

What Shapes Stress in Military Settings: The Predictive Role of Psychological Hardiness and Self-Efficacy

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Armed forces are exposed to high-stress-provoking situations, including several environmental and psychological stressors; therefore, identifying protective factors against stress is crucial. The present research aimed to explore the relationship between stress, psychological Hardiness, and Self-Efficacy in Indian military personnel. Data was collected from 177 soldiers, including 87 B.S.F. personnel from Border Observation Post, Anupgarh, Rajasthan, and 90 Army Personnel from Bairagarh Army Post, Bhopal. The age range of personnel was 30-50 years. The Stress Scale, Sinha's Psychological Hardiness Scale, and Self-Efficacy Scale were used to quantify Stress, Psychological Hardiness, and Self-Efficacy, respectively. The results indicate that Stress have a significantly negative correlation ($r = -0.326^{**}$). Similarly, stress and Self-Efficacy also show a significantly negative relationship ($r = -0.361^{**}$). Moreover, a significantly positive correlation was found between Psychological Hardiness and Self-Efficacy ($r = 0.391^{**}$). Furthermore, stepwise multiple regression analysis reveals that both Self-efficacy ($B = -0.207$, $\beta = -0.35$) and Psychological Hardiness ($B = -0.109$, $\hat{\alpha} = -0.219$) are significant negative predictors of stress, with Self-Efficacy being a relatively stronger predictor.

Keywords: Stress, Psychological Hardiness, Self-efficacy, Military Psychology

Stress and its consequences have been a perpetually highlighted concern in the Indian military setting. Soldiers lie in the category of Public Safety Personnel. Therefore, the immense pressure to keep up with the job description involves living in isolated areas without family, joining war zones, facing war/conflict-related events, etc. Such situations make personnel highly vulnerable to stress. It can activate unhealthy coping mechanisms like substance abuse (Walton, Graupensperger, Walker, & Kaysen, 2024). Selye (1976) defines *stress* as the "Non-specific response of the body to any demand. He further categorized stress as "Eustress" —the one that enhances performance, and "Distress" — which degrades performance and has mental and physical repercussions. In his theory of General Adaptation

Syndrome, he explains stress in the form of a dependent variable by referring to "Stress Response Model (Tan & Yip, 2018).

Theorists like Holmes and Rahe (1967) presented stress in the form of a stimulus, a change that asks for efforts towards readjustment. Recent research explaining the Effect of stressors on military personnel's mental health highlights surfacing problems with cognition, like attention and working memory, as a repercussion (Martin et al., 2019b).

Psychological Hardiness in Military Settings and Other Psychological Contexts

In this era, stress seems almost inevitable. However, research suggests that only some people are worn down by it.

Studies show that stressors are perceived as subjective entities, as subjective experience plays a crucial role in determining who views a stressor as stressful (Roesch, Weiner, & Vaughn, 2002).

Some people can make the best of a situation, even under high stress. Kobasa (1979) terms such people as hardy personality. Individuals high in psychological Hardiness have a deep sense of commitment to the work they encounter. They believe they have control over their life and carry the potential to turn the situation to their advantage. Hence, exploring the variable in a military setting can be a doorway to novel findings. Orme and Kohoe (2014) displayed how psychological Hardiness moderates the relationship between deployment-related stress and the well-being of Australian soldiers during a short tour of a peacekeeping operation.

Escolas, Pitts, Safer, and Bartone (2013) add to these findings by presenting the protective impact of Hardiness on PTSD symptoms post-deployment. The study suggests a negative relationship between PTSD symptoms and Hardiness. Bekeseine Smaliukiene and Kanapeckaite (2023), based on 384 self-reports from reserve personnel, concluded that perceived stress and resilience significantly mediate the relationship between Hardiness and performance. Moreover, several studies have presented Psychological Hardiness to be a protective variable against several stressful situations like physical illness (Wu, Hagan, Eschleman, & Gard, 2024), mental health conditions (Sakharova, 2022; Abid & Mohammed, 2024), war contexts (Predko, Schabus & Danyliuk, 2023) and trauma recovery (Bartone & Bowles, 2021).

The Interplay of Stress and Self-Efficacy

Self-efficacy is another variable affecting the perception of Stress (Karademas & Kalantzi, 2004). Bandura (1977) defines *Self-*

Efficacy as an individual's belief in his/her capacity to control and execute behaviour that further leads to goal attainment. In this way, self-efficacy becomes essential in determining the attainment of military personnel's goals and their stress levels.

Researchers also report its mediating role in the relationship between stress and coping (Wu et al., 2022). Blackburn and Owens (2014) studied the Search for meaning, combat exposure, self-efficacy, and presence of PTSD symptoms in 93 veteran soldiers. The study reveals that self-efficacy moderates the relationship between combat exposure and PTSD severity. Benight and Bandura (2003) relate coping self-efficacy to recovery from trauma caused by wars and long-duration combats. Studies have shown the significant role of Self-Efficacy in several health-related spheres like mental health outcomes in illness (Cárdaba-García et al., 2024; Lean et al., 2024) and natural disasters (D'Souza, Long, Richardson, & Gallagher, 2023). Previous evidence also highlights its importance in the treatment effectiveness of mental health disorders (Paersch et al., 2024), help-seeking behavior (Garrey, Takemoto, Petrusic, & Gargano, 2022), and promoting well-being (Cherewick et al., 2024).

The Present Study

In this deadline-packed era, stress has become pervasive in almost every profession. However, some professions are more susceptible to stress due to the nature of their tasks. Soldiers are among professionals exposed to high-risk factors. Between the period of 2001-2018, 529 soldiers from the B.S.F. have committed suicide (Srinivas, 2019). The figure is alarming enough for us to focus on the mental health of military personnel.

The existing literature offers substantial evidence for the association of Psychological Hardiness and Self-Efficacy with well-being

and PTSD symptoms among soldiers. Therefore, it provides us with a robust theoretical ground to explore the association between Stress, Psychological Hardiness, and Self-Efficacy. Moreover, only a few researchers have explored these variables within the Indian military context. There is a significant gap in understanding stress and its protective factors, as the country's cultural changes, organizational structures, work, and family dynamics also evolve. These changes account for various environmental and psychological stressors that the armed forces face. Therefore, the present research aims to understand the relationship between stress, self-efficacy, and Psychological Hardiness, specifically in the Indian military setting.

Objectives:

1. To study the level of Stress, Psychological Hardiness, and Self-efficacy among Indian military personnel.
2. To explore the relationship between Stress and Psychological Hardiness among Indian military personnel.
3. To explore the relationship between stress and self-efficacy among Indian military personnel.
4. To predict the level of Stress from Psychological Hardiness in Indian Military Personnel
5. To predict the level of stress from self-efficacy in Indian Military Personnel

Hypotheses:

- H1: There would be a significantly negative relationship between Stress and Psychological Hardiness among Indian military personnel
- H2: There would be a significantly negative relationship between stress and self-efficacy among Indian military personnel.

H3: Psychological Hardiness significantly predicts Stress among Indian military personnel.

H4: Self-efficacy significantly predicts Stress among Indian military personnel.

Method

Participants

For the current study, specific criteria were set for selecting participants. The research focused on military personnel serving the country in the Indian National Army and the Border Security Force. Only soldiers deployed on the field were included in the research. Data were collected from 177 soldiers, including 87 (49.2%) B.S.F. personnel from the Border Observation Post in Anupgarh, Rajasthan, and 90 (50.8%) Army Personnel from the Bairagarh army post in Bhopal. The age range of soldiers was 30-50 years.

Tools Used

The data for the research were collected using three questionnaires. To measure stress, the stress scale developed by Singh (2002) was used. To assess Psychological Hardiness, Sinha's Psychological Hardiness Scale was used. To measure Self-Efficacy, the Self-Efficacy Scale (Mehta, 2007) was used.

Stress Scale : The Stress level of participants was assessed through the Stress scale (Singh, 2002). It is a 3-point scale consisting of 40 items with alternatives: "always", "sometimes", and "never". The questionnaire has been standardized with the help of 80 males and 60 females, with an age range of 16 to 50 years. The reliability of the questionnaire is 0.82, and the validity is 0.61. The norms of the test have been established on the Indian population.

Sinha's Psychological Hardiness Scale : The Psychological Hardiness of the participants was assessed using Sinha's Psychological Hardiness

Scale. It consists of 30 items and is a 5-point scale with alternatives, namely: “Completely agree”, “ Agree”, “Indifferent”, “Disagree”, and “Completely Disagree.” The three dimensions in which items have been divided are Control, Commitment, and Challenge. The scale has been standardized on a cross-sectional sample of 600 participants, including 100 government job officers. The test-retest reliability coefficient is 0.86, and content validity is 0.74.

Self-Efficacy Scale : The Self-Efficacy was assessed using the Self-Efficacy Scale (Mehta, 2007). The scale was standardized on a sample of 1100 males and 950 Females from India. It comprises 60 items with two alternatives, “Yes” and “No”. The test-retest reliability of the scale is 0.89. The construct validity is 0.83, and the concurrent validity is 0.86.

Statistics

After data collection, outliers were identified using SPSS version 27 and replaced with the mean score to remove extreme values from the sample. Further, Pearson’s product-moment correlation was used to explore the association among the variables. Further, a stepwise regression and an independent t-test were also utilized to test the hypotheses.

Results

The present study investigated the relationships between stress, self-efficacy, and Psychological Hardiness among Indian military personnel. The study hypothesized a significantly negative relationship between stress and both Psychological Hardiness and Self-Efficacy. Table 1.1 presents the descriptives of Military Personnel on Psychological Hardiness (M = 114.82; SD = 7.041), Stress (M = 13.87; SD = 3.50), and Self-Efficacy (M = 45.54; SD = 5.99). Table 1.4 can be referred to for descriptive statistics by service type of military personnel. The

mean Stress score for B.S.F. personnel was 14.45, and for Army personnel was 13.31. The mean Psychological Hardiness Score for B.S.F. Personnel was 115.50, and for Army Personnel was 114.17. Similarly, the mean scores for Self-Efficacy among B.S.F. personnel and Army personnel were 44.82 and 46.23, respectively.

Table 1.1. Descriptive Statistics

Variables	N	Mean	SD
Hardiness	177	114.82	7.041
Stress	177	13.87	3.501
Self-Efficacy	177	45.54	5.992

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Table 1.2. Correlational Analysis

Variables	Hardiness	Stress	Self-Efficacy
Hardiness	1	–	–
Stress	-.326**	1	–
Self-Efficacy	.391	-.361**	1

Note. **p < .01.

The statistical findings support H1 and H2, which state a significantly negative relationship between stress and psychological Hardiness, as well as between stress and self-efficacy. Moreover, psychological Hardiness and self-efficacy show a significantly positive correlation ($r = 0.391^{**}$).

Further analysis employed stepwise multiple regression analysis to investigate whether Psychological Hardiness and Self-Efficacy significantly predict Stress levels among Indian Military personnel. Table 1.3 presents the regression coefficients for both models. In Model 1, the unstandardized coefficient for Self-Efficacy is -0.207 , indicating that a one-unit increase in Self-Efficacy results in a 0.207 -unit decrease in stress. The results are significant at 0.001 ($t = -5.027^{***}$). Therefore, Self-Efficacy

significantly predicts the level of Stress among Military Personnel. The R^2 for the first model is 0.126 , which indicates that Self-Efficacy explains 12.6% of the variance in stress.

In Model 2, Psychological Hardiness was also entered along with Self-Efficacy as a predictor. The unstandardized coefficient for Psychological Hardiness is $-.109$, indicating that a one-unit increase in Psychological Hardiness results in a decrease of $.109$ units in stress. The results are significant at the 0.01 level ($t = -2.910^{**}$); therefore, Psychological Hardiness also significantly predicts Stress among Indian Military Personnel. Also, looking at beta coefficients in model 2, Self-Efficacy ($\beta = -.27$) is a better predictor of Stress than Psychological Hardiness ($\beta = -.219$)

Table 1.3. Regression Coefficients of Self-Efficacy and Psychological Hardiness on Stress among Military Personnel

Variable	Model 1				Model 2			
	B	β	SE	T	B	β	SE	t
Constant	23.3		1.892	12.31 ^{***}	33.498		3.965	8.448 ^{***}
Self-Efficacy	-.207	-.35	.041	-5.03 ^{***}	-.157	-.27	.044	3.594 ^{***}
Hardiness					-.109	-.219	.037	-2.910 ^{**}
R ²	.126				.167			
ΔR^2	.126				.041			
Adjusted R ²	.121				.157			

Note. ^{**} $p < .01$. ^{***} $p < .001$

Introducing Psychological Hardiness as a predictor increases overall R^2 by 0.041 . Figure 1.1 shows the scatter plot for multiple regression with Stress on Y axis and unstandardized predicted values on X axis. Graph shows that model 2 accounts for 16.7% variance in dependent variable.

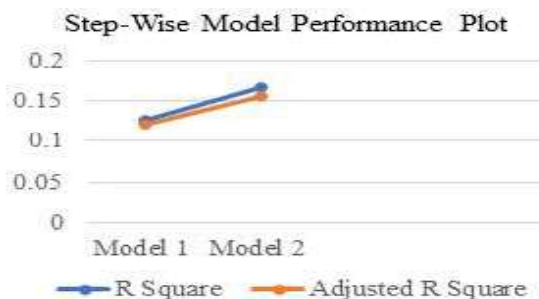


Figure 1.1. Step-Wise Model Performance

Plot

The results from multiple linear regression indicates that both Self-Efficacy and Psychological Hardiness significantly predict the Stress levels in Indian Military Personnel hence, supporting both H_3 and H_4 . Also, the regression analysis reveals that Self Efficacy is a better predictor of Stress. An additional

comparative analysis was conducted using t-test in order to test if the scores on Stress, Psychological Hardiness, and Self-Efficacy significantly differ among B.S.F and Army personnel. Table 1.4 presents the t-test results where the means Psychological Hardiness, Stress, and Self-Efficacy were compared.

Table 1.4. Independent Sample t-Test

Variable	Service	N	Mean	SD	df	t	Sig
Stress	B.S.F.	87	14.45	3.853	175	2.189	0.05
	Army	90	13.31	3.042			
Hardiness	B.S.F.	87	115.50	6.411	175	1.258	0.059
	Army	90	114.17	7.580			
Self-Efficacy	B.S.F.	87	44.82	6.061	175	1.580	0.907
	Army	90	46.23	5.875			

The results indicated that the stress scores of B.S.F. personnel ($M = 14.45$, $SD = 3.85$) were higher than those of Army personnel ($M = 13.31$, $SD = 3.04$). Based on the mean scores, B.S.F. personnel experienced greater stress levels compared to Army personnel. The t-value of 2.19 was significant at the 0.05 level. On the other hand, Hardiness scores of B.S.F. personnel ($M = 115.50$, $SD = 6.41$) were slightly higher than those of Army personnel ($M = 114.17$, $SD = 7.58$). However, the t-value of 1.26 was not significant at the 0.05 level, indicating that Army and B.S.F. personnel have comparable levels of psychological Hardiness. Similarly, Army personnel had slightly higher self-efficacy scores ($M = 46.23$, $SD = 5.87$) compared to B.S.F. personnel ($M = 44.82$, $SD = 6.06$), but the t-value of 1.58 was not significant at the 0.05 level.

Discussion

Military personnel are an indispensable pillar of the country, and their mental health is as salient a premise as is their physical health. Due to exposure to high stress-

provoking situations, exploring factors that can help them appraise the conditions in a relatively healthier way is essential. Therefore, this research aimed to understand the association of Stress level in military personnel with two potential factors: "Psychological Hardiness" and "Self-Efficacy". Considering the previous literature, a significantly negative correlation was hypothesized between stress and psychological hardiness and self-efficacy. The results indicate a significantly negative relationship between Stress and Psychological Hardiness ($r = -0.326^{**}$). Similarly, a significantly negative relationship was found between Stress and Self-Efficacy ($r = -0.361^{**}$). Therefore, it can be inferred that as self-efficacy and hardiness increase, the stress level decreases among military personnel and vice versa.

Moreover, stepwise multiple regression analysis reveals that both Self-Efficacy ($B = -0.207$, $\hat{a} = -0.35$) and Psychological Hardiness ($B = -0.109$, $\hat{a} = -0.219$) are significant negative predictors of stress, with Self-Efficacy being a relatively stronger

predictor. In line with the proposed characteristics of a hardy personality by Kobasa (1979), the current study shows that personnel with more psychological Hardiness are more likely to experience lower stress. A significant factor contributing to this result is the relationship between hardiness and resilience. Resilience is the ability not just to endure, but also to bounce back after a stressful condition. Bartone and Haystad (2010) highlight that Hardiness is integral to developing resilience; therefore, higher levels can help a person endure stressful situations better. Bartone (2000) proposed that hardiness is a critical factor in war resilience among soldiers.

While examining the relationship between Hardiness and Stress, two key sources emerge: individuals' cognitive reappraisal techniques (Kobasa, 1982) and Transformational Coping. High Hardness is associated with low stress-related illness due to the cognitive appraisal used, which also lowers physical arousal (Allred & Smith, 1989). Clark and Hartmen (1996) also highlight that cognitive reappraisal partially moderates the negative association between Hardiness and caregivers' stress levels. Moreover, reappraisal acts as the mechanism of building "control", one of the critical components of Hardiness (Cash & Gardner, 2011). Transformational coping is another source that explains the association between Psychological Hardiness and stress (Maddi, 1999). The coping style also mediates the relationship between Hardiness and perceived Stress (Jamal, 2017). Such a coping mechanism motivates individuals to take creative, action-oriented, and optimistic problem-solving steps when facing stressors (Maddi & Hightower, 1999; Omeri, Lennings, & Raymond, 2004).

Moreover, factors that help mitigate the stress's repercussions are positively correlated with psychological Hardiness, such as social support (Eschleman, Bowling, &

Alarcon, 2010). Research shows that Psychological Hardiness enhances an individual's ability to seek resources, such as social support, in order to handle stress. Wallace, Bisconti, and Bergeman (2010) proposed that Hardiness mediates the relationship between social support and life outcomes, including depression, life satisfaction, and health.

Another factor that gives new perspectives to the relationship between Stress and Hardness is posttraumatic growth (Tedeschi & Calhoun, 2004). Psychological Hardiness significantly predicts posttraumatic growth and well-being (Bartone & Bowles, 2021). It is negatively associated with PTSD (Escolas, Pitts, Safer, & Bartone, 2013), therefore assisting even in tremendous stress-precipitating situations. In the current study, including Psychological Hardiness in the regression model significantly improved the model's fit. Therefore, the results found in the study support the evidence from previous research and available theoretical frameworks in explaining Psychological Hardiness as a significant negative predictor of Stress among Indian military personnel.

Like Psychological Hardiness, Self-Efficacy also has a significantly negative correlation with stress ($r = -0.565^{**}$). Also, in multiple regression analysis, it emerges as a better negative predictor of Stress than Psychological Hardiness. A notable difference exists between the approaches of individuals high and low in Self-Efficacy. People with high Self-Efficacy scores tend to exhibit problem-tackling behavior. However, those with lower scores are likely to escape from such situations (Ng & Lovibond, 2019). The classic study by Seligman on learned helplessness also explains the relationship between Self-Efficacy and Stress. When one believes in their potential to succeed, there is a high likelihood of taking action. However, when one believes that the situation cannot be

solved and holds a pessimistic view, then learned helplessness becomes the outcome, leading to psychological repercussions like stress and even depression (Seligman, 1972).

Moreover, optimum to high self-efficacy results in the potential to change one's circumstances. Therefore, according to Julian Rotter's theory of locus of control, higher scores on self-efficacy tend to result in an internal locus of control. This motivates individuals to take control over their environment and situation, and to engage in active coping strategies rather than succumbing to helplessness (Nowicki, Iles-Caven, Kalechstein, & Golding, 2021). In this way, Self-Efficacy holds potential to assist military personnel in managing their stress. An essential perspective in analyzing the association of Self-Efficacy and Stress is health behaviors. Several studies have indicated that Self-Efficacy is one of the significant predictors of health-related behaviors (Conner & Norman, 2005). It assists in diverse health-related behaviours like smoking cessation, pain management, etc. It helps build up physical resources to deal with the resistance phase of general adaptation syndrome (O'LearyO'Leary, 1985). We are building resources to help individuals manage stress. Another significant finding highlighted by the present research is a positive correlation between self-efficacy and psychological Hardiness ($r = 0.501^{**}$). High self-efficacy indeed helps build the challenge and control dimensions of Hardiness. Also, both variables have been positively correlated with well-being, therefore rationalizing the positive correlation between them (Sahu & Rath, 2003; Skomorovsky & Sodom, 2011).

Every day, a soldier encounters situations that precipitate high levels of stress. Therefore, it is essential to explore as many variables as possible that can help manage

the stress level and ensure the healthy functioning of personnel. Since the research shows a significantly negative correlation between stress and psychological Hardiness, as well as self-efficacy, both variables should be considered essential criteria in personnel recruitment. Additionally, it is crucial to incorporate Psychological Hardiness training through workshops and sessions with personnel, allowing for the assessment and improvement of the control, challenge, and commitment components. Primarily, such training programs focus on an organization's approach to dealing with change, and therefore, will help manage the negative consequences of stress.

The study involved 177 male personnel from the BSF and Army only, limiting generalizability across services and genders. Future research should include Navy, Air Force, and female personnel. As the correlational design prevents causal inference, intervention-based studies on hardiness and self-efficacy are recommended to assess their impact on stress.

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