

Job Demand, Control, and Social Support to Pilots: Basis of Mental Health Recommendations

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Abstract

This study investigates the relationship between job demand, control, and social support on the mental health of pilots. Given the documented prevalence of mental health challenges among pilots, including stress, suicidal thoughts, and anxiety, this research aims to identify key factors influencing their well-being and develop tailored recommendations. Employing a qualitative research design with case study analysis, this study seeks to understand the levels of job demand, control, and social support experienced by pilots. By exploring these factors and their impact on mental health, the study will generate evidence-based recommendations to promote the psychological well-being of pilots.

Keywords: Netiquette, pilots, mental health, job demand, job control, social support, qualitative research, case study

I. INTRODUCTION

Mental health and the absence of mental illness are crucial for the safe execution of pilot and other safety-critical aviation roles (Pilot Mental health, 2024). Pilots face various psychological issues, including adjustment disorder, mood disorders, anxiety, work-related stress, interpersonal issues, sexual dysfunction, and alcohol issues. (Cahill et al., 2020). Report says 78.6% of pilots felt extreme weariness, 22.8% expressed substantial depression, 12.3% reported significant anxiety symptoms, and 10.5% reported serious depression and anxiety symptoms, despite the fact that pilots were rostered for just 60.8% to 62.5% of the legally permitted duty and flight hours/month (Venus, M. et al., 2022). Additionally, Experiencing adverse life events can be instrumental in identifying individuals at higher risk for mental health problems (Mulder, S., & De Rooy, D., 2018). A study has shown that workplace disruptions, such as labor disputes and corporate instability, can have a detrimental impact on pilots' mental well-being. Specifically, it has found that pilots working in unstable airline organizations report higher levels of stress and depression compared to those in more stable environments (Flynn et al., 2022).

Moreover, airline pilots' responsibilities expand not only through their well-being, but also their safe operation of expensive equipment, thus, their load of responsibility affects mental health which can significantly impact flight performance, posing a significant risk to the safety and well-being of hundreds of people involved in the operation of a multi-million dollar apparatus (Hontz & Osborne, 2023). Crucially, because of the uncertainty surrounding the risks associated with aviation operations, as well as the possible terror and insecurity that pilots may experience over time, they are particularly vulnerable to

symptoms of anxiety (Wang, Y. et al., 2022). With regards to the mental-health condition, one of the students in University of North Dakota, committed suicide by crashing his aircraft due to depression and fear of losing flight privileges, if he sought mental healthcare. This tragic event highlights the mental health challenges faced by collegiate pilots (Henson, 2021).

Given that work overload, mental-health condition represents important risk factors in aviation, the objectives of this study were to understand the pilots’ mental-health and the factors that affect them to assess the association between these factors that can negatively affect their work performance.

1.1. Background of the Study

Amongst several instances, being a pilot is considered as something incredible and distinctive, along with its work environment that highlights the excitement and thrill of each flight, but it is important to know that they are also equipped with surmountable responsibilities and increased mental processing. The skies are truly unlimited, but the minds of the pilots do not equate the same as it has its own limitations and disadvantages. Studies conducted by multiple scholars noted that pilots take a huge toll when it comes to mental health, they experience sever fatigue, depression, anxiety, and even the thought of suicide comes to mind. (Sullivan et al., 2023; Brock & Hay, 2019; Pilot Mental Health, 2024)

To further address the issue on hand, it is necessary to state that the psychological health of a pilot can suffer from different factors such as sleep deprivation, ever changing flight schedules, the exposure to traumatic situations, and the mere pressure itself as pilot that you hold hundreds of souls aboard your aircraft. In line with this, pilots tend to lean away from seeking medical attention due to the stigma presented to them, along with the mental health issues in the aviation industry. (Venus et al., 2022)

And so, addressing the challenges faced by pilots mentally is crucial, for it does not only affect the pilots themselves, but also the souls of hundreds of people onboard. This study goals to further understand and delve deep within the factors that directly affect pilots’ mental well-being. This study also aims to identify the issues pilots’ face in their firsthand experience, and bring into light possible solutions and support systems that may help the pilots to mitigate the existing issues they face.

By taking one step upon studying the matter at hand, by shedding light on the unlimited skies yet limited mind faced by pilots, the study may be able to initiate and inspire policy changes, create more impactful programs, and implement health and support services to fortify the mental health of pilots.

1.2. Theoretical Framework

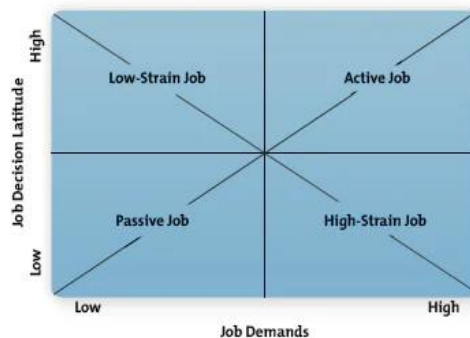


Fig. 2: Robert Karasek’s JDCA Model

The job demand-control-support model, also called the DCS model, created by Robert Karasek is a framework that seeks to assess work stress. The year 1979 saw Karasek’s development of this theory. This theory suggests that high levels of job demand with low decision latitude (control) result in high job strain. Social support at the workplace cushions against negative consequences from high strains. (Fila, 2016; Luchman & González-Morales, 2013; Wall et al., 1996; Jolly et al., 2020)

The DCS model, this model, could be of help in the understanding of pilot mental health. High job demands may be faced by pilots such as time constraints, long working hours and emergencies. In case they have low decision latitude for example tight regulations and automation then it would result in high job strain. Support from peers and supervisors might assist in reducing the negative consequences of intense pressure and contribute to improved psychological wellbeing. (Demerouti et al., 2018; Nappo, 2020; Costa, 1996) And so, upon using Karasek’s Job-Demand-Control-Support Theory, the researchers can further delve to understand the factors that affect the pilots’ mental health.

1.3. Conceptual Framework

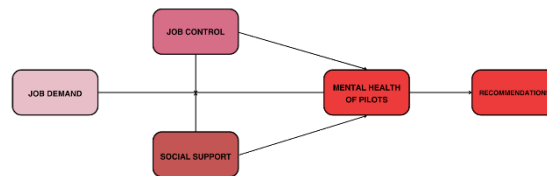


Fig. 2: The relationship of Job Demand, Control, and Social Support to Perceived Mental Health and its recommendations

The figure above explains how Job Demand, Control, and Social Support, the dependent variables directly affect the pilots’ perceived mental health. Job Demand is defined and characterized as the psychological pressure being placed on an employee or a worker, in this study’s case, the pilot, which in the figure above shows the irregular work schedules, jet lag, high workload, and time pressure during jobs. Job Control, on the other hand, represents the autonomy or power the pilot has over his or her job, referring to the pilots’ autonomy in decision during flights and their own operation of flights. Social support, as it suggests, refers to the contradictory force against stress, providing positive emotions such as trust, sense of belonging, and etc. Lastly, perceived mental health is the amount or levels of stress being perceived or felt by the pilot in relation to their mental health. (Nordenmark et al., 2012; “Occupational Stress and Employee Control,” 2003; Drageset, 2021)

This model explains how a high job demand, high job control, and low social support can directly impact a pilot’s perceived mental health, with the DCS model as its grounded theory. During the research timeline, the researchers shall conduct a semi-structured interview in order to fully gather the pilots’ firsthand experience when it comes to their mental health. This model will hopefully answer and fortify the reasons as to why the mental health of pilots continue to deteriorate, and hopefully provide optimal solutions and interventions to help pilots.

1.4. Statement of the Problem

The study's goal is to further understand the factors that affect the mental health of Pilots. In order to do so, there are questions that must be answered to provide an accurate and logical conclusion:

1. What is the level of Job Demand of the pilot-respondents?
2. What is the level of Job Control of the pilot-respondents?
3. What is the level of Social Support to pilot-respondents?
4. How is the mental health of the pilot-respondents?
5. What are the recommendations for the mental health of the pilot-respondents to be mentally healthy?

1.5. Hypothesis

Due to high levels of work-related stress and pressure, the mental state of pilots deteriorates, leading to symptoms of poor mental health such as anxiety, depression, and burnout, which negatively impact their mental health and decision-making abilities in the cockpit.

1.6. Significance of the Study

This research aims to uncover the key elements that influence the psychological well-being of pilots. The outcomes and insights derived from this paper will prove advantageous to the following:

1. **Pilots-** This research will benefit the pilots to be able to cope with their mental health issues and challenges. Recommendations, interventions, and further conclusions will hopefully provide pilots with great assistance, giving them a better practice and a better understanding of their own mental health.
2. **Students-** The study offers students a valuable opportunity to understand the lived experiences of pilots. By revealing the unique stressors, responsibilities, and pressures that pilots navigate on a daily basis, students can develop a deeper appreciation for the dedication and resilience required to excel in this profession.
3. **Future researchers-** By sharing the data and findings of this study, future researchers will gain a more comprehensive understanding of the factors that influence pilot mental health. This knowledge can be used to develop more targeted interventions and support systems to address the specific challenges faced by pilots.
4. **Airline Administration –** By knowing the concepts and possible interventions, they can apply a better work environment for their pilots.

1.7 Review of Related Literature

In a survey of 154 female pilots of varying certification levels, Hoffman et al. (2021) found that nearly 67% withheld information from their healthcare providers. In another survey of 3,765 civilian pilots in the United States, nearly 46% admitted to withholding information from healthcare providers out of fear of aeromedical certificate loss (Hoffman et al., 2022a).

The same study also found that more than 56% of pilots reported at least one healthcare avoidance behavior such as flying despite experiencing new symptoms that the pilot felt warranted medical evaluation, failure to disclose prescription medication use, or misrepresenting or withholding information on a written health questionnaire. Hoffman et al. (2022a) linked motivations for these behaviors to the fear of losing the Federal Aviation Administration (FAA) medical certification.

Wu et al. (2016) found that over 12% of the pilots responding to the survey met threshold levels for depre-

ssion. Additionally, more than 13% of those respondents reporting having worked as a pilot in the preceding 30 days met the same criteria. The anonymous survey was completed by 1837 pilots. More shocking perhaps is that Wu et al. also found that over 4% of the study participants reported having suicidal thoughts within the preceding two weeks (2016).

Although pilots were rostered for only 60.8% to 62.5% of the legally allowed duty and flight hours/month, 78.6% reported severe or very high fatigue, 22.8% significant depression, 12.3% significant anxiety symptoms, 10.5% reported significant depression and anxiety symptoms. Pilots voiced severe concerns about FTL, sleep restrictions associated with early starts, minimum rest, etc. Pilots also expressed distinct fears regarding more fatigue-related crashes, and how adverse working conditions, work-related and psychosocial stress could impair their health.

According to Venus, M. et al.(2022), LCC pilots reported significantly more work-related stressors like lower income, younger age, less total flight experience, more demanding rosters (more sectors, more early starts, more duty and flight hours), significantly more sleep difficulties, and very high levels of fatigue. Moreover, LCC pilots' well-being was significantly more impaired: 24.2% of the LCC vs. 14.8% of NWC pilots reported positive depression screening results, and 7.1% of LCC and NWC pilots reported significant symptoms of anxiety.

According to the review, pilots do not necessarily inform their employers if they are experiencing mental health challenges. The fear of being temporarily grounded or having their flying careers adversely affected is a potential reason for this reluctance. This is a common challenge in aviation safety

According to Mulder, Sanne & De Rooy, Diederik (2018), the key findings highlight the critical role of negative life events in contributing to lethal accidents and suicidal behaviors among pilots. However, the effectiveness of peer-support programs in addressing these mental health challenges remains inconclusive based on the available evidence. Further research is needed to explore the impact of organizational culture and just culture approaches on pilot well-being and safety.

During the COVID-19 pandemic, airline flights were severely reduced. By January 2021, airlines shed thousands of jobs and 24 airlines no longer existed. General population surveys found 13% of individuals had "serious distress" from the pandemic. In two aviation focused surveys, 40–66% of pilots agreed or strongly agreed that their mental health worsened since the COVID-19 pandemic.

These results provide important insights into how proactive coping, stress, and social support interact to shape pilot mental health. The findings suggest that interventions to enhance proactive coping skills and social support could be effective in protecting the mental health of pilots during the ongoing challenges of the pandemic

The study found that a significant number of active airline pilots are experiencing depressive symptoms, with 12.6% meeting the threshold for depression and 4.1% reporting suicidal thoughts. This is likely an underestimate, as many pilots may be reluctant to seek treatment due to concerns about the potential negative impact on their careers. The findings suggest that there is a pressing need to address the mental health challenges faced by airline pilots, in order to ensure the safety and well-being of both pilots and passengers

A review of 20 studies found that the prevalence of depression among commercial airline pilots ranged from 1.9% to 12.6%. Several factors that affects the pilot's well being are substance abuse, experiencing verbal or sexual abuse, disruption in sleep circadian rhythms, and fatigue.

According to Cooper, C., Sloan, S. The study of 442 commercial airline pilots examined the sources of occupational and domestic stress, life events, and coping strategies, and their influence on job

dissatisfaction, mental health, and performance. The research highlights the multifaceted nature of the challenges facing commercial airline pilots. Addressing occupational stressors, work-life balance, and access to mental health resources will be crucial for supporting pilot well-being and performance. Airline organizations should prioritize initiatives that promote autonomy, reduce fatigue, and foster a positive organizational climate.

The Germanwings 9525 incident highlighted the potential psychological threats to aviation safety and the vulnerabilities within the industry. This tragedy underscores the importance of addressing burnout and work-related stress among pilots and other aviation professionals. While the identification and management of burnout are crucial, the prevention of burnout is even more critical. Recognizing the early signs of burnout can be challenging, as the symptoms may not be immediately apparent. However, once an individual reaches the point of burnout, it becomes much more evident and severe.

The study included 328 pilots with a mean age of 41.4 ± 9.7 years. The key findings were alarming - 224 (68.3%) pilots had severe fatigue, with an FSS score ≥ 36 , and 221 (67.4%) reported making mistakes in the cockpit due to fatigue. Additionally, 112 (34.1%) pilots had excessive daytime sleepiness, with an ESS score ≥ 10 , and 148 (45.1%) reported falling asleep at the controls at least once without prior agreement. From a mental health perspective, 113 (34.5%) pilots had an abnormal HADS depression score (≥ 8), and 96 (29.3%) were at high risk for obstructive sleep apnea (OSA), requiring further assessment. These findings highlight the significant prevalence of fatigue, sleepiness, and mental health issues among the pilot population, underscoring the need for comprehensive fatigue risk management, sleep disorder screening, and mental health support programs within the aviation industry.

Demands refer to the physical or mental aspects of a job that require ongoing effort or abilities from the employee (Bakker & Demerouti, 2007). Job demands are not inherently negative, but can become stressful when they require a high level of effort from the worker. When job demands are stressful, they may be linked to negative outcomes like burnout or depression (Schaufeli & Bakker, 2004).

According to Prince M. (2007), The true burden of mental disorders is probably underestimated because the strong connection between mental illness and other health problems is not fully recognized. Since mental and physical health are intricately linked in many complex ways, it's impossible to have good overall health without good mental health. Mental disorders make people more likely to develop both infectious and non-infectious diseases, and also increase the risk of accidental and purposeful injuries. Conversely, many physical health conditions raise the chances of developing a mental disorder. The presence of multiple conditions together makes it harder for people to seek help, get properly diagnosed and treated, and recover. Mental health needs to be a key consideration in all areas of health and social policy, healthcare system planning, and the provision of primary and secondary general medical care.

This hiring is expected to result from both new aircraft generation and retirement as well as pilot attritions outside the pilots' retirements. Also, government regulations could further hike the demand for new pilots. With so much demand, will there be a sustainable supply of new pilots in the long-term? To scrutinize US airline pilot supply and demand. Affordable flight training, economic growth or shrinkage in markets around the world, retirement trends amidst increased life expectancy changes and legislative requirements - are a few of what is leading to an unprecedented pilot supply situation. The methodology offers an empirical approach from which to analyze pilot labor supply in the U.S.

Ground crews in aviation are an essential part of air travel. Their workload not only threatens individual health and organizational efficiency but aviation safety. This study aims to elucidate the relationship between different sources of occupational stress and work performance. It is able to deepen our

understanding the characteristics of aviation ground crews and the effect pathway between occupational stress and work performance, with this effective model we can implore for practices in human resources management or policies related industries yet specifically target on intervention advocacy within an airlines corporation.

Job burnout is associated with emotional instability due to high work demands and inadequate resources to complete tasks (Khan, 2015). It is a chronic job stress issue that needs attention because it directly affects individuals and impacts the quality and stability of social services. A review of previous literature on predictors of personal and environmental job burnout among aviation pilots highlights factors such as shortened rest periods, adverse weather, aircraft maintenance issues, and pressure to meet on-time performance as significant contributors to pilot burnout (Fanjoy et al., 2010). Kearney (2008) also identified job stressors like work overload, organizational politics, and an undervalued reward system as impacting both personal and professional aspects of pilots' lives, leading to burnout. Bennett (2003), through interviews with UK airline pilots, emphasized the need for close examination of job stress in the aviation industry. Consequently, stress among airline pilots affects their personal and professional lives. The mental health assessment of pilots exposed to potentially contaminated cabin air revealed significant cognitive impairments despite preserved general intellectual abilities. While approximately 350 aircrew in the UK reported physical and psychological ill health following such exposure, a focused case series of 27 pilots aimed to determine specific cognitive deficits. Excluding nine pilots with other medical or psychiatric conditions, the study found that the remaining 18 pilots demonstrated normal language, perceptual skills, and general intellect but had below-expected performance in psychomotor speed, attention, and executive functioning. These alarming cognitive failures, such as difficulty retaining or confusing numerical information from Air Traffic Control, cannot be attributed to mood disorders or malingering.

Pilot burnout happens when fatigue difficulties worsen and work demands consume available resources. Fatigue, when combined with burnout symptoms, leads to poor performance and longer reaction times for crucial jobs in safety-sensitive environments such as aviation. This can raise safety concerns or have negative implications.

These requirements (such as stress reactions, such as work-related depression or burnout, especially when there is no autonomy or job management (Bakker et al. 2003). Examples of these stressors include time pressure, an excessive workload, and others. Burnout among employees lowers their confidence in their ability to solve work-related issues. leading to a decline in their productivity at work. Operating with considerable mental strain load necessitates more work, particularly from a fatigued person. Utilizing this addition the person becomes physically and emotionally exhausted due to lack of energy. Increasing work demands can have long-term repercussions on workers' health and happiness (Bakker, Verbeke and Demerouti (2004).

The Early Stage: Warning Indications and Present Symptoms It is frequently most difficult to identify mental illness in its early stages. This is due to the fact that the early signs of a mental disease are frequently very mild. Even though these symptoms seem minor, they become increasingly serious when more symptoms emerge and the mental disease advances to later stages. These symptoms are simple to ignore because they may be readily dismissed as "quirks."

The Second Stage: Worsening Symptoms An individual's symptoms can intensify and become more noticeable during the second stage of mental illness. At this point, the individual may try self-medicating

more frequently in an attempt to manage their mental health. This involves turning to drugs and alcohol as coping methods.

The Third Stage: Daily Life Is Disrupted by Symptoms The third stage of mental illness is characterized by symptoms that start to interfere with day-to-day functioning. This has an impact on more than simply the struggling individual. Everyone in their immediate vicinity—friends or family—also experiences major interruptions in their everyday routines.

Stage Four: Severe Indications The most severe stage of mental disease is the fourth, and frequently the last. This phase happens when a person's mental disease becomes potentially fatal. This is the phase where self-harm is most likely to occur. Aggressive actions toward other people and snapping at circumstances also increase in frequency.

II. METHODOLOGY

This thesis aims to explore what factors contribute to this and also, the mental health of pilots. Given stress and depression may have contributory impact on pilots' performance, the multimodal interview methods in combination with thematic analysis will be used as primary research methodologies for this study. Pilots from all over the Philippines are eligible for interviews, face-to-face or virtual depending on scheduling and geographical considerations. These pilot semi-structured interviews will build a deeper understanding of their personal experiences, perceptions and challenges to mental health. The interview protocol will span a variety of topics including stressors associated with work, skills for coping with stress, the role of various support systems and the ways mental health affects performance in practice.

2.1. Research Design

The researchers will employ a qualitative approach for this study, as qualitative methods are well-suited for gaining an in-depth understanding of human behavior. Given that the focus of this research is on the psychological well-being of pilots, a qualitative approach will enable the researchers to delve into the meaning and experiences of pilots. This method will provide a more comprehensive explanation of the factors influencing pilot mental health, which is the primary aim of the study. The research is based on the primary findings of review of relevant literature that establishes the connections between various factors and pilot mental health.

2.2. Respondent

This study will gather insights from a carefully chosen individual of airline pilots currently licensed, including pilots from various flying schools within the Philippines. The information utilized in this investigation came from (5) respondents. There were 3 pilots from selected Philippine carriers and 2 pilots from different flying schools in the country. All the selected respondents were randomly selected, and the respondents' identities remained anonymous.

2.3. Settings

The study will be conducted in a hybrid setting, combining both face-to-face and online environments to suffice the diverse needs and convenience of the participants. The face-to-face component will be conducted in a controlled setting, such as a café located near the respondent's place and at PATTS College of Aeronautics campus allowing the researchers for a direct interaction with direct feedback. Meanwhile, the online component will use digital platforms such as google meet, Microsoft teams, and other discussion

forums. This hybrid approach will capitalize on the availability of the respondents at their own convenience ensuring a comprehensive collection of data. Enriching the study's findings and enhancing the overall generality.

2.4. Instrumentation

To collect data, the researchers will use semi-structured interviews with open ended questions. The interview might cover a topic regarding the case of the pilot in Job Demand, Job Control, and Social Support. The interview may be conducted in a form of face-to-face interview or video call.

2.5. Data Analysis

To analyze the data gathered from the interviews, the researchers will carefully transcribe the interview dialogues from the raw video. The researchers will then make use of Case Study Analysis to analyze the data. They will set codes and themes that will correspond to certain areas of the independent variables.

2.6. Ethical Considerations

It is essential that the ethical practices and considerations in the said study shall be done with utmost meticulously. The researchers have given informed consent forms to the participants on the day they are met, if the participants are to take part virtually, they will be given the informed consent form the day prior of the participation of the study, enlightening them regarding the purpose, risks, and other necessary information that the participants need to be aware of. It is heavily emphasized that participation for the study is voluntary, and the researchers do not force the participants to take part in the said study.

Voluntary participation along with the awareness of the study

Consent shall be given by the participants to the researchers that they are willingly to take part in the study, if consent is not given, or if the participants decided to withdraw from the study, the researchers shall discard their data. Given that the participants agreed to partake in the study, their information will be kept by the researchers. Even so, the participants have full rights to withdraw from the study at any time, even after they have given their informed consent forms and they experience no comfort and triggers upon answering the interview, and in those instances, the researchers will be held responsible for their situation. Along with their consensual participation, the researchers shall make the participants be aware of the main goal of the study, its background, and its purpose, and so, the participants are knowledgeable of the various data that will be present in the study.

Unbiased Data Collection and Analysis

The researchers will use interviews and thematic analysis to analyze the data, and so, they will be unbiased and stay true to the process of data collection.

Confidentiality

Confidentiality of the participants will be guaranteed, their personal information will remain confidential. The researchers will never ask for other personal information regarding the private life of the participants aside from their name, age, and the information related to our study. The participants have the right to input answers that they find true to themselves.

Data Protection

The data collected from the interview will remain confidential, and will never be shared to anyone outside of the study. Their particular videos that contain their personal information and the answers they have provided will be properly discarded after the study.

III. RESULT AND ANALYSIS

3.1. Results

The study revolves around interviews with five airline pilots. It focuses on three variables that directly affect the pilots' perceived mental health: Job Control, Job Demand, and Social Support. The research aims to evaluate and provide insight into how these three aspects of the job impact their mental health. Additionally, it seeks to offer recommendations to mitigate the negative effects associated with being an airline pilot.

Interviewee 1

- The information highlighted that being a pilot is an intensive role that demands your complete focus, maintaining high situational awareness, while in the aircraft.
- According to the interview, being a captain pilot has a high level of control prioritizing over the first officer, who has the final authority and responsibility of the operation.
- Challenges identified in the current system include providing below-par social support making the employees difficult to be heard and seen.
- The information highlighted that issues related to job control and job demands are not major concerns for the interviewee because they find great satisfaction in their work, except for non-increasing salaries since before the pandemic.
- Compensation for delayed flights, free consultations with a social support system, and increased salary pay.

Interviewee 2

- As for the interviewee, the job demands are diverse and challenging. Managing intricate flight operations, adhering to strict safety procedures, and navigating various weather conditions are all part of the employment requirements for pilots. For instance, negotiating choppy weather or handling unforeseen technical problems may be extremely taxing and unpleasant.
- As for the interviewee, they feel that they have a fair amount of job control. They have the ability to make judgments about flight operations in real-time, but they still have to follow rules and guidelines. For example, even though they have the ability to select the optimum route or handle in-flight alterations, they still have to abide by air traffic control regulations.
- As for the interviewee, they receive a lot of social support from their friends, co-student pilots, and family. Support from ground crew and management, as well as teamwork in the cockpit, are essential. Debriefing meetings with co-student pilots and the company's mental health services, for instance, are two important components of this assistance.
- As for the interviewee, a tolerable environment for mental health is often fostered by striking a balance between strong social support, moderate job control, and high job expectations. Combining these three aspects helps maintain a balance between their professional and private life. Sufficient guidance and supervision aid in reducing the strain caused by excessive expectations, thereby enhancing their psychological health.
- As for the interviewee, they would recommend regular mental health screenings, more resources for assistance, proper rest and recuperation intervals, and a supportive work environment that fosters candid conversations about mental health to help improve overall mental health.

Interviewee 3

- The informant emphasized the challenges faced by pilots. A pilot has numerous responsibilities and must quickly assess various situations, which leads to burnout.

- A high level of control involves significant responsibility, which can lead to stress and is closely related to pilots' mental health.
- Pilots lack sufficient social support and face significant competition.
- The informant noted that job demands, job control, and social support are linked to mental health; however, pilots need to maintain professionalism and not allow these factors to overwhelm them.
- The informant recommended that airlines prioritize the mental health and well-being of their pilots by implementing policies and programs to support them in their roles

Interviewee 4

- The informant stressed that being a pilot is challenging. As a student pilot, she has come to understand that it can be quite stressful, as her own life is at risk, along with that of the flight instructor.
- The informant highlighted the immense pressure pilots face, as they must master a wide range of lessons and tasks to perform flawlessly during every flight.
- Social support plays a crucial role in mental health and directly impacts performance in the field.
- The informant emphasized that pilots must remain professional at all times and not allow stress to compromise the safety of themselves or others.
- The informant suggested that prioritizing pilots' mental health is a key factor in enhancing their performance. She recommended that higher-ups and supervisors regularly assess their employees and provide them with benefits.

Interviewee 5

- The interviewees job demands as a pilot are high since being a pilot is not just limited to simply flying a plane but also the different theoreticals or the proper procedures behind are taken into account. His Workload is high most of the time and these things don't come in order or follow a step by step process, but rather all at once which can get stressful at times.
- The interviewees job control is also high despite the high workload that he encounters during most of his flights. As a pilot, they are trained to work under pressure, particularly being able to make rational decisions in stressful environments knowing that their safety is at risk. He said that as a pilot, he can certainly state that he has excellent control of the aircraft. In fact, one of the most important components of his job is to maintain constant control of the airplane.
- The interview stated that he's lucky to have high levels of social support from his family and friends, as well as to his instructors and colleagues. Furthermore, he is lucky to be given the support that he needs, may it be emotional support or may come in the form of advice.
- He stated that job demands of being a pilot can be stressful, given the extensive workload, sometimes lead to stress. He oftenly experiences fatigue due to high workload and to my personal matters. Lack of sleep is also one of his biggest problems since he started his flying school in Subic but having high social support from his family and colleagues lightens the mental burden.
- The pilot states that having a good work-life balance as this affects not only our performance at work but also our relationships with the people, we face every day. He also states that achieving this balance can come in different forms like giving importance to physical health by exercising, or it can also be simply taking rest periods to relax our minds.

3.2 Analysis

Job Demand of the Pilot-Respondents

The pilot respondents unanimously indicated that the job demands are high. Interviewee 1 noted the intensive nature of the pilot's role, requiring complete focus and high situational awareness. Interviewee 2 emphasized the diverse and challenging nature of their responsibilities, including managing flight operations and adhering to safety protocols. Interviewee 5 echoed these sentiments, stating that the workload is often overwhelming, as pilots must juggle multiple tasks simultaneously.

Despite these high demands, some respondents expressed satisfaction with their roles, suggesting that passion for flying mitigates the stress associated with job demands. However, the overarching theme is that the demands placed on pilots are significant and can lead to stress and fatigue, particularly when compounded by external factors such as personal life challenges.

Job Control of the Pilot-Respondents

The level of job control among the pilot respondents appears to be relatively high. Interviewee 2 highlighted their ability to make real-time decisions regarding flight operations, despite the necessity to adhere to air traffic control regulations. Interviewee 5 also emphasized having excellent control over the aircraft, which is a critical aspect of their training. This sense of control is vital for pilots, as it empowers them to manage stressful situations effectively.

However, the high level of responsibility associated with this control can lead to stress, as noted by Interviewee 3. The balance between autonomy in decision-making and the pressures of adhering to strict guidelines is a recurring theme, suggesting that while pilots feel in control, the weight of their responsibilities can be burdensome.

Social Support to Pilot-Respondents

Social support emerged as a crucial factor in the mental health of the pilot respondents. Interviewee 2 reported receiving substantial support from friends, family, and colleagues, which is essential for coping with the demands of the job. Interviewee 5 also noted the importance of having a strong support system, emphasizing that emotional support from family and colleagues helps alleviate mental burdens.

However, Interviewee 3 pointed out a lack of sufficient social support in the competitive environment of aviation, indicating that not all pilots may experience the same level of support. The overall sentiment is that while social support is present and beneficial for many, there are gaps that need to be addressed to ensure all pilots have access to the support they need.

Mental Health of the Pilot-Respondents

The mental health of the pilot respondents appears to be a complex issue influenced by job demands, control, and social support. While many respondents reported satisfaction with their work and a sense of control, the high demands and potential for burnout are significant concerns. Interviewee 4 specifically mentioned the stress associated with mastering various lessons and tasks, which can lead to mental fatigue. Overall, the responses suggest that while pilots may maintain professionalism and cope with stress, the pressures of their roles can impact their mental health. The need for mental health awareness and support systems within the aviation industry is evident.

Recommendations for Mental Health of Pilot-Respondents

Based on the insights gathered from the interviewees, several recommendations can be made to enhance the mental health of pilots:

Regular Mental Health Screenings: Implementing routine mental health assessments can help identify issues early and provide necessary support.

Enhanced Social Support Systems: Airlines should foster a culture of support, encouraging open conversations about mental health and providing resources for pilots to seek help.

Work-Life Balance Initiatives: Encouraging pilots to prioritize their physical and mental health through regular rest periods, exercise, and personal time can mitigate burnout.

Training on Stress Management: Providing training programs focused on stress management and coping strategies can equip pilots with tools to handle job demands more effectively.

Supportive Policies and Programs: Airlines should implement policies that prioritize pilots' mental health, such as access to mental health services and debriefing sessions after challenging flights.

IV. DISCUSSION

4.1. Conclusions

Based on the findings from the interviews with multiple pilots, several key conclusions can be drawn regarding the challenges and factors affecting their roles and mental health:

- 1. Job Demands and Control:** Pilots universally face high job demands, including managing complex flight operations, adhering to safety protocols, and handling unexpected challenges like weather changes and technical issues. Despite these demands, most pilots express a high level of job control, allowing them to make critical decisions in real-time, albeit within strict regulatory frameworks.
- 2. Social Support:** The level of social support varies among pilots. While some report adequate support from family, friends, colleagues, and mental health services provided by their companies, others highlight deficiencies in this area. Social support plays a crucial role in mitigating stress and maintaining mental well-being.
- 3. Impact on Mental Health:** There is a consensus among interviewees that the pilot profession carries significant mental health challenges, including stress, burnout, and fatigue due to high workload and the responsibility of ensuring safety. The ability to maintain a balance between job demands, control, and social support directly influences their mental health and overall job satisfaction.
- 4. Recommendations for Improvement:** Interviewees commonly recommend improvements such as regular mental health screenings, enhanced social support systems, adequate rest periods, and supportive work environments that openly address mental health issues. These recommendations aim to reduce stress levels and improve overall psychological resilience among pilots.
- 5. Professionalism and Safety:** Despite the mental health challenges, all interviewees emphasize the critical importance of maintaining professionalism and not allowing stress to compromise flight safety. This underscores the need for effective coping mechanisms and support systems to uphold both pilot well-being and passenger safety.

In conclusion, while pilots derive satisfaction from their roles, they face substantial mental health challenges due to high job demands and responsibilities. Addressing these challenges through enhanced support systems and proactive mental health initiatives is crucial for sustaining both pilot performance and well-being in the aviation industry.

The case study analysis highlights the dual nature of the pilot profession, characterized by demanding job requirements and high levels of responsibility balanced by significant mental health concerns. Pilots are responsible for managing complex flight operations and navigating unpredictable conditions, requiring quick decision making within strict regulatory limits. Despite these pressures, pilots often perceive a significant degree of control over their work, allowing them to exercise authority over operational decisions. However, the impact on mental health is profound, with stress, burnout and fatigue considered

common problems arising from demanding workloads and ongoing safety responsibilities. Effective management of these challenges depends greatly on the presence of a strong social support network, the adequacy of which varies between individuals. Improving social support systems, combined with regular mental health screenings and supportive work environments, emerged as key recommendations for enhancing pilot resilience and well-being.

Furthermore, consensus among those surveyed emphasized the importance of maintaining professionalism and ensuring flight safety amid these mental health challenges. The balance between job demands, control, and social support not only shapes pilots' mental health but also affects their overall job satisfaction. Therefore, fostering an environment that prioritizes psychological resilience and safety protocols is essential to sustain pilot performance and improve the broader operational integrity of the aviation industry. Addressing these multifaceted issues through proactive measures not only supports the health of individual pilots but also strengthens the industry's commitment to safe and efficient air travel for passengers worldwide.

4.2. Recommendations

Mental Health Training for Aviation Professionals: Examine the significance and effects of mental health training for pilots and aviation personnel. This training could equip them to handle the various challenges they may encounter, ensuring that aviation professionals are both mentally and physically prepared to perform their duties effectively.

Regular Check-ups for Pilots' Well-Being: This approach would provide pilots with a support system for addressing mental health issues. It functions similarly to school guidance services, offering assistance to help them maintain their psychological well-being.

Mental Health Screening and Support Programs: Assess the existing mental health screening procedures for pilots and suggest enhancements. This could concentrate on creating customized mental health programs that cater to the specific challenges pilots encounter, particularly those related to mild to moderate mental health issues

Coping Strategies and Resilience Training: Investigate the effectiveness of training programs focused on resilience and coping strategies for pilots. This could pinpoint specific programs that assist pilots in managing stress and mental health challenges, thereby enhancing their overall well-being and performance

Assessment of Mental Health Screening Processes: Examine the existing mental health screening procedures for pilots, concentrating on their effectiveness and potential areas for improvement. This could assess the recommendations from the Aerospace Medical Association and the FAA concerning mental health evaluations and suggest modifications to more effectively identify and assist pilots facing mental health challenges.

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