Relationship between psychological distress and resilience in rescue workers

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ABSTRACT

الأهداف: تقييم العلاقة بين الضغوط النفسية والمرونة في عمال الانقاذ ،صيغت الفرضية التالية: ستكون هناك علاقة سلبية بين الضغوطات النفسية والمرونة عند عمال الانقاذ.

الطريقة: أجريت هذه الدراسة الارتباطية من 1 يونيو إلى 30 أغسطس 2015 في رحيم يار خان، باكستان. وتألفت عينة الدراسة الحالية من 100 من عمال الانقاذ. تراوحت أعمار المشاركين بين 23 إلى 40 عاما مع متوسط عمر يبلغ 27.4±3.9 سنوات. طبقت استمارة المعلومات الديموغرافية و مقياس Kesslerpsychological distress scale و وقياس مرونة البالغين على المشاركين لتقييم مستوى الشدة النفسية والمرونة.

النتائج: طُبق معامل الارتباط بيرسون لتحليل العلاقة بين الضغوطات النفسية والمرونة وأشار تحليل النتائج لوجود علاقة سلبية بين الضغوطات النفسية والمرونة (r= -0.203, p<0.01) لدى عمال الإنقاذ. بالإضافة للعوامل السياقية (r= -0.292, p<0.05) وعناصرها الفرعية (r= -0.239, p<0.05) متضمنة المعتقدات الروحية (r= -0.239, p<0.05) والمصادر الثقافية (r= -0.287, p<0.01) التي وُجد أنها مرتبطة عكسياً مع الضغط النفسي.

الخاتمة: يتضح من هذه الدراسة معاناة عمال الانقاذ من عوامل الضغوطات النفسية والمرونة يجب أخذها في الاعتبار عند تصميم دورات تدريبية للحفاظ على الصحة العقلية وتعزيز الرفاه النفسي لدى عمال الانقاذ.

Objectives: To assess the relationship between psychological distress and resilience in rescue workers. Following hypothesis was formulated; there would be negative correlation between psychological distress and resilience in rescue workers.

Method: A correlational study was conducted from June-August 2015 in Rahim Yar Khan, Punjab, Pakistan. The sample of the present study consisted of 100 rescue workers. The age of the participants ranged from 23 to 40 year old with the mean age of 27.4±3.9 years. Demographic information form, Kessler psychological distress scale and adult resilience measure were administered on the participants to assess the level of psychological distress and resilience.

Results: Pearson product moment coefficient of correlation was applied to analyze the relationship of psychological distress and resilience. Analysis of the result indicated that there is negative relationship between psychological distress and resilience (r= -0.203, p<0.01) in rescue workers. Further, contextual factors (r= -0.292, p<0.05) and its subcomponents including spiritual beliefs (r= -0.239, p<0.05) and cultural resources (r= -0.287, p<0.01) were also found to be inversely correlated with psychological distress.

Conclusion: The research evidenced that rescue workers were experiencing psychological distress Resilience factors should be considered while designing trainings to preserve mental health and to enhance the psychological well-being of rescue workers.

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The Punjab Emergency Service (Rescue-1122) is the first ever structured humanitarian service at government level, which is providing emergency services in natural disasters and human made calamities. Rescue 1122 has rescued the 3.59 million victims of emergencies. Rescue 1122 is not only providing its services to 80 million population living in 36 districts of Punjab, but also technically assisting other provinces. It is also ensuring its high quality performance by maintaining its average response time of 7 minutes. While serving humanity, they exposed to and witnessed

human suffering (death, injuries, and so forth), natural hazard (earthquake, flood, storms, and so forth), and terrorism or violence (bomb blast, gun violence, and so forth) that may increase the vulnerability of developing psychological symptoms and distress. Research showed that 32.6% and 45.7% of rescue workers of 1122 are experiencing severe to extremely severe level of depressive and anxiety symptoms.[1] Rescue workers are hidden victims of traumatic events,[2] which may jeopardize their psychological well-being. Psychological distress is subjective state, which impact the individuals' personal and professional life on both cognitive and behavior level. Barlow and Durand[3] conceptualized psychological distress as the emotional state, which may result in negative view of self, others and environment, as well as manifest itself in symptoms of worthlessness, tension, worries, and irritability. Mirowsky and Ross[4] categorized the symptoms of depression and anxiety in psychological distress. Rescue workers, who confront with catastrophes or life threatening situations frequently, are at risk to develop psychological symptoms. For example, rescue workers have been found to have high level of psychological distress, probable depression and post-traumatic stress disorder[5-7]. Another study revealed that rescue workers who provided rescue services reported symptoms of anxiety and depression after 24 months of earthquake.[8] A study conducted on workers who participated in relief services for aircraft crash victims underscore the long lasting impact of traumatic event in the form of psychological distress. Results revealed that exposed workers were experiencing somatic complaints, fatigue, and psychological distress after the 8.5 years of trauma.[9] Empirically, number of studies confirmed that rescue workers are more likely to develop physical illness,[10] post-traumatic stress disorder,[8] depression, and anxiety.[11] Thus, it is important to investigate those means which navigate rescue workers to use resources or assets related to individual, interpersonal, and environmental domains to reduce the stress and foster the adaptation in this high risk group. For instance, resilience serves as an important resource in the development of interventions to prevent and treat the psychological distress including depression, anxiety, and stress.[12] Resilience is one of the important resource that help to recover from difficult situations and to deal with stress. Resilience is ability of positive adaptation during or after the adverse and hazardous situation.[13] Individuals with higher levels of resilience experience low level of emotional and behavioral problems including depression, anxiety and stress.[14,15] Arnetz et al[16] suggested that resilience is associated with low level of psychological distress and its role should be considered while assessing risk and protective factors. As indicated, rescue worker exposed to variety of human miseries and suffering, which may negatively influence the psychological state of workers. To cope up with these internal and external demands, they have to mobilize and use psychological resources. Considering this idea, current study aims to investigate the correlation between psychological distress and resilience in rescue workers.

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Methods. This study was based on a cross-sectional, non-experimental, correlational design. The study was carried out from June-August 2015 in Rahim Yar Khan, Pakistan. The objectives of the entire study/ procedure followed and material were reviewed by the ethical review committee of Rahim Yar Khan Campus, The Islamia University of Bahawalpur, Pakistan. All recommendations of the Board were followed in the procedure of the study. Consent for data collection was obtained by concerned authorities. Respondents were also given the consent form for agreement to participate in the study. Participants were instructed to read and sign the informed consent. Confidentiality was assured and participant's anonymity was maintained. By using purposive sampling technique, 100 (91 males and 9 females) rescue workers were selected. The age range of the participants was from 23-40 years with the mean age of 27.4 ± 3.9 years. Participants who were working for more than one year were included in this study. Rescue workers who were suffering from any physical or mental illness were excluded. Information was gathered through a demographic information form by asking questions related to respondents' age and gender. To assess the level of distress, Kessler psychological distress scale[17] was used. This is 10 item scale. Respondents are asked regarding the symptoms of anxiety and depression over 30 days. Each item is scored on 1(none of the time) to 5 (all of the time). Total score is obtained by summing up the score on each item (range 5-50), and high score indicated the high level of psychological distress. Resilience was assessed by Adult resilience measure.[18] Adult resilience scale was designed to assess resources related to individual capacities, relationship with significant persons, belongingness with community, and culture that may intensify their resilience. It consisted on 28-item, divided in 3 subscales. These 3 subscales comprised of individual

factors (personal skills, peer support, social skills) caregiving factor (physical caregiving, psychological caregiving), and contextual component (spirituality, culture, education). Each item is scored on 1(does not describe me at all) to 5 (describes me a lot) likert scale, the higher scores indicated the increased level of resilience on each component. All statistical computation was carried out through Statistical Package for Social Sciences version 14 (SPSS Inc., Chicago, ILL, USA). Descriptive statistics of frequencies, percentages and mean were calculated for the demographic variables. Pearson correlation coefficients analysis was computed to analyze the correlation of psychological distress with resilience and its sub-domains.

Results. As described in **Table 1**, more males (91%) as compared with females (9%) participated in this study. As a preliminary analysis illustrated in (**Table 2**), Mean and standard deviation (SD) were calculated of total sample. The mean and standard deviation of psychological distress scores was 31.3 ± 6.2 (range 5-50). While mean ± SD of resilience and its subcomponents scores were total score of resilience 91.3 ± 13.5 (absolute range= 5-140), individual factors 35.9 ± 6.9 (absolute range= 5-55), caregiving factors 23.0 ± 4.8 (absolute range= 5-35), and contextual factors 32.5 ± 5.8 (absolute range= 5-50). Correlation of psychological distress with resilience and its subdomains was computed and as can be seen in (**Table 3**), resilience was significantly negatively correlated (r= -0.203, $p<0.05$) with psychological distress. Further, contextual factors (r= -0.292, $p<0.01$) including its subscales of spiritual (r= -0.239, $p<0.05$) and cultural factors (r= -0.287, $p<0.01$) were also found to be significantly negatively correlated with psychological distress.

Table 1 - Demographic characteristics of 100 rescue workers.

Variables	N	%
Male	91	91
Females	9	9
Mean age ± SD for the total sample	27.4 ± 3.9	

SD - standard deviation

Table 2 - Mean and standard deviation (SD) of psychological distress, resilience and its subdomains.

Variables	Mean	SD
Psychological distress	31.3	6.2
Resilience total	91.3	13.5
Individual factors	35.9	6.9
Individual personal skills	16.5	3.0
Individual peer support	6.4	2.9
Individual social skills	13.9	3.1
Caregiving factors	23.0	4.8
Physical care giving	6.2	2.8
Psychological care giving	17.6	3.8
Contextual factors	32.5	5.8
Context spiritual	10.0	2.4
Context education	6.6	1.9
Context cultural	15.9	4.6

Table 3 - Correlation of psychological distress with resilience and its subdomains.

Variable	r	sig
Resilience total	-0.203*	0.042
Individual factors	-0.115	0.256
Individual personal skills	-0.086	0.396
Individual peer support	-0.033	0.743
Individual social skills	-0.082	0.419
Caregiving factors	-0.047	0.644
Physical care giving	0.033	0.741
Psychological care giving	-0.107	0.290
Contextual factors	-0.292†	0.003
Context spiritual	-0.239*	0.017
Context education	-0.092	0.363
Context cultural	-0.287†	0.004

*$p>0.05$, $p>0.01$, †$p<0.001$ - please clarify

Discussion. The purpose of current study was to assess the correlation of psychological distress with resilience and its subcomponents among rescue workers. Findings of current study corroborate the negative relationship of psychological distress with resilience. Past studies have also pointed out that resilience may be an important resource to decrease the level of psychological distress.[19] Consistent with current findings, McGarry et al[20] found that high level of resilience was inversely associated with symptoms of anxiety, depression and stress whereas positively associated with optimism. Similarly, Pietrantoni and Prati[21] identified that high level of resilience in rescue workers protect them from compassion, fatigue, and burnout, as well as preserve their work related mental health. Findings of current study further highlighted that workers with high level of spiritual/religious beliefs were experiencing low level of psychological distress. It reflect the idea that rescue workers who participated in current study view

religion/spirituality as source of strength, perform religious activities and construe community services in the light of religion. One possible explanation of this finding is that religion positively changes human cognitions by providing belief system. People who have faith on religion believe that every enduring pain will be rewarded if they deal with patience and they will be liked by Allah or will be eligible for His mercy by serving the humanity. These beliefs may intensify the relation with Divine by believing that He knows human sufferings and guide people to overcome hardships and develop compassionate feelings for others. As a result, use of religious/spiritual beliefs, as well as religious practices led rescue workers to deal with distress developed by witnessing human sufferings and also motivate them to help others devotedly. It is also empirically validated that religiosity is strengthen during and after the critical circumstances or events,[22,23] and help to reduce psychological distress.[24,25] Obtained results showed that sense of community is another resilient factor, which is inversely related with psychological distress in rescue workers. A possible explanation of this association is that data was collected from rescue workers who are Muslims and scored high on spiritual sub-domain of resilience as well. Religion of Islam promotes community integration by religious practices, such as daily prayers, alms giving and by exhorting to fulfill rights of each other. These practices, rituals and obligations definitely increase feelings of belongingness and harmony in society that ultimately impact the psychological well-being of individuals in positive way. These findings are in line with cultural dynamics of Pakistani society. Pakistan is listed in collectivistic societies that emphasizes on the strong connections between groups or members of groups where concept of self is more interdependent. Conceivably, having feeling of relatedness and bonding, sense of importance that one matter in others life, being part of supportive network, satisfaction with cultural or ethnic traditions, serves as sources of resilience against deleterious impact of trauma. Hobfoll, Jackson, Hobfoll, Pierce, and Young,[26] for instance, suggested that sense of mastery emerged when people perceive themselves as part of cohesive society, which help them to be resilient in highly stress producing circumstances. By helping others, rescue workers feel competent and good about themselves and appraise their duties at work as helpful to others, which might result in positive emotions outside the work environment.[27] It can be inferred from current findings that being a member of collectivistic society and having sense of community in targeted sample prevent them to ruminate the traumatic events outside the work that serves as resilient factors against psychological distress.

There are certain limitations of present study. This study is based on cross-sectional correlational design, therefore, causality cannot be drawn. Self-report scales were used in this study, which may not be fully understood by respondents or they might not reveal actual information due to social desirability. Limitation related to use of resilience questionnaire is also notable, as people might not evaluate their resilience in perfect manner.[28] Interview based techniques and longitudinal research design could be used in future researches to explore and track the baseline level of distress caused by personal, environmental and work related factors. Exploration of these specific factors would help to design comprehensive assessment measures and preventive strategies that may foster resilience against distress.

In conclusion, the current findings underscore the significance of psychological distress and resilience in rescue workers who are serving others at the cost of their psychological and physical well-being. It pointed towards the need to develop and implement resilience training program in organizations. Results of current study give insight to researchers, policy makers, and mental health professional to promote resilience factors obtained in this study, as well as explore other factors to accrue the psychological well-being in rescue workers.

References

1. Ahmad S, Arshad T, Kausar R. Psychological Correlates of Distress in Rescue 1122 Workers in Pakistan. ***International Journal of Emergency Mental Health and Human Resilience*** 2015; 17: 486-494.
2. Dyregrov A, Kristoffersen JI, Gjestad R. Voluntary and professional disaster-workers: similarities and differences in reactions. ***J Trauma Stress*** 1996; 9: 541-555.
3. Barlow D, Durand V. Abnormal psychology: An integrative approach. Belmont (CA): Thomson Wadsworth; 2005.
4. Mirowsky J, Ross CE. Measurement for a human science. ***J Health Soc Behav*** 2002; 43: 152-170.
5. Alvarez J, Hunt M. Risk and resilience in canine search and rescue handlers after 9/11. ***J Trauma Stress*** 2005; 18: 497-505.
6. Cardozo BL, Holtz TH, Kaiser R, Gotway CA, Ghitis F, Toomey E, et al. The mental health of expatriate and Kosovar Albanian humanitarian aid workers. ***Disasters*** 2005; 29: 152-170.
7. Sakuma A, Takahashi Y, Ueda I, Sato H, Katsura M, Abe M, et al. Post-traumatic stress disorder and depression prevalence and associated risk factors among local disaster relief and reconstruction workers fourteen months after the Great East Japan Earthquake: a cross-sectional study. ***BMC Psychiatry*** 2015; 15: 58.
8. Ehring T, Razik S, Emmelkamp PM. Prevalence and predictors of posttraumatic stress disorder, anxiety, depression, and burnout in Pakistani earthquake recovery workers. ***Psychiatry Res*** 2011; 185: 161-166.
9. Witteveen AB, Bramsen I, Twisk JW, Huizink AC, Slottje P, Smid T, et al. Psychological distress of rescue workers eight and one-half years after professional involvement in the Amsterdam air disaster. ***J Nerv Ment Dis*** 2007; 195: 31-40.

10. Gray A. Staff support in Haiti. ***Intervention*** 2010; 8: 255-262.
11. Eriksson CB, Cardozo BL, Foy DW, Sabin M, Ager A, Snider L, et al. Predeployment Mental Health and Trauma Exposure of Expatriate Humanitarian Aid Workers: Risk and Resilience Factors. ***Traumatology*** 2012; 20: 1-8.
12. Connor KM, Zhang W. Recent advances in the understanding and treatment of anxiety disorders. Resilience: determinants, measurement, and treatment responsiveness. ***CNS Spectr*** 2006; 11 (10 suppl 12): 5-12.
13. Masten AS, Cutuli JJ, Herbers JE, Reed MJ. Resilience in development. In: Lopez SJ, Snyder CR, editors. Oxford handbook of positive psychology. New York (NY): Oxford University Press; 2009. p. 117-131.
14. Hjemdal O, Vogel PA, Solem S, Hagen K, Stiles TC. The relationship between resilience and levels of anxiety, depression, and obsessive-compulsive symptoms in adolescents. ***Clin Psychol Psychother*** 2011; 18: 314-321.
15. Ziaian T, de Anstiss H, Antoniou G, Baghurst P, Sawyer M. Resilience and Its Association with Depression, Emotional and Behavioural Problems, and Mental Health Service Utilisation among Refugee Adolescents Living in South Australia. ***International Journal of Population Research*** 2012; 6: 8-19.
16. Arnetz J, Rofa Y, Arnetz B, Ventimiglia M, Jamil H. Resilience as a protective factor against the development of psychopathology among refugees. ***J Nerv Ment Dis*** 2013; 201: 167-172.
17. Kessler RC, Andrews G, Colpe LJ, Hiripi E, Mroczek DK, Normand SL, et al. Short screening scales to monitor population prevalences and trends in non-specific psychological distress. ***Psychol Med*** 2002; 32: 959-976.
18. Ungar M, Liebenberg L. Assessing resilience across cultures using mixed methods: construction of the child and youth resilience measure. ***Journal of Mixed Methods Research*** 2011; 5: 126-149.
19. Mealer M, Jones J, Newman J, McFann KK, Rothbaum B, Moss M. The presence of resilience is associated with a healthier psychological profile in intensive care unit (ICU) nurses: results of a national survey. ***Int J Nurs Stud*** 2012; 49: 292-299.
20. McGarry S, Girdler S, McDonald A, Valentine J, Lee SL, Blair E, et al. Paediatric health-care professionals: relationships between psychological distress, resilience and coping skills. ***J Pediatr Child Health*** 2013; 49: 725-732.
21. Pietrantoni L, Prati G. Resilience among first responders. ***Afr Health Sci*** 2008; 8 Suppl 1: S14-S20.
22. McColl MA, Bickenbach J, Johnston J, Nishihama S, Schumaker M, Smith K, et al. Spiritual issues associated with traumatic-onset disability. ***Disabil Rehabil*** 2000; 22: 555-564.
23. Pargament KI, Ano GG. Spiritual resources and struggles in coping with medical illness. ***South Med J*** 2006; 99: 1161-1162.
24. Ano GG, Vasconcelles EB. Religious coping and psychological adjustment to stress: a meta-analysis. ***J Clin Psychol*** 2005; 61: 461-480.
25. Smith BW, Pargament KI, Brant C, Oliver JM. Noah revisited: Religious coping by church members and the impact of the 1993 midwest flood. ***Journal of Community Psychology*** 2000; 28: 169-186.
26. Hobfoll SE, Jackson A, Hobfoll I, Pierce CA, Young S. The impact of communal-mastery versus self-mastery on emotional outcomes during stressful conditions: a prospective study of Native American women. ***Am J Community Psychol*** 2002; 30: 853-871.
27. Sonnentag S, Grant AM. Doing good at work feels good at home, but not right away: When and why perceived prosocial impact predicts positive affect. ***Personnel Psychology*** 2012; 65: 495-530.
28. Campbell-Sills L, Cohan SL, Stein MB. Relationship of resilience to personality, coping, and psychiatric symptoms in young adults. ***Behav Res Ther*** 2006; 44: 585-599.