Impact of COVID on Aviation Worker Wellbeing
(March 21, 2022)


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Lived Experience & Wellbeing Project
Centre for Innovative Human Systems (CIHS)
School of Psychology, Trinity College Dublin, Ireland
Overview

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Starting Point
3 Pillars of Health & Wellbeing

**Biological**
- Sleep
- Exercise
- Diet

**Psychological**
- Attitude to life
- Stress Management & Coping Techniques
- Meaning & Purpose

**Social**
- Interpersonal relationships
- Support Network
Airplanes are maintained to ensure that they are airworthy. We are no different!
Airplanes are maintained to ensure that they are airworthy. We are no different!
Wellbeing & Mental Health

All of us

Mental Illness

On an ever fluctuating continuum

Mental Wellness
COVID Experience (2020 & 2021)

- 27.7% of adults in ROI felt clinically depressed or anxious
  Hyland et al. (2020)
  (representative sample, March/April)

- 46% of adults ROI felt depressed
  Burke et al. (2020)
  (convenience sample; April)

- Between 23% to 44% young people felt depressed internationally
  Nearchou et al. (2020)
  (Systematic Review, n= 12, 262)

- 2020-21: Global depression: 18%-33%
  2017: 3.44%
  (Meta-analysis, Notivol et al., 2021)
“Say ... what’s a mountain goat doing way up here in a cloud bank?’
Wellbeing & Mental Health in the Workplace

Vision is ‘where all workplace leaders recognize and commit – with the right tools in place – to taking tangible and evidence-based action on mental health and wellbeing, enabling their workforces to thrive’.

(World Economic Forum, Mental Health in the Workplace Initiative, 2021).

(United Nations 2030 Sustainable Development Agenda)
About Surveys
About COVID Surveys

- COVID Survey 1: August 2020 (n=2,050, with n= 1,796 completing PHQ9 & GAD 7)
- COVID Survey 2: October & November 2021 (n= 1,114, with n= 1,010 completing PHQ9 & GAD 7)
- Examine impact of the COVID 19 pandemic on (1) job and employment, (2) wellbeing and morale, (3) performance and safety behaviour, and (4) safety oversight. Also, investigated reporting culture, coping strategies, fitness to work assessment, and the supports provided by aviation companies to workers during the pandemic.

- Anonymous online questionnaire, using Qualtrics.
- Targeted at ALL aviation workers.
- Incorporates validated instruments predicting presence of depression (PHQ 9) & anxiety (GAD 7).
- Involvement of stakeholders in survey design
- Ethics (including GDPR) approval, REC, School of Psychology, Trinity College Dublin, Ireland
Survey Topics

- COVID 19 Pandemic and impact on employment
- COVID 19 Pandemic and impact on health and wellbeing
- Talking about mental health and accessing/seeking help
- Coping Methods/Self Care & Looking for Help
- Supports and Wellbeing Culture
- Impact on performance and safety
- COVID 19 Pandemic and return to work
- COVID 19 Pandemic, remote work, work impact and change
Summary: Wellbeing Measures
# Comparisons – Groups (Pre & Since COVID)

<table>
<thead>
<tr>
<th>Measure</th>
<th>Baseline (Population)</th>
<th>Baseline (Aviation Workers-Pilots only thus far) – Prior to COVID</th>
<th>2020 (All) (n=1076)</th>
<th>2021 (All) (n= 1010)</th>
<th>Change/Status (During COVID)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Happiness &amp; Life Satisfaction</td>
<td>6.5. (OECD, 2021).</td>
<td>-</td>
<td>6.086%</td>
<td>6.089%</td>
<td>=</td>
</tr>
<tr>
<td>Depression (PHQ 9: Threshold for Moderate Depression, &gt;10)</td>
<td>4.4% (WHO)</td>
<td>12.6% (Wu et al, 2016)</td>
<td>29.6%</td>
<td>27.1%</td>
<td>↓</td>
</tr>
<tr>
<td>Suicidal Ideation</td>
<td>3.1% (Nock et al, 2018), 3.9% (CDC)</td>
<td>4.1% (Wu et al, 2016)</td>
<td>11.6%</td>
<td>11%</td>
<td>↓</td>
</tr>
<tr>
<td>Anxiety (GAD 7: Threshold for Moderate Depression, &gt;10)</td>
<td>3.6% (WHO)</td>
<td>-</td>
<td>24.1%</td>
<td>23%</td>
<td>↓</td>
</tr>
</tbody>
</table>
All Aviation Workers: Life Satisfaction, Depression, Suicidal Ideation & Anxiety (2020 & 2021)

Aviation Workers Health - During COVID

- Depression Threshold PHQ 9 (≥10): 29.60%
- Suicidal Ideation: 11.60%
- Anxiety Threshold PHQ 9 (≥10): 24.10%
- Life Satisfaction & Happiness (mean score): 6.09%

TCD, 2020 (n=1,796) vs. TCD 2021 (n=1010)
Depression & Suicidal Ideation: Pilots (Pre & Since COVID)

**Pilots: Depression & Suicidal Ideation**

- **Harvard Study (Wu et al, 2016) - n=1,866**: 12.60% Depression Threshold PHQ.9 (≥10), 4.10% Suicidal Ideation
- **TCD Pilots, 2018/2019 (n=821)**: 17.04% Depression Threshold PHQ.9 (≥10), 7.90% Suicidal Ideation
- **TCD, Pilots 2020 (n=729)**: 10.70% Depression Threshold PHQ.9 (≥10), 9% Suicidal Ideation
- **TCD Pilots 2021 (n=488)**: 20.70% Depression Threshold PHQ.9 (≥10), 9% Suicidal Ideation

Note: The data indicates a significant increase in depression and suicidal ideation among pilots, particularly since the COVID-19 pandemic began.
Comparison with Population Study - Depression & Anxiety Threshold, (Pre & Since COVID)

2021 Survey: Depression & Roles

PHQ9 ≥ 10 (Depression) & Aviation Roles

- All (n=1,010): 73% YES, 27% NO
- Pilots (n=488): 79% YES, 21% NO
- Cabin Crew (n=231): 59% YES, 41% NO
- Line MX/Engineering (n=67): 72% YES, 28% NO
- ATC (n=135): 76% YES, 24% NO
2021 Survey: Anxiety & Roles

GAD7 ≥ 10 (Anxiety) & Aviation Roles

- All (n=1,010): 23% YES, 77% NO
- Pilots (n=488): 17% YES, 83% NO
- Cabin Crew (n=231): 35% YES, 65% NO
- Line MX/Engineering (n=67): 27% YES, 73% NO
- ATC (n=135): 21% YES, 79% NO

Legend:
- YES (GAD7 ≥ 10)
- NO (GAD7 <10)
S2021 Survey: Suicidal Ideation & Roles

Suicidal Ideation (PHQ9 - Question 9) & Roles

- All (n=1,010): 11% YES (Suicidal Ideation), 89% NO (Suicidal Ideation)
- Pilots (n=488): 9% YES, 91% NO
- Cabin Crew (n=231): 16% YES, 84% NO
- Line MX/Engineering (n=67): 16% YES, 84% NO
- ATC (n=135): 5% YES, 95% NO
2021 Survey: Life Satisfaction/Happiness & Roles

Life Satisfaction & Happiness & Groups
(≥ 6.5, OECD Average)

- Pilots (n=488): 50% YES, 50% NO
- Cabin Crew (n=231): 36% YES, 64% NO
- Line MX/Engineering (n=67): 54% YES, 46% NO
- ATC (n=135): 61% YES, 39% NO

Legend:
- YES (≥ 6.5 – OECD Average) 48%
- NO (<6.5 – OECD Average) 52%
Comparing 2021 and 2020 Surveys, Wellbeing Measures
Rating of Mental Health

![Bar chart showing rating of mental health with percentages for Very good, Good, Fair, Bad, Very bad, Do not know, and Prefer not to say.]

- Very good: 17.59% (2020: 12.97%)
- Good: 38.36% (2020: 31.29%)
- Fair: 35.05% (2020: 35.05%)
- Bad: 8.96% (2020: 3.34%)
- Very bad: 2.87% (2020: 0.28%)
- Do not know: 0.10% (2020: 0.17%)
- Prefer not to say: 0.10%
Negative Impact of COVID on Health & Wellbeing

The COVID-19 pandemic is having a negative impact on my health & wellbeing

- Strongly agree: 27.62% (2020), 31.78% (2021)
- Agree: 40.59% (2020), 45.45% (2021)
- Neither agree nor disagree: 17.37% (2020), 13.17% (2021)
- Disagree: 10.86% (2020), 0.03% (2021)
- Strongly disagree: 3.56% (2020), 2.57% (2021)
MH Worsened Since COVID

My Mental Health has Worsened Since the COVID 19 Pandemic

- **Strongly agree**: 24.11% (2020), 29.11% (2021)
- **Agree**: 39.25% (2020), 42.97% (2021)
- **Neither agree nor disagree**: 16.54% (2020), 15.45% (2021)
- **Disagree**: 14.37% (2020), 9.31% (2021)
- **Strongly disagree**: 5.73% (2020), 3.17% (2021)

Sample sizes: 2020 (n=1796), 2021 (n=1010)
Happiness & Life Satisfaction (2020 & 2021)
Happiness & Life Satisfaction (2020 & 2021)
Happiness & Life Satisfaction (2020 & 2021)

<table>
<thead>
<tr>
<th>Score 2021</th>
<th>Min</th>
<th>1st Qu (25% fall below)</th>
<th>Median/ (Middle)</th>
<th>Mean</th>
<th>3rd Qu (75% fall below)</th>
<th>IQR (Middle 50%)</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Score 2021</td>
<td>1</td>
<td>5</td>
<td>6</td>
<td>6.089</td>
<td>8</td>
<td>3</td>
<td>10</td>
</tr>
<tr>
<td>Score 2020</td>
<td>1</td>
<td>5</td>
<td>6</td>
<td>6.086</td>
<td>8</td>
<td>3</td>
<td>10</td>
</tr>
</tbody>
</table>
PHQ 9 – Cut-offs (2020 v 2021)

![Bar chart showing the percentage distribution of PHQ9 scores for minimal, mild, moderate, moderately severe, and severe depression. The chart compares the percentage distribution for 2020 (n=1,796) and 2021 (n=1,010).]
PHQ 9 – Cut-offs (2020 v 2021)

<table>
<thead>
<tr>
<th></th>
<th>Min</th>
<th>1&lt;sup&gt;st&lt;/sup&gt; Qu</th>
<th>Median</th>
<th>Mean</th>
<th>3&lt;sup&gt;rd&lt;/sup&gt; Qu</th>
<th>IQR</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Score 2021</td>
<td>0</td>
<td>3.00</td>
<td>6.00</td>
<td>7.25</td>
<td>10.00</td>
<td>7</td>
<td>26.00</td>
</tr>
<tr>
<td>Score 2020</td>
<td>0</td>
<td>3.000</td>
<td>6.000</td>
<td>7.442</td>
<td>10.000</td>
<td>7</td>
<td>27.000</td>
</tr>
<tr>
<td>PHQ 9 Cut-offs 2020</td>
<td>Minimal</td>
<td>Minimal</td>
<td>Mild</td>
<td>Mild</td>
<td>Moderate</td>
<td>Mild</td>
<td>Severe</td>
</tr>
</tbody>
</table>

### Boxplot of PHQ Scores

![Boxplot of PHQ Scores](image1.png)

### Boxplot of PHQ Scores 2020 Survey

![Boxplot of PHQ Scores 2020 Survey](image2.png)
Suicidal Ideation (2020 v 2021)

- Not at all: 88.31% (2020) vs 89.00% (2021)
- Several days: 7.85% (2020) vs 8.32% (2021)
- More than half the days: 2.51% (2020) vs 2.18% (2021)
- Nearly every day: 1.34% (2020) vs 0.50% (2021)

2020 (n=1,796) vs 2021 (n=1,010)
Suicidal Ideation (2020 v 2021)

2020

- All (n=176): 88.31%
- Pilot / Cockpit Crew (n=729): 89.93%
- Cabin Crew (n=376): 79.94%
- MX/Engineering (n=152): 85.21%
- ATC (n=210): 92.61%

2021

- All (n=1010): 89.00%
- Pilots (n=488): 91.00%
- Cabin Crew (n=231): 84.00%
- MX (n=67): 84.00%
- ATC (n=135): 95.00%

Legend:
- 0/Not at all
- 1/Several days
- 2/More than half the days
- 3/Nearly every day
Suicidal Ideation

<table>
<thead>
<tr>
<th></th>
<th>Min</th>
<th>1st Qu</th>
<th>Median</th>
<th>Mean</th>
<th>3rd Qu</th>
<th>IQR</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Score 2021</td>
<td>0.0000</td>
<td>0.0000</td>
<td>0.0000</td>
<td>0.1416</td>
<td>0.0000</td>
<td>0</td>
<td>3.0000</td>
</tr>
<tr>
<td>Score 2020</td>
<td>0.0000</td>
<td>0.0000</td>
<td>0.0000</td>
<td>0.1687</td>
<td>0.0000</td>
<td>0</td>
<td>3.0000</td>
</tr>
</tbody>
</table>

Boxplot of Suicidal Ideation

2021

Boxplot of Suicidal Ideation

2020
GAD 7, Anxiety Cut-offs (2020 v 2021)
GAD 7, Anxiety Cut-offs (2020 v 2021)
GAD7: Comparing Means & Cut-offs (2020 & 2021)
# GAD7: Comparing Means & Cut-offs (2020 & 2021)

<table>
<thead>
<tr>
<th></th>
<th>Min</th>
<th>1st Qu</th>
<th>Median</th>
<th>Mean</th>
<th>3rd Qu</th>
<th>IQR</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Score 2021</strong></td>
<td>0</td>
<td>3</td>
<td>5</td>
<td>6.372</td>
<td>9</td>
<td>6</td>
<td>21</td>
</tr>
<tr>
<td><strong>Score 2020</strong></td>
<td>0</td>
<td>3</td>
<td>6</td>
<td>6.62</td>
<td>9</td>
<td>6</td>
<td>21</td>
</tr>
<tr>
<td><strong>Interpretation</strong></td>
<td>Minimal</td>
<td>Minimal</td>
<td>Mild</td>
<td>Mild</td>
<td>Mild</td>
<td>Mild</td>
<td>Severe</td>
</tr>
<tr>
<td><strong>SD 2021</strong></td>
<td>5.135626</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Variance 2021</strong></td>
<td>26.37465</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>SD 2020</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Variance 2020</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

**Boxplot of GAD7 Score 2021**

**Boxplot of GAD7 Score 2020**
Comparing 2021 and 2020 Surveys, General Findings
# COVID & Impact on Wellbeing

<table>
<thead>
<tr>
<th>Year</th>
<th>2021</th>
<th>2020</th>
<th>Survey Question/Metric/Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>71%</td>
<td>77%</td>
<td>Rate their physical health either very good or good</td>
</tr>
<tr>
<td></td>
<td>48%</td>
<td>56%</td>
<td>Rate their mental health very good or good</td>
</tr>
<tr>
<td></td>
<td>77%</td>
<td>68%</td>
<td>Feel their the COVID pandemic is having a negative impact on their health and wellbeing</td>
</tr>
<tr>
<td></td>
<td>72%</td>
<td>63%</td>
<td>Feel that their mental health has worsened since the COVID-19 pandemic.</td>
</tr>
<tr>
<td></td>
<td>71%</td>
<td>57%</td>
<td>Feel the wellbeing of their family has been negatively impacted by the challenges in my work situation.</td>
</tr>
<tr>
<td></td>
<td>16.1%</td>
<td>17.7%</td>
<td>Number meeting threshold for moderate depression</td>
</tr>
<tr>
<td></td>
<td>13%</td>
<td>12%</td>
<td>Number meeting threshold for moderate anxiety</td>
</tr>
<tr>
<td></td>
<td>11%</td>
<td>11.69%</td>
<td>Number meeting threshold for suicidal ideation</td>
</tr>
</tbody>
</table>
## COVID & Impact on Employment

<table>
<thead>
<tr>
<th>2021</th>
<th>2020</th>
<th>Survey Question/Metric/Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>51%</td>
<td>49.64%</td>
<td>Indicated that their employment status has changed since the COVID-19 pandemic</td>
</tr>
<tr>
<td>40%</td>
<td>50.95 %</td>
<td>Lost job</td>
</tr>
<tr>
<td>45%</td>
<td>41.41%</td>
<td>Of those who have lost jobs, job loss is permanent</td>
</tr>
<tr>
<td>94%</td>
<td>88.94 %</td>
<td>Intend returning to work within aviation</td>
</tr>
<tr>
<td>40%</td>
<td>81.37%</td>
<td>Of those who have lost jobs, not secured another job</td>
</tr>
<tr>
<td>66%</td>
<td>65.84%</td>
<td>Of those who have lost jobs, actively seeking reemployment within aviation</td>
</tr>
<tr>
<td>88.72%</td>
<td>93.36%</td>
<td>Of those still employed, working reduced hours</td>
</tr>
<tr>
<td>91.10%</td>
<td>95.07%</td>
<td>Of those still employed, working reduced salary</td>
</tr>
<tr>
<td>64%</td>
<td>68%</td>
<td>Worry about meeting financial obligations</td>
</tr>
<tr>
<td>29.09%</td>
<td>56.70%</td>
<td>Obtaining financial support from government or another agency.</td>
</tr>
<tr>
<td>24%</td>
<td>20%</td>
<td>Feel confident about their future employment terms within aviation</td>
</tr>
<tr>
<td>36%</td>
<td>22%</td>
<td>Agree or strongly agree that future of company looks bright</td>
</tr>
</tbody>
</table>
## Impact on Performance & Safety

<table>
<thead>
<tr>
<th>2021</th>
<th>2020</th>
<th>Survey Question/Metric/Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>58%</td>
<td>46%</td>
<td>Agree or strongly agree that changes in morale arising from the COVID-19 pandemic has negatively impacted on safety practices.</td>
</tr>
<tr>
<td>82%</td>
<td>69%</td>
<td>Agree or strongly agree that changes in morale are negatively impacting on aviation worker engagement in work.</td>
</tr>
<tr>
<td>63%</td>
<td>47%</td>
<td>Rate their motivation towards their job now, as compared to before the COVID-19 pandemic as deteriorated or greatly deteriorated.</td>
</tr>
<tr>
<td>70%</td>
<td>53%</td>
<td>Rate the level of engagement between you and your employer now, as compared to before the COVID-19 pandemic as deteriorated or greatly deteriorated.</td>
</tr>
<tr>
<td>33%</td>
<td>25%</td>
<td>Rate their competence and ability to do the job safety and to the required standard as deteriorated or greatly deteriorated, as compared with before the COVID 19 pandemic</td>
</tr>
<tr>
<td>43.18%</td>
<td>53.35%</td>
<td>Indicate that there has been no change to company safety practices since COVID 19</td>
</tr>
<tr>
<td>52.56%</td>
<td>56.63%</td>
<td>Indicate no change to company safety oversight, since COVID 19 pandemic.</td>
</tr>
<tr>
<td>38%</td>
<td>28%</td>
<td>Rate the level of safety oversight from within their company now, as compared to before the COVID-19 pandemic as deteriorated or greatly deteriorated.</td>
</tr>
<tr>
<td>61.50%</td>
<td>63.44%</td>
<td>Indicate no change in compliance with safety policies and procedures now, as compared to before the COVID-19 pandemic.</td>
</tr>
<tr>
<td>60%</td>
<td>59.29%</td>
<td>Indicate no change to safety oversight from their national regulator.</td>
</tr>
</tbody>
</table>
Coping Methods & Seeking Help

<table>
<thead>
<tr>
<th>Year</th>
<th>2020</th>
<th>Survey Question/Metric/Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>56.27%</td>
<td>56.10%</td>
<td>Before the COVID-19 pandemic, were you doing anything to help you cope with stress generally (i.e., self-care routines/coping strategies)?</td>
</tr>
<tr>
<td>55.75%</td>
<td>54.75%</td>
<td>Before the COVID-19 pandemic, were you doing anything to help you cope with work related stress (i.e., self-care routines/coping strategies)?</td>
</tr>
<tr>
<td>62.8%</td>
<td>58.27%</td>
<td>Since the start of the COVID-19 pandemic, have you been doing anything to help you cope with stress and any changes to your wellbeing and mental health arising from the COVID-19 pandemic?</td>
</tr>
<tr>
<td>67%</td>
<td>68%</td>
<td>Would look for help if had a MH issue.</td>
</tr>
<tr>
<td>67%</td>
<td>68.92</td>
<td>Would approach the Peer Support Group for peer support services, if needed.</td>
</tr>
<tr>
<td>57%</td>
<td>60.14%</td>
<td>Would use organisational supports if provided.</td>
</tr>
<tr>
<td>26.62%</td>
<td>20%</td>
<td>Used outside supports to help them cope with stress arising from the COVID 10 pandemic and changes to their wellbeing.</td>
</tr>
</tbody>
</table>
## Attitudes to Talking About Mental Health

<table>
<thead>
<tr>
<th>2021</th>
<th>2020</th>
<th>Survey Question/Metric/Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>73%</td>
<td>67%</td>
<td>Feel that there are low levels of speaking out or reporting.</td>
</tr>
<tr>
<td>33.77</td>
<td>33.86%</td>
<td>State that discussions about MH happen less than once a month.</td>
</tr>
<tr>
<td>20%</td>
<td>22%</td>
<td>Would willingly disclose a MH issue to their employer.</td>
</tr>
<tr>
<td>82%</td>
<td>85.29%</td>
<td>Would report concerns about serious MH issues of colleagues if felt presented a safety risk.</td>
</tr>
<tr>
<td>20%</td>
<td>27%</td>
<td>Willingly disclosed a mental health issue to their employer.</td>
</tr>
<tr>
<td>46.83%</td>
<td>53.68%</td>
<td>Have spoken to somebody about a mental health issue they were experiencing/have experienced?</td>
</tr>
<tr>
<td>23%</td>
<td>23%</td>
<td>Who did you speak to - partner/spouse</td>
</tr>
<tr>
<td>21.99%</td>
<td>21.96%</td>
<td>Who did you speak to - medical professional</td>
</tr>
<tr>
<td>9.62%</td>
<td>10.49%</td>
<td>Who did you speak to - close work colleague</td>
</tr>
<tr>
<td>3.72%</td>
<td>2.89%</td>
<td>Who did you speak to - line manager</td>
</tr>
<tr>
<td>3.48%</td>
<td>2.55%</td>
<td>Who did you speak to - peer support</td>
</tr>
<tr>
<td>80%</td>
<td>27%</td>
<td>Trust in employer has deteriorated or greatly deteriorated since COVID 19 Pandemic.</td>
</tr>
</tbody>
</table>
Company Supports & Wellbeing Culture

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>Survey Question/Metric/Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>21%</td>
<td>25%</td>
<td>Airline provided you with specific support to cope with stresses arising from COVID and any changes to your wellbeing?</td>
</tr>
<tr>
<td>25%</td>
<td>24.27%</td>
<td>Used supports provided by their company</td>
</tr>
<tr>
<td>57%</td>
<td>60.14%</td>
<td>Use company supports if provided</td>
</tr>
<tr>
<td>27%</td>
<td>19.83%</td>
<td>Accessed supports outside their airline to cope with stress arising from the COVID-19 pandemic and any changes to your wellbeing</td>
</tr>
<tr>
<td>15%</td>
<td>19.83%</td>
<td>Agree or strongly agree that their company cares about their wellbeing</td>
</tr>
<tr>
<td>64%</td>
<td>32%</td>
<td>Agree or strongly agree that supporting and maintaining positive mental health for aviation 'Safety-Critical Workers' during the COVID-19 pandemic is a key priority for my airline</td>
</tr>
<tr>
<td>79%</td>
<td>69.62</td>
<td>Aware of the existence of a Peer Support Group within their company or staff representative association</td>
</tr>
<tr>
<td>69.80%</td>
<td>60%</td>
<td>Indicated that if a Peer Support Group were in place, and if needed, they would approach the Peer Support Group for peer support services.</td>
</tr>
</tbody>
</table>
### COVID & Experience of Remote Work

<table>
<thead>
<tr>
<th>2021</th>
<th>2020</th>
<th>Survey Question/Metric/Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>51%</td>
<td>40%</td>
<td>Agree or strongly agree that remote working arrangements have had a positive impact in terms of productivity.</td>
</tr>
<tr>
<td>59%</td>
<td>47%</td>
<td>Agree or strongly agree that remote work / collaboration arrangements arising from the COVID-19 pandemic have resulted in an increase in their workload.</td>
</tr>
<tr>
<td>40%</td>
<td>46%</td>
<td>Agree or strongly agree that working from home has made it more difficult to achieve a satisfactory work-life balance.</td>
</tr>
</tbody>
</table>
## Requirements for Wellbeing Supports

<table>
<thead>
<tr>
<th>2021</th>
<th>2020</th>
<th>Survey Question/Metric/Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>93%</td>
<td>94%</td>
<td>Agree or strongly agree - need for wellbeing supports for those currently in work.</td>
</tr>
<tr>
<td>94%</td>
<td>92%</td>
<td>Agree or strongly agree - wellbeing supports are required for those off work.</td>
</tr>
</tbody>
</table>
### Requirements for Fitness for Work Evaluation

<table>
<thead>
<tr>
<th>2021</th>
<th>2020</th>
<th>Survey Question/Metric/Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>81%</td>
<td>86%</td>
<td>Feel they will be fit to return to work, post the COVID-19 pandemic.</td>
</tr>
<tr>
<td>67%</td>
<td>61%</td>
<td>Agree or strongly agree - that aviation 'Safety-Critical' workers who are currently not working, will need some form of 'Fitness for Duty' evaluation before they return to work after the COVID-19 pandemic.</td>
</tr>
<tr>
<td>61%</td>
<td>64%</td>
<td>Agree or strongly agree - that all aviation workers working in 'Safety-Critical' roles will need some form of 'Fitness for Duty' evaluation, before returning to work, post the COVID-19 pandemic.</td>
</tr>
</tbody>
</table>
COVID Survey 2 (2021), Participants Profiles
Survey 2: Response Summary & Participant Profiles

• 1172 respondents participated in the survey.
• 1010 completed the PHQ
• 1010 completed the GAD 7

• Mostly male (69.21%, n=771)
• Aged between 46-55 years (31.78%, n=354)
• Working in aviation for approx. 21-25 years (21.27%, n=237)
• Working for commercial airlines (73.07%, n= 814) - specifically full-service carriers (72.06%, n=575)
• Working as pilots (48.33%, n=535)
• In permanent positions (80.27%, n= 883)
COVID Survey 2 (2021), Physical Health
Physical Health

Rating of Physical Health

- All (n=1010):
  - Very good: 44.95%
  - Good: 47.13%
  - Fair: 26.34%
  - Bad: 5.61%
  - Very bad: 3.04%
  - Do not know: 0.95%
  - Prefer not to say: 0.95%

- Pilots (n=488):
  - Very good: 48.85%
  - Good: 38.96%
  - Fair: 19.61%
  - Bad: 6.42%
  - Very bad: 0.81%
  - Do not know: 0.18%
  - Prefer not to say: 0.18%

- Cabin Crew (n=231):
  - Very good: 48.15%
  - Good: 38.96%
  - Fair: 19.61%
  - Bad: 6.42%
  - Very bad: 0.81%
  - Do not know: 0.18%
  - Prefer not to say: 0.18%

- ATC (n=135):
  - Very good: 50.75%
  - Good: 38.96%
  - Fair: 19.61%
  - Bad: 6.42%
  - Very bad: 0.81%
  - Do not know: 0.18%
  - Prefer not to say: 0.18%

- MX (n=67):
  - Very good: 43.28%
  - Good: 38.96%
  - Fair: 19.61%
  - Bad: 6.42%
  - Very bad: 0.81%
  - Do not know: 0.18%
  - Prefer not to say: 0.18%
COVID Survey 2 (2021), Mental Health
Mental Health

Rating Of Mental Health

- All (n=1010): 35.05% Very good, 13.52% Good, 12.97% Fair, 11.26% Bad, 16.30% Very bad, 5.97% Do not know, 0.00% Prefer not to say
- Pilots (n=488): 35.25% Very good, 13.52% Good, 11.26% Fair, 11.26% Bad, 16.30% Very bad, 5.97% Do not know, 0.00% Prefer not to say
- Cabin Crew (n=231): 31.17% Very good, 13.52% Good, 11.26% Fair, 11.26% Bad, 16.30% Very bad, 5.97% Do not know, 0.00% Prefer not to say
- ATC (n=135): 39.26% Very good, 13.52% Good, 11.26% Fair, 11.26% Bad, 16.30% Very bad, 5.97% Do not know, 0.00% Prefer not to say
- MX (n=67): 32.84% Very good, 13.52% Good, 11.26% Fair, 11.26% Bad, 16.30% Very bad, 5.97% Do not know, 0.00% Prefer not to say
COVID Survey 2 (2021), Impact of COVID on Health & Wellbeing
Negative Impact of COVID on Health & Wellbeing

The COVID-19 pandemic is having a negative impact on my health & wellbeing

- All (n=1010): 45.45% Strongly agree, 31.78% Agree, 15.56% Neither agree nor disagree, 8.72% Disagree, 0.56% Strongly disagree
- Pilots (n=488): 42.01% Strongly agree, 33.81% Agree, 12.50% Neither agree nor disagree, 8.32% Disagree, 0.83% Strongly disagree
- Cabin Crew (n=231): 46.32% Strongly agree, 38.96% Agree, 12.50% Neither agree nor disagree, 4.34% Disagree, 0.43% Strongly disagree
- ATC (n=135): 52.59% Strongly agree, 25.37% Agree, 11.81% Neither agree nor disagree, 6.67% Disagree, 0.74% Strongly disagree
- MX (n=67): 56.72% Strongly agree, 25.37% Agree, 9.01% Neither agree nor disagree, 3.02% Disagree, 0.15% Strongly disagree
Worsening MH

My Mental Health has Worsened Since the COVID 19 Pandemic

- All (n=1796): 39.25% Strongly agree, 39.11% Agree, 42.66% Neither agree nor disagree, 37.57% Disagree, 39.44% Strongly disagree
- Pilots (n=675): 24.11% Strongly agree, 27.70% Agree, 11.33% Neither agree nor disagree, 35.96% Disagree, 14.08% Strongly disagree
- Cabin Crew (n=354): 24.11% Strongly agree, 27.70% Agree, 11.33% Neither agree nor disagree, 35.96% Disagree, 14.08% Strongly disagree
- ATC (n=203): 24.11% Strongly agree, 27.70% Agree, 11.33% Neither agree nor disagree, 35.96% Disagree, 14.08% Strongly disagree
- MX (n=142): 24.11% Strongly agree, 27.70% Agree, 11.33% Neither agree nor disagree, 35.96% Disagree, 14.08% Strongly disagree
COVID Survey 2 (2021), Happiness & Life Satisfaction
Happiness & Life Satisfaction (2021)

<table>
<thead>
<tr>
<th>Score</th>
<th>Min</th>
<th>1st Qu (25% fall below)</th>
<th>Median/Mean</th>
<th>3rd Qu (75% fall below)</th>
<th>IQR (Middle 50%)</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5</td>
<td>6</td>
<td>6.089</td>
<td>8</td>
<td>3</td>
<td>10</td>
</tr>
</tbody>
</table>

When asked to rate their general satisfaction with life on a scale from 0 to 10, people on average across the OECD gave it a 6.5.

Taking everything together, how happy do you feel with your life, with '0' representing 'Not Happy At All', and '10' representing 'Very Happy'?
Happiness Rating, 2021
Happiness & Life Satisfaction & Roles (2021)

One Way ANOVA, p value (4.45e-07)
Statistically significant difference in mean scores across roles
Happiness & Life Satisfaction & Roles (2021)

One Way ANOVA, p value (4.45e-07)
Statistically significant difference in mean scores across roles
### Happiness & Life Satisfaction - Roles (2021)

<table>
<thead>
<tr>
<th>Role</th>
<th>Min</th>
<th>1st Qu (25% fall below)</th>
<th>Median/ (Middle)</th>
<th>Mean</th>
<th>3rd Qu (75% fall below)</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Score 2021</td>
<td>1</td>
<td>5</td>
<td>6</td>
<td>6.089</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>Pilots</td>
<td>1</td>
<td>5</td>
<td>6</td>
<td>6.158</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>Cabin Crew</td>
<td>1</td>
<td>4</td>
<td>5</td>
<td>5.494</td>
<td>7</td>
<td>10</td>
</tr>
<tr>
<td>Maintenance/ Engineering</td>
<td>2</td>
<td>5</td>
<td>7</td>
<td>6.09</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>ATC</td>
<td>2</td>
<td>6</td>
<td>7</td>
<td>6.644</td>
<td>8</td>
<td>10</td>
</tr>
</tbody>
</table>

**Boxplot of Happiness Rating**

The boxplot visually represents the distribution of happiness ratings for different roles, showing quartiles and outliers.
Happiness & Life Satisfaction & Gender (2021)

One Way ANOVA, p value (0.0236)
Statistically significant difference in mean scores for groups
<table>
<thead>
<tr>
<th></th>
<th>Min</th>
<th>1st Qu (25% fall below)</th>
<th>Median/ (Middle)</th>
<th>Mean</th>
<th>3rd Qu (75% fall below)</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Score 2021</td>
<td>1</td>
<td>5</td>
<td>6</td>
<td>6.089</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>Female</td>
<td>1</td>
<td>5</td>
<td>6</td>
<td>5.83</td>
<td>7</td>
<td>10</td>
</tr>
<tr>
<td>Male</td>
<td>1</td>
<td>5</td>
<td>7</td>
<td>6.198</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>Prefer not to say</td>
<td>4</td>
<td>5.5</td>
<td>7</td>
<td>6.533</td>
<td>8</td>
<td>8</td>
</tr>
</tbody>
</table>
Happiness & Life Satisfaction & Age (2021)

One Way ANOVA, p value (0.0135)
Statistically significant difference in mean scores for age groups
# Happiness & Life Satisfaction & Age (2021)

<table>
<thead>
<tr>
<th>Score All Age Groups</th>
<th>Min</th>
<th>1st Qu</th>
<th>Median</th>
<th>Mean</th>
<th>3rd Qu</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;25 years</td>
<td>3</td>
<td>4</td>
<td>6</td>
<td>5.55</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>25 to 35 years</td>
<td>1</td>
<td>4</td>
<td>6</td>
<td>5.858</td>
<td>7</td>
<td>10</td>
</tr>
<tr>
<td>35 to 45 years</td>
<td>1</td>
<td>5</td>
<td>6</td>
<td>6.016</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>46 to 55 years</td>
<td>1</td>
<td>5</td>
<td>6</td>
<td>6.188</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>56 to 65 years</td>
<td>1</td>
<td>6</td>
<td>7</td>
<td>6.667</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>Prefer not to say</td>
<td>3</td>
<td>5</td>
<td>5.5</td>
<td>5.875</td>
<td>7.25</td>
<td>8</td>
</tr>
</tbody>
</table>
Happiness & Life Satisfaction & Type of Org Work for

One Way ANOVA, p value (0.0272)
Statistically significant difference in mean scores for age groups
## Happiness & Life Satisfaction & Type of Org Work for 2021

<table>
<thead>
<tr>
<th>Type of Org Work</th>
<th>Min</th>
<th>1&lt;sup&gt;st&lt;/sup&gt; Qu (25% fall below)</th>
<th>Median/ (Middle)</th>
<th>Mean</th>
<th>3&lt;sup&gt;rd&lt;/sup&gt; Qu (75% fall below)</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Score 2021 (All)</td>
<td>1</td>
<td>5</td>
<td>6</td>
<td>6.089</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>Commercial/Passenger airline</td>
<td>1</td>
<td>5</td>
<td>6</td>
<td>5.972</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>(n=748)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Air Traffic Management</td>
<td>2</td>
<td>6</td>
<td>7</td>
<td>6.611</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>(n=131)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cargo airline</td>
<td>2</td>
<td>4</td>
<td>7</td>
<td>6.25</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>(n=16)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Airport Operator</td>
<td>2</td>
<td>5</td>
<td>6.5</td>
<td>5.929</td>
<td>7.75</td>
<td>9</td>
</tr>
<tr>
<td>(n=14)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General aviation</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>6.048</td>
<td>7</td>
<td>9</td>
</tr>
<tr>
<td>(n=21)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Business aviation</td>
<td>5</td>
<td>6</td>
<td>8</td>
<td>7.538</td>
<td>9</td>
<td>10</td>
</tr>
<tr>
<td>(n=13)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maintenance and Repair Organisation (MRO)</td>
<td>3</td>
<td>4</td>
<td>6</td>
<td>6.053</td>
<td>7.5</td>
<td>10</td>
</tr>
<tr>
<td>(n=19)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Military Air Force</td>
<td>3</td>
<td>4</td>
<td>6</td>
<td>6.053</td>
<td>7.5</td>
<td>10</td>
</tr>
<tr>
<td>(n=3)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flight Training</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>5.333</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>(n=9)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outsourcing company</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>6</td>
<td>7</td>
<td>9</td>
</tr>
<tr>
<td>(n=2)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (Please specify)</td>
<td>1</td>
<td>5</td>
<td>7</td>
<td>6.324</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>(n= 134)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Happiness & Life Satisfaction

Boxplot of Happiness Rating

Boxplot of Happiness Rating

Boxplot of Happiness Rating

Boxplot of Happiness Rating

Boxplot of Happiness Rating

Boxplot of Happiness Rating
COVID Survey 2 (2021),
Depression Severity/PHQ 9
PHQ9, 2021

Histogram for PHQ Severity Levels

- mild
- minimal
- moderate
- moderately severe
- severe
PHQ9 ≥ 10 (Depression) & Aviation Roles
PHQ9 Severity Levels & Worker Profiles, 2021

Pearson’s Chi Squared Test, p value (2.761e-08)
Relationship between role and depression severity is statistically significant
## PHQ9 Severity Levels and Worker Profiles

<table>
<thead>
<tr>
<th></th>
<th>All (n=1010)</th>
<th>Pilots (n=488)</th>
<th>Cabin Crew (n=231)</th>
<th>MX/Eng (n=67)</th>
<th>ATC (n=135)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimal</td>
<td>35.30%</td>
<td>41.60%</td>
<td>18.00%</td>
<td>36.00%</td>
<td>43.00%</td>
</tr>
<tr>
<td>Mild</td>
<td>37.60%</td>
<td>37.70%</td>
<td>42.00%</td>
<td>36.00%</td>
<td>34.00%</td>
</tr>
<tr>
<td>Moderate</td>
<td><strong>16.10%</strong></td>
<td><strong>13.70%</strong></td>
<td><strong>19.00%</strong></td>
<td><strong>16.00%</strong></td>
<td><strong>17%</strong></td>
</tr>
<tr>
<td>Moderately Severe</td>
<td>8.00%</td>
<td>5.00%</td>
<td>13.00%</td>
<td>10.00%</td>
<td>6.00%</td>
</tr>
<tr>
<td>Severe</td>
<td>3.00%</td>
<td>2.00%</td>
<td>8%</td>
<td>2.00%</td>
<td>0%</td>
</tr>
</tbody>
</table>

- All (16%), Pilots (14%), Cabin Crew (19%), MX (16%) and ATC (17%) met threshold for depression (>10).
- Note All (16%) > population average 4.4%.
- Note pilots < than for all, and Cabin Crew > than all.
PHQ 9/Severity Levels & Gender

Over twice as much men in sample, yet numbers close for moderate and severe (and higher for females – severe depression)

Pearson’s Chi Squared Test, p value (1.244415e-06)
Relationship between gender and depression severity is statistically significant
PHQ 9/Severity Levels & Gender

Over twice as much men in sample, yet numbers close for moderate and severe (and higher for females – severe depression)

<table>
<thead>
<tr>
<th>Gender/Response</th>
<th>Female</th>
<th>Male</th>
<th>Prefer Not to Say</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proportion &amp; N</td>
<td>29.89% (n=333)</td>
<td>69.21% (n=771)</td>
<td>0.90% (n=10)</td>
</tr>
<tr>
<td>Minimal</td>
<td>7.03%</td>
<td>27.82%</td>
<td>0.50%</td>
</tr>
<tr>
<td>Mild</td>
<td>12.08%</td>
<td>25.45%</td>
<td>0.10%</td>
</tr>
<tr>
<td>Moderate</td>
<td>6.24%</td>
<td>9.70%</td>
<td>0.20%</td>
</tr>
<tr>
<td>Moderately Severe</td>
<td>3.27%</td>
<td>4.65%</td>
<td>0%</td>
</tr>
<tr>
<td>Severe</td>
<td>1.7%</td>
<td>1.29%</td>
<td>0%</td>
</tr>
</tbody>
</table>
The proportion of the global population with depression in 2015 is estimated to be 4.4%. Depression is more common among females (5.1%) than males (3.6%). Prevalence rates vary by age, peaking in older adulthood (above 7.5% among females aged 55-74 years, and above 5.5% among males).

<table>
<thead>
<tr>
<th>Score</th>
<th>Min</th>
<th>1st Qu</th>
<th>Median</th>
<th>Mean</th>
<th>3rd Qu</th>
<th>IQR</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
<td>3.00</td>
<td>6.00</td>
<td>7.25</td>
<td>10.00</td>
<td>7</td>
<td>26.00</td>
</tr>
<tr>
<td>PHQ 9 Cut-offs</td>
<td>Minimal</td>
<td>Minimal</td>
<td>Mild</td>
<td>Mild</td>
<td>Moderate</td>
<td>Mild</td>
<td>Severe</td>
</tr>
</tbody>
</table>
PHQ 9, 2021
# PHQ 9 – Roles, 2021

<table>
<thead>
<tr>
<th>Role</th>
<th>Min</th>
<th>1st Qu</th>
<th>Median</th>
<th>Mean</th>
<th>3rd Qu</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Score 2021 (All)</td>
<td>0</td>
<td>3</td>
<td>6</td>
<td>7.25</td>
<td>10</td>
<td>26</td>
</tr>
<tr>
<td>Pilots</td>
<td>0</td>
<td>3</td>
<td>5</td>
<td>6.275</td>
<td>9</td>
<td>26</td>
</tr>
<tr>
<td>Cabin Crew</td>
<td>0</td>
<td>6</td>
<td>8</td>
<td>9.71</td>
<td>13</td>
<td>25</td>
</tr>
<tr>
<td>Maintenance/Engineering</td>
<td>0</td>
<td>4</td>
<td>6</td>
<td>7.418</td>
<td>10</td>
<td>20</td>
</tr>
<tr>
<td>ATC</td>
<td>0</td>
<td>3</td>
<td>5</td>
<td>6.222</td>
<td>9</td>
<td>18</td>
</tr>
</tbody>
</table>

![Boxplot of PHQ Scores & Role](image.png)
## PHQ 9 – Gender, 2021

<table>
<thead>
<tr>
<th></th>
<th>Min</th>
<th>1&lt;sup&gt;st&lt;/sup&gt; Qu</th>
<th>Median</th>
<th>Mean</th>
<th>3&lt;sup&gt;rd&lt;/sup&gt; Qu</th>
<th>IQR</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Score All</td>
<td>0</td>
<td>3.00</td>
<td>6.00</td>
<td>7.25</td>
<td>10.00</td>
<td>7</td>
<td>26.00</td>
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<tr>
<td>Score Males</td>
<td>0.000</td>
<td>3.00</td>
<td>6.00</td>
<td>6.579</td>
<td>9.000</td>
<td></td>
<td>24.00</td>
</tr>
<tr>
<td>Score Females</td>
<td>0.000</td>
<td>5.000</td>
<td>8.000</td>
<td>8.833</td>
<td>12.000</td>
<td></td>
<td>26.00</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>SD: All Aviation Workers</th>
<th>SD: Males</th>
<th>SD: Females</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5.222656</td>
<td>4.936088</td>
<td>5.513173</td>
</tr>
</tbody>
</table>
PHQ 9 – Age Range, 2021

<table>
<thead>
<tr>
<th>Score All Age Groups</th>
<th>Min</th>
<th>1st Qu</th>
<th>Median</th>
<th>Mean</th>
<th>3rd Qu</th>
<th>IQR</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;25 years</td>
<td>3</td>
<td>6</td>
<td>9.5</td>
<td>9.4</td>
<td>13</td>
<td>10</td>
<td>18</td>
</tr>
<tr>
<td>25 to 35 years</td>
<td>0</td>
<td>3</td>
<td>7</td>
<td>7.834</td>
<td>11</td>
<td>7</td>
<td>25</td>
</tr>
<tr>
<td>35 to 45 years</td>
<td>0</td>
<td>4</td>
<td>7</td>
<td>7.298</td>
<td>9</td>
<td>6</td>
<td>25</td>
</tr>
<tr>
<td>46 to 55 years</td>
<td>0</td>
<td>3</td>
<td>6</td>
<td>7.059</td>
<td>10</td>
<td>4.5</td>
<td>26</td>
</tr>
<tr>
<td>56 to 65 years</td>
<td>0</td>
<td>2</td>
<td>5</td>
<td>6.061</td>
<td>8.5</td>
<td>8.5</td>
<td>23</td>
</tr>
<tr>
<td>Prefer not to say</td>
<td>1</td>
<td>3</td>
<td>4</td>
<td>4.444</td>
<td>6</td>
<td>8</td>
<td></td>
</tr>
</tbody>
</table>

Boxplot of PHQ Scores & Age

Density

Age & PHQ9 Mean Scores

Age:
- <25 years
- 25-35 years
- 36-45 years
- 46-55 years
- 56-65 years
- Prefer not to say
# PHQ 9 – Job Loss, 2021

<table>
<thead>
<tr>
<th></th>
<th>Min</th>
<th>1st Qu</th>
<th>Median</th>
<th>Mean</th>
<th>3rd Qu</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Score 2021 (All)</td>
<td>0</td>
<td>3</td>
<td>6</td>
<td>7.25</td>
<td>10</td>
<td>26</td>
</tr>
<tr>
<td>Job Loss - Yes</td>
<td>0</td>
<td>4</td>
<td>8</td>
<td>8.418</td>
<td>12</td>
<td>26</td>
</tr>
<tr>
<td>Job Loss - No</td>
<td>0</td>
<td>4</td>
<td>7</td>
<td>7.429</td>
<td>10</td>
<td>25</td>
</tr>
</tbody>
</table>

![Boxplot of PHQ Scores & Job Loss](image1.png)

![Density Plot](image2.png)
COVID Survey 2 (2021), Anxiety/GAD 7
Anxiety/GAD 7, 2021
GAD7 ≥ 10 (Anxiety) & Aviation Roles

GAD7 ≥ 10 (Anxiety) & Aviation Roles

- All (n=1,010): 23% YES, 77% NO
- Pilots (n=488): 17% YES, 83% NO
- Cabin Crew (n=231): 35% YES, 65% NO
- Line MX/Engineering (n=67): 27% YES, 73% NO
- ATC (n=135): 21% YES, 79% NO

Legend: YES (GAD7 ≥ 10) | NO (GAD7 <10)
Anxiety Cut-offs & Roles, 2021

Pearson’s Chi Squared Test, p value (7.183e-08)
Statistically significant relationship between roles and anxiety severity
Anxiety/GAD 7 & Gender

Over twice as much men in sample, yet numbers close for moderate and severe

Pearson’s Chi Squared Test, p value (1.124e-09)
Statistically significant relationship between gender and anxiety severity
Anxiety/GAD 7 & Gender

Over twice as much men in sample, yet numbers close for moderate and severe

<table>
<thead>
<tr>
<th></th>
<th>Female</th>
<th>Male</th>
<th>Prefer Not to Say</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proportion &amp; N</td>
<td>29.89%</td>
<td>69.21%</td>
<td>0.90%</td>
</tr>
<tr>
<td></td>
<td>(n=333)</td>
<td>(n=771)</td>
<td>(n=10)</td>
</tr>
<tr>
<td>Minimal</td>
<td>8.51%</td>
<td>34.06%</td>
<td>0.60%</td>
</tr>
<tr>
<td>Mild</td>
<td>11.39%</td>
<td>22.47%</td>
<td>0.20%</td>
</tr>
<tr>
<td>Moderate</td>
<td>6.24%</td>
<td>7.02%</td>
<td>0%</td>
</tr>
<tr>
<td>Severe</td>
<td>4.16%</td>
<td>5.35%</td>
<td>0%</td>
</tr>
</tbody>
</table>

The proportion of the global population with anxiety disorders in 2015 is estimated to be 3.6%. As with depression, anxiety disorders are more common among females than males (4.6% compared to 2.6% at the global level).
<table>
<thead>
<tr>
<th>Score</th>
<th>Min</th>
<th>1&lt;sup&gt;st&lt;/sup&gt; Qu</th>
<th>Median</th>
<th>Mean</th>
<th>3&lt;sup&gt;rd&lt;/sup&gt; Qu</th>
<th>IQR</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimal</td>
<td>0</td>
<td>3</td>
<td>5</td>
<td>6.372</td>
<td>9</td>
<td>6</td>
<td>21</td>
</tr>
</tbody>
</table>

**Interpretation**
- Minimal
- Minimal

**Mild**
- Mild
- Mild
- Mild
- Mild
- Severe
### Anxiety/GAD 7 Mean Score & Roles

<table>
<thead>
<tr>
<th>Role</th>
<th>Min</th>
<th>1st Qu</th>
<th>Median</th>
<th>Mean</th>
<th>3rd Qu</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Score 2021 (All)</td>
<td>0</td>
<td>3</td>
<td>5</td>
<td>6.372</td>
<td>9</td>
<td>6</td>
</tr>
<tr>
<td>Pilots</td>
<td>0</td>
<td>2</td>
<td>4</td>
<td>5</td>
<td>7</td>
<td>21</td>
</tr>
<tr>
<td>Cabin Crew</td>
<td>0</td>
<td>5</td>
<td>7</td>
<td>8.667</td>
<td>13</td>
<td>21</td>
</tr>
<tr>
<td>Maintenance/Engineering</td>
<td>0</td>
<td>3</td>
<td>6</td>
<td>6.881</td>
<td>10.5</td>
<td>21</td>
</tr>
<tr>
<td>ATC</td>
<td>0</td>
<td>2</td>
<td>5</td>
<td>5.585</td>
<td>8.500</td>
<td>18</td>
</tr>
</tbody>
</table>

**Boxplot of GAD7 Scores & Role**

- **GAD7 Scores** range from 0 to 21.
COVID Survey 2 (2021),
Suicidal Ideation
Suicidal Ideation, 2021

Density plot of Suicidal Ideation

N = 1010  Bandwidth = 0.09963
Suicidal Ideation & Roles

Suicidal Ideation (PHQ9 - Question 9) & Roles

- All (n=1,010): 11% YES, 89% NO
- Pilots (n=488): 9% YES, 91% NO
- Cabin Crew (n=231): 16% YES, 84% NO
- Line MX/Engineering (n=67): 16% YES, 84% NO
- ATC (n=135): 5% YES, 95% NO

Legend:
- YES (Suicidal Ideation)
- NO (Suicidal Ideation)
Suicidal Ideation & Roles, 2021

Suicidal Ideation, 2021

% shown for 3/nearly every day
Suicidal Ideation, 2021

<table>
<thead>
<tr>
<th></th>
<th>Min</th>
<th>1st Qu</th>
<th>Median</th>
<th>Mean</th>
<th>3rd Qu</th>
<th>IQR</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Score</td>
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<td>0.0000</td>
<td>0.0000</td>
<td>0.1416</td>
<td>0.0000</td>
<td>0</td>
<td>3.0000</td>
</tr>
</tbody>
</table>

"Boxplot of Suicidal Ideation"

11% have suicidal thoughts (TCD, COVID Survey 2021), Harvard Study 4.1% (2016)
COVID Survey 2 (2021)
Scatterplot Matrices:
4 Measures of Wellbeing
Scatterplot Matrix of Happiness & Life Satisfaction

- HappinessRating
- PHQScore
- GADScore
- SuicidalideationScore
Scatterplot Matrix of Suicidal Ideation
COVID Survey 2 (2021)
Disclosure & Attitudes to MH
Disclosure & Attitudes to MH

How often is there discussion concerning mental health issues among your work colleagues?

- Every day
- Every few days
- At least once per week
- Every few weeks
- Less than once per month
- Never

There are low levels of speaking out and/or reporting about mental health among my work colleagues.
Disclosure & Attitudes to MH

If I had a mental health issue, I would look for help

- All (n=995): 23.22% Strongly Agree, 43.62% Agree, 21.92% Neutral, 16.96% Disagree, 2.2% Strongly Disagree
- Pilots (n=479): 23.22% Strongly Agree, 42.59% Agree, 21.92% Neutral, 16.96% Disagree, 2.2% Strongly Disagree
- Cabin Crew (n=230): 23.22% Strongly Agree, 42.61% Agree, 21.92% Neutral, 16.96% Disagree, 2.2% Strongly Disagree
- ATC (n=134): 23.22% Strongly Agree, 45.52% Agree, 21.92% Neutral, 16.96% Disagree, 2.2% Strongly Disagree
- MX (n=65): 23.22% Strongly Agree, 56.92% Agree, 21.92% Neutral, 16.96% Disagree, 2.2% Strongly Disagree
Org Culture & Priorities

My Company Cares About My Wellbeing

Supporting and maintaining positive mental health for aviation 'Safety-Critical Workers' during the COVID-19 pandemic IS a key priority for my airline
COVID Survey 2 (2021) 
Org Wellness Culture & 
Supports Provided
Org Wellness Culture & Supports Provided

Has your airline provided you with any specific support to cope with stresses arising from COVID and any changes to your wellbeing?

- **All (n=965)**: 78.76% Yes, 21.24% No
- **Pilots (n=466)**: 77.04% Yes, 22.96% No
- **Cabin Crew (n=225)**: 84.89% Yes, 15.11% No
- **ATC (n=129)**: 74.42% Yes, 25.58% No
- **MX (n=62)**: 77.42% Yes, 22.58% No

Used Supports Provided by Company

- **All (n=203)**: 74.88% Yes, 25.12% No
- **Pilots (n=107)**: 78.50% Yes, 21.50% No
- **Cabin Crew (n=34)**: 91.18% Yes, 8.82% No
- **ATC (n=31)**: 74.19% Yes, 25.81% No
- **MX (n=14)**: 50.00% Yes, 50.00% No
<table>
<thead>
<tr>
<th>Frequency Ranking</th>
<th>2021</th>
<th>Type</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>35.34% (n= 41)</td>
<td>Peer Support</td>
<td>Tertiary</td>
</tr>
<tr>
<td>2</td>
<td>28.44 (n=33)</td>
<td>Health education and training</td>
<td>Secondary</td>
</tr>
<tr>
<td>3</td>
<td>18.10% (n=21)</td>
<td>Specialist MH support</td>
<td>Tertiary</td>
</tr>
<tr>
<td>4</td>
<td>17.24% (n=20)</td>
<td>One-way emails/communications promoting wellbeing</td>
<td>Secondary</td>
</tr>
<tr>
<td>5</td>
<td>13.79% (n=16)</td>
<td>2-way team meetings to communicate updates and provide feedback/support</td>
<td>Secondary</td>
</tr>
<tr>
<td>6</td>
<td>12.93% (n=15)</td>
<td>Employee Assistance Program (internal/external)</td>
<td>Tertiary</td>
</tr>
<tr>
<td>7</td>
<td>11.2% (n=13)</td>
<td>Signposting (internal/external)</td>
<td>Secondary</td>
</tr>
<tr>
<td>8</td>
<td>2.58% (n=3)</td>
<td>1 to 1 check-in/chats</td>
<td>Secondary</td>
</tr>
<tr>
<td>9</td>
<td>1.72, (n=2)</td>
<td>Wellbeing Apps</td>
<td>Primary</td>
</tr>
<tr>
<td>10</td>
<td>1.72, (n=2)</td>
<td>Exercise Class</td>
<td>Primary</td>
</tr>
</tbody>
</table>
Organisational Wellbeing Supports

- **Health education and...**: 28.44% (2020) vs 23% (2021)
- **Specialist MH support**: 22.08% (2020) vs 18.10% (2021)
- **On way communications**: 16.41% (2020) vs 17.24% (2021)
- **Employee Assistance...**: 15.52% (2020) vs 12.93% (2021)
- **Signposting**: 12.83% (2020) vs 11.20% (2021)
- **2-way team meetings**: 12.83% (2020) vs 13.79% (2021)
- **Peer Support**: 35.34% (2020) vs 12.23% (2021)
- **1 to 1 check-in/chats**: 1.49% (2020) vs 2.58% (2021)
- **Wellbeing Apps**: 1.49% (2020) vs 1.72% (2021)

2020 (n=419) vs 2021 (n=205)
Org Wellness Culture & Supports Provided

Although your airline has not provided any support, would you use this if provided?

- All (n=755): Yes - 56.95%, No - 43.05%
- Pilots (n=357): Yes - 56.58%, No - 43.42%
- Cabin Crew (n=190): Yes - 53.16%, No - 46.84%
- ATC (n=95): Yes - 50.53%, No - 47%
- MX (n=48): Yes - 62.50%, No - 37.50%

Dark blue bars represent 'Yes', light orange bars represent 'No'.
Self Care & Coping

Before the COVID-19 pandemic, were you doing anything to help you cope with stress in general?

- All (n=965): 56.27% Yes, 43.73% No
- Pilots (n=466): 55.15% Yes, 44.85% No
- Cabin Crew (n=225): 61.33% Yes, 38.67% No
- ATC (n=129): 50.39% Yes, 49.61% No
- MX (n=62): 54.84% Yes, 45.16% No

Before the COVID-19 pandemic, were you doing anything to help you cope with work related stress (i.e. self-care routines/coping strategies)?

- All (n=965): 55.75% Yes, 44.25% No
- Pilots (n=466): 55.58% Yes, 44.42% No
- Cabin Crew (n=225): 58.22% Yes, 41.78% No
- ATC (n=129): 50.39% Yes, 49.61% No
- MX (n=62): 56.45% Yes, 43.55% No

Since the start of the COVID-19 pandemic, have you been doing anything to help you cope with stress and any changes to your wellbeing and mental health arising from the COVID-19 pandemic?

- All (n=965): 62.80% Yes, 37.20% No
- Pilots (n=466): 63.73% Yes, 36.27% No
- Cabin Crew (n=225): 68.44% Yes, 31.56% No
- ATC (n=129): 56.59% Yes, 43.41% No
- MX (n=62): 58.06% Yes, 41.94% No
Have you accessed any supports outside your airline to cope with stress arising from the COVID-19 pandemic and any changes to your wellbeing?

<table>
<thead>
<tr>
<th>Category</th>
<th>Yes (%)</th>
<th>No (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>All (n=958)</td>
<td>73.38%</td>
<td>26.62%</td>
</tr>
<tr>
<td>Pilots (n=464)</td>
<td>77.80%</td>
<td>22.20%</td>
</tr>
<tr>
<td>Cabin Crew (n=224)</td>
<td>64.73%</td>
<td>35.27%</td>
</tr>
<tr>
<td>ATC (n=126)</td>
<td>76.19%</td>
<td>23.81%</td>
</tr>
<tr>
<td>MX (n=62)</td>
<td>77.42%</td>
<td>22.58%</td>
</tr>
</tbody>
</table>
COVID Survey 2 (2021)
Need for Supports
Need for Supports

Aviation workers who are currently working in "Safety-Critical" roles need support to maintain their wellbeing during the COVID-19 pandemic.

Those 'Safety-Critical' aviation workers who are currently not working, need support to maintain their wellbeing now, so that they are fit to return to work post the COVID-19 pandemic.
COVID Survey 2 (2021)
Fitness for Work & Assessment
Fitness for Work & Assessment

I feel I will be fit to return to work, post the COVID-19 pandemic.
Fitness for Work & Assessment

All aviation workers working in 'Safety-Critical' roles will need some form of 'Fitness for Duty' evaluation, before returning to work, post the COVID-19 pandemic.

Those aviation 'Safety-Critical' workers who are currently not working, will need some form of 'Fitness for Duty' evaluation before they return to work after the COVID-19 pandemic.
COVID Survey 2 (2021)
Trust, Engagement, Motivation & Talking About MH
Trust, Engagement & Motivation

How would you rate your overall level of trust in your employer since the COVID-19 pandemic?

How would you rate the level of engagement between you and your employer now, as compared to before the COVID-19 pandemic?

How would you rate your motivation towards your job now, as compared to before the COVID-19 pandemic?
Talking about Mental Health

Have you ever spoken to somebody about a mental health issue you are experiencing/have experienced?

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>All, n=995</td>
<td>53.2%</td>
<td>46.8%</td>
</tr>
<tr>
<td>Pilots, n=479</td>
<td>56.4%</td>
<td>43.6%</td>
</tr>
<tr>
<td>Cabin Crew, n=230</td>
<td>51.7%</td>
<td>48.3%</td>
</tr>
<tr>
<td>Mx/Eng, n=65</td>
<td>55.4%</td>
<td>44.6%</td>
</tr>
<tr>
<td>ATC, n=134</td>
<td>56.0%</td>
<td>44.0%</td>
</tr>
</tbody>
</table>
If you had a mental health issue, would you willingly disclose it to your employer?

- All (n=522): 19.5% Yes, 80.5% No
- Pilots (n=267): 21.3% Yes, 78.7% No
- Cabin Crew (n=110): 12.7% Yes, 87.3% No
- Mx/Eng (n=36): 25.0% Yes, 75.0% No
- ATC (n=74): 16.2% Yes, 83.8% No

If you were feeling depressed or anxious, who would you talk to about this? (Select more than one, if appropriate)

- Nobody
- Partner/Spouse
- Family Member
- Close Friend
- Medical Professional
- Close Work Colleague
- Line Manager
- Peer Support
- HR/Occ Health
- EAP

- All (n=522)
- Pilots (n=267)
- Cabin Crew (n=110)
- Mx/Eng (n=36)
- ATC (n=74)
Note: With the exception of pilots, more respondents reported that they would talk to nobody rather than use PSP. The picture is slightly better for pilots, with 14% reporting they would speak to PSP, while 11% would speak to nobody.
COVID Survey 2 (2021)
Peer Support
Peer Support

Are you aware of the existence of a Peer Support Group within your company or staff representative association?

If needed, would you approach the Peer Support Group for peer support services?

If a Peer Support Group was in place, if needed, would you approach the Peer Support Group for peer support services?
Wellbeing, Performance & Safety Impact

In my view, changes in morale arising from the COVID-19 pandemic have negatively impacted on safety practices.

How would you rate the overall level of safety within your company now, as compared to before the COVID-19 pandemic?
Wellbeing, Performance & Safety Impact

How would you rate your competence and ability to do your job safely and to the required standard now, as compared to before the COVID-19 pandemic?

How would you rate compliance with safety policies and procedures now, as compared to before the COVID-19 pandemic?
Key Takeaways
Key Takeaways
(Wellbeing, Ramp-up and Return to Work)

- **Decreased wellbeing** of aviation professionals during shutdown and on return to work
- Aviation personnel fatigue
- **Financial wellbeing** (job loss, job change, job uncertainty, contract change)
- **Skill fade**
- MH and reporting problems/challenges (stigma, culture...)
- Reduced focus on, or prioritisation of safety, human and organisational factors
- **Trust is necessary but not a given**
- Strong need for supports – that address issues around MH stigma, concern for license, need for privacy
Key takeaways
(Individual, Org and Regulatory Approach)

- Need to treat wellbeing as a shared responsibility
- The regulator needs to address the design of regulation in relation to the management of wellbeing and mental health for safety critical workers
  - Low reporting levels
  - Peer support not be used
  - Very few providing supports, and existing supports not being used (not fit for purpose)
- Aviation organisations need to rethink their objectives and approach in terms of providing appropriate wellbeing supports for those currently in work and off work.
- Suffering is not equal – age range (younger), gender (females), roles (cabin crew), job loss
- Those people who have lost their jobs and/or are experiencing MH difficulties require immediate support
- The roles and responsibilities of different stakeholders (i.e. workers, organisations, regulator, society/charities, government) in relation to managing wellbeing require rethinking and clarification.
- Aviation organisations need to address issues pertaining to their wellbeing culture – promoting healthy behaviour, supporting disclosure around mental health issues/challenges, promoting awareness of MH.
- Solutions need to be address issues around trust and privacy
- Organisations and workers need to manage specific sources of stress (including work related stress) and anxiety, and specific impact of COVID 19 on aviation workers
- Aviation workers across different roles are practising self-care – this should be encouraged at all levels – linking to promoting a wellbeing culture and safe behaviour
- Need for peer support for all aviation workers – not just pilots
- We need an Acceptable Means of Compliance (AME) for wellbeing
- Wellbeing risk needs to be managed in airline safety management systems (SMS)
Our Vision & Transformation
Our Vision

Our vision is to change:

- The health and wellbeing situation for pilots (and other airline personnel) – with particular attention to health and wellbeing in work, and loops between health and wellbeing in and outside work (i.e., on and off duty).
- Aviation organisations/airline’s approach to wellbeing management for pilots – treated as a shared responsibility.

3 L’s - licence, livelihood and life

Wellbeing as a factor in safe performance
(link to Safety II/Safety II.I)

Trust, Privacy, Respect, Dignity

Using data and evidence ....
Crisis and Change/Transformation

Crises can be transformative

1: Addressing positive wellbeing, and spectrum of suffering
2: Focus on wellbeing, performance/professionalism and safety (without stigma)
3: Ethics of care: responsible work and leadership
4: Cultural, process/operational and regulatory change
5: Culture of supporting and reporting/disclosure
6: Managing people/wellbeing, using data and technology to manage wellbeing risk (psychosocial risk, work related stress, lived experience)
7. Systems level/human factors response
Wellbeing II: Individual & Org Performance

Positive Wellbeing, WRS, Home/Work Interface, Suffering

- Higher Safety
- Higher Engagement & Flow
- Better Social Relationships & Trust
- Higher Productivity
- Improved Customer Service
- Purpose/Meaning & Fulfilment

Ethics (3BL, Decent Work, Responsible Work)
Conclusions,
Acknowledgements & Contact
Conclusions


Self awareness

Looking after oneself (self care, self compassion)

Seeking help when needed (peer support/PAN, medical professionals)

Fitness for work & operational readiness

Supporting others (kindness & humanity, compassion for others)

Need for airlines to manage wellbeing risk

Need for regulatory change + address trust and privacy
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