0.80	0.88	0.07	0.36
Education	-1.12	0.83	-0.10	0.18
Department	-0.21	0.15	-0.10	0.18
Job rank	-0.10	0.89	-0.01	0.91
Team Psychological safety	0.20	0.12	0.13	0.09
Perceived organizational support	0.23	0.19	0.09	0.22
Physical safety climate	1.04	0.12	0.68	<0.01*

* = significant at p < 0.01

Table 3. Comparison of PSC before and after the introduction of occupational safety website

PSC level	Mean ±SD	Level	w (p-value)
Before	36.095 ± 5.6202	High	-6.372 (<0.001)*
After	37.742 ± 4.7069	High	

* = Significant at p < 0.05

Website review by respondents

All respondents have read through the designated safety website and most of them (97.1%) were looking forward to know more about their workplace safety and health.

DISCUSSION

The existing PSC levels found in the current study was high which indicated that the Royal Malaysian police (RMP) has conducive policies, procedure and practices

to protect their employees from psychological and mental health problems. It is proven by the development of several strategies in improving and managing mental health and well-being of Malaysian police officers. For example, the Bahagian Agama dan Kaunseling (BAKA) (the Section of Counselling and Religion) was established in 2007 specifically to provide counselling, religious talks for Muslims, training, short courses, seminar and workshops for the police officers throughout Malaysia. The RMP also collaborates with relevant government institution, the Federal Psychology Management Division

under the Public Service Department of Malaysia in policy making and management guidelines (30).

Results of the present study showed that there was no significant relationship between socio-demographical characteristics and job ranks with the PSC level in the Royal Malaysian police. These findings were consistent with those found among Australian workers (14) and university students in the USA (31). Instead, after also considering team psychological safety and perceived psychological support, only physical safety climate was found significant in predicting PSC ($\beta = 0.68$, $p < 0.01$) where better physical safety climate was significantly associated with better PSC. These findings can be explained by the nature of their work. Police work is a dangerous work and they are exposed to many occupational hazards including violence, and threat of injuries and death and these factors were found in many previous studies to have significant impact on their psychological health (32-34). Therefore, by providing policies, procedures and practices that protect their physical safety, the organization is actually also protecting their psychological health and safety.

Moreover, findings of the present study proved that the usage of informative website on occupational safety and health including the psychological health among respondents significantly improved the RMP PSC level even though it was already good prior to the website usage. These findings supported those of previous researches done by Chih-Lin (25) on breast health care and by Chen (26) on oral skill. Coleman (35) suggested that using graphic interface such website can displayed the best content of information and help to deliver knowledge better by both audio and visual elements. . Since police work are highly mobile, they have limited time to attend classroom training. With the introduction of website, they can easily access the informative website during their free time.

Finally, the intervention on PSC level by introducing the informative website among RMP has indicated positive improvement of PSC. The informative website is in line with four major domains of PSC, whereby the website reflects the commitment of the management to emphasize and prioritizing the psychological health among the police. Apart from this, the website acts as an ideal platform for two-way communications between management and the police officers which participation of all members are encouraged. Therefore, the new tool (informative website) should be further developed and sustained in long term to achieve greater improvement on PSC.

CONCLUSION

In conclusion, the existing level of the effectiveness of policies, procedures and practices which also known as

PSC in protecting employees' health and safety is high among respondents. Two main factors, physical safety climate and team psychological safety were determined to significantly predict this PSC after considering the socio-demographical factors and job rank. Moreover, findings of this study showed that the introduction of an informative website on health and safety specific for police officers is significantly proven to improve the level of PSC among them. Since this study involved 105 police officers in the Headquarters of PDRM, Kuala Lumpur, results may not represent the total of 113,336 Malaysian police officers (36). A study involving representative sample size for the whole Malaysian police including all states will give better insight on the status of safety climate and the effectiveness of customized safety website among Malaysian police. Also, this study can be replicated in other occupational settings aiming to improve psychosocial safety climate among workers.

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