

2nd International Conference on

ENVIRONMENTAL HEALTH & GLOBAL CLIMATE CHANGE

September 7-8, 2017 | Paris, France

OCCUPATIONAL STRESS, AND SLEEP QUALITY ON FATIGUE AMONG COMMERCIAL AIRLINE PILOTS- BASED ON MODERATING EFFECTS OF JOB RELATED FACTORS

Jung HS^a and LEE HJ^a^aThe Catholic University, Republic of Korea

It has been reported that pilots' fatigue is the biggest human cause of aircraft accidents, and the International Civil Aviation Organization (ICAO) has recommended that each nation should introduce, operate, and manage a Fatigue Risk Management System (FRMS) to prevent aircraft accidents caused by fatigue and reduce pilots' fatigue. This study aimed to build and test a path model to explain factors and paths influencing pilots' fatigue to develop a Korean-style fatigue management model for pilots and its management plans fit for the circumstances of South Korea. A survey was conducted with pilots that were members of the Airline Pilots Association of Korea and working for a domestic airline with a questionnaire on their general characteristics, job related factors, psychosocial factors (Type A Behavior and self-esteem), occupational stress, sleep quality and fatigue. Data was collected with an online survey from September 9 ~ October 9, 2015.

The main findings were as follows: First, the subjects average scores are as follows: 5.3 points (0~10 points) in Type A Behavior among the psychosocial factors, 30.3 points (10~40 points) in self-esteem, 61.3 points (0~100 points) in occupational stress, 8.8 points (0~21 points) in sleep quality, and 98.1 Points (19~133 points) in fatigue and had an average of 7.9 hours of sleep. Second, the path analysis results show that a higher tendency toward Type A Behavior of psychosocial factors and lower self-esteem led to higher occupational stress ($\beta=0.961$, $p<0.05$), which in turn resulted in lower sleep quality ($\beta=0.699$, $p<0.001$) and higher fatigue ($\beta=0.489$, $p<0.001$). Their lower sleep quality led to higher fatigue ($\beta=0.185$, $p<0.05$). Third, occupational stress had significant positive (+) mediating effects between the psychosocial factors and sleep quality and between the psychosocial factors and fatigue. Sleep quality had significant positive (+) mediating effects between occupational stress and fatigue. Fourth, the study examined moderating effects according to their job related factors and found that occupational stress had greater impacts on sleep quality in the pilots whose job career was less than ten years than in the pilots whose job career was ten years or longer. The psychosocial factors had significantly greater impacts on occupational stress among captains than co-pilots. Sleep quality had significantly greater influences on fatigue at full service carriers low cost carriers.

Based on these findings, the study made the following proposals: First, there is a need to develop programs to reduce or control pilots' fatigue and build systems in the policy aspect since pilots have a difficult time avoiding fatigue and inevitably experience it due to their job characteristics. Second, there is a need to develop a standardized instrument to measure the subjective fatigue of airline pilots, analyze the flight routes and forms to measure their fatigue objectively, and collect and analyze their biometric data before introducing an FRMS recommended by ICAO. Third, there is a need to develop and apply an intervention program to manage the psychosocial factors at the individual level and occupational stress at the organizational level fit for the organizational culture of the nation. Fourth, there is also a need to provide personal custom information based on smartphone applications or websites for the search of data and the operation of interventions and educational programs by taking into account the occupational characteristics of pilots and the usefulness of media. Finally, a future study needs to test the effects of intervention programs and investigate the depression levels reflecting the fatigue characteristics in prospective research to track and observe the subject groups.

Biography

Jung HS is a Professor in Preventive medicine. She is presently working in The Catholic University, Republic of Korea. Her main research interest includes Nursing, Public Health and industrial nursing.

hyesun@catholic.ac.kr