5-1-2012

The Stress Coping Skills of Undergraduate Collegiate Aviators

Jennifer Kirschner
John P. Young
Richard Fanjoy
Donald Petrin

Follow this and additional works at: http://docs.lib.purdue.edu/atgrads

Part of the Behavior and Behavior Mechanisms Commons

Kirschner, Jennifer; Young, John P.; Fanjoy, Richard; and Petrin, Donald, "The Stress Coping Skills of Undergraduate Collegiate Aviators" (2012). Aviation Technology Graduate Student Publications. Paper 9.
http://docs.lib.purdue.edu/atgrads/9

This document has been made available through Purdue e-Pubs, a service of the Purdue University Libraries. Please contact epubs@purdue.edu for additional information.
THE STRESS COPING SKILLS OF UNDERGRADUATE COLLEGIATE AVIATION STUDENTS

Jennifer Kirschner
John P. Young
Richard Fanjoy, PhD
Donald Petrin

Introduction

Flying is a stressful activity. How do aviation students deal with that stress? Are the coping skills they use stable over their collegiate career, or is there a difference between how experienced and inexperienced students deal with stress?

Research Questions:
1. “Do inexperienced and experienced aviation students have different levels of perceived stress?”
2. “Do inexperienced and experienced aviation students use different coping skills in order to deal with their stress level?”

Stress

“Any environmental, social, or internal demands which require an individual to readjust his/her usual behavior patterns”

Too much stress can lead to...
- a decrease in performance
- an increase in fatigue
- an increase in errors committed
- an increase in accident rates

“...the cognitive and behavioral efforts a person makes to manage demands that tax or exceed his/her personal resources”

Types of coping skills...
- active (problem-focused): directly attack the source of the stress and attempt to change the situation in a different way to diminish the negative emotional reaction associated with the stressful situation, and avoidant coping skills allow one to mentally and/or physically disengage through the use of daydreams, sleep, drugs, and/or alcohol.

Coping Skills

An important human factors research interest area is error reduction. Although pilots placed in highly stressful situations have an increased chance of making errors, they use coping skills to lower their stress level and reduce the likelihood of errors. Typically, coping skills are conceptually separated into three types: active coping skills change the situation to make it inherently less stressful, emotion-focused coping skills use discussion or thinking about the situation in a different way to diminish the negative emotional reaction associated with the stressful situation, and avoidant coping skills allow one to mentally and/or physically disengage through the use of daydreams, sleep, drugs, and/or alcohol. In this research project, a sample of 49 inexperienced private pilots and 30 experienced multi-engine commercial pilots were surveyed to determine if significant differences existed between their levels of perceived stress and the frequency with which they used different types of coping skills using a one-time, written survey. Variables measured included demographic information, perceived level of stress, and coping skills usage. The results showed that there was an association between experience level and stress (F = 5.46, p = .022), emotional coping, (r = .200, p = .078) and instrumental coping (r = .201, p = .075).

Conclusions and Discussion

Perceived stress decreases with an increase in flight experience. This could be due to students becoming more comfortable in stressful situations, students learning how to better deal with their stress level over time, or students with high stress levels self-selecting out of the flight program over time.

There is an association between flight experience and emotional-focused coping skills. The use of instrumental and emotional support increases with an increase in flight time. During the last two years of the flight program at Purdue, there is a heavy emphasis on crew operations during line-oriented flight training; classes in crew resource management skills and human factors could teach students how to better communicate with and relate to those around them.

Methodology

Participants:
- 49 student or private pilots = inexperienced
- 30 multi-engine, commercial pilots = experienced

Survey Instrument:
demographic information
- the Perceived Stress Scale (PSS): measured stress level on a 40 point scale
- a coping skills inventory: measured the frequency of use of 14 different coping skills using a Likert scale.

Implications for Future Research

Since this study used correlational methods, it cannot draw cause-and-effect conclusions. More research is needed to define how experience level, stress, and coping skills are related.

A larger project that took a “daily process” approach would examine how each participant used different coping skills over time, instead of measuring group differences. This type of study would collect a much larger amount of data and would be able to draw conclusions on an individual basis, instead of on a group basis.

Selected References