

Occupational Stress and Quality of Life among Rescue Workers: Moderating Role of Social Support

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ABSTRACT

Background: Rescue workers, including firefighters, paramedics, and emergency responders, often face high levels of stress due to the nature of their work. This stress can be attributed to exposure to traumatic events, long working hours, and the pressure to make critical decisions in emergencies. Social support plays a crucial role in mitigating the effects of occupational stress and hence helps in maintaining a good quality of life.

Objective: The present study aims to investigate the relationship between occupational stress, social support, and quality of life among rescue workers and to determine the moderating role of social support in the relationship between occupational stress and quality of life among rescue workers.

Methods: A purposive sample of 170 young adults with an age range of 22-30 years ($M = 31.7$, $SD = 5.05$) were taken from different Rescue Stations in Punjab and Khyber Pakhtunkhwa. The Occupational Stress Inventory, Pro-Quality of Life Scale, and Multidimensional Perceived Social Support Scale were used to assess the sample. Pearson product-moment correlation and moderation through multiple hierarchical regression analyses were run to test the hypotheses.

Results: Results showed a positive relationship between occupational stress, burnout, and secondary traumatic stress among rescue workers. Further, it is found that compassion satisfaction is positive, and burnout and secondary traumatic stress domains of quality of life are negatively related to social support. Moreover, occupational stress negatively predicted the burnout and secondary traumatic stress domains of quality of life indicating higher occupational stress linked with higher burnout and secondary traumatic stress. The results also showed a significant positive interaction effect of occupational stress and support from significant others in predicting secondary traumatic stress among rescue workers.

Conclusion: The study will contribute to the field of emergency services in depth. The findings will help the rescue administration to improve the quality of life of rescue workers.

Keywords: Occupational stress, quality of life, social support, rescue workers, burnout, secondary traumatic stress, compassion satisfaction.

INTRODUCTION

In the realm of emergency response and rescue operations, the staff who serve as firefighters, paramedics, and emergency responders face not only the call of duty but also the relentless challenges that accompany their profession. Their roles demand unwavering commitment to safeguarding lives and property in the face of adversity, often exposing them to traumatic and high-stress situations. Occupational stress among rescue workers is a well-documented concern, stemming from the intense demands, emotional toll, and long hours associated with their work. The repercussions of this stress extend beyond the workplace, influencing their overall quality of life.

Occupational stress can have a detrimental effect on the quality of life of rescue professionals. It can be described as a state in which an individual undergoes psychological and physiological changes, causing them to deviate from their normal functioning [1]. It arises from

a perceived imbalance between the demands placed on an individual and their capacity to meet those demands [2, 3]. Occupational stress results from negative environmental factors (e.g., work overload, role conflict/ambiguity/vagueness, poor working conditions) linked with a particular job [4].

Talking about quality of life, which is perceived through social living standards according to their goals and expectations [5]. It also refers to the one's social status is affected by the norms of the one's culture around him or her [6]. The quality of life depends on the level of satisfaction in society according to one's feelings [7]. Quality of life is not confined to the capacity to do work, stage of work, condition of mind, and elongation, but encircles the personal life, liberty to choose emotional betterment, and preservation of esteem [8].

Furthermore, social support is an important element in tackling challenging situations. O'Neill highlighted the vital importance of social support from colleagues [9]. Social support is a vital source for employees in managing the presence of stress [10]. The relationship between near and dear ones and any information from them affects the relations of a person psychologically and socially [11]. Social support is beneficial for individuals as it provides

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a sense of love, value, and esteem, and refers to the assistance provided by others within the community [12]. Workers having social and organizational support can perform their duties efficiently at both places whether at home or in the organization [13].

So based on the above discussion, the purpose of the present study is to assess the relationships between occupational stress, social support, and quality of life among rescue workers, further, to assess the moderating role of social support in the relationship between the occupational stress and quality of life among rescue workers. So, the following hypotheses were formulated:

- Occupational stress will likely to negative and social support will positively relate to the quality of life among rescue workers.
- Social support is likely to moderate the relationship between occupational stress and quality of life among rescue workers.

MATERIALS AND METHODS

In the present study, the correlational research design was used. This study was conducted at the Department of Applied Psychology, University of Management and Technology, Lahore from October 2020 to November 2021. The research synopsis was approved by the concerned supervisor and Departmental Graduate Committee (DGC) following up with Institutional Ethical Approval (Ref. ICPY/20/176).

The sample comprised 170 rescue workers as calculated by the G power formula [14] ($N > 50 + 8m$, m denotes the number of predictors in the model, so sample (N) is greater than $50 + 8 \times 8 = 114$ participants). The data were collected from rescue offices of three districts of Punjab including Layyah, Bhakkar, and Jhang, and one district Dera Ismail Khan of Khyber Pakhtunkhwa. The age range of the sample was 22-30 years ($M=31.7$, $SD=5.05$) and all were males. The purposive sampling strategy was used in the present study. Those rescue workers who dealt directly with the COVID-19 patients and other dangerous diseases were included. The administration officers of Rescue 1122 were excluded.

Data collection was done by approaching the participants who met the required criteria. A formal consent form was taken from each participant before filling out the research Performa. They were apprised of the nature and purpose of the study and were given the right to withdraw from the research at any time, also the confidentiality of the information was ensured. The following scales were administered along with a demographic information sheet.

Occupational Stress Inventory [15] was used to assess occupational stress in rescue workers. The scale consisted of 46 items, with a 1 - 5 Likert scale, (1 = *strongly disagree* to 5= *strongly agree*). The

scale includes 12 subscales including load overload, role conflict, role ambiguity, unreasonable group of political pressure, powerlessness, responsibility of persons, under participation, peer group relationship, intrinsic impoverishment, low status, strenuous working conditions, and unprofitability. All the items are summed up to give scores on occupational stress and a high score indicates high occupational stress. The Cronbach's Alpha Coefficient for the scale was found to be 0.77. Pro Quality of Life Scale [16] was used to measure the quality of life of rescue workers. It consists of 30 items on a 5-point Likert scale (1= *Never*, 2 = *rarely*, 3 = *sometimes*, 4 = *Often*, 5= *Very Often*). This scale has three subscales including compassion satisfaction, burnout, and secondary traumatic stress. All the items sum up to give the scores of each subscale. A high score indicates high scores in the specific subscale. Further Higher scores on burnout and secondary traumatic stress and lower scores on compassion satisfaction indicate poor quality of life. The alpha reliability of the subscales ranges between 0.80 to 0.90. The Multidimensional scale of perceived social support Scale [17] was used to measure the social support of rescue workers. It consists of 12 items with a 7-point Likert scale (1 = *Very Strongly Disagree*, to 7 = *Very strongly agree*). This scale is further subdivided into three subscales including Significant Other Subscale, Family Subscale, and Friends Subscale. The sum across all 12 items, is then divided by 12. A high score means high social support and a low score means low social support. The demographic questionnaire consisted of Age, Education in years, designation, scale, marital status, number of children, number of siblings, birth order, family system, number of dependences, monthly income, family monthly income, duty hours, duration of job and any psychological and physical disease.

For data collection, a letter for permission to collect data at rescue offices was taken from the Department of Applied Psychology, University of Management and Technology, Lahore. Permission letter No. 218/21 (P.E.S) was sought from Head Quarter, Punjab Emergency Service, Lahore. The rescue offices of three districts Bhakkar, Layyah, and Jhang from Punjab and one district of Dera Ismail Khan from Khyber Pakhtunkhwa were approached for data collection following ethical considerations *i.e.* volunteer participation, right to withdraw at any time, confidentiality of their information. Results were reported honestly.

The data was analyzed using the SPSS-26 version. After screening the data, reliability analysis was run on all four scales to find out the reliability of the data (**Table 1**). Secondly, the Pearson product-moment correlation analysis was run to deduce the relationship between occupational stress, social support, and quality of life among rescue workers (see **Table 2**). Furthermore, moderation through multiple hierarchical regression analyses was run to see the interaction effects of social support and occupation stress among rescue workers

(see **Table 3**). Statistical significance was defined based on a p-value < 0.05.

RESULTS

The sociodemographic characteristics of the sample indicated that the average education of the participants was 13.7 years, and most of the participants, 117 (66%) were unmarried, while 47 (26%) were married). About 86 (51.6%) had above 5 number of siblings, while 84 (49.4%) had 5 or below. The birth order of the participants indicated that most of the participants, 96 (54.9%) were middle born, while 41 (23.4%) were first born, 28 (16%) were last born, and 5 (2.9%) were only-child. The family system indicated that 140 (82%) of the participants belonged to a joint family and 30 (18%) from a nuclear family. Talking about several dependents, 134 (78.8%) participants had 7 or below number of dependents while 36 (21.2%) had more than 7 dependents. Furthermore, the job duration indicated an average of 6.36 years, with an average of 7.82 duty hours. The average salary of the participants was 36799.72 rupees with the average overall family monthly income 63205.08 rupees.

The details of the other results are as follows:

Table 1: Cronbach Alpha and descriptive statistics of the measure (N=170).

Measures	M(SD)	Alpha	Range
Occupational Stress Index	137.66(19.99)	0.77	46-225
Role Overload	18.84(4.33)	0.31	6-30
Role Ambiguity	11.18(2.66)	0.38	4-20
Role Conflict	14.63(2.65)	0.08	5-25
Unreasonable Group and Political Pressure	10.24(2.85)	0.49	4-20
Responsibility for Persons	8.85(2.24)	0.31	3-15
Under Participation	11.06(3.486)	0.73	4-20
Powerlessness	8.73(2.56)	0.53	3-15
Peer Group Relation	11.99(2.41)	0.00	4-20
Intrinsic Impoverishment	12.91(2.37)	-0.11	4-20
Low status	10.52(13.74)	0.06	3-15
Strenuous Working Condition	12.30(2.64)	0.20	4-20
Unprofitability	5.28(1.94)	0.47	2-10
Professional Quality of Life Scale			
Compassion Satisfaction	41.39(8.163)	0.64	10-50
Burnout	32.45(5.02)	0.43	10-50
Secondary Traumatic Stress	26.95(7.67)	0.74	10-50
Multidimensional Scale of Perceived Social Support			
Significance	10.30(5.07)	0.85	4-28
Family	9.20(4.44)	0.81	4-28
Friends	9.99(4.21)	0.81	4-28

The results of reliability analyses in **Table 1** showed good reliability of all the scales used. The results showed that the Occupational Stress Index showed .77 and its subscales. Further, compassion satisfaction, burnout, and secondary traumatic stress the subscales of the Professional Quality of Life scale showed 0.64, 0.43, and 0.74 alpha reliability respectively. The Cronbach alpha for the multidimensional scale of perceived social support showed 0.91 and its subscales included

Table 2: relationship between occupational stress, social support and quality of life in rescue workers (N=170).

Variable	OS	RO	RA	RC	PP	Res	UP	Pow	PR	IMP	LS	SC	UNP	CS	BUR	STS	SS	SIG	FAM	FRD	
Occupational Stress (OS)		0.62**	0.62**	0.66**	.49**	0.47**	0.56**	0.46**	0.57**	0.50**	0.49**	0.64**	0.52**	0.10	0.22**	0.28**	0.09	-0.02	0.14	0.12	
Role Overload (RO)			0.39**	0.36**	0.35**	0.05	0.08	0.06	0.13	0.13	0.16*	0.43**	0.33**	-0.07	0.24**	0.25**	0.19*	0.12	0.15	0.24**	
Role Ambiguity (RA)				0.41**	0.40**	0.04	0.21**	0.13	0.30**	0.22**	0.24**	0.44**	0.33**	-0.09	0.44**	0.41**	0.20**	0.06	0.25**	0.25**	
Role Conflict (RC)					0.36**	0.30**	0.27**	0.25**	0.41**	0.28**	0.27**	0.46**	0.26**	0.08	0.09	0.12	0.11	0.08	0.09	0.14	
Political Pressure (PP)						0.11	0.16*	-0.07	0.31**	0.00	0.15	0.22**	0.48**	-0.14	0.40**	0.42**	-0.01	-0.05	0.04	-0.02	
Responsibility (RES)							0.56**	0.67**	0.35**	0.37**	0.24**	0.22**	0.11	0.33**	-0.26**	-0.17*	-0.13	-0.09	-0.22**	-0.22**	
Under Participation (UP)								0.65**	0.46**	0.38**	0.20**	0.20**	0.15	0.18*	-0.06	0.08	-0.39	-0.11	0.07	-0.05	
Powerlessness (POW)									0.36**	0.33**	0.21**	0.18*	0.10	0.23**	-0.15	-0.00	0.06	0.03	0.17*	-0.04	
Peer Relationship (PR)										0.39**	0.14	0.29**	0.25**	0.28**	-0.03	0.14	-0.02	-0.00	0.04	-0.09	
Impoverishment (IMP)											0.23**	0.25**	0.26**	0.28**	-0.13	0.00	-0.07	-0.06	-0.06	-0.07	
Low Status (LS)												0.25**	0.17*	0.07	0.12	0.20*	-0.02	-0.05	0.00	-0.01	
Strenuous Condition (SC)													0.24**	0.11	0.10	0.22**	-0.00	-0.09	0.00	0.08	
Unprofitability (UNP)														-0.19*	0.36**	0.24**	0.06	0.03	0.09	0.04	
Quality of Life																					
Compassion Satisfaction (CS)																					
Burnout (BUR)																					
Secondary Traumatic Stress (STS)																					
Social Support (SS)																					
Significance Other (SIG)																					
Family (FAM)																					
Friends (FRD)																					

*Higher scores on burnout and secondary traumatic stress and lower scores on compassion satisfaction indicate poor quality of life
*p< 0.05. **p< 0.01. ***p<0.001.

Significance, Family, and Friends at 0.85, 0.81, 0.81 respectively. So, this indicated that all the scales have sufficient reliability to carry out further studies.

The results of Pearson Product Moment correlation analysis to see the relationships among study variables are presented in Table 2.

Table 2 shows the positive relationship of overall occupational stress with burnout and secondary traumatic stress subscales of quality of life among rescue workers. However, no relationship was found between occupational stress and social support. Results also showed that role overload and role ambiguity subscales of occupational stress were positively related to support from family and friends. Further responsibility-related stress was negatively related to overall social support and friend-related support. The powerlessness was positively related to the family subscale of social support. Results also showed that compassion satisfaction was found to be negative and burnout and secondary stress were positively related to overall social support and its subscales.

Results in Table 3 showed that the overall variance explained by the model compassion satisfaction aspect of quality of life was 23% with $F(11,157) = 4.16$, $p < 0.001$.

Table 3: Moderation through multiple hierarchical regression analyses (N=170).

Predictors	Quality of Life					
	Compassion Satisfaction		Burnout		Secondary Traumatic Stress	
	ΔR^2	β	ΔR^2	β	ΔR^2	β
Step I	0.14	-	0.09	-	0.02	-
(Control Variables)	-	-	-	-	-	-
Family Monthly Income (Rs.)	-	0.12	-	-0.00	-	0.09
Number of Dependence	-	-0.18**	-	0.18*	-	0.10
Duty Hours	-	-0.02	-	0.14	-	0.01
Duration of Job (Years)	-	-0.34***	-	0.21**	-	0.02
Step II	0.01	-	0.05	-	0.08	-
Occupational Stress	-	0.09	-	0.23*	-	0.28***
Step III	0.06	-	0.13	-	0.05	-
Significance Other	-	-0.05	-	0.05	-	0.02
Family	-	-0.09	-	0.21	-	0.11
Friends	-	-0.15	-	0.14	-	0.12
Step VI	0.01	-	0.01	-	0.04	-
Occupational Stress X Significance-Other	-	0.27	-	0.44	-	1.45*
Occupational Stress X Family	-	-0.30	-	-1.00	-	-1.91
Occupational Stress X Friends	-	-0.71	-	0.24	-	-0.42
R2	0.23	-	0.28	-	0.19	-
F (11,157)	4.16***		5.54***		3.31***	

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

*Higher scores on burnout and secondary traumatic stress and lower scores on compassion satisfaction indicate poor quality of life

< 0.001 . There is a non-significant interaction between any of the domains of social support and occupational stress in rescue workers. Results also showed that occupational stress and any of the domains of social support (Significance other, Family, Friends) showed non-significance prediction of compassion satisfaction. However, the number of dependents ($\beta = -0.18$, $p < 0.05$) and duration of the job ($\beta = -0.34$, $p < 0.05$) negatively significantly predicted the compassion satisfaction among rescue workers.

The overall variance explained by the model burnout was 28% with $F(11,157) = 5.54$, $p < 0.001$. The results showed a non-significant interaction between any of the domains of perceived social support and occupational stress in rescue workers. It was also found that occupational stress negatively predicted the burnout domain of quality of life ($\beta = 0.23$, $p < 0.05$) in rescue workers. However, the number of dependents ($\beta = 0.18$, $p < 0.05$) and duration of the job ($\beta = 0.21$, $p < 0.05$) positively significantly predicted burnout.

The overall variance explained by the model Secondary traumatic stress aspect of quality of life was 17% with $F(11,157) = 3.31$, $p < 0.001$. The results showed a significant interaction of support from significant others and occupational stress among rescue workers. Further, it was found that occupational stress positively predicted secondary traumatic stress ($\beta = 0.28$, $p < 0.001$) among rescue workers.

DISCUSSION

This current study investigated the relationships between occupational stress and quality of life among rescue workers. This study was carried out to assess the moderating role of social support in the relationship between occupational stress and quality of life among rescue workers. The sample of this study was 170 rescue workers from rescue offices of three districts of Punjab Pakistan including Layyah, Bhakkar Jhang, and one district Dera Ismail Khan of Khyber Pakhtunkhwa Pakistan.

The findings of the present study highlighted the positive relationships between occupational stress and burnout and the secondary traumatic stress aspect of professional quality of life in rescue workers. It was also highlighted that role overload and role ambiguity subscales of occupational stress were positively related to support from family and friends. This finding is in line with some other studies in the relevant literature. According to Jenkins and Elliott, who examined the relationships between stressors and burnout among qualified and non-qualified staff nurses. Their sample consisted of 93 nurses and the findings indicated there was a positive significant relationship between burnout and workload stress in the nurses and qualified nurses reported significantly higher workload stress than unqualified staff. Further, it was reported that lack of adequate staffing was the main stressor reported by

qualified staff while dealing with physically threatening, difficult, or demanding patients was the most stressful aspect for unqualified staff [18]. Furthermore, Babu [19] also investigated the relationship between job stress with quality of life among software professionals in a sample of 1071. It was found that quality of life showed statistically significant associations with increasing stress domains of autonomy, physical infrastructure, work environment, and emotional factors. Further literature also suggests that occupational stress is the direct outcome between an individual and their work environment that may pressure his or her resources and thus threaten his or her well-being [20].

Results of the present study also showed that compassion satisfaction was found to be negative and burnout and secondary stress were positively related to overall social support and its subscales. To support the findings, Jenkins and Elliott found a negative relationship between levels of social support and burnout indicating that higher social support is linked with lower burnout. Hence, they also highlighted that staff support groups may be useful in alleviating feelings of burnout [18]. Furthermore, Mohammadi *et al.* [21] investigate the effect of Job strain on the quality of work life of nurses. The sample comprised 300 nurses working in seven educational hospitals in Ahvaz, Iran. Their results suggested that job stress in nurses was high, and quality of work life was moderate (or less) indicating that increased job stress leads to reduced quality of work life in nurses. Another study by Mo *et al.* [22], investigated the nurses in China who were supporting Wuhan in fighting against COVID-19. The sample consisted of 861 nurses. The results highlighted the role of social support in promoting mental health among nurses supporting the findings of the present study. Another study by Ruisoto [23] examined the role of social support in healthcare professionals having burnout. Their sample size was 1035 health professionals. Their results indicated that higher social support was associated with lower burnout among health professionals. Further in another study, Keeton *et al.* [24] have found an inverse relationship between social support and burnout. So, these findings, to some extent also support the other findings of the present study that occupational stress negatively predicted the burnout and secondary traumatic stress domains of quality of life indicating higher occupational stress linked with higher burnout and secondary traumatic stress.

The results of the present study also highlighted the moderating role of support from significant others in predicting the relationship between occupational stress and secondary traumatic stress among rescue workers. The literature suggests that social support can be an important protective factor for psychological resilience that alleviates mental stress and lifts psychological barriers [25]. It is also suggested that strengthening social support among health professionals could also mitigate

the effect of job strain on health and they should keep in touch with their families and friends to achieve spiritual support [22, 26]. Further, LaRocco *et al.* [27] investigated the role of social support in reducing occupational stress in a sample of 2010 males from different occupational institutes. Their results showed the protective role of social support in reducing job stress among professionals. Tang *et al.* [28] suggested that role stress significantly correlated with emotional exhaustion, depersonalization, and decreased personal accomplishment of burnout, and workplace support moderated the effects of role stress on three syndromes of burnout. Further, Lambert *et al.* [29] suggested that a low standard of social support is associated with higher stress at work and hence poor psychological well-being of healthcare providers. Besides, in their meta-investigation, Wu *et al.* [30] found that people who acquired more significant levels of social support may have more sure well-being status, physical and mental personal satisfaction, and prosperity. Barello *et al.* [31] investigated those mental problems corresponding to high pressure and burnout. What's more, Moreno Fortes *et al.* [32] found that occupational stress was positively related to poor mental health as well as psychopathological symptoms, and poor emotional wellness.

The results of the present study also highlighted that the number of dependents and duration of the job negatively predicted, compassion, and satisfaction, and positively predicted burnout in rescue workers, which are well supported by Kelly *et al.* [33], and Maddigan *et al.* [34] who suggested that lack of meaningful recognition, more years of experience and "Millennial" generation (ages 21-33 years), uncertainty about staying in one's current job, working fulltime hours and high number of dependents in family are strong predictors of low compassion satisfaction and higher burnout. So, the results of the present study are well supported by previous research.

CONCLUSION

From the current study, it is concluded that higher occupational stress is linked with higher burnout and secondary traumatic stress, indicating poor quality of life for rescue workers. Further, it is found that higher social support is linked with higher compassion satisfaction, low burnout, and low secondary traumatic stress which are indicative of good quality of life. Results showed support from significant others plays a moderating role in the relationship between occupational stress and secondary traumatic stress among rescue workers. Further, the number of dependents and duration of the job negatively predicted compassion satisfaction and positively predicted burnout.

ETHICAL APPROVAL

Ethical approval was obtained from the Department of Clinical Psychology, School of Professional Psychology, University of Management and Technology, Lahore

(REF letter No. ICPY/20/176, IRB# 2019-05-092). All procedures performed in studies involving human participants were following the ethical standards of the institutional and/ or national research committee and with the Helsinki Declaration.

CONSENT FOR PUBLICATION

Written informed consent was taken from the participants.

AVAILABILITY OF DATA

The data set may be acquired from the corresponding author upon a reasonable request.

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

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AUTHORS' CONTRIBUTION

Farhan Saheem: Conception, Data Collection, Statistical Analyses, and Interpretation, Write-up.

Sumaira Ayub: Design, Supervision, Write up and Review.

Beenish Mubeen: Write up, Proofread, and Review.

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