FREQUENCY OF STRESS AMONG PILOTS OF A BASE

Mahmood Iqbal, Muhammad Zaman*

70-Medical Battalion Lahore Pakistan, *Military Hospital Rawalpindi Pakistan

ABSTRACT

Objective: To determine the frequency level of stress among the pilots stationed at a base in Pakistan.
Study Design: Cross-sectional descriptive study.
Place and Duration of Study: Study was carried out at an air base of Pakistan from April to July 2013.
Material and Methods: All aviators on active flying duties with no past psychiatric history were included in this study. After taking consent and permission from authorities each pilot was given two self-reporting forms consisting of life inventory composed of thirty items depicting recent life changes. Life events included in this scale ranged from highest score of 100 for death of spouse to minimum score of 11 for minor violations of law. The stress questionnaire included a symptoms list with five possible responses of never, seldom, sometimes, often and regular. Pilots were to choose most appropriate response that fitted best for the last six months. This questionnaire consisted of 75 items. Items covered almost all physical, psychological and cognitive symptoms that might occur in stress.
Results: A total of 74 aviators participated in this study. On stress inventory 31 (42%) pilots had no significant problems in their lives, 22 (30%) had mild stress, and 17 (23%) pilots had moderate stress while only 4 (5%) pilots exhibited to have major stress. Results of stress questionnaire reveal that 35% of pilots had below average stress level, 27% pilots had above average stress levels, 23% of the pilots showed average person's stress level, and 9.45% of the pilots that is only 7 out of 74 exhibited high stress level.
Conclusion: Majority of Pakistani pilots have reported low level of stress.

Keywords: Job satisfaction, Job stress, Stress.

INTRODUCTION

Over the past few decades stress is emerging as an increasing problem in the organizations. Selye in 1936 first introduced the idea of stress into the life science. He defined stress as the force, pressure, or tension subjected upon an individual who resists these forces and attempts to uphold its true state[1]. What is stress? The HSE (Health Safety Executive UK) defines stress as an undesirable response people have to tremendous pressures or other types of demands placed upon them. It arises when they worry that they cannot deal with them. Stress has a positive effect on employees of any organization but to a certain extent up to which an employee can cope with it, mostly it exceeds the bearable limits and has a negative result on employees[2]. In addition to affecting psychological and emotional well-being, stress can also result in a decrease in physical health, such as the development of hypertension, heart disease, and immune deficiency disorders[3]. Job stress can reduce productivity, increase mistakes and accidents at work, encourage absenteeism, lower morale, increase conflict with others and cause physical and emotional problems[4]. Pilots are usually reluctant to report their physical problems or illnesses for fear of having their flying careers adversely affected. For a typical pilot there is no greater fear than losing flying status. Possibly, this under-reporting of stress occurs for the reasons that most of the pilots are not fully aware of the effect that stress has on them; and even when they are aware of these effects, a variety of internal and external pressures make it less likely that a pilot will report or seek help for his symptoms[5].

Stress is a health risk for everyone, but this risk increases in aviation environment. Fighter pilots face stressful situations daily as a part of the operational environment. Long and different flying hours, noise, vibration, altitude and potential mechanical malfunctions are just a few examples of aviation stressors. Human error has also contributed to aviation accidents. Family problems, social stressors, career instability, aircraft accidents and difficult flight

Correspondence: Dr Muhammad Zaman, Classified Health Care Administrator, MH Rawalpindi Pakistan. (*Email: zaman_toor@yahoo.com*)
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schedules are a few of the many potential sources of emotional stress in aviation. Pilots who could not use stress coping techniques may become depressed, blame others for their misfortunes or even self-destructive. The pilot at risk may demonstrate "warning signs" such as defensiveness, arrogance, fatigue, deteriorating performance or increased risk taking. Moreover, there may be failure on the part of the aviation planners to recognize the "warning signs"[6].

In a study using Sloan and Cooper's questionnaire, researchers asked aviators directly about their perception of the relationships between self-reported home–stress, work–stress, and perceived performance. In response pilots mentioned that their flying performance was impaired when home–stress carried over to the work environment. Pilot's tendencies to worry at work increased, attention span and decision making slowed down and these were significantly correlated with their perception of poorer flying performance. Pilots reported that fatigue and thinking about the home stressors were most common while they were at work. The authors suggest that their findings support Sloan and Cooper's conclusion that the primary effect of home stress at work is in the cognitive domain (worry / rumination / intrusive thoughts)[7].

Some researchers attempted to validate the hypothesis that poor stress coping may increase the chances of causing a mishap. They hypothesized that for aggressive, young, military aviators the typical reaction to heightened levels of stress would be acting out behavior in which frustrations and the aggressive feelings they produce, are directed at other people or objects rather than turning inward to become self-destructive or depressive. Pilots who played a contributory role in their mishaps exhibited more difficulties with superiors, peers, and spouses, than those who did not play a contributory role[8].

Stress in pilots may occur in a wide range of circumstances but is often made worse when they find little support from supervisors or colleagues and little knowledge on how to cope with its demands and pressures. Number of studies have been conducted in different areas of the world but a huge gap exists in third world countries like Pakistan. Given the information provided above, there is a need to conduct studies on the presence of life stressors among Pakistani pilots. This study will provide important information to the planners regarding interventions required to reduce stressors among Pakistani pilots. The purpose of this study was to examine the frequency level of stress among the pilots stationed at an air base in Pakistan.

MATERIAL AND METHODS

This cross-sectional descriptive study was carried out at an Air base of Pakistan from April 2013 to July 2013. A total of 74 healthy and on active flying duty aviators aged 21-40 yrs were included in this study. After taking approval from authorities, informed consent was taken from the pilots. These pilots were first interviewed informally to collect demographic data in order to include only those pilots who fulfilled the criteria for this study. Pilots having any past psychiatric history were excluded pilots fulfilling the criteria were given stress inventory and stress questionnaire to be filled by them. Stress inventory is a scale developed by Holmes and Rahe to investigate the relationship between social readjustment, stress and susceptibility to illness. Holmes and Rahe have shown the relationship between recent life changes (exposure to stressors) and future illness. This scale consists of 30 items depicting recent life changes. Life events included in this scale range from highest score of 100 for death of spouse to minimum score of 11 for minor violations of law. A person with a score of 200-250 during a one year period has a 50% chance of developing illness or health change. With a score of 300 or more a person's chances increase to 80%. Scoring of this scale is done as follows, a score ranging from 0-149 means the individual is having no significant problem, score ranging from 150-199 means individual is having mild stress and has 35% chance of illness, scores ranging from 200-299 means individual is having moderate stress with 50% chance of illness, scores of 300+ mean

Table-1: Stress inventory.

S. No	Stress level	No. of pilots	Percentage
1.	No significant problem	31	42
2	Mild stress	22	30
3	Moderate stress	17	23
4	Major stress	4	5
	Total	74	100

Table-2: Stress questionnaire.

S. No	Stress level	No. of pilots	Percentage
1	Invalid response	4	5.40
2	Below average	26	35.13
3	Average	17	23
4	Above average	20	27.02
5	High	7	9.45

that individual is having major stress with 80% chance of illness[9].

The second scale, the stress questionnaire included a variety of symptoms list with five possible responses of never, seldom, sometimes, often and regular. Pilots were to choose most appropriate response that fitted best for the last six months. This questionnaire consisted of 75 items. Items covered almost all physical, psychological and cognitive symptoms that might occur in stress. Scoring of stress questionnaire was done in the following manner, score ranging from 0 to 20 was interpreted as invalid response, scores ranging from 21 to 45 meant below average stress, scores of 46 to 70 meant stress of an average person, scores of 71 to 90 meant above average stress while scores more than 90 meant high stress levels[10].

RESULTS

A total of 74 aviators participated in this study. All of the pilots completed stress inventory, results are given in table-1. All of the 74 pilots completed stress questionnaire results of which are shown in table-2. On stress inventory 31 (42%) pilots had no significant problems in their lives, 22 (30%) had mild stress, and 17 (23%) pilots had moderate stress while only 4 (5%) pilots exhibited to have major stress. Results of stress questionnaire reveal that 35% of pilots had below average stress level, 27% pilots had above average stress levels, 23% of the pilots showed average person's stress level, and 9.45% of the pilots that is only 7 out of 74 exhibited high stress level.

DISCUSSION

In one of the studies by Khatibi, it was shown that 32% of the employees had high level of job stress, 60% had medium level of stress and 8% of employees harbored low level of job stress[11]. Another study by O Lanre showed that 73% of the employees exhibited high level of stress with physical complaints of headache[12]. According to National Health Population survey conducted in Canada it was revealed that employed women had greater work stress than men. Twenty eight percent of women had high level of stress while 17% had low stress as compared with 20% and 24% for men respectively[13]. In a study by Ahamadi, 60% of the pilots reported significant level of stress[14]. Jackson and Earl revealed that 75% of the pilots reported severe fatigue[15]. The results of this study are not consistent with other studies rather results are opposite as it is evident that high level of stress is exhibited in less than 10% of pilots while higher percentage of pilots exhibited low level of stress. This can be explained on the grounds that subjects of this study defiantly have stressful jobs at hand but they do not like being interviewed by mental health professionals[16]. There is no denying that correlation exists between life-stressors and aviation accidents, and reported effects of life-stress on cognitive aspects of flying task performance[17].

Although stress levels have been identified as low in pilots in this study but it should be kept in mind that factors such as personal factors, personality of pilots, working hours, job environment, task specification and organizational stressors were not considered. It can safely be suggested that further studies are required in this respect. Furthermore there is need to educate pilots about the effects of stress and hazards if stress is concealed, by giving confidence to the pilots that it is alright to be stressed but not if concealed.

CONCLUSION

It can be safely concluded on the basis of this study that majority of the Pakistani pilots have reported low level of stress.

Limitations

Working environment, working hours, experience, organizational factors, participation in decision making and personal factors were not considered. Effects of variables like age, sex and marital status were not compared and considered in this study.

CONFLICT OF INTEREST

This study has no conflict of interest to declare by any author.

AUTHORS CONTRIBUTION

Mahmood Iqbal, involved in literature review, study design, development of data collection tools, data collection, data analysis, article writing and proofing, Muhammad Zaman, involved in literature review, development of data collection tools, data collection, data analysis.

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