

02-27-2024

# Understanding Collegiate Flight Students' Perceptions and Realities of Depression and Anxiety

Grant Boyd  
*Oklahoma State University*

Timm J. Bliss  
*Oklahoma State University*

As a result of recent incidents and other circumstances, shared questions and potential problems related to mental health and aviation have surfaced within collegiate aviation programs. The purpose of this study is to provide a better understanding of collegiate aviators' attitudes toward mental health in aviation, how they manage their mental health, how these practices may transition into their flying careers, and whether the current FAA aeromedical standards are professionally written to protect these and other aviators. The researchers conducted a mixed methods study to identify a common knowledge base of collegiate flight students' perceptions and realities related to depression and anxiety. Study participants were bachelor's degree seeking flight students from University Aviation Association (UAA) member collegiate flight programs. The received responses were analysed through the perspective of four research questions. In summary, gathered responses indicated that students believe there is a perceived benefit to not disclosing or ignoring mental health and fitness issues, safeguarding their own mental health is one of their primary concerns, and there is a considerable number who would leave the aviation industry if they could no longer fly. Additionally, most students agree that change would be beneficial as it relates to the current FAA medical certification process.

## Recommended Citation:

Boyd, G. & Bliss, T. J. (2024). Understanding collegiate flight students' perceptions and realities of depression and anxiety. *Collegiate Aviation Review International*, 42(1), 57–74. Retrieved from <https://ojs.library.okstate.edu/osu/index.php/CARI/article/view/9723/8590>

## **Introduction**

The Federal Aviation Association (FAA) has formally enumerated a particular methodology for examining and diagnosing mental health conditions within the required medical exam process. The Administration's structured guide must be followed by trained and approved Aviation Medical Examiners (AMEs) who review both new and existing pilot medical certification applications (Federal Aviation Administration, 2022). Varying levels of medical certification allow these personnel to act in the capacity identified by their FAA issued airmen privileges (Code of Federal Regulations, 2023).

Considering its importance to overall well-being and performance, mental health is a crucial aspect that is focused on during the FAA aeromedical application process. In terms of the number of covered items and descriptions thereof, the mental health portion of the exam is comprehensive and focuses on several criteria. For an applicant's successful passing of this section, they must not have been diagnosed or have an established history of four identified disqualifying diagnoses. These diagnoses are (1) a personality disorder, (2) a psychosis, (3) a bipolar disorder, and (4) substance dependence (Code of Federal Regulations, 2023). In addition to the noted, symptoms of anxiety and depression, as well as formal diagnoses, are also grounds for aeromedical application denial (Federal Aviation Administration, 2022).

The occurrence rate of depression and anxiety in the aviation community is like that of the public, approximately 6% of the population (Transport Canada, 2019). Additionally, the level of reported mental illness in the 18- to 25-year-old age range (i.e., the age typically associated with college students) was the highest of any population group, at 30.6% in 2020 (Substance Abuse and Mental Health Services Administration, 2021).

The repercussions of medical certification denial can be both career and life defining (Blue, 2016). As a result, many aviators are careful to balance their personal well-being with careful consideration of their futures (Blue, 2021). Arguably, there is not a more professionally defining time in one's life than college. For students enrolled in a collegiate flight program, the pursuit of flight ratings, and ultimately a flying job post-graduation, is inexplicably tied to their ability to be granted and continually hold an FAA first-class medical certificate. In some cases, but less frequently, a second-class medical certificate is the highest level of FAA-issued medical certificate that a pilot carrying passengers for hire is required to hold (Federal Aviation Administration, 2016).

### **Statement of the Problem**

The FAA's aeromedical examination process criteria related to mental health, identified in 14 CFR Part 67-Medical Standards and Certification, has not been amended since 1996 (GovInfo, 1996). Regulations related to the use of selective serotonin reuptake inhibitors (SSRIs) for anxiety and depression were last revised in 2010 (U.S. Department of Transportation, 2010). Most recently, in 2016, third-class medical restrictions were relaxed for pilots requesting initial and subsequent certificate issuances with the introduction of BasicMed (Federal Aviation Administration, 2017). Additionally, there are pathways that exist that applicants can follow to be further considered by the FAA for medication certification if they have certain disqualifying or

other conditions. These pathways exist for those with certain mental health disorders, such as anxiety and depression (Aircraft Owners and Pilots Association, n.d.).

Irrespective of the latest revisions to the aeromedical process or additions of new certification pathways, there has been increased attention on mental health in the flying population throughout recent years. Callouts prompting additional industry focus on mental health have originated in well-respected industry publications, online forums, aviation non-profit advocacy foundations, and other sources. Many of these voices collectively advocate for Aeromedical Reform, the dynamic concept of aeromedical standards' revision in the United States (Laczko, 2023). These requests center around policy change of varying forms, but almost all of which request an in-depth review of the current aeromedical certification process and identification of aspects that could be improved (Goyer, 2021).

Some of the increased industry attention has been brought forth by concerned parties who have explained their own or others' struggles with mental health and flying. These personal stories contribute to the narrative surrounding the increased interest in this topic. One of the most compelling viewpoints about mental health and flying was posthumously offered. Since October of 2021, some of the expanded attention towards pilots' mental health has been the result of a high-profile incident involving a freshman collegiate flight student, John Hauser. The nineteen-year-old University of North Dakota private pilot's intentional airplane crash has since highlighted the juxtaposition of mental health within collegiate flight programs across the country (Wildes, 2022). While the hopeful airline pilot could not overcome his struggles with mental health and the perceived repercussions of seeking help, he left his loved ones with one request. Hauser wrote in a letter to his parents "If you can do anything for me, try to change the FAA rules so that other young pilots don't have to go through what I went through" (ABC 7 Chicago, 2022).

As a result of this incident and other circumstances, some common questions and potential problems related to mental health and aviation have surfaced within collegiate aviation programs. A sampling of the potential issues and related questions that affect flight students in these programs include (1) whether flight students forgo professional help for their mental health concerns, (2) how flight students manage mental health concerns, (3) flight students' perceptions about the FAA's stance on mental health disorders, (4) flight students prioritizing their careers over their mental health, and (5) flight students developing an unhealthy reliance upon flying as their sole identity. These statements will help to guide the research in better understanding students' attitudes towards mental health.

For many of these students, the transitional aspect of college is one of the most defining periods of their lives. During their undergraduate tenure, students work to better themselves academically while preparing for life post-graduation (Montgomery & Cote, 2008).

## **Purpose of the Study**

The purpose of this study was to document United States collegiate flight program students' sentiments towards mental health and its impact on required flight training undertaken during their undergraduate tenure, as well as their flying careers thereafter. This in-depth

examination provided a better understanding of these aviators' attitudes towards mental health in aviation, how they manage their mental health, how these practices may transition into their flying careers, and whether the current FAA aeromedical standards are properly written to protect these and other aviators, as well as the public. The study's purpose was also to guide recommendations related to potential future improvements to the aeromedical examination and certification process' mental health criteria and educate collegiate flight programs about this omnipresent topic.

### **Significance of the Study**

The significance of the study was related to the impact of potential mental health issues among pilots within the respondent population of collegiate flight programs. Because this topic has not been thoroughly researched, specifically regarding collegiate flight students' perceptions and realities surrounding mental health, more clarity was needed on the subject. A focused examination of the subject helped to reveal opportunities for the FAA to better support pilots in training through flexible mental health reform that is aligned with present-day mental health standards. As a result of this research, collegiate flight programs will be able to better support their students, including those who may suffer from mental health disorders and those going through challenging periods during their collegiate tenure.

### **Research Questions**

The following four questions were written with the purpose of helping to create a better understanding of collegiate flight students' perceptions regarding mental health:

- RQ1: What are collegiate flight students' perceptions regarding mental health disclosure based on the current aeromedical process?
- RQ2: Do collegiate flight students view disclosing mental health struggles as having a negative impact upon their careers?
- RQ3: What strategies do collegiate flight students use to manage their mental health and what are these strategies' effectiveness?
- RQ4: Do collegiate flight students feel there is a tangible benefit to pilots and the public if the current first-class medical certification standards related to mental health aspects are revised?

### **Research Methodology**

This study employed a mixed-methods approach to gather both qualitative and quantitative data through an online-administered survey. The survey was created by the researchers and consisted of three sections. Each question within the survey was specifically coded, requiring the participant to provide a response so that no partial surveys were submitted to the researchers. This helped to ensure that a more complete understanding of each participants' concerns surrounding mental health issues (particularly anxiety and depression) was gathered. As a result, a more representative data set existed, allowing the researchers to draw appropriately guided conclusions and recommendations.

The first section of the survey focused on the personal information of each participant, with the goal of extracting suitable information to build a demographic profile of the survey's respondents. This personal information was relevant to the research topic, as it helped to assign a collective identity to the survey's participants. With an appropriate number and types of participants, the sample would be representative of the studied population (Sheppard, 2019, p. 111). The second section prompted participating flight students to provide their own written responses to open-ended questions. These questions helped to bring individual voice to the group of participants and their concerns surrounding mental health. Additionally, the comments provided by the participants helped to identify context and themes, potentially highlighting elements or concepts not specifically asked for by the researchers. The final section of the survey consisted of Likert Scale statements, which solicit participants' thoughts and perceptions on a variety of topics related to mental health and flight training. The students' responses to these statements provided clarity to their open-ended answers.

## **Study Participants**

Participants for this study were those who responded to the researcher's request for participation. The survey, as well as the accompanying background information and voluntary consent statement, was sent to the University Aviation Association (UAA)-member collegiate flight programs that offer four-year Professional Pilot, Commercial Aviation, and similar degree options. Program directors from 66 programs were identified and contacted to disseminate the anonymous survey link to their institution's flight students at their discretion. All participating students provided their voluntary consent to be a part of the research study.

The researcher targeted 100 completed surveys. This was determined as an appropriate sample size that accurately reflected the collegiate flight student population and minimized sampling error (Sheppard, 2019, p. 111-112). Two weeks after the researcher's initial email, a follow-up message was sent. The survey was closed for response at the conclusion of 45 days. In total, 95 complete survey responses were collected during the spring 2023 academic semester. Due to the anonymity of the survey collection process, the geographic dispersion and other potentially identifying information of completed surveys is unknown. The only known demographic data were those asked in the survey, which were gender, academic classification by credit hour, level of held FAA medical certificate, held FAA pilot certificates/ratings, number of logged flight hours, and career aspirations.

## **Validation Process**

The reliability of the 24-question survey was ensured through the incorporation of several measures. The administered questionnaire's elements were carefully considered, so that the survey's length was appropriate and provided clarity towards the ideated research questions. Each of the survey's 24 questions was written in such a way as to minimize the potential for misunderstandings within the responding participant population.

The validity of the survey questions was established by forwarding the questions to industry professionals known to the researchers. These individuals were asked to examine the set of survey questions and confirm its focus on the related research topic and verify its clarity in

wording and instruction. Their comments and suggestions were then used to further edit and improve the survey questions.

### **Statistical Analysis of the Data**

The collected data was analyzed using a variety of common statistical methods to identify trends and other pertinent factors. Identification of these details allowed the researchers to provide a detailed findings section, as well as evidence to support logical conclusions.

The six multiple choice questions, focusing on demographic related information, were examined using descriptive statistics. According to Dunn and Clark, “With descriptive statistics, we summarize data, making calculations, tables, or graphs that can be comprehended easily” (Dunn & Clark, 2002, p. 1). The thirteen Likert scale questions, as well as the five short-answer questions, were also analyzed using descriptive statistics, in addition to statistical inference. There are several categories of measurement classified as descriptive statistics, including measures of variability (or spread), frequency distribution, and measures of central tendency (Hayes, 2022). Frequency distribution was the best method for review of the collected data, as it focuses on expressing the number of times a data point was chosen. As a result, “a frequency distribution allows one to easily see the most popular answers for all types of questions within the survey, through the use of percentages and other figures” (Dunn & Clark, 2002, p. 4). These distributions were useful in guiding the researchers’ determination of conclusions from the research questionnaire, as well as recommendations.

Measuring of central tendency is another descriptive statistics technique used to analyze the collected data. Measures of central tendency focus on the average or middle values of data sets and include the mean, median, and mode (Hayes, 2022). Statistical inference, also referred to as inferential statistics, is also relevant when creating conclusions that are supported by fact. Statistical inference is based on the mathematical theory of probability and involves drawing conclusions from the data (Dunn & Clark, 2002, p. 1).

All of the participants’ survey data were analyzed by the researchers using data analysis completed within the Qualtrics XM software, ensuring the strongest integrity in data translation and application to support the study’s four research questions. The Qualtrics XM software provided outputs to several statistical tests that are commonly used descriptive statistics measures. Results and interpretations from the statistical analysis of the collected data are provided in the findings.

Last, another data summarization method was the categorization of participant responses to the open-response questions. Following the review of the responses to each of the five questions, answers were manually coded with a number that corresponded to a commonly expressed thought. The coded responses were subsequently grouped, then the groupings of data were shown through a frequency distribution.

## **Findings**

### **Collegiate Flight Students’ Demographics**

Question 1 of the research survey asked each participant to indicate their gender. Table 1 shows that 71 (75%) of the respondents indicated they were males, and the remaining 24 (25%) students indicated they were female.

**Table 1**  
*Collegiate Flight Students' Gender*

<b>Gender</b>	<b>Responses</b>	<b>Percentage of Responses</b>
Male	71	75%
Female	24	25%
Prefer Not to Answer	0	0%
Gender Not Listed	0	0%

Question 2 of the research survey asked each flight student to indicate their current academic classification with respect to the number of completed student credit hours (Table 2). Of the 95 total responses, 36% of the participants stated they were freshmen and sophomores, and the remaining 64% of participants were juniors and seniors.

**Table 2**  
*Collegiate Flight Students' Completed Credit Hours*

<b>Academic Classification</b>	<b>Responses</b>	<b>Percentage of Responses</b>
Freshman	16	17%
Sophomore	18	19%
Junior	27	28%
Senior	34	36%

The third question asked participants to indicate which class of FAA-issued medical certificate they held at the time of completing the survey. As Table 3 shows, all the participants had a medical certificate. The responses showed that 83% of the students held a first-class medical and 17% of students held a second-class or third-class medical.

**Table 3**  
*Collegiate Flight Students' Medical Certificate Class*

<b>Medical Certificate Class</b>	<b>Responses</b>	<b>Percentage of Responses</b>
First	79	83%
Second	5	5%
Third	11	12%
None	0	0%

Question 4 requested flight students state which FAA pilot ratings and certificates they held at the time of the survey (Table 4). Most of the participating students (67%) indicated they were private pilots, 33% of the flight students were student pilots, and 17% were commercial pilots. In addition, 36% of the students had earned an instrument rating and 12% had earned a multi-engine rating. Lastly, 7% of the participating students were certified flight instructors.

**Table 4**  
*Collegiate Flight Students' Pilot Ratings and Certificates*

<b>Certificates/Ratings</b>	<b>Responses</b>	<b>Percentage of Responses</b>
Student Pilot	32	33%
Private Pilot	64	67%
Commercial Pilot	16	17%
Airline Transport Pilot	2	2%
Instrument Rating	34	36%
Multi-Engine Rating	11	12%
Certified Flight Instructor	7	7%
Certified Flight Instructor- Instrument	1	1%
Other	1	1%

Note. The total percentage of responses is greater than 100% because this question allowed participants to select more than one answer.

Question 5 asked flight students to indicate how many flight hours they have logged in total. Table 5 shows that most students (70%) had less than 200 hours of flight time in the cockpit. And only 11% of students had logged 300 or more flight hours.

**Table 5**  
*Collegiate Flight Students' Total Number of Flight Hours*

<b>Number of Hours</b>	<b>Responses</b>	<b>Percentage of Responses</b>
0-99	34	36%
100-199	32	34%
200-299	18	19%
300-399	7	7%
400+	4	4%

### **Collegiate Flight Students' Open-ended Responses**

The second section of the research survey requested the participating students to provide personal responses to the five open-ended questions. The first question asked participants to indicate how they manage stress and anxiety. Each of the 95 participants identified various techniques for how they handle stress and anxiety in their daily lives. After coding the survey data, Table 6 lists the common themes identified by the researchers. Approximately one-third of the students (34%) indicated they manage stress and anxiety by pursuing various other hobbies, including reading, writing, spiritually focused efforts, listening to music, watching television, and playing video games. Thirty-one percent of students mentioned spending quality time alone and relaxing, and 26% of students managed anxiety and stress by exercising.



**Table 6**  
*Collegiate Flight Students' Mental Health Management Techniques*

<b>Stress and Anxiety Management Techniques</b>	<b>Responses</b>	<b>Percentage of Responses</b>
Planning/Time Management	21	22%
Exercise	25	26%
Time With Family/Friends	19	20%
Various Hobbies	32	34%
Alone Time/Relaxation	29	31%
Ignoring The Issue(s)	3	3%
Flying	4	4%
Other	15	16%

Note. The total percentage of responses is greater than 100% because this question allowed participants to provide multiple responses.

The second open-ended question asked the students if they had a backup career goal in the event of an aeromedical certificate issue. Approximately one-half of flight students (52%) indicated they would continue to work in the aviation industry even if they could no longer fly (Table 7). And 35% of students explicitly stated they would pursue a career in a non-aviation industry if they could no longer be a pilot.

**Table 7**  
*Collegiate Flight Students' Backup Career Goals*

<b>Backup Career Plan</b>	<b>Responses</b>	<b>Percentage of Responses</b>
Aviation Industry	49	52%
Other Industry	33	34%
No Plans or Alternate Ideas	13	14%

The third open-ended question asked students if their application for an FAA medical (of any class) has ever been denied for any reason. As shown in Table 8, only 4% of collegiate flight students had an issue obtaining their medical certificate. These students indicated the additional concerns, given their individual cases, were due to (1) a visual color deficiency, (2) childhood ADHD, (3) hypothyroidism, and (4) habitual headaches. However, none of the students indicated a mental health condition as the cause for a medical certificate denial.

**Table 8**  
*Collegiate Flight Students' Medical Certificate Denial Experiences*

<b>Medical Denial</b>	<b>Responses</b>	<b>Percentage of Responses</b>
Yes	4	4%
No	91	96%

The next open-ended question asked students if they currently held a Special Issuance medical. Like the previous question, 4% of flight students currently hold a Special Issuance medical certificate (Table 9). The students identified hypothyroidism, pre-menstrual pain and anxiety, childhood anxiety and depression, and a bleeding disorder as the reason they had the special medical. One additional student commented that they did not currently have a Special Issuance medical but stated they expected to have one soon due to depression.

**Table 9**  
*Collegiate Flight Students’ Special Issuance Medical History*

“Special Issuance” Medical	Responses	Percentage of Responses
Yes	4	4%
No	91	96%

The last open-ended question asked students if they had any suggestions for how to improve the current FAA aeromedical certification process (including aspects related to mental health). As shown in Table 10, the comments provided by the participating students focused on a wide array of aspects within the aeromedical certification process, including mental health. Of the five open-ended questions, the collegiate flight students were collectively the most descriptive when answering this question. Several novel and repeated opinions were expressed with 39% of students specifically mentioning mental health. One student stated, “As students, we would be willing to talk about our depression and anxiety concerns, but out of fear of how the FAA will react, we do not seek help. So, we just deal with it and press on, causing untold levels of mental fatigue. All this fatigue leads to a fragile mental state.” A second student added, “I feel that mental health in aviation is not addressed enough, especially for female flight students. As a female, there are fewer female peers to connect with and talk to, while there is an increased amount of pressure to perform well in the cockpit since you are constantly being compared to males.”

Additionally, 24% of students commented that they hoped any future revision in the certification process would be less punitive to pilots. Lastly, 44% of flight students indicated they had no suggestions for a potential process revision.

**Table 10**  
*Collegiate Flight Students’ Aeromedical Certification Process Improvement Suggestions*

Process Improvement Suggestions	Responses	Percentage of Responses
Mental Health Related	37	39%
Other Conditions	5	5%
Being Less Punitive to Pilots	23	24%
Other Aspects	12	13%
Not Sure/No Suggestions	42	44%

Note. The total percentage of responses is greater than 100% because this question allowed participants to provide multiple responses.

### Collegiate Flight Students' Perceptions Regarding Mental Health

The last section of the survey consisted of thirteen Likert scale statements. Each question had five options for participants to rank their feelings, including Strongly Agree (SA), Agree (A), Neutral (N), Disagree (D), or Strongly Disagree (SD). Table 11 provides a summary of data from the first four Likert statements regarding mental health disclosure. Almost one-half of flight students (46%) disagreed with the statement, “The FAA has my best interests in mind, in terms of mental health disorder diagnosis, disclosure, and treatment.” One of these students responded, “The fear of never flying again is why no one gets help for mental health issues.” Another student added, “The FAA needs to understand that pilots are human and have human emotions and thus need to provide resources that will not penalize a pilot for feeling sad or anxious.” Only 27% of students agreed with the statement. Conversely, almost all students (91%) agreed with the statement, “It is dangerous for pilots to hide their mental health disorders.” Two-thirds of students (68%) agreed with the statement, “The current FAA medical certification process encourages dishonesty in relation to mental health disorders.” And only 9% of participating students disagreed with the statement. Regarding the statement, “I am aware of pilot(s) who have been dishonest during the FAA medical certification process in relation to mental health disorders,” 38% of students agreed with the statement, and 35% of students disagreed.

**Table 11**  
*Collegiate Flight Students' Perceptions Regarding Mental Health Disclosure*

<b>Likert Scale Statement</b>	<b>SA</b>	<b>A</b>	<b>N</b>	<b>D</b>	<b>SD</b>
The FAA has my best interests in mind, in terms of mental health disorder diagnosis, disclosure, and treatment.	6 (6%)	18 (19%)	27 (28%)	26 (28%)	18 (19%)
It is dangerous for pilots to hide their mental health disorders.	53 (56%)	33 (35%)	8 (8%)	1 (1%)	0 (0%)
The current FAA medical certification process encourages dishonesty in relation to mental health disorders.	26 (28%)	39 (41%)	21 (22%)	6 (6%)	3 (3%)
I am aware of pilot(s) who have been dishonest during the FAA medical certification process in relation to mental health disorders.	12 (12%)	24 (25%)	26 (28%)	23 (24%)	10 (11%)

Table 12 summarizes data from the three Likert statements regarding mental health and career impacts. Most collegiate flight students agreed their flying careers were contingent on their ability to successfully complete an FAA medical examination and receive a medical certificate. Regarding the Likert statement, “If I failed to receive an FAA medical at the time of my physical examination, then my flying career would be in jeopardy,” 85% of students agreed, and only 4% disagreed with the statement. Similarly, 71% of students agreed with the statement, “If I told an Aviation Medical Examiner (AME) that I was depressed or anxious, then I would no

longer be able to fly.” Regarding this statement, a student commented, “There is an incredible stigma in having any mental health struggle because if we report it on the medical, the chances of getting deferred by the AME and being grounded while the FAA slowly asks a lot of questions and orders a bunch of expensive tests is high.” Only 9% of students disagreed with the statement. In relation to the second open-ended question, collegiate flight students were asked to indicate their perceptions regarding a backup career plan if they were denied a medical certificate. More than half of the students (61%) agreed with the statement, “I have thought about what career I would pursue if I was denied an FAA medical certificate.” Approximately one-fourth of students (27%) have not thought about a backup career plan.

**Table 12**

*Collegiate Flight Students’ Perceptions Regarding Mental Health and Career Impacts*

<b>Likert Scale Statement</b>	<b>SA</b>	<b>A</b>	<b>N</b>	<b>D</b>	<b>SD</b>
If I failed to receive an FAA medical at the time of my physical examination, then my flying career would be in jeopardy.	39 (41%)	42 (44%)	10 (11%)	3 (3%)	1 (1%)
If I told an Aviation Medical Examiner (AME) that I was depressed or anxious, then I would no longer be able to fly.	30 (32%)	37 (39%)	19 (20%)	9 (9%)	0 (0%)
I have thought about what career I would pursue if I was denied an FAA medical certificate.	23 (24%)	35 (37%)	11 (12%)	19 (20%)	7 (7%)

Regarding collegiate flight students’ perceptions related to mental health strategies, 81% of students agreed with the statement, “I adequately manage my stress and any mental health challenges that I face.” Only 4% of students disagreed with the statement (Table 13). One of the students who disagreed with the statement commented, “Due to my mental decline, my passion for aviation has been almost completely drained to the point that it is hard to see a future for myself in the industry.” Only 41% of flight students agreed with the statement, “My collegiate flight program has adequate mental health related resources.” One of the students who disagreed with this statement stated, “Collegiate flight schools can make the experience easier on students but choose not to.” Moreover, 65% of students agreed with the statement, “My professors, flight instructors, and others within my collegiate flight program care about my mental health.” Furthermore, 17% of students disagreed with the statement. One of these students, disagreeing with the statement, commented, “Having so many bad experiences with flight instructors has had a strong negative impact on my flight training and my mental health. I have thought about leaving Part 141 flying because I am sick of being treated poorly while I’m trying to learn. My university does not seem to do a thorough job screening their flight instructors before hiring them. Most instructors make very little effort to teach because they are only in it for the hours to get to the airlines.” And another student added, “At my university, I have had several flight instructors who raised their voice with me in the cockpit regarding simple mistakes, which

makes it more difficult for me mentally. These instructor outbursts leave me on edge and anxious throughout the training flight.”

**Table 13**

*Collegiate Flight Students' Perceptions Regarding Mental Health Management Strategies*

<b>Likert Scale Statement</b>	<b>SA</b>	<b>A</b>	<b>N</b>	<b>D</b>	<b>SD</b>
I adequately manage my stress and any mental health challenges that I face.	28 (29%)	49 (52%)	14 (15%)	2 (2%)	2 (2%)
My collegiate flight program has adequate mental health related resources.	5 (5%)	34 (36%)	30 (32%)	18 (19%)	8 (8%)
My professors, flight instructors, and others within my collegiate flight program care about my mental health.	22 (23%)	40 (42%)	17 (18%)	10 (11%)	6 (6%)

Table 14 shows a summary of data from the three Likert statements regarding collegiate flight students' perceptions related to revising the aeromedical certification process. One-half of participating students (52%) agreed with the statement, “I have a good understanding of the FAA medical certification process,” whereas 16% of students disagreed with the statement. Approximately two-thirds of flight students (69%) agreed with the statement, “The current FAA medical certification standards are uncertain and subjective in relation to mental health disorders.” On the contrary, only 7% of students believed these standards were clear and not subject to interpretation. Lastly, most students (84%) agreed the FAA mental health certification standards should be reviewed and potentially revised. One of the flight students remarked, “These FAA standards have always affected me in an extremely negative way in my life all because of the trouble it takes to be on medication that has helped me a lot. I hope things change because I want to fly, but the FAA is destroying the Gen Z pilot opportunities.” And another student stated, “The FAA has a long way to go in addressing mental health needs. It cannot be ignored, and I find their policies about mental health to be absolutely barbaric. There needs to be a systematic change from within before it can be accepted instead of being stigmatized. Another suicide is waiting to happen if the FAA does not move.” Last, another student added, “The FAA has an archaic viewpoint on mental health issues that alienates current and potential pilots. Their refusal to update medical policies and listen to science and medical professionals will continue to create serious safety issues as pilots attempt to secretly manage serious mental health issues without the support of a trained professional.”

**Table 14**  
*Collegiate Flight Students' Perceptions Regarding Aeromedical Certification Process Revision*

<b>Likert Scale Statement</b>	<b>SA</b>	<b>A</b>	<b>N</b>	<b>D</b>	<b>SD</b>
I have a good understanding of the FAA medical certification process.	11 (11%)	39 (41%)	30 (32%)	14 (15%)	1 (1%)
The current FAA medical certification standards are uncertain and subjective in relation to mental health disorders.	22 (23%)	44 (47%)	22 (23%)	7 (7%)	0 (0%)
The FAA mental health certification standards should be reviewed and potentially revised.	41 (43%)	39 (41%)	13 (14%)	1 (1%)	1 (1%)

### Conclusions

This research effort highlighted the connection between mental health and collegiate flight students. Ninety-five collegiate flight students completed surveys, with most students having the following characteristics, male, senior classification (by student credit hour), a first-class medical, private pilot certificate, and have less than 200 hours of logged flight time. These students' responses were clear regarding their perceptions and realities related to mental health, and there was sufficient data collected to draw conclusions, as well as recommendations related to the topic.

#### **RQ1: What are collegiate flight students' perceptions regarding mental health disclosure based on the current aeromedical process?**

What were the primary conclusions drawn from the analyzed qualitative and quantitative data? Most prominent was the feeling that there is a perceived benefit to not disclosing or ignoring mental health and fitness issues; students are aware of mental health and the impact it has in the cockpit; their mental health is impacted by several factors, and the current FAA medical certification process could be improved. One of the collegiate flight students participating in this study directed their concern to the researchers, "Even though this research data is protected and as you [researchers] said in your email that all pilots are highly uncomfortable when talking about mental health due to the fear of the FAA getting involved; no matter the protections it is almost like you can trust no one about this topic."

#### **RQ2: Do collegiate flight students view disclosing mental health struggles as having a negative impact upon their careers?**

So why do collegiate aviators believe there is a benefit to dishonesty? Similarly, what is the impact of being truthful, even when there may be reasons not to be? Participating students indicated that it is dangerous to hide mental health disorders, yet 68% believe the way the FAA aeromedical standards are presently written encourages dishonesty. Thirty-eight percent of participants are aware of someone who has been dishonest during this process, noting that a

rationale for doing so is the consequences of being truthful. Seventy-one percent thought that by telling their AME that they were depressed or anxious, then they would no longer be able to fly. One of the participating flight schools stated, "Even though I'm mentally OK, I would NEVER see a psychologist on the very small chance they would diagnose me with something that could be used against me from getting my medical." Eighty-five percent of the students believed their flying careers were tied to their ability to receive a medical at the time of their examination (no deferral to the FAA for further review).

### **RQ3: What strategies do collegiate flight students use to manage their mental health and what are these strategies' effectiveness?**

What are some of the drivers, both negative and positive, for mental health within this population? How can industry standards be revised to be more supportive of pilots with mental health conditions? Each participant noted which methods they use to help manage their own mental health. Employed techniques included exercise, spending time with loved ones, and using proper time management, as a few examples. Many participants stated they use multiple of the techniques listed, as well as others. Fifty-nine percent of students disagreed or were neutral to the Likert Scale statement their collegiate flight program had adequate resources to support their mental health. Eighty-four percent of students agreed the aeromedical standards should be revised, with 69% feeling that the standards, as they are written, are either uncertain or subjective – in relation to mental health disorders.

Based on the findings of the survey, in addition to conclusions drawn from the research data, the researchers advise the following recommendations. First, the majority (71%) of students recognized the connection between mental health and their ability to fly. As a result of the correlation between one's mental health and other aspects of well-being in their flying careers, flight students should begin or continue creating healthy habits. As it pertains to mental health, students should foster habits that allow them to manage their current related issues, as well as ones that may occur in the future.

Secondly, by knowing what can happen when mental health is stigmatized or ignored amongst its student population, collegiate flight programs should begin or continue, fostering conversations surrounding mental health and collegiate aviation. As evidenced by a flight student who stated, "Some flight instructors need to have more of a teaching attitude, it is not the actual flying that jacks my mental health – it is the people at my flight school." And another student added, "The school that I go to lacks awareness of a student's mental situation and seems as they do not care about me, which does not help with the situation that I face flight training." Each program should conduct research with their own students to determine how their students' perceptions vary from the sample population studied in this research. From these conversations and research, collegiate flight programs and their associated universities can create resources to address these issues, as well as anticipate potential mental health related problems connected with flight training prior to them occurring. As one flight student stated, "I love flying and aviation, but sometimes it can be a lot. I feel there is no one who cares or is safe to just vent all my feelings to. I cannot talk to a therapist at my school because they do not know what I am talking about or try to diagnose me with something that will cause me to lose my medical." And another student added, "Prior to this semester I struggled with depression and anxiety but have

been scared to see a university counselor since I do not want to be grounded and delay my flight training. I would love to get help and support, but I am not willing to risk my future as a pilot when I can find different ways to handle my anxiety and depression with meditation and journaling.”

**RQ4: Do collegiate flight students feel there is a tangible benefit to pilots and the public if the current first-class medical certification standards related to mental health aspects are revised?**

Last, the findings of this research study should be discussed among various governmental and industry-trade organizations. These organizations can use the examined literature and the results derived from student perceptions to review and potentially revise existing regulations surrounding mental health, flying, and aeromedical certification. A common theme from the students’ comments was they believe the current certification process is punitive to pilots. As stated by one of the student pilots, “I strongly believe that if the FAA made attention-deficit/hyperactivity disorder (ADHD) medication, SSRIs, anti-anxiety medication, and other medications non-disqualifying we would see a marked decrease in instances of anxiety and depression in flight students.” So, lawmakers and others should be mindful of that aspect when reviewing this research, as well as other examples that showcase the current state of certifications and regulations surrounding mental health and collegiate aviation.

**Study Beneficiaries**

Degree-seeking flight students and university flight programs are the primary beneficiaries of this study as its findings are directly related to each party. The data from this study contributes to existing research surrounding mental health and aviation, including the limited amount of information that is specifically focused on this unique segment of the industry. These results are useful context for decision makers to understand issues related to the future aviation workforce. On a concluding note, a participating flight student commented, “It is good that there has been so much noise about mental health in aviation lately, considering it can be such a taboo topic in a field where we are expected to be 100% physically and mentally fit.” And another student added, “I hope this increased discourse around mental health will start to shed light towards people in the flying community stuck in the dark of their own minds.”

**Recommendations for Further Research**

Further research studies are needed to determine whether the current mental health standards for aeromedical certification are a barrier to entry or a barrier for student pilots in completing their bachelor’s degrees related to flight. Additionally, an understanding of whether mental health issues associated with collegiate flight are a contributing factor for undergraduate students who underperform in coursework, fail to graduate or are delayed from their original plan of study. Also, a further study is recommended to determine if collegiate flight students suffer from anxiety and depression at a differing rate than the non-flying collegiate student population. Additionally, this study should attempt to understand the causes for anxiety and depression within flight programs, including whether the symptoms are situational and whether they are caused by factors that could be controlled if known. Last, how well do collegiate flight



programs support their flight student's mental health, and what strategies, if any, are programs employing to support their students? Further studies could focus on flight programs that have already implemented mental health awareness classes, peer-to-peer support groups, and other mental health management methods, in addition to airlines and other pilot-focused groups that have incorporated successful mental health support strategies into their own flight operations.

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