

# Influence of Organizational Role Stress on Perceived Burnout among Military Aircrew

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**Abstract-** Role stresses are known to influence the experience of burnout. Workplace stress has been studied widely in various Occupational environments. However, published studies exploring military environment are less. In air and on ground, military aircrew perform a wide variety of roles each requiring a different set of skills. Demands of workplace and nature of job only add to the stress levels. Burnout manifests itself in individuals as a general loss of feeling, concern, trust, interest, and well-being. The present study investigated the relationship between organizational role stress and job burnout among military aircrew using Organizational Role Stress Inventory and Maslach Burnout Inventory. 45 Indian Air Force officers participated in this study. Organizational role stress was significantly related to depersonalization and emotional exhaustion dimensions of burnout. Inter-role Distance and Personal Inadequacy dimension significantly predicted emotional exhaustion, while depersonalization was predicted by inter-role difference alone, none of the role stress dimensions were related to personal accomplishment dimension of burnout.

**Index Terms-** Aircrew, burnout, military, Organizational role stress.

## I. INTRODUCTION

An organization can be defined as a system of roles [1]. The concept of 'role' is key to understanding how an individual functions in any system. This is through his/her role that an individual interacts with and is integrated into a system [2]. Occupational stress is no longer considered an occasional, personal problem that can be taken lightly. It is a global phenomenon affecting all occupations and countries alike. Role stress refers to the conflict and tension due to the roles being enacted by a person at any given point of time [3]. Military environment is challenging and unforgiving of smallest of mistakes, especially if it is aircrew. It seems to be assumed that the stress of military life is attributable solely to such things as deployments overseas, exposure to combat, and the threat of bodily harm. The periodic permanent change of station, stationing of personnel overseas, and lack of control over duty assignments are just a few examples of the more mundane aspects of military life that may affect the mental health of its members [4-5]. In addition to such tasks and duties aircrew is one of the working groups that has to deal with a highly demanding job as it requires high level of knowledge and expertise, as well as the practical application of it. Spatial disorientation, decision making, information processing, communication, split second decisions and logical reasoning are some of the tasks that an aircrew performs simultaneously. At the

same time, there is a feeling of responsibility, not only with regard to risking one's own life, but also for the high financial cost involved in flying. In a study comparing job stress in university, corporate and military personnel it was found that military personnel reported experiencing almost all kinds of role stress more frequently than others [6]. Role stressors can influence the perceived well-being, job satisfaction, and overall satisfaction of aircrew, thus affecting their efficiency and skill. Role stress reduces the feeling of well-being and makes one derive less pleasure from work [7]. Organizational role stress is significantly but negatively correlated with personal adjustment and social relations [8]. In a study of Indian military aircrew stress was studied using Udai Pareek's organizational role stress scale, it was reported that stress among the military aircrew is less in comparison with other civil professions such as teachers and researchers [9].

Burnout is a prolonged response to chronic emotional and inter-personal stressors on the job, and is defined by three dimensions of exhaustion, cynicism and inefficacy [10]. One of the most significant predictor of burnout is role stress. Stress can lead to social and domestic problems [11]. Personnel who experience burnout are alienated and derive less satisfaction from the work. Burnout results in psychosomatic complaints and negative attitude towards work [12]. Burnout is positively related to years of experience, age and work stresses and negatively related to social support among Air Traffic Control Personnel [13]. Burnout is closely and positively related to the professional dissatisfaction and work stressors and not related to non-work stressors [13]. Research has shown that most frequently reported symptoms of stress include burnout, fatigue and irritability towards others [14]. Job specific stressors are the strongest predictors of burnout across organization types and occupations [15]. In a study of military mental health patients' work-related problems and stressors leading to burnout were found to be the primary contributors to their emotional problems [16]. In an exploratory study of perceptions of organizational stress among US military officers in Germany, workload, work design, job qualification etc were identified as stress precipitators and leading to feelings of burnout [17]. Role stress and organizational commitment produce direct effect to job burnout among employees [18].

The current study has been undertaken to assess the relationship between organizational stress factors and burnout among aircrew of Indian Air Force, so that the findings be used for better tasking and planning. Military flying is inherently stressful and organizational role stressors only add to the mental workload of pilots. It is essential to study those aspects of aircrew's role that can precipitate the experience of burnout because human resource is more precious than any other

possession an organization has. This study was taken up since there is apparent dearth of studies in the area of organizational role stress relating to burnout. There are many aspects to the role stress and what particular role stress influence aircrew remains unexplored, keeping this in mind the investigator choose to study aircrew of Western Air Command of IAF. The present study aims to investigate relationship between organizational role stress and burnout among military aircrew. It also investigates the predictors of these stress factors on burnout among military aircrew. The study also attempts to infer the implications of the presence of these stressors.

## II. METHODOLOGY

### A. Sample

58 healthy aircrew from Indian Air Force participated in this study. Responses from 13 aircrew were incomplete; hence, they were rejected from the present study. There were responses from 45 aircrew which consisted of 26 pilots and 19 navigators available for analysis. Their age ranged from 22-45 years with a mean of 32.24. Their length of service ranged from 01-23 years with a mean of 10.09. Majority of the aircrew were postgraduate (67%) and rest were graduates (33%).

Variable	Minimum	Maximum	Mean
Age	22	45	32.24
Service	01	23	10.09
Years of education	17	21	17.83

Figure 1: Showing demographic data

### B. Sampling procedure and instruments

A number of interactions were planned to facilitate better communication. Small groups of aircrew were called at different times for rapport building and better observation. They were administered Maslach Burnout Inventory and Udai Pareek Organizational Role Stress Scale. Maslach Burnout Inventory was administered to aircrew to measure the magnitude of psychological burnout on three dimensions: diminished personal accomplishment, depersonalization and emotional exhaustion. It consists of 29 statements which are to be rated on a 7-point scale. It usually takes about 20 minutes to complete the test. Standard scoring procedure is adopted. Organizational role stress scale was used to find out the roles within the organization that create stress. This test assesses ten role stresses: inter role distance (IRD), role stagnation (RS), role expectation conflict (REC), role erosion (RE), role overload (RO), role isolation (RIs), personal

inadequacy (PI), self/role conflict (S/RC), role ambiguity (RA) and resource inadequacy (RIn). This test consists of 50 statements that are to be rated on a 5-point scale. It usually takes about 25 minutes to complete the test. The average time-taken was 50 minutes. Data was encoded and analyzed using the SSPS 10.00 for windows. The survey data obtained were analyzed descriptively, zero order correlation and Stepwise Multiple Regression was carried out to infer the organizational role stress predictors of burnout among military aircrew.

## III. RESULTS AND DISCUSSION

Table 1 gives an overview of the scores and standard deviation of ten dimensions of organizational role stress and three dimensions of burnout.

Table 2: Showing stress levels and personal accomplishment scores.

Variable	N	Mean	Std. Deviation
Inter-role Distance (IRD)	45	15.20	4.37
Role Stagnation (RS)	45	15.62	5.54
Role-expectations Conflict (REC)	45	13.49	4.15
Role Erosion (RE)	45	14.98	4.74
Role Overload (RO)	45	11.36	3.92
Role Isolation (RIs)	45	13.87	4.67
Personal Inadequacy (PI)	45	9.33	3.98
Self/Role Conflict (S/RC)	45	13.22	4.19
Role Ambiguity (RA)	45	11.62	5.06
Resource Inadequacy (RIn)	45	15.00	4.86
Personal Accomplishment (PA)	45	27.56	7.61
Emotional Exhaustion (EE)	45	15.56	9.70
Depersonalization (DP)	45	5.82	4.71

**Table 3: Showing correlations among the organizational role stress variables, and dimension of burnout.**

VARIABLES	IRD	RS	REC	RE	RO	RI	PI	S/RC	RA	RIn
Personal Accomplishment (PA)	.043	.012	.117	.133	-.004	-.059	-.079	-.144	-.088	.012
Emotional Exhaustion (EE)	.747**	.735**	.709**	.344*	.688**	.626**	.469**	.590**	.522**	.562**
Depersonalization (DP)	.672**	.615**	.596**	.354*	.522**	.556**	.332*	.453**	.492**	.389**
** Correlation is significant at the 0.01 level (2-tailed).										
* Correlation is significant at the 0.05 level (2-tailed).										

It is evident from the table that emotional exhaustion and depersonalization were found to be positively correlated with all

the ten dimensions of role stress. Personal accomplishment does not shows significant relation with any dimensions of role stress.

**Table 4: Multiple Regression summaries of Emotional Exhaustion**

Model	Predictor	Constant	R <sup>2</sup>	β	F-value	Significance
1	Inter-role Distance	0.747	0.547	0.747	54.13	0.001
	Inter-role Distance	0.817	0.652	0.682	42.29	0.001
	Personal Inadequacy			0.339		

**C. Dependent Variable : Emotional exhaustion**

However, none of the other organizational role stress variables contribute significantly to emotional exhaustion. When compare to other variables Inter-role Distance and Personal Inadequacy prove to be better predictors of Emotional Exhaustion. It shows that higher the score on these two dimensions, the higher will be the emotional exhaustion. Inter-role distance scores predict 54%

variance in the extent of burnout. So it is inferred that more of inter-role distance a person experiences, the more will be his/ her experience of emotional exhaustion. The addition of significant contribution of personal inadequacy explains a further 11 per cent of the variance in emotional exhaustion dimension of burnout.

**Table 5: Multiple Regression summaries of Depersonalization**

Predictor	Constant	R <sup>2</sup>	β	F-value	Significance
Inter-role Distance	0.672	0.439	0.672	35.43	0.001

**D. Dependent Variable: Depersonalization**

However, none of the other role stress variables contribute significantly to Emotional Exhaustion. The regression value of 0.43 shows that inter-role distance scores predict 43% variance of the extent of burnout. So it is inferred that more of inter-role distance a person experiences, the more will be his/ her experience of depersonalization. When compare to other

variables inter-role distance proves to be better predictor of Emotional Exhaustion. It shows that higher the score on inter-role distance variable, higher will be the depersonalization. Conflicts may exist between two or more roles played by an individual for example aircrew often encounter conflicts caused by their roles as flyers, officers, sub-ordinates and flier, and when these roles become incompatible with each other it sets the

foundation for inter-role distance and induces stress. When compare to other variables inter-role distance and personal inadequacy proves to be better predictor of emotional exhaustion. The major role related stress and forms of conflict among faculty members were role stagnation and inter-role distance [19]. Study also shows that higher the score on inter-role distance, the higher will be the emotional exhaustion. Results indicated that inter-role distance significantly predicted the emotional exhaustion and depersonalization components [20]. In a survey conducted on US military personnel 52% reported that work stress was causing them significant emotional distress [21]. A study of US military personnel also reported that 23% feel that distances in roles and varied nature of roles is responsible for their ill health and the diagnosis given by doctors to many mental health patients is occupational problems [5]. Burnout was found to be closely and strongly related to professional dissatisfaction and work stressors in Air Traffic Controllers. It also concluded that burnout was not related to non-work stressors [13]. The findings are in line with the evidence by one of the studies of role stress; it was found that inter-role distance and role erosion is the dominant contributor of role stress and burnout [22].

An individual may sacrifice his own interest, preferences and values for a job because he/she is afraid of being inadequate enough to fill the role and thus experience personal inadequacy. Personal inadequacy along with inter-role distance emerged as a significant predictor of burnout, whereas depersonalization is predicted solely by inter-role distance. It is supported by the another study that examined the role stresses among managers and found that middle level managers score significantly high on inter-role distance and personal inadequacy [20]. Other study reveals that amongst nursing professional inter-role distance and personal inadequacy have been found to be positively correlated with burnout and play a major role in the extent of emotional exhaustion and depersonalization experienced [23]. In a study of role stress among women of Indian Information Technology sector, resource inadequacy emerged as the most potent role stressor followed by role overload and personal inadequacy [24]. Burnout and high levels of job stress are known as the cause of professional's decision to leave hospital work [25]. Burnout has been found to be associated with decreased job performance and low career satisfaction, and has a special significance in health care, where staff experience psychological-emotional and physical stress [26].

The present study also shows that amongst aircrew none of the role stress variable is related to personal accomplishment. This is supported by the literature. Role stress was found to be significantly related to emotional exhaustion and depersonalization but not the personal accomplishment [27]. In the meta-analysis of burnout and occupational stress, it was found that occupational stress predicts emotional exhaustion and depersonalization more than the perception of reduced personal accomplishment [15].

Overall role stress emerged as significant predictor of burnout. It also brings out that there is a significant correlation existing between burnout and self-efficacy, hazard exposure and organizational role stress, along with age and illness. In a study of organizational role stress and well being in Canadian forces regression analysis found that there was a negative association between role stress and individual well-being [28]. In a study of

work stress and burnout among teachers it was found that work stressors are strong predictors of psychological burnout [29]. In a study of Air Force Medical Facility it came out that the symptoms of stress reported most frequently were fatigue, burnout and irritability towards others [14]. Various studies have cited that the components of role stress are significant predictors of the three aspects of burnout and its applicable across all organizational type and occupations [15-30].

It shows that role stressors especially inter-role distance and personal adequacy are responsible for the feeling of burnout amongst aircrew to some extent and burnout can reduce the well-being and job satisfaction which is counterproductive to the aim of flying. This was a pilot study to find out the potential stressors, if any, in the aircrew but the small sample size and only one command is the limitation of this study. That is why generalization is not possible without getting more data and including various commands.

#### IV. CONCLUSION

Results indicated that all the ten dimensions of organizational role stress were found to be positively correlated with emotional exhaustion and depersonalization of burnout. It becomes evident that inter-role distance is the most significant and potent stress for aircrew in Indian Air Force. Personal accomplishment is independent of the role stress and an independent phenomenon. Together inter-role distance and personal inadequacy predict a large amount of variance in the experience of burnout among aircrew.

In view of the small sample size further study on large sample including more navigators, pilots and flight engineers with representation from all the command is suggested. It is pertinent to use this information while assigning task and duties to avoid burnout and minimize the role stress.

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