Original Research

A Pilot Study on Influence of Organizational Role Stress on Perceived Burnout among Military Aircrew

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ABSTRACT

Workplace stress has been studied widely in various occupational environments. However, the published studies exploring military environment are rare. 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. Role stresses are known to influence the experience of burnout. 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, this study examined the relationship between the organizational role stress factors and burnout, and also investigated the predictors of role stress dimensions on burnout among aircrew. Subjects were 45 Indian Air Force officers and the study followed cross-sectional design and survey methodology. The results revealed that among organizational role stress, all ten dimensions were significantly related to depersonalization and emotional exhaustion dimensions of burnout. Only 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. Results have implications on the assigning of tasks and duties to aircrew for its impact on the overall improvement in the experience in burnout and productivity in terms of output. The contribution of the study is in advancing new concepts in the already existing framework of burnout, and thus, can assist aircrew and organization on how to control this problem.

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Introduction

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. An organization can be defined as a system of roles [1]. Role stress refers to the conflict and tension due to the roles being enacted by a person at any given point of time [2]. 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 [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 having 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

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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 and, it was reported that stress among the military aircrew is less in comparison with other civil professions such as teachers and researchers [19].

Burnout is a prolonged response to chronic emotional and inter-personal stressors on the job, and is defined by three dimensions; 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 and job qualification 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.

Material and Methods

58 healthy military aircrew constituted the sample for this study. A number of interactions were planned to facilitate the better communication. Small groups of aircrew were called at different times to facilitate interaction and

better observation. They were provided with a pen and the legible copy of the test. 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 was 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. Standard scoring procedure was adopted. The purpose of the test was spelt out and it was ensured that the confidentiality of their responses would be maintained. They were given instructions before filling up the questionnaires. Queries were satisfied accordingly. The subjects filled up details like, age, branch, entry, marital status, smoking, drinking, etc. They were given an option to leave the column of name and service number blank if they liked. Investigator made it clear that there was no time constraint but they should give the first response that comes to their mind. The average time-taken was 50 minutes. 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. 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.

Results

The age of the aircrew participated in the study 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%).

Table 1: showing Minimum, Maximum and Means of variables

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

Table 2: Descriptive Statistics

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

It is evident from Table-2 that the stress levels are well within the normal range and personal accomplishment is on higher side.

Table 3: Correlation among Study Variables

VARIABLES	IRD	RS	REC	RE	RO	RIs	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).

Table 4: Multiple Regression summaries of Emotional Exhaustion

Model	Predictor	Constant	R^2	β	F-value	Significance
1	Inter-role Distance	0.747	0.547	0.747	54.13	0.001
23	Inter-role Distance Personal Inadequacy	0.8170.817	0.6520.652	0.6820.339	42.2942.29	0.0010.001

Table 3 shows the correlations among the organizational role stress variables, and dimensions of burnout.

Emotional exhaustion and depersonalization were found to be positively correlated with all dimensions of role stress. Personal accomplishment did not show significant relation with any dimensions of role stress.

Table 4 shows that Inter-role Distance and Personal Inadequacy dimension of Organizational Role Stresses are significant predictors of Emotional Exhaustion dimension of burnout.

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 shows Inter-role distance dimension of role stress as significant predictor of depersonalization dimension of burnout.

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

Table 5: Multiple Regression summaries of Depersonalization

Predictor	Constant	R^2	β	F-value	Significance
Inter-role Distance	0.672	0.439	0.672	35.43	0.001

score on inter-role distance variable, higher will be the depersonalization.

Discussion

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. 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% felt 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 was 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 were in line with the evidence by one of the studies of role stress; it was found that inter-role distance and role erosion was 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 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 to the personal accomplishment [27]. In the meta-analysis of burnout and occupational stress, it was found that occupational stress predicted 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. 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 were 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 were 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.

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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