UAA UNIVERSITY AVIATION ASSOCIATION

Collegiate Aviation Review International

Volume 43 | Issue 2 Proceedings of the 2025 UAA Annual Conference, Article #1

12-05-2025

Fostering Mental Wellness in the Early Stages of Professional Pilots' Careers: A Collegiate Curriculum for Aviators

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Mental health challenges remain a pressing concern in aviation, affecting both professional pilots and collegiate aviation students. Contributing factors include irregular schedules, extended time away from family, academic and operational pressures, and high-performance expectations. Part 141 collegiate flight students face these stressors early in their careers, compounded by the need to maintain Federal Aviation Administration (FAA) medical certification. Stigma and fear of career repercussions discourage many from seeking care, creating hidden safety risks. This ongoing study explores the development of a Mental Wellness Curriculum (MWC) tailored to collegiate flight students, with the goal of embedding proactive wellness education into training. Using a mixed-methods approach, the study draws from existing literature, stakeholder collaboration, and evidence-based practices to design curriculum modules focusing on stress management, resilience-building, stigma reduction, and healthy lifestyle practices. Importantly, the curriculum incorporates Safety Management System principles, positioning mental wellness as a core component of operational safety. Preliminary findings highlight the urgent need for structured mental wellness education to build resilience among future aviators and strengthen the safety culture of the aviation industry.

Recommended Citation:
Mendonca, F. A.C., Bowyer, S., & Timothy, K. (2025). Fostering mental wellness in the early stages of professional pilots' careers: A collegiate curriculum for aviators. *Collegiate Aviation Review International, 43*(2), pending. Retrieved from http://ojs.library.okstate.edu/osu/index.php/CARI/article/view/10423/9191

Introduction

Aviation is a high-stakes environment where safety depends not only on technical proficiency but also on the psychological health of pilots (Federal Aviation Administration [FAA], 2024; Hoffman et al., 2024). Mental health has increasingly emerged as a critical issue, highlighted by recent high-profile cases such as the Alaska Airlines Flight 2059 incident, in which the pilot reported severe depression, grief, and sleep deprivation (Cleave & Earl, 2025). This event underscored how untreated mental health conditions can escalate into direct safety risks, even among experienced and medically certified aviators (Miller & Assad, 2024). A wide range of operational and lifestyle factors contribute to mental health challenges in aviation. Pilots are frequently subjected to extended time away from home and family, erratic schedules that disrupt circadian rhythms, fatigue from long duty days, and a constant burden of safety responsibility. Many also experience isolation during layovers or extended trips and face disruptions to healthy lifestyle habits, including proper diet, exercise, sleep quality, and access to social support. These stressors, when combined, can degrade cognitive performance, slow reaction times, impair decision-making, and ultimately increase risk within the aviation system (Minoreti & Piercarlo, 2023; Walden & Thomas, 2025).

These challenges are not limited to airline pilots. Collegiate aviation students, particularly those enrolled in FAA Part 141 programs, encounter remarkably similar pressures early in their training. Their workload combines demanding science, technology, engineering, and mathematics (STEM) coursework with intensive flight training (Mendonca et al., 2023). The structured nature of collegiate aviation programs creates irregular schedules, late-night study periods, and reduced sleep quality, producing fatigue and stress patterns that closely mirror those of professional operations (Jacobs et al., 2020). Students, like professional aviators, must sustain performance under conditions of high workload and constant evaluation while simultaneously meeting medical certification requirements that create additional stress (Pitts & Faulconer, 2023).

One of the greatest barriers to addressing these issues is the stigma surrounding mental health in aviation. Many aviators (Hoffman et al., 2023), including students (Pitts & Faulconer, 2023), are reluctant to seek support out of fear that disclosure could jeopardize their FAA medical certification and future career opportunities. Financial costs and distrust of the medical review system compound this reluctance. As a result, nondisclosure or "firewalling", withholding medical information to protect flying privileges, has become common. While this may protect short-term aspirations, it conceals long-term risks and perpetuates hidden safety threats within the system (FAA, 2024).

By recognizing the parallels between collegiate aviation students and professional pilots, it becomes clear that early, proactive mental wellness education is essential. If students are equipped with the tools to manage stress, build resilience, and openly address mental health challenges during their training, they will be better prepared to manage these demands throughout their professional careers (Mendonca et al., 2024). Collegiate aviators represent the primary pipeline for airline, corporate, and military operations, which means the attitudes and habits they develop now will directly shape the future of the industry (Keller et al., 2020). Promoting resilience and wellness from the outset leads to healthier student pilots progressing into healthy professional pilots, ultimately strengthening the overall safety culture within the aviation industry.

Methods

This ongoing study adopts a mixed-methods approach. The first phase involves a comprehensive literature review examining mental health in aviation and identifying gaps in existing programs. The review includes both scholarly studies and recommendations from aviation regulators and industry stakeholders. The second phase emphasizes collaboration with mental health professionals from the Embry-Riddle Aeronautical University Counseling Center and curriculum specialists from the Center for Teaching and Learning Excellence. Their input ensures that the curriculum is both evidence-based and pedagogically sound. Additional perspectives are drawn from aviation professionals working in airline, military, and corporate sectors, who provide insights into the real-world stressors and mental health challenges encountered across professional practice.

Based on these inputs, the project is developing a curriculum that incorporates mental health education (e.g., Jorm, 2012; Golightly et al., 2017), stress management techniques such as mindfulness and relaxation strategies (Rogerson et al., 2024), resilience-building practices, and healthy lifestyle promotion, including sleep hygiene, physical fitness, and social connection (Mahindru et al., 2023; Prakash et al., 2021). Crucially, the curriculum integrates Safety Management System (SMS) principles by framing mental health as a safety hazard that can be identified, assessed, and mitigated through education and training (DeFusco et al., 2015). The final phase of the study involves stakeholder feedback and preliminary evaluation. The curriculum will then be reviewed and refined with input from students, counselors, faculty, and aviation professionals, with the aim of ensuring its relevance, effectiveness, and adaptability across collegiate aviation contexts.

Expected Findings and Conclusions

Mental health in aviation continues to be an area that requires stronger engagement and leadership from academia (Boyd & Bliss, 2024; Cross et al., 2024; Mendonca et al., 2024; Wilson et al., 2023), the FAA (2024), and the wider aviation community (International Civil Aviation Organization, 2022; Royal Aeronautical Society, 2024). While much attention has been given to regulatory barriers and crisis management, less progress has been made in developing proactive strategies that prepare aviators to manage their psychological well-being before problems escalate. One promising approach to fill this gap is education (DeFusco et al., 2015; FAA, 2024; Shin et al., 2022). By embedding structured training on mental wellness into collegiate flight programs, institutions can better equip future pilots to manage stress, build resilience, and openly address mental health challenges without fear of stigma (Bowyer et al., 2024).

The current study is developing a Mental Wellness Curriculum designed specifically for Part 141 collegiate flight students. Unlike prior research that has focused on one-time interventions, this project seeks to establish a sustainable and evidence-based framework that can be integrated into existing aviation training (Mendonca et al., 2024). Drawing on mental health best practices (e.g., National Institute of Mental Health, 2024), input from counseling professionals, and aviation-specific safety considerations (e.g., FAA, 2024), the curriculum emphasizes stress management, resilience-building (e.g., Lacomba-Trejo et al., 2022), healthy

lifestyle practices (University of California San Francisco, n.d.), and the integration of SMS concepts (DeFusco et al., 2015). The expectation is that such a curriculum will not only increase mental health literacy among collegiate flight students but also foster a culture in which psychological well-being is recognized as essential to operational safety.

Preliminary insights indicate that collegiate pilots already face many of the same stressors as professional aviators, including irregular schedules, heavy performance pressure, and fatigue (Boyd & Bliss, 2024; Pan & Mendonca, in press). Yet, despite these challenges, many students hesitate to seek professional help. The stigma surrounding mental health in aviation, combined with fears that disclosure could jeopardize their FAA medical certification and career prospects, creates powerful disincentives for open discussion (FAA, 2024; Pitts & Faulconer, 2023). This reluctance perpetuates hidden risks and underscores the need for early education that normalizes help-seeking behavior and reframes wellness as a safety-critical issue rather than a personal liability.

Although the study is ongoing and outcome data are not yet available, the curriculum development process has highlighted the value of proactive education. Integrating mental wellness into collegiate aviation training is expected to reduce misinformation, encourage healthier coping strategies, and strengthen resilience before students enter professional practice. By addressing stigma and disclosure concerns directly, the program aims to reshape attitudes toward mental health, preparing students to manage these issues throughout their careers.

Significance of this Study

The importance of this study lies in its potential to address one of the most pressing and under-discussed safety challenges in aviation: mental health (FAA, 2024). Collegiate pilots, much like their professional counterparts, face demanding schedules, high performance expectations, and the constant pressure of maintaining medical certification (Mendonca et al., 2024). Yet many lack the tools to manage these stressors effectively, often constrained by the same stigma and fear of disclosure that discourage professional pilots from seeking support (Pan, 2025; Pitts & Faulconer, 2023). By developing and integrating a Mental Wellness Curriculum, this initiative seeks to correct misinformation, narrow knowledge gaps, and improve overall mental health literacy among pilots, while fostering resilience and encouraging early help-seeking behaviors. The long-term impact of this work may extend well beyond the university setting, as students who are trained to value and practice mental wellness carry these skills into their professional careers. In this way, early education creates a trickle-down effect: healthier student pilots evolve into healthier professional pilots, strengthening safety culture across the aviation industry and helping to transform mental health practices throughout the broader aviation ecosystem.

Note. This study was partially supported by the Embry-Riddle Aeronautical University Faculty Research Development Program.

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