

Coping Strategies as a Mediator of Hardiness and Stress among Rescue Workers

Yousaf Jamal

Punjab Higher Education Department, Lahore, Pakistan

KEYWORDS Stress. Hardiness. Coping Strategies

ABSTRACT The current study intends to explore the mediating role of coping strategies in the stress-hardiness relationship among rescue workers of Gujrat. A sample of 151 rescue workers was taken from Gujrat by using the convenience sampling technique. Personal Views Survey III-R (PVSIII-R) by Maddi (2001), Perceived Stress Scale (PSS) by Cohen (1994) and Brief Cope Inventory (BCI) by Carver (1997) were individually administered to the participants to investigate the hardiness, stress and coping strategies, respectively. Findings of Pearson Product Moment Correlation indicated significant negative correlations among stress and hardiness, stress and problem-focused coping, and positive relationship between stress and avoidant coping. Mediation analysis revealed that coping plays a mediating role between stress and hardiness. These findings hold implications for rescue workers so that they can increase levels of hardiness and ameliorate the usage of effective coping strategies to cope with stressful situations.

INTRODUCTION

Stress is a critical phenomenon since it is directly related to the physical and psychological health of an individual. The importance of stress has become more important in the workplace scenario. Many internal and external factors may influence the physical and mental health of workers working in the emergency situations, for example, doctors, police officers or rescue workers (Cummings and Dwyer 2001).

Work stress is a psychological state that directs a person to behavioral disorders (Looker and Gregson 1993). It is a consequence of the discrepancy amongst job necessities and the capacity to cope (Mesko et al. 2013). The workplace stress plays a critical part in the life of rescue workers, but it has never been importantly a subject of the study among researchers in Pakistan. The current work is directed to explore the relationship of stress, hardiness and coping strategies among rescue workers of district Gujrat, and mediating role of coping strategies on stress and hardiness.

Stress can be explained as a connection amongst the person and the surroundings reviewed by the individual as challenging his or

her resources and frightening his or her comfort (as cited in Cummings and Dwyer 2001).

A mounting attentiveness in the destructive impact of stress, mainly its influence on work performance in the organizational situation, delivered an attention for this research. Research work in this field exhibited that low productivity, absenteeism, and health-related problems have dramatically increased in past decades due to the higher level of work stress (Cummings and Dwyer 2001).

Hardiness was originally developed by Kobasa (1979) and later defined by Maddi and Kobasa (1984). Hardiness can be found in a pool of personality features that serve as a resistance source in the happenstance with stressful situations (Kobasa 1979). Commitment, control, and challenge are three dimensions of hardiness. It was chiefly valuable for this research into that cognitive coping strategies can alter a stressful state into a challenge and reinterpret stressful conditions in a manner that stress is declined (as cited in Judkins 2001). Therefore, stressful situations can be altered by hardiness into a positive reassessment and drop negative sentiments like frustration and stress (Rasouli et al. 2012). Research work on stress and hardiness explored that people with higher hardiness are more likely to take part in adaptive coping approaches and fewer maladaptive coping to reduce their stress as compare to their counter-

Present Address for correspondence:
Yousaf Jamal
Effat University, KSA
E-mail: drjamalyousaf@gmail.com

parts' low-hardy persons. Hence, individuals having higher level of hardiness experience lower level of stress (Blaney and Ganellen 1990; Jalali and Amarqan 2015). Jamal (2016) investigated the relationship of optimism, hardiness and professional life stress among 200 house job doctors. Findings of this study revealed that hardiness is significantly negatively associated with stress. Rasouli et al. (2012) conducted a research on hardiness, job satisfaction and stress among 200 faculty members and staffs in Islamic Azad University in Mahabad. The faculty members reported that higher level of hardiness expressed high level of job satisfaction and low level of stress. Similarly, Bartone (2012) revealed that there was a relationship between hardiness and stress. The findings of this research revealed that hardiness was a defensive factor against the stress related diseases. In a meta-analytic review, Alarcon et al. (2009) found that hardiness positively correlated with personality traits that are anticipated to protect individuals from stress.

When defining levels of stress and coping, individual characteristics such as personality style, backup systems, coping mechanisms, and exercise habits affect the person's response to occupational stress (Cooper and Marshall 1978). Moreover, personality variables, for example, hardiness are significant aspects in facilitating the effects of stress and coping strategies. In one of the most comprehensive surveys to consider personality and stress, Kobasa et al. (1982), investigated that high-hardy individual inclined to practice less stress.

Coping strategies can be defined as specific mental and behavioral procedures used by the person to effectively deal with stressful situations. The level of stress in any individual is determined by his awareness of demands and coping capacity (Lazarus and Folkman 1984). Appraisal of stress needs recruitment of coping strategies. In the workplace, stress rises way up when workers try to manage with the duties, responsibilities and other patterns of compression connected with their concerns, but bumps into complications, apprehension, anxiety, and worries in trying to make them (Stranks 2005). Researchers explored the negative connection between stress and coping strategies, for example, Kurimay et al. (2017) examined the relationship between cognitive competitive anxiety intensity and coping strategies in 102 table tennis

players in the United States of America. Findings of this study revealed that players who have higher level of cognitive anxiety might be more likely to use avoidance coping strategies. Similarly, Jamal and Niloferfarooqi (2016) investigated the relationship between coping strategies and professional life stress reported by house job doctors and explored significant negative association between stress and problem-focused coping. Moreover, stress was positively related with avoidance coping and emotion focused coping. In another study, Chai and Low (2015) examined the relationship of personality, coping strategies and psychological stress among university students from a private university college in Kuala Lumpur. Results of this research suggested that psychological stress was related to avoidance coping strategies. Likewise, Tshabalala (2014) conducted a research on occupational stress and coping resources in air traffic control and found that air traffic controllers who use problem-focused coping resources experience low levels of stress, whereas significant positive association between avoidant coping and stress was also found in this study. Using a cross sectional design Laranjeira (2011) studied the relationship between work place stress and the types of various coping strategies used by 102 registered nurses at Portuguese hospitals. Findings of this study suggested significant negative correlation between Professional Life Stress and subscales of ways of coping questionnaire such as avoidance, problem solving, seeking social support and self-controlling. Similarly, in the sample of athletes, Kaiseler et al. (2009) investigated that higher levels of mental toughness were associated with more problem-focused coping, but less emotion-focused and avoidance coping.

Significance of the Research

The current study is important for several reasons. First, a lot of research work has been done in the area of workplace stress, hardiness and coping strategies among professionals all over the globe, whereas in Pakistan, there is a minimum body of knowledge regarding stress, hardiness and coping strategies especially employees working in emergency situations. The current research will add super plus information relating to the association of coping as the mediator of hardiness and stress about rescue workers of Pakistan. Second, the implication of

the study becomes double when the phenomenon of hardiness and coping can be amended and enhanced among relief workers to scale down their stress at workplace. Third, Rescue 1122 is a newly established service in Gujarat, and no research has been done on rescue workers previously in Gujarat. Fourth, the study of variables affecting occupational stress is also significant because stress has numerous distressing effects on the workplace situation and enlightening person's hardiness might increase his capability to deal with occupational stress. Finally, in Pakistan, working conditions for rescue workers are unprivileged, and hence they are more prone to develop pressure. Evaluation stress and hardiness may enable employers to assist rescue workers in using effective stress-reducing coping strategies.

Hypotheses

1. Increase in hardiness would decrease stress among rescue workers.
2. There would be a negative relationship between stress and problem focused coping among rescue workers.
3. Increase in avoidant coping would increase stress among rescue workers.
4. Coping strategies would mediate the relationship between hardiness and stress among rescue workers.

METHODOLOGY

Participants

A sample of 151 rescue workers recruited through convenient sampling technique took part in the current research. Sample was drawn from Rescue 1122 Gujarat. The age ranged from 20-40 years ($M = 26.77$, $SD = 4.69$). Minimum age of the participants was set 18 years. Participants aged below 18 were excluded from the study. Monthly income of workers ranged from PKR 20,000 to 40,000 ($M = 22750.00$, $SD = 6087.53$). Their job experience ranged from 1 to 8 years ($M = 3.27$, $SD = 2.04$) and duration of duty ranged from 6 to 12 hours ($M = 6.80$, $SD = 1.29$). All participants were male. Rescue workers only from Rescue 1122 Gujarat took part in the study.

Measures

As the target population of current study was rescue workers. All workers were not able

to understand the English. That is why the need to translate scales in Urdu was necessary. The scales were translated with the permission of the author. Back-translation method was used to translate the scales.

PVSIII-R: Hardiness was measured with Personal Views Survey III-R developed by Maddi (2001). It is an 18-item self-reported scale in which items are answered on 4-point rating scale ranging from 'Not at all' to 'Very true'. Nine items of this scale are negatively worded, and therefore, these items are reverse scored. Scores were obtained by calculating sum of scores on each item of the scale with high score meaning high hardiness and low scores indicated low hardiness. The PVSIII-R comprises of three components, which are commitment, control and challenge. Each component comprises of 6 items. Commitment calculates the extent to which individuals believe their active engagement will give them the chance to explore what is significant to them. Control measures the extent to which individuals believe that through struggle they can change the world around them. Challenge assesses an individual's belief that highly values insight is gained through both positive and negative practices (Maddi 2002). The reliability coefficient for Personal View Survey III-R in the current research was $\alpha = 0.75$.

PSS: Perceived Stress Scale (PSS) developed by Cohen (1994) was used to measure perceived stress of rescue workers. PSS consists of 10 items on a 5-point rating scale ranging from 'Never' to 'Very often'. Four of the ten items are reverse coded. Scores on reverse coded items are obtained by reversing their responses (for example, 0 = 4, 1 = 3, 2 = 2, 3 = 1, 4 = 0) to the four positive stated items (4, 5, 7 and 8) and then summing across all scale items. The higher the score, the higher is the level of stress. The reliability coefficient for Perceived Stress Scale in the current research was $\alpha = 0.80$.

BCI: Brief Cope Inventory by Carver (1997) Urdu version was used to measure the coping strategies. It contains 28 items on 4-point rating scale ranging from 'I usually don't do this at all' to 'I usually do this a lot'. The scale consists of 14 sub scales which are self-distraction, active coping, denial, substance use, use of emotional support, use of instrumental support, behavioral disengagement, venting, positive reframing, planning, humor, acceptance, religion and self-

blame. Moreover, the scale also categorized in three main coping strategies named as problem focused coping, emotion focused coping and avoidant coping. Problem focused coping comprises of active coping planning and suppression. Emotion focused coping includes positive reinterpretation, restraint, acceptance and religion. Avoidant coping comprises of behavioral disengagement, denial and mental disengagement. In the current research the reliability coefficient for the Brief Cope Inventory was $\alpha = 0.76$.

Demographics

Demographic information regarding participant's age, education, working hours, job experience, job duration, rank, residential area and monthly income was also obtained from participants.

Procedure

A sample of 151 rescue workers was taken using the convenience sampling technique. Data were collected from rescue workers by the personal approach. All the information was obtained through one to one administration with rescue workers. The study was presented as an endeavor to investigate stress levels and coping strategies used by rescue workers in their everyday chores. Consent form to take part in the study was collected from the participants. A booklet of the questionnaire contained all instructions, and these instructions were read to the members, and they were encouraged to ask any query if they find any difficulty regarding the questionnaire. Average time taken for an administration of the survey was 15 minutes approximately.

Statistical Analysis

Statistical analysis was completed by using the Statistical Package for Social Sciences (SPSS) version 20. Frequencies and percentages of demographic variables were explored by

descriptive analysis. Correlation among stress, hardiness, and coping strategies was determined using the Pearson Product Moment Correlation. Furthermore, Mediation Analysis (Preacher and Hayes 2008) was calculated to examine the mediating function of coping strategies on perceived stress and hardiness.

RESULTS

Inter-correlation among Study Variables

The relationships among stress (as measured by PSS), hardiness (as measured by PVSIII-R) and coping (as measured by COPE) were investigated using the Pearson product-moment correlation. Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity, and homoscedasticity.

Inter-correlation of study variables is described in Table 1. All variables were correlated in the expected directions, increasing confidence in the validity of the current research. Table shows that there is a significant negative relationship between stress and hardiness and stress and problem focused coping. Furthermore, findings also revealed significant positive association between stress and avoidant coping, and hardiness and avoidant coping.

The primary assumption of mediation analysis is to inspect whether a significant relationship occurs between the predictor variable and the outcome variable. Correlation matrix (see Table 1) displays that all the research variables were significantly associated.

Path c in Table 2 depicts the predictive association between hardiness as an independent variable and stress as a dependent variable without controlling the coping as mediator. This shows a significant predictive relationship between hardiness an independent variable and

Table 1: Inter correlation of study variables among rescue employees (N = 151)

Variables	1	2	3	4	5	M	SD
Stress	-	-.64**	.39**	-.08	-.29**	14.09	6.68
Hardiness		-	.52**	.00	.29**	35.06	8.30
AC			-	.19	.02	9.61	2.42
EFC				-	.71**	27.88	4.18
PFC					-	17.96	2.92

Note: AC = Avoidant coping. EFC = Emotion focused coping. PFC = Problem focused coping.

** $p < .01$.

stress as a dependent variable without controlling the effects of coping.

Table 2: Mediation effect of coping strategies on the association between perceived stress and hardiness (N=151)

Measures	$\hat{a}$	SE	p
<i>Step 1 (Path c)</i>			
Outcome: Stress			
Hardiness	-.51	.07	.000
<i>Step 2 (Path a)</i>			
Predictor: Hardiness			
PFC	.09	.03	.01
EFC	-.03	.05	.49
AC	-.16	.03	.000
<i>Step 3 (Path b)</i>			
Outcome: Stress			
PFC	-.13	.35	.70
EFC	-.18	.23	.45
AC	.23	.31	.45
<i>(Path c')</i>			
Mediator: Coping			
Predictor: Hardiness	-.46	.10	.000

Note: PFC = Problem-focused Coping, EFC = Emotion-focused coping, AC = Avoidant Coping
 $*p < .05$, $**p < .01$, $***p < .001$. $\hat{a}$ = Standardized Coefficient.

Path a shows the relationship among hardiness as the independent variable and coping as a mediator. This path demonstrates that hardiness significantly associated with problem focused coping and avoidant coping.

Path b in Table 2 depicts coping as the predictor of stress exhibited the overall significance of regression equation.

The path $\hat{c}$ in Table 2 shows the association between hardiness as the independent variable and stress as the dependent variable when controlling coping as a mediator. If hardiness has no effect on stress and the path c model is no more significant when controlling coping, then it can be concluded that coping completely mediates the association between hardiness and stress. However, only decrease in the association will specify partial mediation (Kenny 2016; Frazier et al. 2004; Baron and Kenny 1986). Table 2 reveals that coping strategies partially mediates the relationship between hardiness and stress.

DISCUSSION

The current research was aimed to explore the association among stress, hardiness and

perceived stress in rescue workers of Gujarat. Preacher and Hayes' (2008) bootstrapping approach was utilized to observe whether coping strategies mediated the association among hardiness as an independent variable and stress as a dependent variable. Hypotheses guiding this study provided the framework for the discussion of primary findings of the study. Answers from 151 rescue workers offer the following basic conclusions.

The results of the present research confirmed the first hypothesis that increase in hardiness would decrease stress among rescue workers. Since hardiness has a buffering effect against stress, so it justifies the negative relationship of hardiness and stress. Stressful situations can be altered by hardiness into a positive reassessment and drop negative sentiments like frustration and stress. Research work on stress and hardiness explored that people with higher hardiness are more likely to take part in adaptive coping approaches and fewer maladaptive coping to reduce their stress as compare to their counterparts' low-hardy persons. These research findings are consistent with the previous studies of Jamal (2016) or Rasouli et al. (2012) or Bartone (2012) or Judkins (2001) or Soderstrom et al. (2000) or Nowack (1989) or Shepperd and Kashani (1991) that examined the relationship between hardiness and stress and determined that a negative association is present among hardiness and stress.

The second hypothesis of the study that there would be a negative relationship between the stress and problem focused coping among rescue workers was also confirmed by findings. The current study revealed the negative association between the stress and problem focused coping, which displays that when problem focused coping increases, the degree of stress decreases. So, it confirmed the second hypothesis of the study. The research findings are in line with the previous findings of Kurimay et al. (2017) or Jamal and Niloferfarooqi (2016) or Shiferaw et al. (2015) or Skaalvik and Skaalvik (2015) or Asghari et al. (2013) or An et al. (2012) or Chou et al. (2011) or Sprenger (2011) or Soderstrom et al. (2000). In many studies, similar results found conducted on others samples rather than rescue workers like nurses (Shirey 2009; Laranjeira 2011), air traffic controllers (Tshabalala 2014) and students (Chai and Low 2015).

Furthermore, the third hypothesis of the study that increases in avoidant coping would increase stress among rescue workers was also supported by findings of the current research. These findings are consistent with those of Cumming and Dwyer (2001) or Snow et al. (2003) who also investigated a positive relationship between stress and avoidant coping in their researches. According to Lazarus and Folkman (1984), individuals who use avoidant strategy may find a brief respite from stressful situations. They further reported that continued use of avoidant strategy was associated with depression, anxiety and distress.

Finally, findings also supported the fourth hypothesis that coping strategies would mediate the relationship between hardiness and stress among rescue workers. Results of mediation analysis showed that coping plays a mediating role between stress and hardiness. These findings indicate that coping training of rescue workers helps them experience the low level of stress. This means that increase in coping enables workers to be hardy in reaction to stress. Furthermore, the present findings suggest that time to time coping training of students is essential to reduce the stress level. These findings are consistent with the previous research findings by Judkins (2001) who accompanied a study on hardiness, stress and coping strategies between mid-level nurse managers. In this non-experimental research, purposive sampling technique was used. Findings of this study also revealed that coping significantly mediates the relationship between hardiness and stress. The conclusions of this research are deep-rooted in the theoretical assumptions of decline in stress if hardiness and definite coping strategies are high among mid-level nurse managers. Potential is present for occupational stress to be condensed by growing hardiness and adaptive coping strategies.

IMPLICATIONS

On the whole, the current research has several implications. First, it added to the literature on hardiness, coping and stress pertaining to rescue workers. Second, the current study further highlighted the importance of concepts of stress, coping, and hardiness in the work environment of rescue workers because they have to work in emergency situations almost all the

time. The workplace stress plays an important role in the life of rescue workers. Stress can be reduced by adopting coping strategies and increasing the level of hardiness. The current survey found a positive relationship between stress and hardiness, and a negative correlation between stress and coping strategies. Thus, inward this way current study offers a strong foundation for reducing professional life stress. Programs and workshops could be devised to improve coping strategies and hardiness.

CONCLUSION

The existing study was planned to discover the association among stress as the outcome, hardiness as an independent and coping strategies as a mediator variables. In the current study, coping was found to be a significant mediator of a stress-hardiness relationship among rescue workers.

LIMITATIONS

The current study has several drawbacks. Firstly, the chief drawback of the study is its small sample size, which affects the generalizability of the current study. Secondly, forced choice questions used in this study may leave an inadequate possibility for a discrepancy in choices. Thirdly, questionnaires utilized in this study were not standardized to local norms. Fourthly, cross-sectional research design of this study prevents from drawing causal inferences. To define cause and effect associations, particularly the direction of relations, longitudinal and experimental designs are best recommended. Fifthly, the researchers cannot claim that rescue workers are representative of the general population because they were not randomly recruited. Finally, there is a likelihood that the contributors' self-presentational apprehensions impact their responses.

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