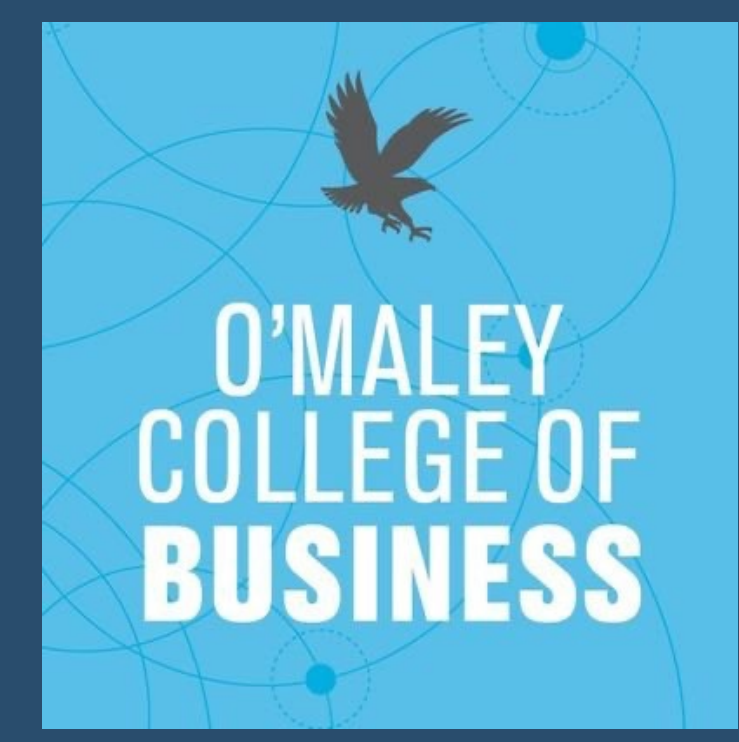




Impact of Pilots' Mental Health on Aviation Safety

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Abstract

In aviation, safety is the highest priority. Several recent aviation accidents and incidents have brought the mental health issue of the pilots to the forefront of aviation safety. To protect the safety of crew members and passengers, the Federal Aviation Administration (FAA) and other civil aviation authorities across the globe strictly regulate the status of pilots' physical and mental health.

- The purpose of this paper is three-folded:
- First, it describes the significance of pilots' mental health and its impact on aviation safety.
 - Second, it explores the state of pilots' current mental health and the causes and side-effects of mental health-related issues.
 - Third, it reviews relevant regulations currently in place and summarizes available resources established by the FAA and civil aviation authorities to support pilots' mental health.

The paper concludes by providing useful recommendations beneficial for the pilots, regulatory agencies, and general public interested in getting a better understanding of mental health-related issues in high-stress professions.

What is Mental Health

The understanding of mental health has significantly changed over time, shifting from an illness-focused definition to a more person-focused one.

Mental health is a fundamental component of well-being, which refers to a person's overall health and wellness, including physical, social, emotional, and psychological health.

Mental Health is defined as "a state of well-being in which every individual realizes his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to her or his community" by the World Health Organization (WHO). Mental health determines how we deal with stress, retain information, build relationships, and make choices.

Types of Mental Health Conditions

Disqualifying Mental Health Conditions (FAA, 2022)

- Attention Deficit Disorder
- Bipolar Disorder
- Adjustment Disorder
- Personality Disorder
- Psychosis
- Substance Dependence or Abuse
- Bereavement or Dysthymic
- Suicide Attempt
- Depression requiring the use of antidepressant medication

Most Common Psychological Conditions (Cahill et al., 2021; The British Psychological Society, 2017)

- Anxiety
- Depression
- Postpartum Depression
- Alcohol Misuse
- Occupational Stress
- Adjustment Disorder
- Mood Disorder
- Relationship Problems
- Sexual Dysfunction

Factors Impacting Mental Health in Aviation

Work-Related Stressors

(The British Psychological Society, 2017; Cahill et al., 2021; Wu et al., 2016):

- Changing Nature of the Industry
- Frequently Changing Schedules
- Working Irregular Hours
- Working Long Duty Periods
- Insufficient Rest between Duty Periods
- Circadian Disruptions due to Time Zone Crossing and Jet Lag
- Sleep Deprivation
- Acute and Chronic Fatigue
- Acute and Chronic Stress
- Working Anti-Social Hours
- Divergence of Values and Lack of Engagement with Management
- Difficulty Getting Healthy Food
- Time Away from Home
- Inflexible Annual Leave
- Sedentary Nature of the Job
- Job Uncertainty and Insecurity
- Uncertainty About the Roster
- Sexual & Verbal Harassment
- Pilot Shortage

Personal Stressors

(The British Psychological Society, 2017; Cahill et al., 2021):

- Bereavement
- Illness and Health Challenges
- Relationship Problems
- Family and Marital Discord
- Behavioral Problems
- Financial Difficulties
- Career Strains

92%

Pilots indicated that the environment in which they work contributes to the onset or worsening of an existing mental health issue.

83%

Pilots reported that work-related or occupational stressors have an impact on their performance.

81%

Pilots reported sleep difficulty is due to or worsened by the job.

50%

Pilots reported suffering family and marital discord due to the job.

Impact of Mental Health in Aviation Safety

- Aviation Accidents and Incidents**
- LAM Mozam (November 29, 2013)
 - The captain committed a deliberate controlled flight into terrain (CFIT), after going through a difficult psychological time. His son had recently died, his daughter was in the hospital for heart surgery, and his divorce had not yet been settled
 - Germanwings Flight 9525 (March 24, 2015)
 - Co-pilot Andreas Lubitz committed a deliberate CFIT, killing 149 passengers on board.
 - Lubitz had a history of severe depression and took three years off flying to undergo treatment for psychological problems.
 - UND Flight Student Fatal Crash (October 18, 2021)
 - John Hauser committed suicide during a solo cross-country flight. His family disclosed he was suffering from mental health problems.
 - CASA 212 N497CA (July 29, 2022)
 - Co-pilot Charles Crooks committed suicide by departing the skydiving plane mid-flight, according to the NTSB.

Health Care Avoidance

- Hoffman et al., 2022
 - 56.1% (2,111) of pilots reported a history of health care avoidance due to fear of losing their aeromedical certificate.
- Blue, 2022
 - 63% suffered from depression or other mental health issue and not gotten help or medication.

Misguided Medical Treatment

- Hoffman et al, 2022
 - 45.7% (1,721) of pilots sought informal medical care.
 - Self-treatment and self-medication could lead to addiction and substance abuse.

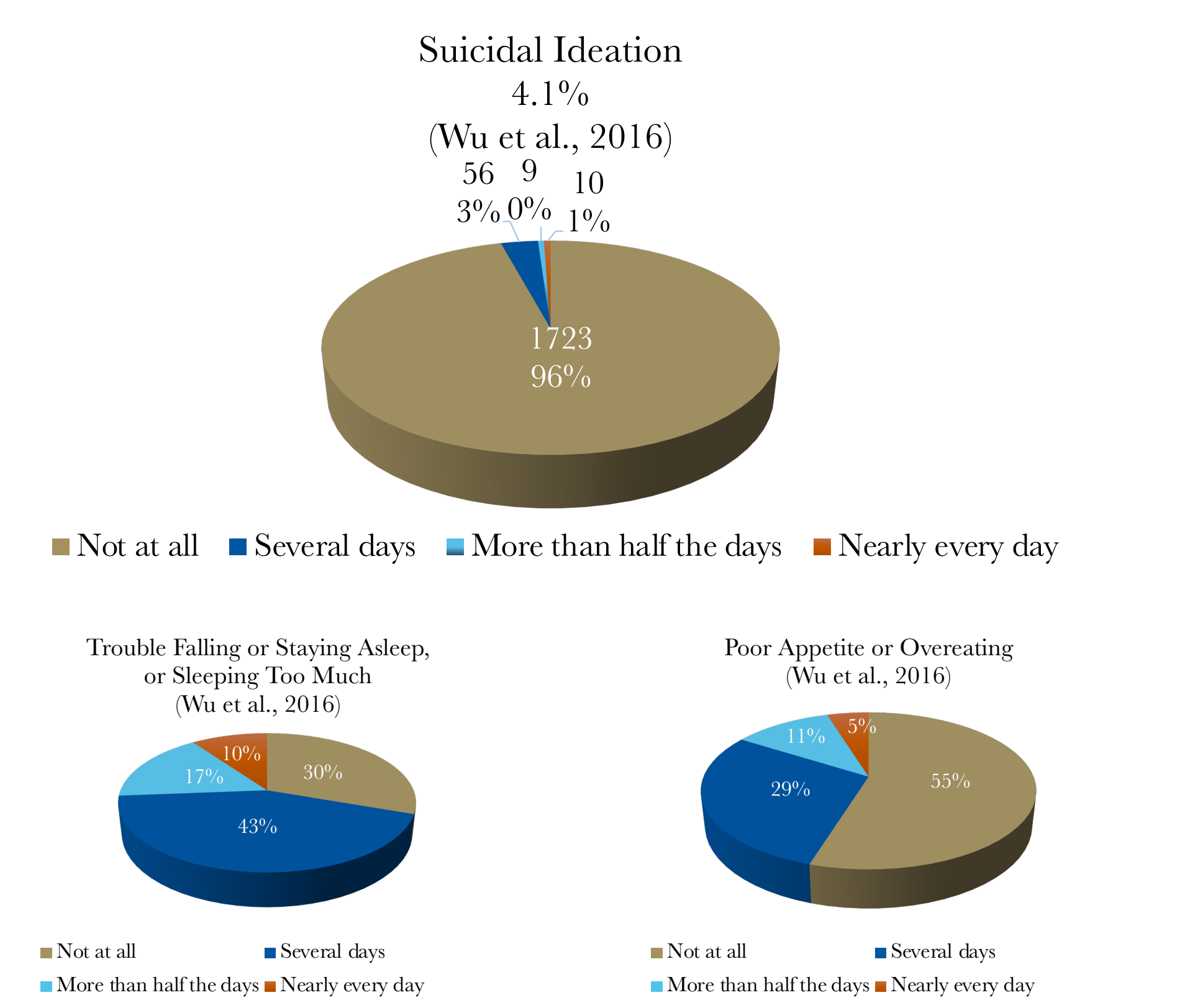
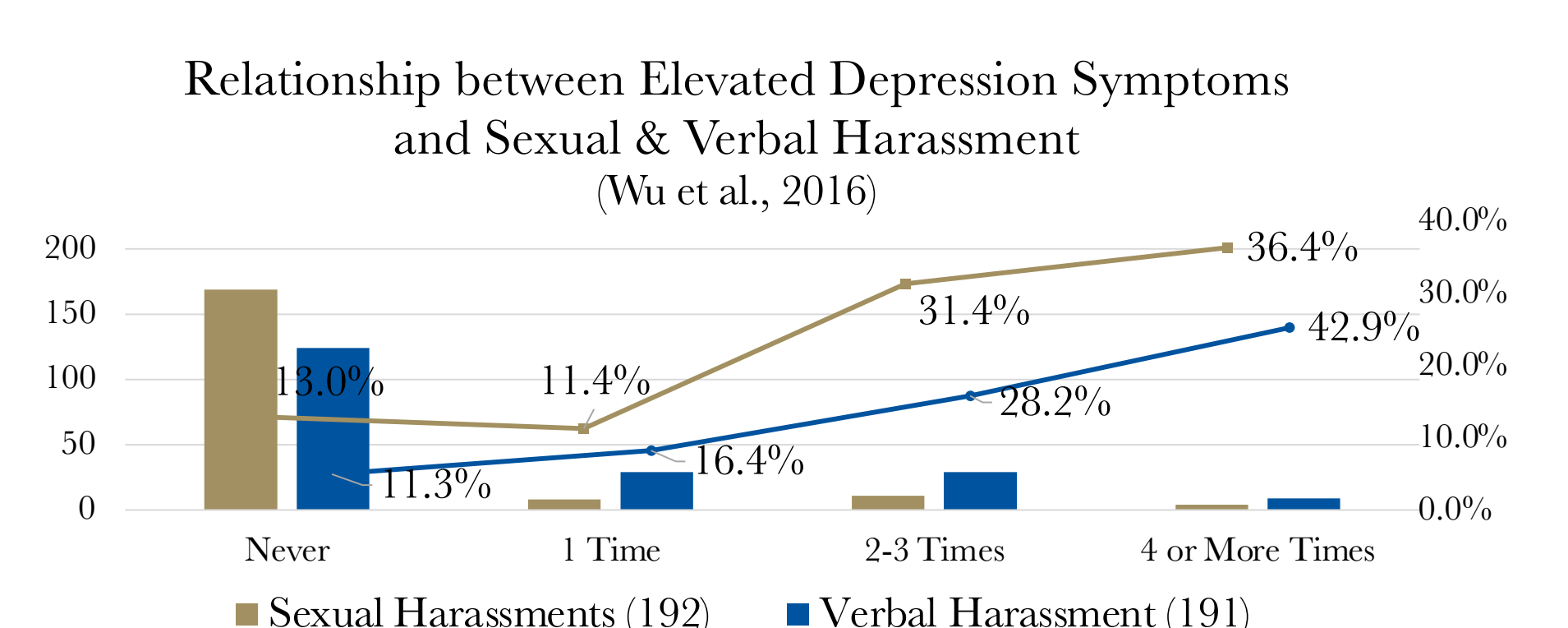
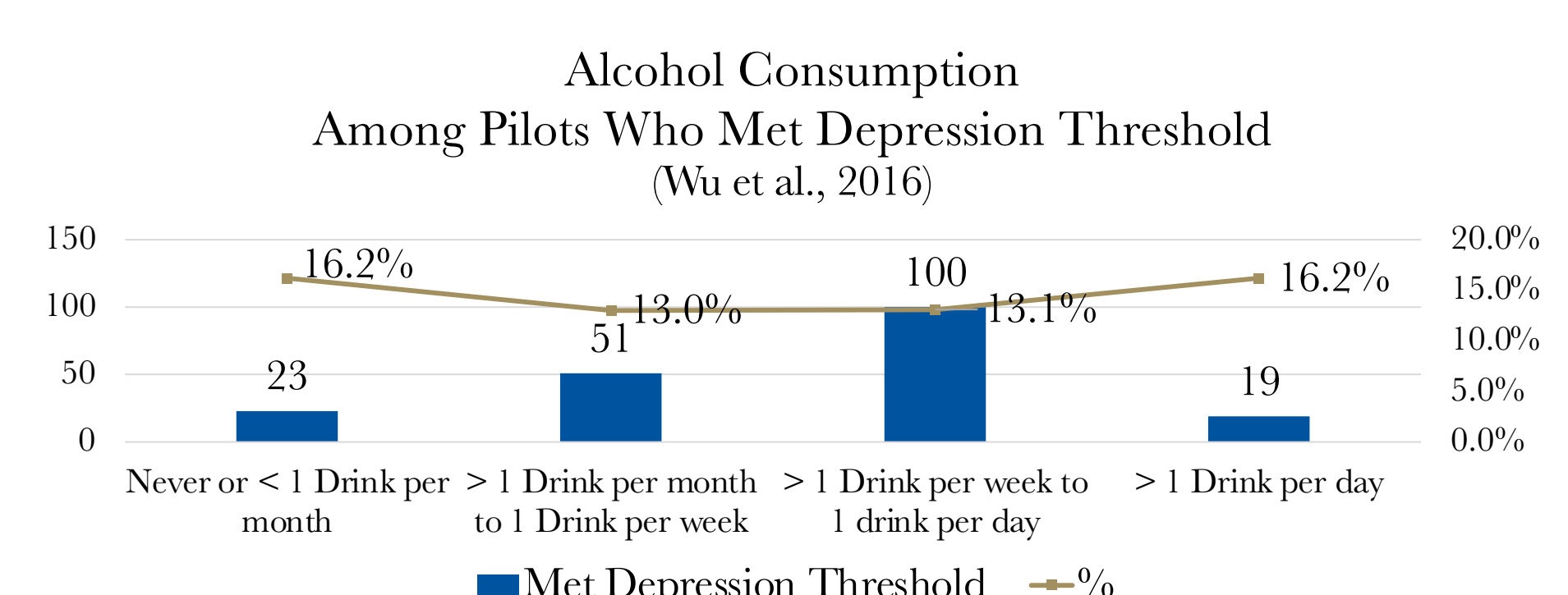
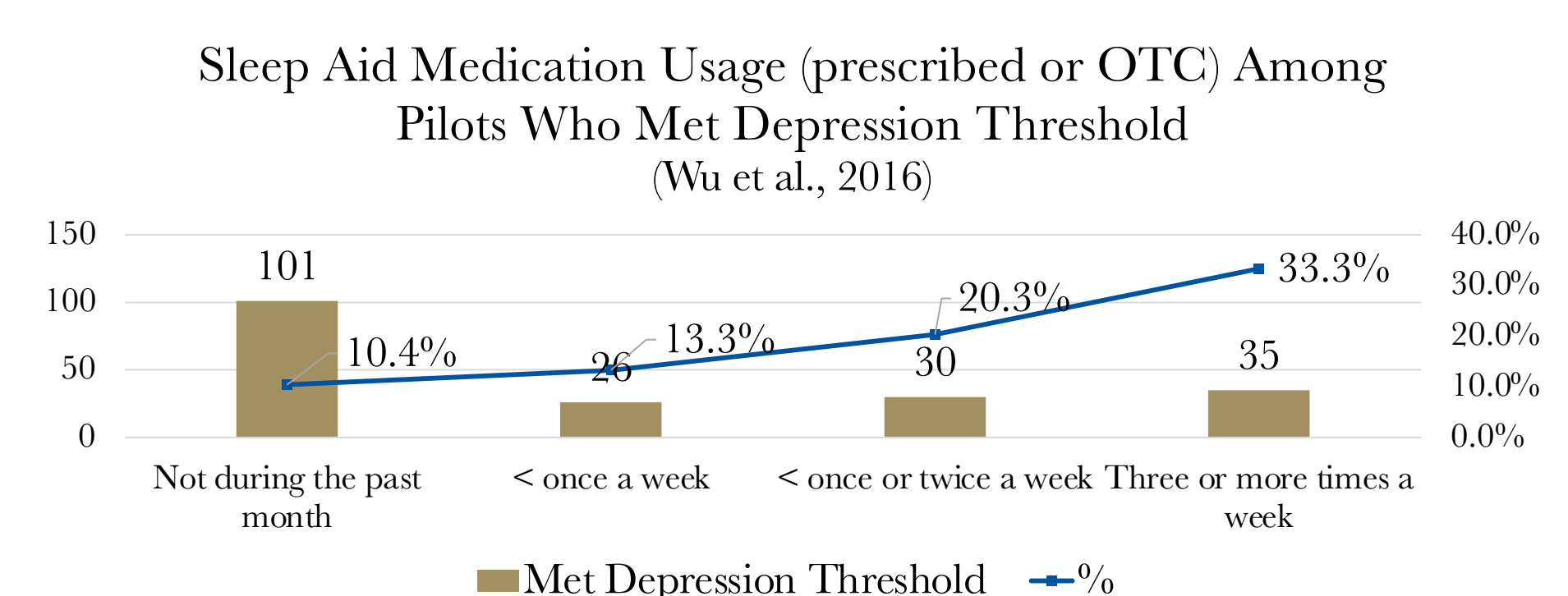
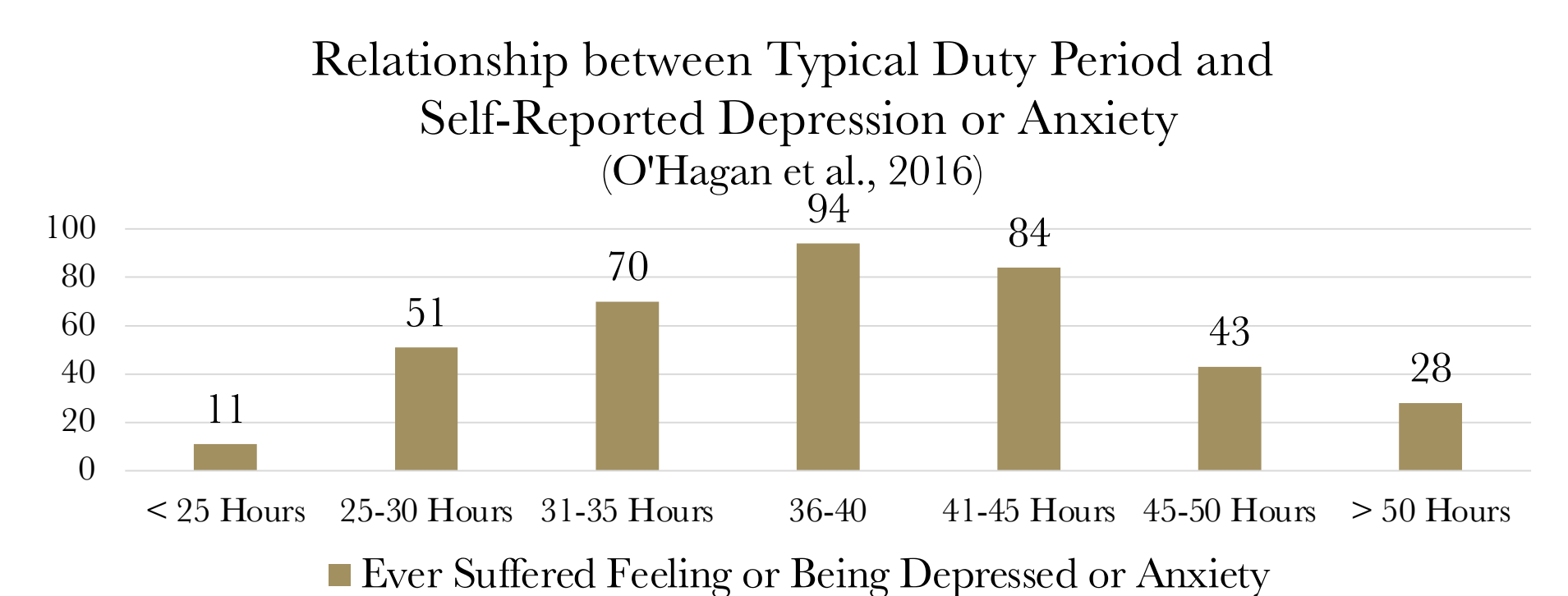
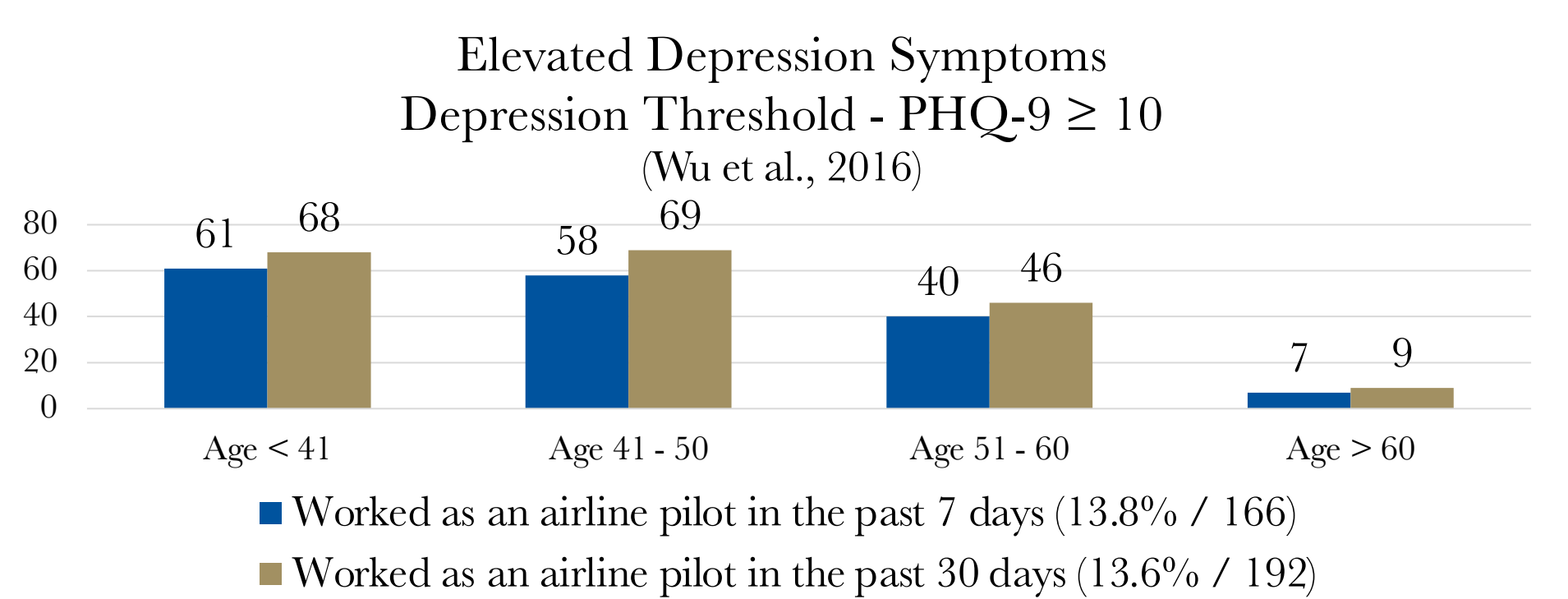
Undisclosed Mental Health Conditions

- Hoffman et al., 2022
 - 26.8% (994) misrepresented/withheld information on written FAA health forms due to fear of aeromedical certificate loss.
- Blue, 2022
 - 49% used antidepressant medication while flying that was not reported to the FAA.

Current State of Mental Health in Aviation

97% Pilots responded they don't think the FAA handles pilot mental health issues appropriately on a survey conducted by Dr. Brent Blue, Senior Aviation Medical Examiner, on June 2022.

(Wu et al., 2016)	Age < 41	Age 41 - 50	Age 51 - 60	Age > 60	Total
Ever diagnosed with depression	11 (2.3%)	15 (3.0%)	11 (2.5%)	20 (5.1%)	57 (3.1%)
Ever diagnosed with sleep disorder	15 (3.1%)	40 (8.1%)	54 (12.0%)	51 (12.9%)	160 (8.8%)
In the past 7 days, experienced fatigue everyday	15 (3.1%)	26 (5.3%)	30 (6.7%)	17 (4.3%)	88 (4.8%)



Recommendations

- Federal Aviation Administration (FAA)**
 - Create a specialized psychology and psychiatric department for education, training, and treatment.
 - Remodel outdated regulatory framework based on psychology.
- Pilots**
 - Seek professional mental health treatment to address any issues before they become diagnosable.
- Airlines & Air Carriers**
 - Duty of notification as a part of the Safety management System (SMS).
 - Include mental skills training in pilot initial and recurrent training.
 - Provide psychological therapy for pilots after high-stress situations or unexpected critical events, such as emergencies, accidents, or incidents.
- Flight Schools**
 - Develop peer support programs.
 - Include mental skills training in curriculum.

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* Additional References are available on request.