Original Article

A Qualitative Study Exploring Well-Being and the Potential Impact of Work-Related Stress Among Commercial Airline Pilots

Paul Cullen, Joan Cahill, and Keith Gaynor

School of Psychology, Trinity College Dublin, Ireland

Abstract: Increasing evidence suggests that commercial airline pilots can experience physical, mental, and social health difficulties. Qualitative interviews with commercial airline pilots explored the relationship between work-related stress and well-being. Participatory workshops involving pilots were conducted. The methodology of this action-based research involved a blend of person-centered design approaches; specifically, "stakeholder evaluation" and "participatory design." The findings further support the hypothesis that pilot well-being is being negatively affected by the nature of their work. The biopsychosocial model of the lived experience of a pilot, as presented in this paper, provides a useful structure to examine pilot well-being, and to identify and scope potential coping strategies to self-manage health and well-being issues associated with the job of being a pilot.

Keywords: pilot well-being, biopsychosocial, work-related stress, risk management, coping strategies

Despite exceptionally low risks posed to the travelling public (International Civil Aviation Organization, 2009; Flight Safety Foundation, 2019), there is mounting evidence to suggest that commercial aviation poses long-term health risks to pilots. Pilots can be considered as both "shift workers" and "remote workers," with a wealth of studies examining well-being issues related to these types of work. Numerous studies indicate these types of work can be detrimental to one's well-being, and demonstrate that such duties are shown to increase the risk of:

- Anxiety, depression, increased neuroticism, and impaired cognitive function (Eldevik et al., 2013; Proctor et al., 1996);
- Reduction in quality and quantity of sleep (Caruso, 2014; Reis et al., 2016);
- Widespread complaints of fatigue (Lee & Kim, 2018; Park et al., 2001);
- Increased risk of adverse cardiovascular effects (Brown et al., 2009; Hermansson et al., 2007; Pimenta et al., 2011);
- Possible increased risk of certain types of cancer (Anjum et al., 2012; Sancar et al. 2015);
- Increased risk of type 2 diabetes (Axelsson & Puttonen, 2012; Knutson & Kempe, 2014) and metabolic syndrome (Wang et al., 2014);
- Possible increase in gastrointestinal effects (Nojkov et al., 2010);
- Marital strain, family dysfunction, and social marginalization (Muurlink et al., 2014); and
- Increased risk of fertility difficulties (Goldstein & Smith, 2016).

Following the 2015 GermanWings tragedy, the psychological well-being of airline pilots came into sharp focus. The European Aviation Safety Agency (EASA) went to great lengths to strengthen medical requirements for pilots. In July 2018, new safety rules were published, including improved provisions to better support the mental fitness of pilots. Commission Regulation EU 2018/1042 mandates the introduction of pilot support programs, alcohol/drug testing, and pre-employment psychological assessment. The EASA's response, and the subsequent recommendations, focus on assessment and identification of current risk, and presently contain no preventative elements.

Evidence suggests that pilot mental health might be under threat from sources of work-related stress (WRS). Overall, 40% of airline pilots (n = 1,147) are reported as experiencing levels of high burnout (Demerouti et al., 2018). Separately, 12.6% of airline pilots sampled (n = 1,848) were reported to have met the threshold for clinical depression or displayed major depressive disorder

symptoms (Wu et al., 2016), while 4.1% of these pilots were reported as having had suicidal thoughts within the same period. In 2016, 17% of pilots sampled agreed that their company cared about their well-being (n = 7,239), while 21% felt that fatigue was taken seriously within their organization (Reader et al., 2016). In 2012 a correlation between measured levels of common mental disorders (CMD) among pilots and workload was reported (Feijó et al., 2012). Encouragingly, this research demonstrated that regular physical exercise was associated with a lower risk of CMD. Little focus to date has been placed on the relatively higher proportion of pilots who are not experiencing mental health difficulties.

This research highlights the general well-being of pilots as an important area of focus allowing significant preventative work to be done. Specifically, work-related factors that impinge on pilot well-being are not well understood and/or managed, and an opportunity has been missed to potentially correct this.

Biopsychosocial Models of Well-Being

Despite extensive literature detailing the impact of shift work, remote work, and high cognitive demands on other professions, there is a lack of information concerning these factors and commercial airline pilots. Equally, while fatigue in pilots, for instance, is widely studied (e.g., Johansson & Melin, 2018), few studies explore broader conceptualizations of pilot well-being and even fewer give voice to pilot experience. This paper is part of an overall project to develop a broader perspective of the relationships between WRS, pilot well-being, pilot performance, and flight safety (The Pilot Lived Experience Project).

Research has focused on developing a biopsychosocial model of pilot lived experience (Cahill et al., 2018; Cullen et al., 2016, 2017). According to biopsychosocial models of health and well-being (Engel, 1977; Havelka et al., 2009), the cause, manifestation, and outcome of wellness and disease are determined by a dynamic interaction between biological, psychological, and social factors. None of these factors in isolation are sufficient to lead definitively to wellness or illness. Instead, the interrelationships between all three pillars result in a given outcome (Engel, 1977; Havelka et al., 2009; Santrock, 2007). The biopsychosocial model has been utilized to develop interventions to lower stress and/or improve people's ability to cope with stressors, aiming toward mental and physical health (Johnson & Acabchuk, 2018). A health psychology perspective is fundamentally behavioral, in that the majority of chronic illness can be avoided or reduced through healthy lifestyles.

Previous qualitative research involved informal semistructured scoping interviews with active commercial airline pilots (n = 103) in which their lived experience was explored. This involved identifying sources of WRS and discussing how these impacted physically, mentally, and socially on the individual pilots and their families. This was further supported by a broad literature review of a range of factors that have been documented as affecting well-being, leading to the development of a preliminary biopsychosocial model of pilot well-being (Cullen et al., 2017). This current paper describes a subsequent qualitative study of 33 pilots aged between 25 and 60 years who attended participatory workshops exploring the impact of WRS on well-being.

Method

Research Aim

The workshops had two objectives. First, to examine WRS and the specific work factors impacting on pilot well-being. The workshop endeavored to validate a proposed biopsychosocial model of the lived experience of being a pilot. Secondly, the workshops attempted to map the relationship between WRS, pilot well-being, pilot performance, and flight safety. This paper focuses on the first objective. Subsequent papers will examine the impact of WRS and potential intervention tools.

Research Design

This was an action research study involving a series of three sequential workshops with commercial pilots (n = 33). The methodology involved a blend of person-centered design approaches; specifically, "stakeholder evaluation" (Cousins et al., 2013) and "participatory design" (Bødker & Buur, 2002). The workshops were led by the second author, an experienced qualitative researcher.

This research was premised on two relevant theoretical frameworks: (1) biopsychosocial models of well-being (Engel, 1977; Havelka et al., 2009), and (2) phenomenological approaches to eliciting information about "lived experience" (Lindseth & Norberg, 2004; Van Maanen, 1988). The research effort focused on understanding the context and meaning of airline pilots experience (phenomenological approach).

Ethics approval for this research was obtained from the School of Psychology, Trinity College Dublin (TCD), Ireland.

Workshop Structure

Briefing information was provided to participants 7 days prior to each workshop, including information about the

preliminary biopsychosocial model of pilot lived experience. Participants were briefed about confidentiality issues. All provided written consent and agreement to maintain confidentiality in relation to anything discussed/disclosed by workshop attendees.

The biopsychosocial model of health was further explained. Taking the form of a "round the table" discussion, participants were invited to review the model. Efforts were made to ensure that participants were not asked leading questions. A group discussion followed, concerning relationships between WRS, pilot well-being, pilot performance, and flight safety. As part of this, participants reviewed a series of performance/safety impact scenarios. These are reported in a different paper (Cahill et al., 2018). After each session, participants were debriefed and the need for confidentiality re-emphasized. Participants were also invited to undertake an optional review exercise from home.

Sampling Method

The study used a mix of (1) quota sampling (selection of participants for interviews) and (2) opportunity sampling. The workshops were advertised on social media. Inclusion criteria for participants were: being in an age range of 25–65 years; possessing a commercial and/or air transport pilot license. We also sought a mixture of males/females and first officer and captains.

Participants

Three workshops were conducted at Dublin Airport between March and April 2018, involving 33 active commercial pilots. Workshops 1, 2, and 3 were attended by 12, 10, and 11 pilots, respectively, spanning three Irish registered airlines. Participants had on average 9,178 hr of flying experience, and included 20 captains and 13 first officers. Of them, seven were female and 26 were male. Overall, 25 were on full-time contracts, with eight working part-time; four flew regional/short-haul operations, 22 flew medium-haul, and seven flew long-haul.

Data Analysis

Workshop transcripts were written up by one member of the research team, and reviewed by the other team member. Further, participants reviewed transcripts after each session.

Overall findings of all three workshops pertaining to (1) sources/causes of WRS, (2) manifestation/symptoms, and (3) health outcomes were analyzed. Participant lived experience data were organized into a series of 16 themes. Specific themes were linked to each of the three pillars of well-being. These are reported in the results section. Specific findings are organized into a series of infographics for each pillar (see next section).

Results

Participants gave a wide variety of feedback, some of which has been reported in a separate paper (Cahill et al., 2019) that examined the impact of WRS on flight safety. However, the data reported in this paper look deeper at the relationships between WRS and pilot well-being, with the intention of validating the preliminary biopsychosocial model of pilot well-being.

The Relationship Between WRS and Pilot Well-Being

Three major super-ordinate constructs emerged from the workshops, largely mapping onto the constructs of biological, psychological, and social factors. Within these, 16 themes were evident and these are outlined in Tables 1, 2, and 3. Within the participants' feedback, there were strong inter-relationships between these themes. This feedback was used to validate and further develop the biopsychosocial model of pilot well-being, which is depicted in Figures 1, 2, and 3.

Theme 1: Biological Issues, Consequences and Causes

Participants highlighted a range of biological issues that they identified as impacting them as a result of work and WRS.

Workshop participants reported frequently feeling tired and sleep-deprived, due to working long, irregular, antisocial hours with frequent time-zone changes and associated sleep displacement. This was normalized as a routine aspect of life as a pilot. Many considered themselves to be either "early birds or night owls," feeling that they often worked against their body clock and that their sleep was disrupted.

Furthermore, they reported diet as a concern, and either consumed crew meals provided by their airline or brought their own food, with many critical of the portion sizes of crew meals and suspicious of the nutritional content and processed nature. Those who self-catered reported frequent stress due to issues with airport security. Participants reported regular snacking between meals, with meals normally consumed when opportunity allowed (e.g., during quieter periods of their duty), rather than when hungry. Many reported gastrointestinal (GI) issues, such as irritable bowel syndrome (IBS), abdominal bloating, and

Table 1. The relationship between WRS and pilot biological well-being

Super-ordinate theme	Themes	Participant feedback (direct quotes)
Biological issues, Consequences & Causes	• Fatigue	"...not enough time between shifts to recover" "I'm a night owl, and when on early duties, stay awake early in the morning using coffee. Still can't get to sleep until late, and end up only getting about 4 hours sleep..."
		"Wear & tear & fatigue hits you when you stop... sick during days off & annual leave" "I never had IBS until I started work as a pilot..."
	• Diet, hydration, and bowel movements	"...lack of breaks, including bathroom breaks. Postponed defecation is a big stress" "...can't drink sufficient water, otherwise running to the bathroom"
	• Back pain/musculoskeletal issues	"...different environment from the 90's... health issues emerging now, not seen as often in the past, or not at all... young captains needing back surgery..."
	• Low levels of physical exercise	"...restricted movement due to locked cockpit door... can't rotate in the chair... can't stretch out or stand up straight... muscle cramps and stiffness"
		"...not simply sedentary, but effectively impaled into the seat... need to get permission to use the bathroom"

Note. WRS = work-related stress. IBS = irritable bowel syndrome.

Table 2. The relationship between WRS and pilot psychological well-being

Super-ordinate theme	Themes	Participant feedback (direct quotes)
Psychological issues, consequences & causes	• Not feeling valued	"...feel dehumanised by management, referred to as a 'fulltime equivalent'...just a staff number... feel objectified..." "Management know the cost of everything, but the value of nothing. Experience doesn't count anymore..."
	• Diminished authority	"Many pilots are high achievers, and their abilities are not being tapped into" "No top cover provided by management... they don't have our backs..."
	• Social isolation	"Get to ops, go to aircraft, get things moving, 30-minute turn-around, do it all over again. Don't get 5 minutes to myself..."
		"The vagueness of some rules is a source of stress..."
		"Battle with management a constant source of stress and anxiety... they are bonus chasers and don't experience the impact of their decisions... they're not on the same team as the pilots"
	• Employment practices	"We're always understaffed..."
		"After years of this treatment, you become weary and disengaged"
		"...no personal space while at work"
		"Pilots show up to work and tick all the boxes. Things don't give until the end..."
		"We're task-orientated, tend to keep going, get on with things to achieve the task. We keep pushing on..."
		"...pilot might be struggling... something on the day pushes them over the edge, something gives on a particular day..." "I'm not proud of my company..."
		"Flying 900 hours is the new norm, not a boundary or limit. It's the target..."
		"If the company want to engage, start by stop kicking us in the head..."
		"Our EAP [employee assistance program] has had its resources slashed, now at a time when its needed more than ever..."
	• Aeromedical requirements	"Better off saying nothing. Germanwings pushed mental health issues underground..."

Note. WRS = work-related stress.

Table 3. The relationship between WRS and pilot social well-being

Super-ordinate theme	Themes	Participant feedback (direct quotes)
Social issues, consequences & causes	• Family strain	"...fixed-pattern roster has benefits, predictability, but can be very inflexible... missing major family and social events..."
		"...come home and your body clock is out of sync with the rest of the family"
	• Marriage/Spousal relationship	"We're not special or unique, but our job is unique..."
	• Lack of understanding from others	"We're 5 miles up, hanging onto a pair of wings. It's unnatural but we've normalised this... can't just step out for a minute..."
	• Loneliness	"...dragging your life behind you in a suitcase"
	• Home life Isolation	"As a foreigner, it's hard to make new friends, in a new country... cultural differences... hard to fit in"
	• Work life isolation	"...can be stuck in close confines with someone you don't like..."
		"Due to lack of familiarity with colleagues, each day in work is like a first date"
		"Things can snowball quickly. You're fine at the start of the week, and suddenly by the end of the week, you're not coping... we're no good at seeing this in ourselves"
	• "Macho" culture	"I off-loaded myself... considered a wimp by management... conversations with managers reflected macho culture and stigma around mental health..."

Note. WRS = work-related stress.

hemorrhoids, and some attributed this to diet, disrupted toilet habits, and sitting for long periods within the confines of the cockpit.

Due to a reluctance to urinate regularly, dehydration was also reported as an issue. Numerous pilots reported a reluctance to have a bowel movement while on an aircraft, delaying defecation until after their shift, with reasons given such as the disruption to the cabin crew, a lack of privacy, and also the perception of being monitored by their passengers.

Reports of lower back pain were common among participants, as were complaints of poor ergonomics within the cockpit.

Owing to the long working days and sedentary nature of the job, many pilots reported taking little or no physical activity during their working week. Antisocial and irregular hours made regular exercise as part of teams/clubs difficult.

Theme 2: Psychological Issues, Consequences and Causes

Participants highlighted a range of psychological stresses associated with their work.

Many participants, particularly more experienced crew, reported that levels of stress and responsibility have increased during the past 15 years, highlighting that new responsibilities have appeared, due to commercial pressures.

Some felt that the commander's authority and autonomy were diminishing. Participants reported working longer duties with less rest time and for less remuneration. Overall, there was a sense that pilots were not valued as much as previously by their employers. The term "glorified bus drivers" was frequently used.

Many pilots described a disconnection between their own values and those of their line managers, feeling that their employer cared little about their welfare. Some pilots reported feeling that occasionally safety, but more often staff well-being, was compromised in favor of commercial requirements. Participants reported not feeling psychologically safe in raising well-being-related concerns with their managers. Fatigue risk management and work–life balance were considered to be company philosophies that had not made it into practice. Some pilots reported feeling psychologically drained, having spent years of working long, irregular, and antisocial hours in an environment where they felt undervalued. A number of pilots reported morale as a safety concern, with some saying that they found it difficult to remain motivated in maintaining their professionalism.

Due to changing employment practices, many pilots are hired indirectly via agencies, with some not receiving payment if unable to fly due to sickness. Increasing numbers of pilots have substantial financial debt owing to the high initial training costs. This was reported as a deterrent in reporting sick, and a cause of distress due to professional conflict. Some captains also reported this as a source of concern when flying with such pilots. In some cases, pilots reported feeling that "calling in sick" was not considered acceptable by their line managers or base captains.

The stringent aeromedical requirements were considered by many to be a deterrent in openly discussing well-being issues, particularly those related to mental health. Due to the perception of pilots possessing "the right stuff" and having been "cut from the same cloth as astronauts," pilots

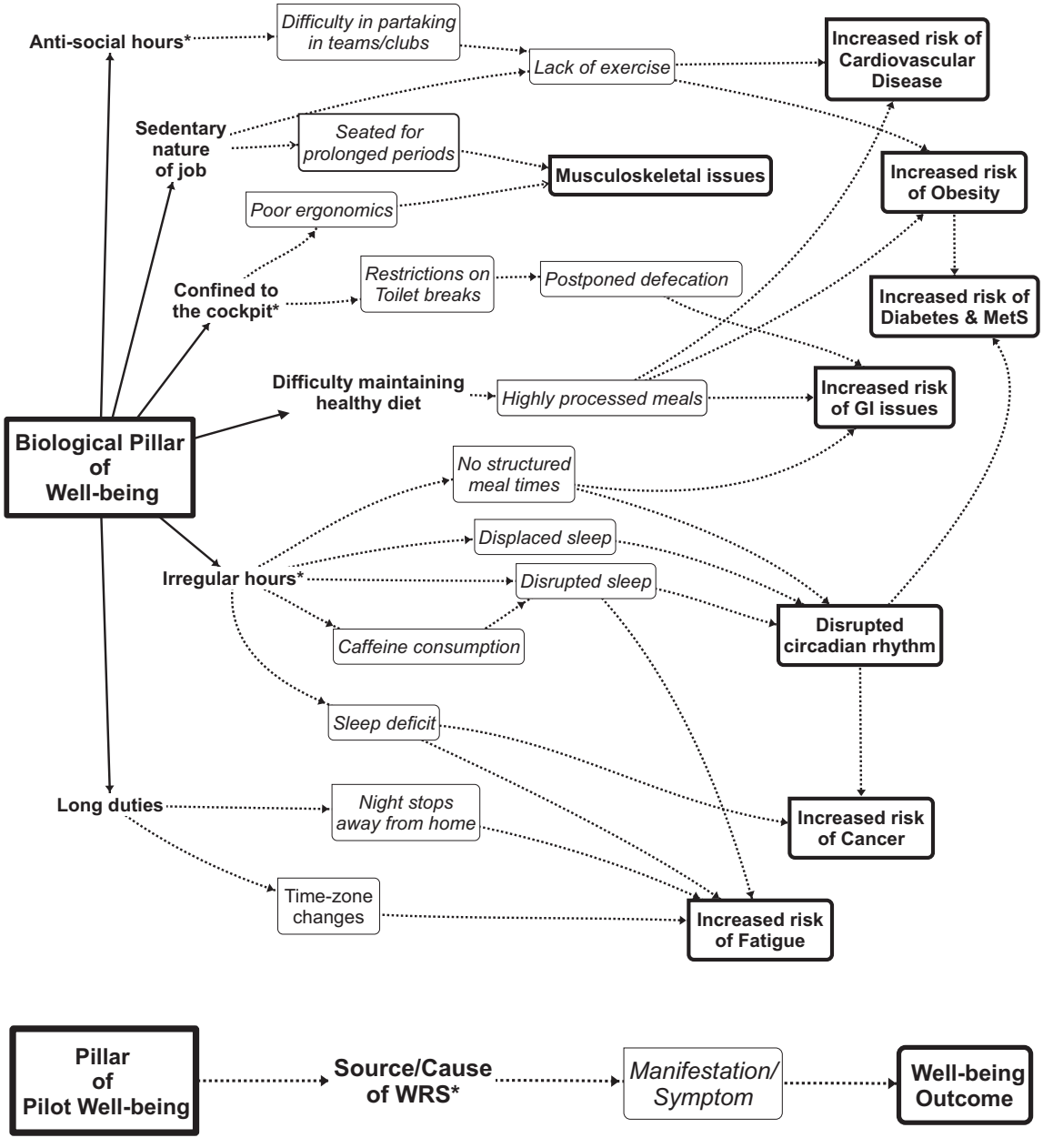

Figure 1. Biological pillar of pilot well-being. MetS = metabolic syndrome. WRS = work-related stress.

reported that if they developed mental health issues, they would most likely not discuss it with colleagues. Other pilots reported that owing to the perception of "living the dream" and a lack of support from those outside the profession, they would be unlikely to disclose such an issue to "an outsider."

Theme 3: Social Issues, Consequences and Causes

The relationship between work practices, the impact of work, and social outcomes was highlighted widely by participants.

A strained home life, loneliness, and poor social networks were reported by many participants, and they associated these with working irregular and antisocial hours. Managing and navigating the home–work interface was perceived as challenging, and spousal relationships were sometimes reported as strained.

Despite generous annual leave entitlements, many participants reported difficulties getting leave during peak times such as school holidays, and reported that important family events were frequently missed because of inflexible rosters. Delays were seen as a cause of strain, with spouses

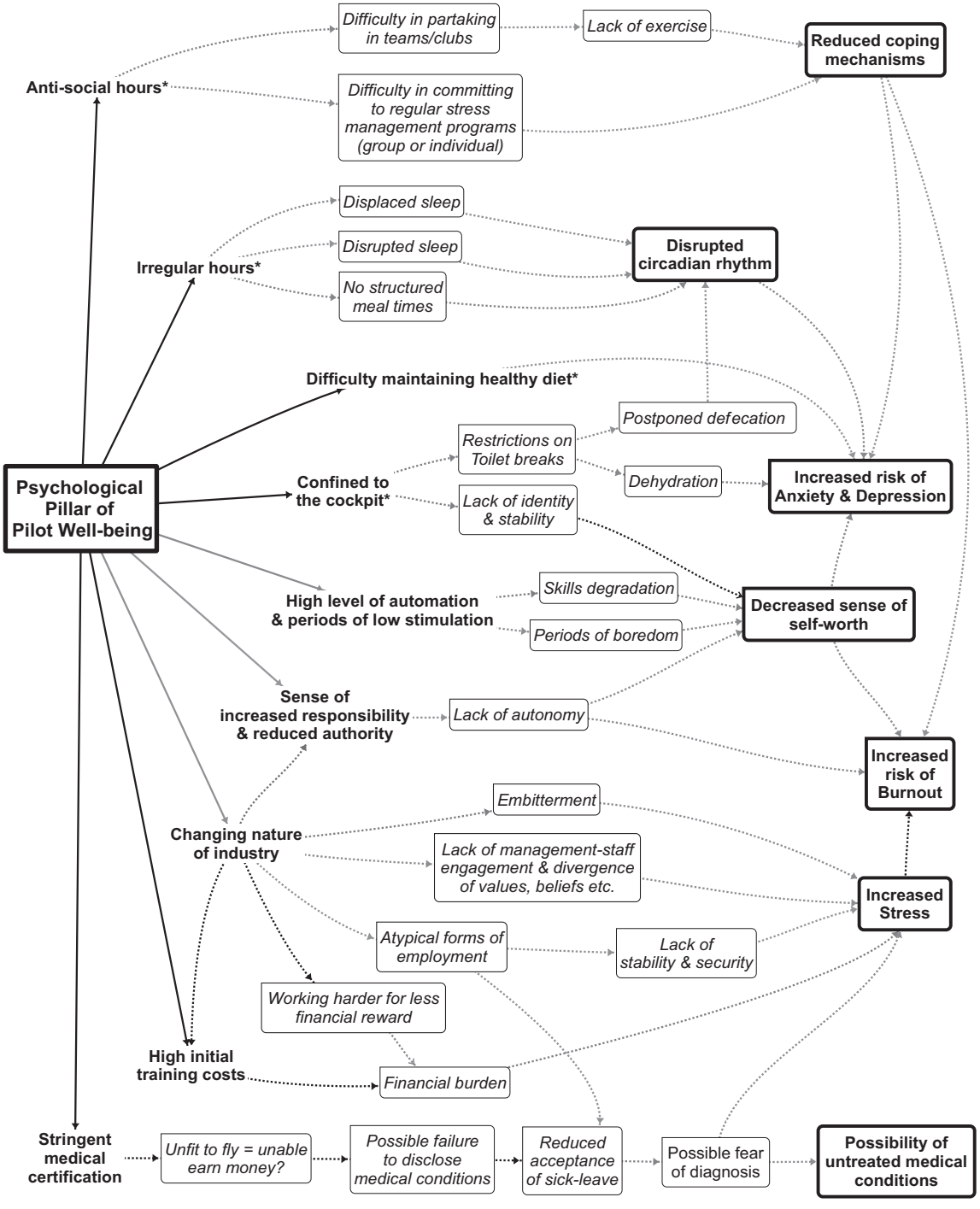

Figure 2. Psychological pillar of pilot well-being.

not confident that their pilot-partners would be off-duty as scheduled and able take up their share of domestic/parental responsibilities.

Lack of control over rosters and frequent working at weekends/holidays were highlighted as a source of family strain. It was felt, particularly in families where both parents were working, that domestic responsibilities were unequally shared. This was further exacerbated by the fact that pilots frequently spend nights away from base, while spouses manage the family alone.

Two distinct types of loneliness were reported, and appeared to be linked to the length of time spent working as a pilot and to the ages of their children. Those with younger children, and perhaps those who were younger themselves, reported loneliness borne out of not being where they wanted to be, that is, with loved ones. The

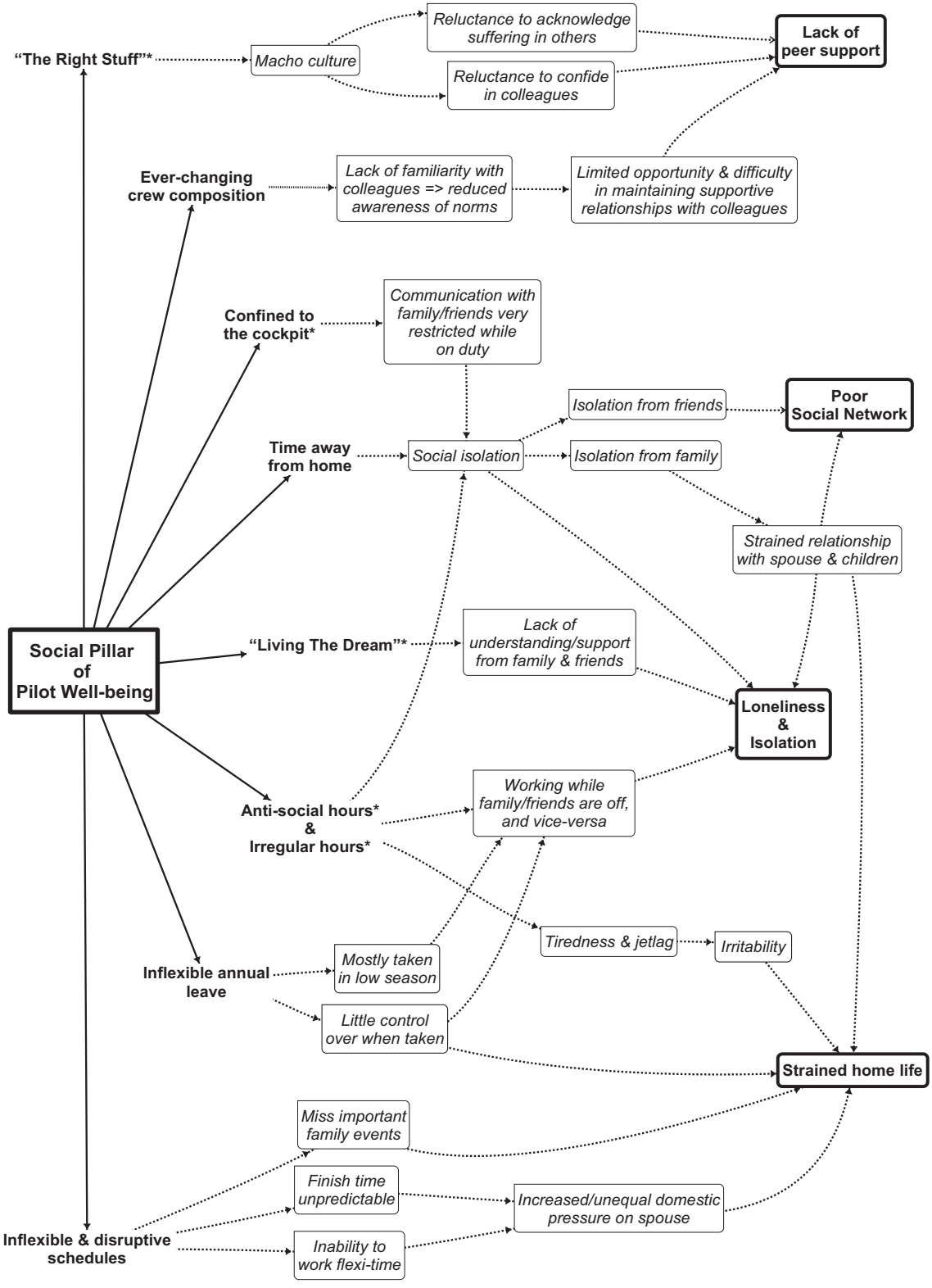

Figure 3. Social pillar of pilot well-being.

second group were older than the first, had worked as pilots for a longer period, typically had children in the teenage years or older. These pilots reported feeling distant from their families, with some feeling that they were "just paying the bills," and were somewhat removed or isolated from their families. They felt this was due to their repeated

absences over many years. Some pilots who were approaching retirement also expressed concern over how they would "fit back into their family" after retirement.

Most pilots reported that their families and friends held unbalanced views of the challenges facing pilots, not fully appreciating the negative aspects of being a pilot, and instead only focused on the positives. As such, many felt they did not receive appropriate understanding and support in dealing with well-being issues, such as loneliness, stress, or fatigue. With many pilots fulfilling a childhood ambition, many reported that in the eyes of others they were "living the dream."

Due to irregular and antisocial working hours, many reported difficulties in maintaining regular social routines and connections. Some spoke of social isolation and loneliness. Many pilots spoke of hobbies that they enjoyed, but no longer did since becoming a pilot. Regular commitment to team sports or societies was seen as very difficult. Many reported physical exercise was often solitary, for example, going to the gym, swimming, running, cycling. Pilots spoke of having to make a disproportionate effort in arranging events with friends, as the friends usually assumed they would be unavailable because of work commitments.

Due to ever-changing crew composition and lack of familiarity with fellow crew members, participants reported difficulties in forging close bonds with colleagues. This prevented them from knowing whether colleagues were having good or bad days and was seen as detrimental to building supportive work environments. Some captains described a sense of social isolation, due to the often-sizeable age difference between themselves and other crew members. This was exacerbated on duties involving night stops. Some participants (both captains and copilots) described a lack of peer support on a routine basis.

Some pilots described the culture in which they worked as male-dominated and "macho," that is, stable extroverts who are mentally resilient and calm under pressure. This was seen as feeding a culture in which pilots were considered to be immune from experiencing mental health issues. Peer support programs operate with a high degree of confidentiality, and consequently participants expressed a view that if a pilot approaches them, he/she is most likely unaware of how frequently the service is utilized, and therefore may fear that they are the only one ever to have approached the group. If the pilot is already feeling overwhelmed, this perception may further increase feelings of isolation.

Validation of the Biopsychosocial Model

Although there was naturally a significant crossover between themes, participants' concerns largely fell within the broad framework of biological, psychological, and social factors. When participants were presented with the model, they endorsed it as a whole, highlighting specific aspects, particular to their individual experiences. Firstly, these data validate the concept of pilots' experiences being understood using a biopsychosocial model rather than a more specific focus, such as fatigue. Secondly, these factors largely mapped onto the preliminary biopsychosocial model of pilot lived experience as proposed by Cullen and colleagues (2017). Thirdly, these data validated many of the individual factors identified within that model. Fourthly, these factors are in line with literature reviews of WRS and pilots, the area of WRS and well-being in general.

Discussion

The aim of this paper was to (1) map the relationships between WRS and pilot well-being and (2) to validate the preliminary biopsychosocial model of pilot lived experience.

The workshops with the pilots gave rich and varied data concerning issues of WRS and pilot well-being. It was noticeable how many of the pilots identified with issues of WRS and were concerned about their own long-term well-being. The participants' data were organized into three super-ordinate themes (biological, psychological, and social). Each of these are associated with a series of subthemes (of which there are 16 in total). We attempted to capture these in Figures 1–3. Although pilot well-being often focuses on specific issues such as fatigue or rosters, the pilots have highlighted a broad range of issues that affect them and that should be addressed in order to maintain pilot health.

The breadth of the issues discussed within the biopsychosocial model of pilot lived experience stands in stark contrast to a limited focus of pilot fatigue, or suicidality for instance. The model presented in this paper highlights the need for a multidimensional approach to pilot well-being. The breadth of this conceptual framework highlights the range of different ways that pilot well-being is affected by their role. It offers a broad range of opportunities for intervention. This conceptualization is much broader than often discussed and gives a range of areas to be explored in further research.

Despite being proposed over 40 years ago, the biopsychosocial model remains influential today. However, the model has been criticized in the literature for being too vague and for not providing enough detail as to how the individual pillars interact and contribute to wellness and illness (Benning, 2015; Farre & Rapley, 2017). Although literature exists on how biological, psychological, and social factors are separately associated with health, causal links between these factors have not been clarified. Recent

studies demonstrate how interrelationships among these factors can be investigated. Karunamuni et al. (2020) propose an updated theoretical model: the biopsychosocial pathways model, which considers potential pathways between the individual pillars (biological, psychological, and social), and attempts to explain how these pathways can contribute to subjective well-being and objective physical health outcomes.

Limitations

Limitations of this study include the qualitative nature of small-scale workshops, potential bias due to the self-selected sample, and the fact that the workshops took place over three points in time. The sample composition is made up of commercial pilots flying for airlines based in Ireland, and the study results need to be replicated in other cohorts of pilots and with large-scale quantitative research.

Areas for Further Analysis

An online health questionnaire has been launched, incorporating the standard instruments to measure levels of distress used in previous studies (Demerouti et al., 2018; Wu et al., 2016). This detailed questionnaire also examines lifestyle factors that are commonly accepted to impact on physical, mental, and social well-being. Within the questionnaire, additional quantitative and qualitative research will be undertaken to further validate and develop the biopsychosocial model of pilot lived experience.

It is hoped that the findings of this questionnaire will assist in furthering the understanding of what contributes to some pilots being susceptible to distress while others remain resilient. This will build on the findings previously reported (Cahill et al., 2019), regarding effective coping strategies that can be utilized by pilots.

Following this, it is planned to engage in a consultation process with all stakeholders to identify how the well-being/mental health issues identified in the survey might be addressed at different levels (i.e., pilot self-management, airline, regulator etc.). Although our research to date has focused solely on commercial airline pilots, many of our results are likely to apply to other pilot groups such as cargo operations, military, and search and rescue, and perhaps other staff groups within aviation. Some of our findings were recently used by the Flight Safety Foundation (2020) to assist aviation professionals in dealing with the stress associated with the Covid-19 pandemic.

Until recently, absence of evidence suggesting that pilots were suffering was broadly taken as evidence of absence of suffering. However, substantial evidence now demonstrates that pilots are under stress and experiencing well-being problems. Furthermore, evidence suggests aspects of their job are contributing to these health problems. Pilots are potentially more at risk of developing well-being issues than has previously been considered, despite the perception that pilots are naturally mentally resilient. Despite the extremely low number of lives lost due to pilot suicide, there are possibly a significantly large number of pilots flying today with untreated mental health issues, such as depression, anxiety, and suicidal thoughts. Potentially, burn-out and embitterment with work/work practices can lead to disengagement/loss of motivation. Disengagement/loss of motivation can have an impact on task performance and professionalism (i.e., use of procedures, attitudes to change, willingness/interest in quality/safety processes, e.g., voluntary reporting). This in turn has an impact on flight safety.

Conclusion

If the well-being of pilots is being negatively affected by the nature of their work, this needs to be identified and measured, and the associated risks managed accordingly. The biopsychosocial model of the lived experience of a pilot, as presented in this paper, provides a useful starting point for this research, and perhaps could be utilized in training pilots for (1) identification of risky behavior and (2) development of coping strategies.

Both pilots and airlines are responsible for managing well-being issues. A first step is the identification of the challenges faced by pilots. If the true picture of pilot well-being (including the causes for well-being problems) were to emerge, this may very well help reduce or even remove the current stigmatization of mental health issues among pilots, thus enabling open disclosure and increased support. In time, perhaps airline management might reconsider their duty of care to their employees and regulators may implement measures that not only protect the safety of the travelling public, but also the well-being of the crew operating the aircraft.

Potentially, these findings can be used to identity and scope possible coping strategies for use by pilots, to self-manage health and well-being issues associated with the job of being a pilot.

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ORCID
Paul Cullen
https://orcid.org/0000-0002-0600-7268

Paul Cullen
School of Psychology
Trinity College Dublin
Dublin
Ireland
cullenp4@tcd.ie

Captain Paul Cullen is an Airbus pilot, IFALPA accredited accident investigator and research associate at the Centre for Innovation in Human Systems (CIHS), School of Psychology, Trinity College Dublin, Ireland. Paul is keen to understand how the Safety-II philosophy can be incorporated into the management of well-being within aviation.

Joan Cahill (PhD) is a Research Fellow and Principal Investigator at the Centre for Innovation in Human Systems (CIHS), at the School of Psychology, Trinity College Dublin, Ireland. Dr Cahill's research spans three fields – Human Factors, Ethics & Behaviour Science.

Keith Gaynor is Assistant Professor in Clinical Psychology in the School of Psychology, University College Dublin, and Senior Clinical Psychologist in St. John of Gods Hospital, Dublin. Keith specializes in cognitive behavioral therapy (CBT) and mental health. His current research interests include emotional regulation, psychosis, CBT, pilot mental health and loneliness.