



Trinity College Dublin
Coláiste na Tríonóide, Baile Átha Cliath
The University of Dublin



**Lived Experience
Wellbeing Project**

BIOLOGICAL - PSYCHOLOGICAL - SOCIAL

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

Findings of COVID Survey 2 (2021) & Comparison with COVID Survey 1 (2020)

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Lived Experience & Wellbeing Project
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Overview

1. **Starting point**
2. About COVID Surveys
3. **Summary – Wellbeing Measures**
4. **Comparison of 2020 & 2021 Surveys: Wellbeing Measures**
5. **Comparison of 2020 & 2021 Surveys: General Findings**
6. **COVID 2021 Survey: Detailed Findings**
 - Participant Profiles
 - Rating of Physical Health
 - Rating of MH Health
 - Impact of COVID on Health & Wellbeing
 - Life satisfaction and happiness
 - Depression Severity
 - Suicidal Ideation
 - Anxiety
 - Disclosure & Attitudes to MH
 - Company Priorities & Wellbeing
 - Company Support Provided Since COVID
 - Coping & Self Care
 - Need for Support
 - Need for Return to Work Assessment
 - Trust Engagement & Motivation
 - Peer support
 - COVID, Wellbeing, Performance & Safety
7. **Key takeaways**
8. **Our vision, crisis and transformation**
9. Conclusions
10. **Acknowledgements**
11. Contact



**Lived Experience
Wellbeing Project**

BIOLOGICAL - PSYCHOLOGICAL - SOCIAL

Starting Point

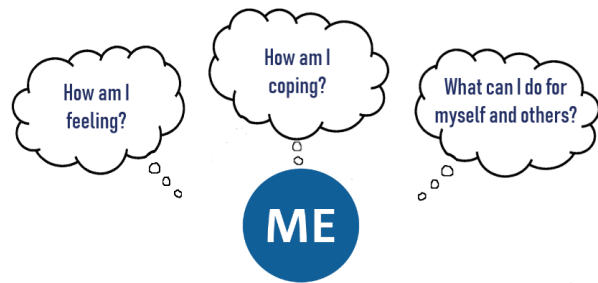
3 Pillars of Health & Wellbeing



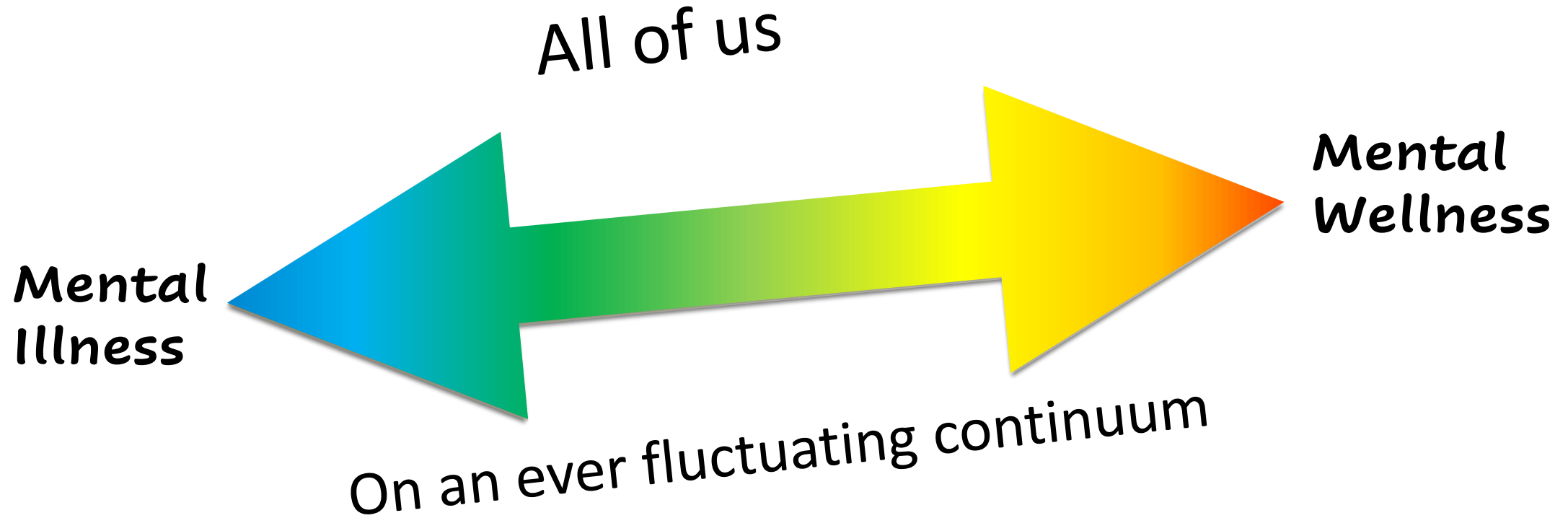
Airplanes are maintained to ensure that they are airworthy. We are no different!



Airplanes are maintained to ensure that they are airworthy. We are no different!



Wellbeing & Mental Health



COVID Experience (2020 & 2021)

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

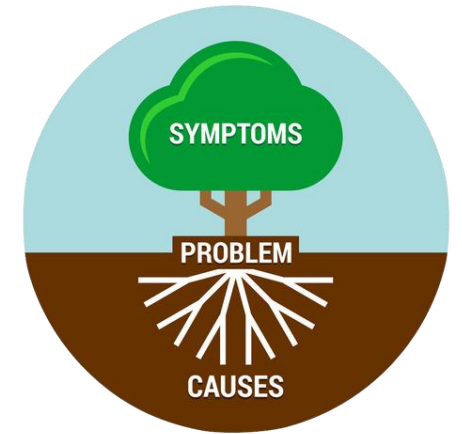
46% of adults ROI felt depressed
Burke et al. (2020)
(convenience sample; April)

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)

Hazard Identification

“Say ... what’s a mountain goat doing way up here in a cloud bank?”



Need to define AME for Wellbeing Reporting - Punished for reporting Fatigue to Employer/ Airline

"If you raise too many red flags, you get a black mark by your name"
 "People with black marks more likely to be selected for redundancy - trouble makers"
 "Reporting fatigued in flight or citing fatigue as a reason for a near miss/safety event is a non runner - the safety manager will say you should of not come to work - and file a report with the regulator (non compliance)"



Situation 1 & Consequences



- Peter, male, 40 years
- Captain, cargo operations, short range > 17 years,
- Married, three young children (1, 3, & 5 years)
- Not open to talking about mental health, prone to stress
- Unhealthy diet,
- Sleep issues (young children and commute to work)

Pre COVID, Safety event/landing overrun - reports 'exhaustion' as a contributory factor

- Pressure - investigation (reporting of fitness for duty)
- Worsening sleep
- Increased alcohol
- Increased stress and anxiety (about career in aviation, job precarity etc).

Situation 2 & Consequences



COVID, Working Reduced Hours, Extended Quarantine

- Increased financial pressure & concern that will be laid off (black mark against name, given reporting)
- Increased stress and anxiety (about career in aviation, job precarity etc).
- Family stress - time away from home/quarantine requirements
- Alcohol dependency

Resilience & coping (Individual Level)

- Seeks and obtains supports from Peer Support - managing anxiety and stress
- Referral to alcohol program
- Addresses diet and exercise

Final Outcome/Current Situation



- Feels on employer blacklist re fatigue report
- Continued lack of certainty re job contract and potential redundancy (managing anxiety)
- Small improvements to psychological wellbeing & physical health (alcohol being managed)

Job precarity. Punished for reporting fatigue. Lack of prevention (fatigue management). What ifs?

- What if no social support/what if did not seek support (implications: individual wellbeing)?
- Lack of reporting re fatigue (implications: performance/safety)?
- Missed opportunity - improve rostering/wellbeing & preventative approach

PREVENTION & CHANGE



- Individual?
- Organisation?
- Aviation Regulation?
- Health & Safety Regulation?
- Government & Society?

Fatigue & Precarious Work for Cabin Crew

"I have to take the flight work when I get it - even when I am tired"
 "I can't rely on aviation job - I have to do other work to pay the bills"
 "I am constantly exhausted - thank goodness no safety issues so far"



Situation 1 & Consequences



- Vicky, female, 29 years
- Cabin Crew, > 8 years, commercial airline
- Single, no children
- Good health, open to talking about mental health
- Practices yoga and healthy lifestyle

Reduced hours/income arising from COVID

- Increased financial pressure
- COVID lockdown and social isolation
- Sleep difficulties
- Lack of support from employer
- Increased stress and anxiety (about career in aviation, job precarity etc).

Situation 2 & Consequences



Return to Work - P/T Hours & Job Precarity

- P/T hours only, contract changes
- Unpredictable and precarious roster
- Seeks P/T work in restaurant
- Exhaustion and fatigue on job

Resilience & coping (Individual Level)

- Seeks and obtains supports from others (family)
- Practices self-care, self-compassion and awareness
- Obtains second job as waitress in city restaurant
- Second job helps with financial pressure and job uncertainty, but exhausting

Final Outcome/Current Situation



- Employer not aware of situation (i.e., two jobs and fatigue risk)
- Has presented to work, with <3 hours sleep and 'not fit for work'
- Exhaustion is worsening her anxiety

No peer assistance for Cabin Crew. Job precarity. What ifs? Consequences?

- What if no social support/what if did not seek support (implications: individual wellbeing)?
- What does a 'tough day at the office' look like? (implications: performance/safety)?

PREVENTION & CHANGE



- Individual?
- Organisation?
- Aviation Regulation?
- Health & Safety Regulation?
- Government & Society?

Self Awareness, Disclosure & Org Wellbeing Culture

"If people have issues, they are not going to say so - they would be sent home"
 "Protecting my licence - but at a cost"



Situation 1 & Consequences



- Frank, 27 years, male
- First Officer, > 5 years
- Lives with family, no children, small social network
- Not open to talking about MH & very private
- Keeps fit/healthy lifestyle

COVID: reduced hours and income, changed work terms/environment (rosters)

- Social isolation with COVID
- Job precarity and insecurity (likelihood of new job, worsening environment/job terms)
- Sleep difficulties, social withdrawal
- Lack of support from org
- Rapid onset of serious anxiety

Situation 2 & Consequences



Standby arrangements - costs paid by Frank - creates frustration, financial pressure

- Pressure to hold down job/present as ok
- Increased anxiety, not sleeping, not talking to others
- Lack of awareness re reduced wellbeing and need for help
- Not reporting wellbeing problems
- Lack of support from org

Resilience & coping (Individual Level)

- Not seeking support - either in work/outside work
- Not obtaining support from social network

Final Outcome/Current Situation



- Not managing health (anxiety, stress)
- Risk to wellbeing and safety
- Organisation no oversight on Frank's wellbeing

Job precarity. Lack of support. What ifs? Consequences?

- What next for wellbeing (implications: individual wellbeing)?
- Lack of reporting (implications: performance/safety)?
- Missed opportunity - avoidable situation/prevention, early intervention to address

PREVENTION & CHANGE

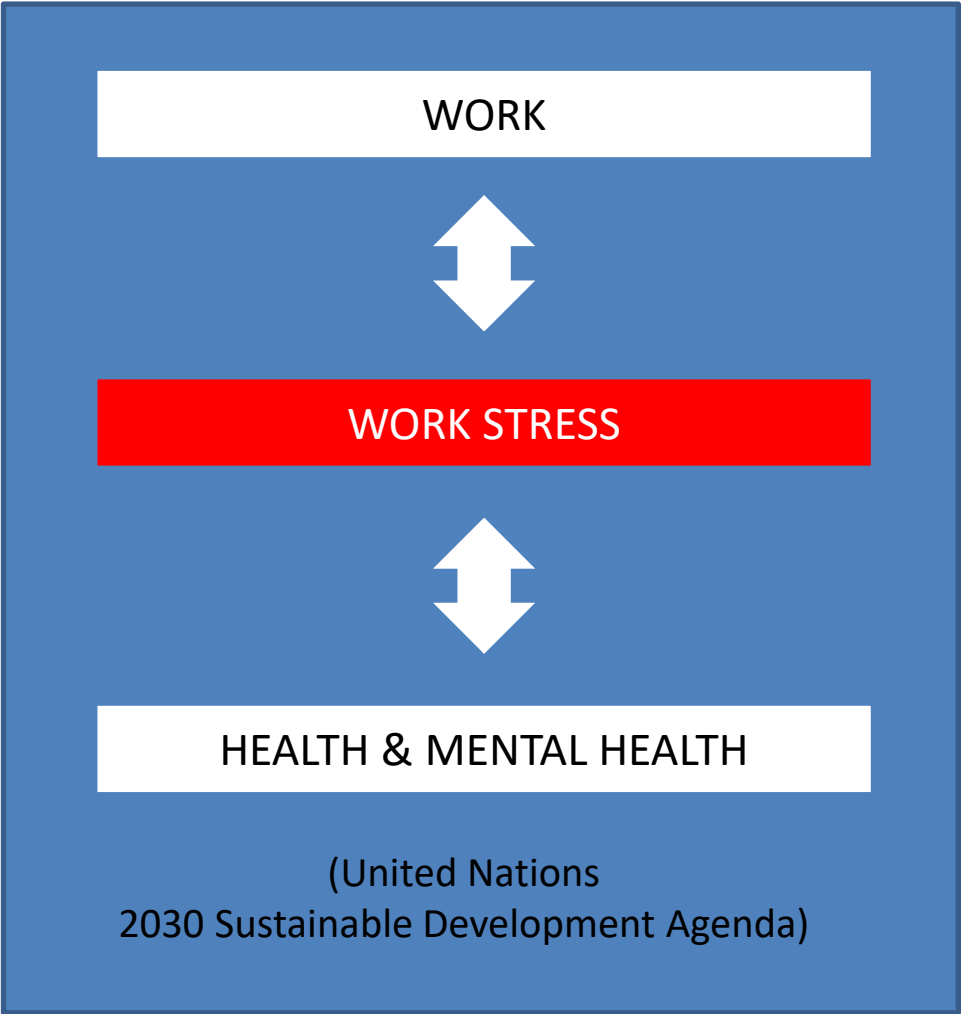


- Individual?
- Organisation?
- Aviation Regulation?
- Health & Safety Regulation?
- Government & Society?

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’.

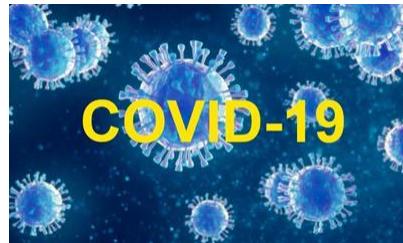
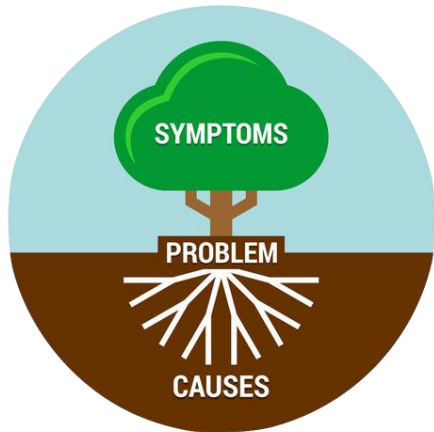
(World Economic Forum, Mental Health in the Workplace Initiative, 2021).



About Surveys

About COVID Surveys

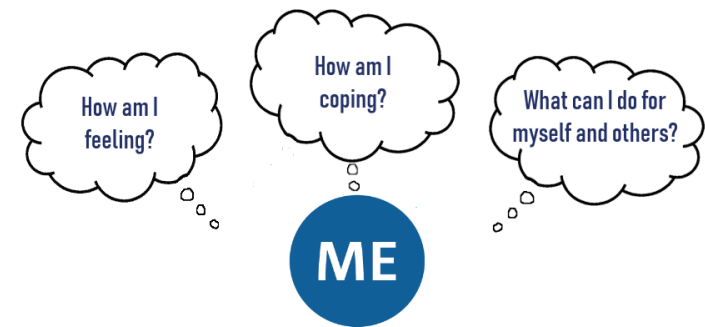
- COVID Survey 1: August 2020 (n=2,050, with n= 1,796 completing PHQ9 & GAD 7)
- COVID Survey 2: October & November 2021 (n= 1,114, with n= 1,010 completing PHQ9 & GAD 7)
- Examine impact of the COVID 19 pandemic on (1) job and employment, (2) wellbeing and morale, (3) performance and safety behaviour, 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

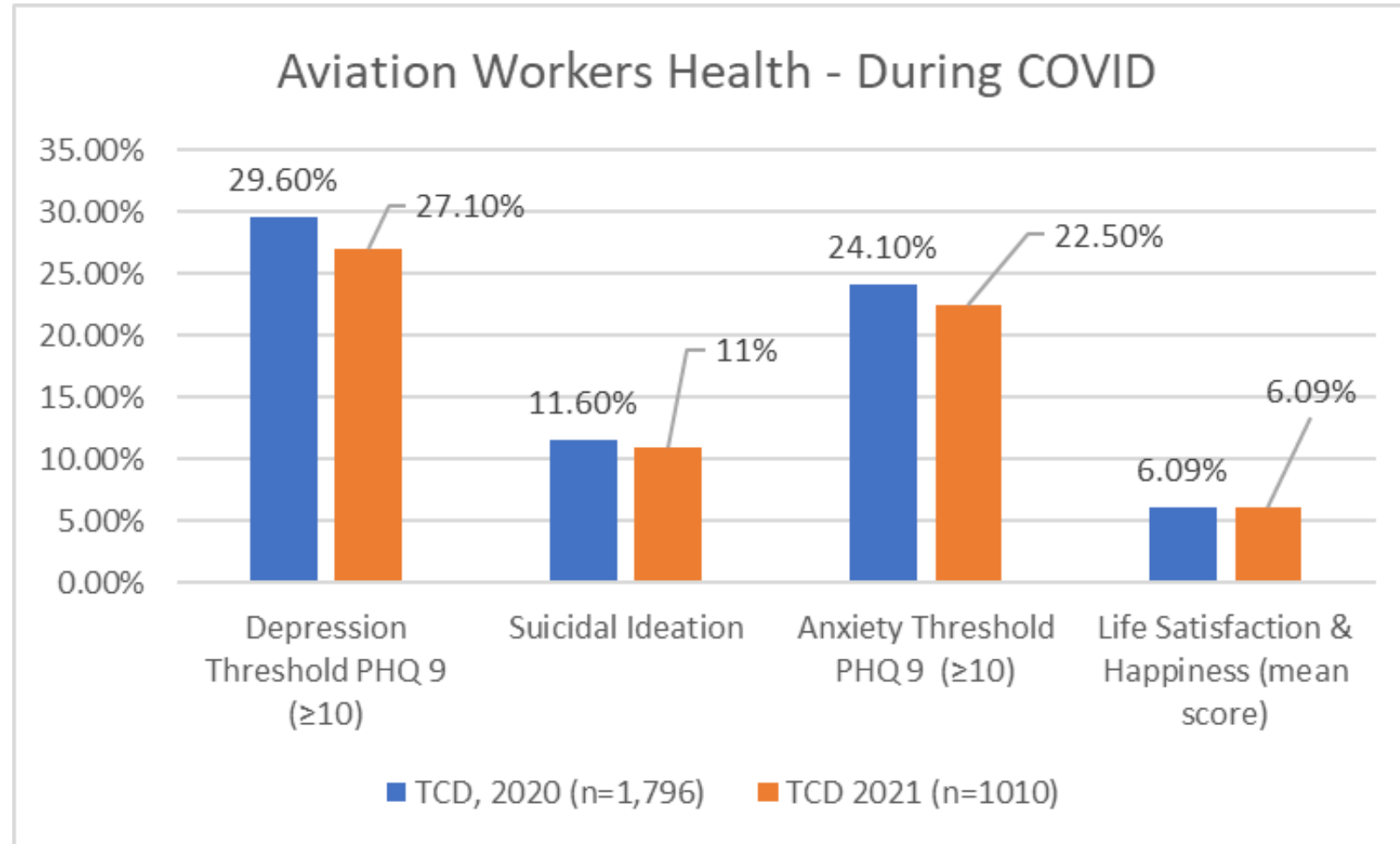


Summary: Wellbeing Measures

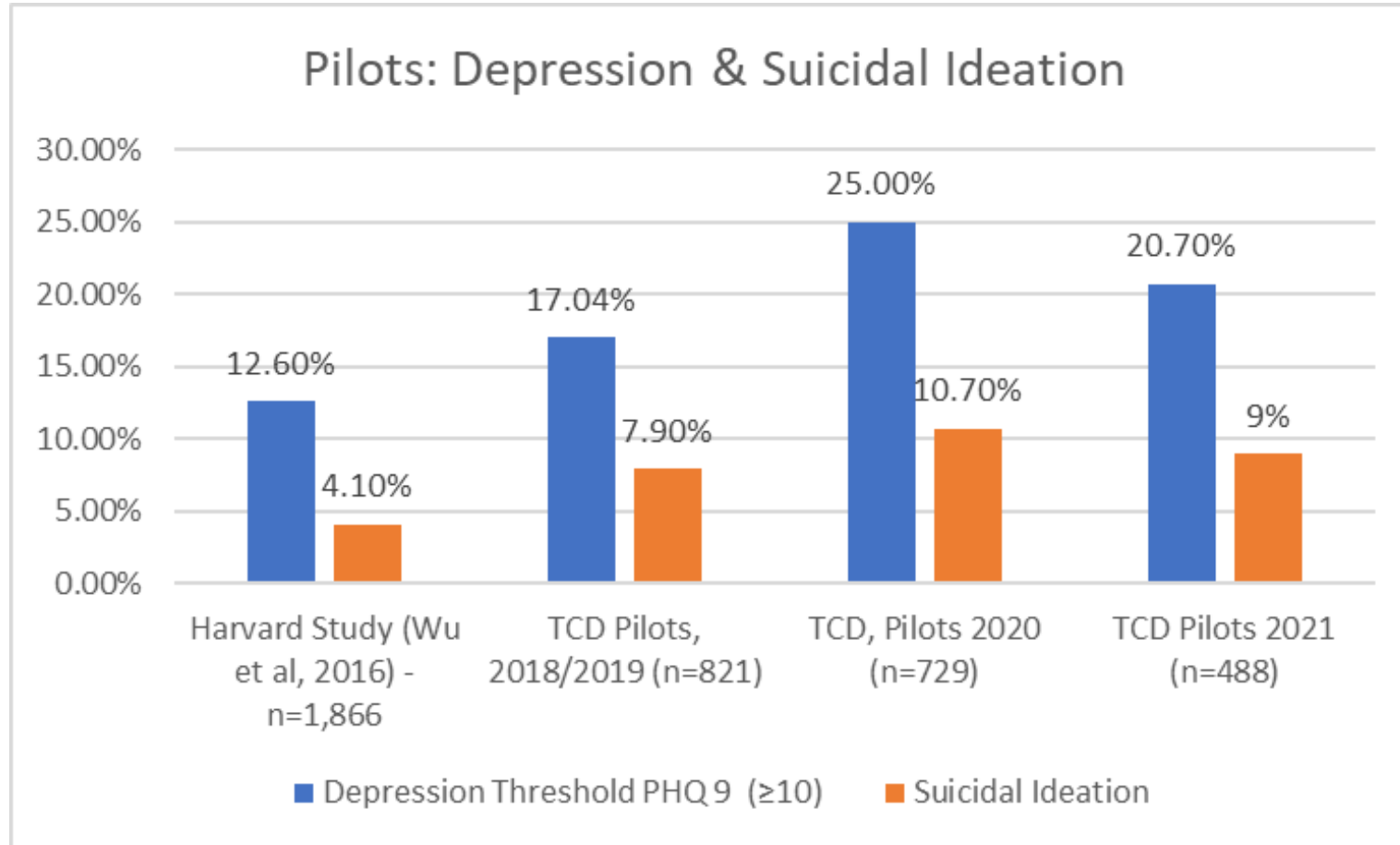
Comparisons – Groups (Pre & Since COVID)

Measure	Baseline (Population)	Baseline (Aviation Workers-Pilots only thus far) – Prior to COVID	2020 (All) (n=1076)	2021 (All) (n= 1010)	Change/ Status (During COVID)
Happiness & Life Satisfaction	6.5. (OECD, 2021).	-	6.086%	6.089%	=
Depression (PHQ 9: Threshold for Moderate Depression, >10)	4.4% (WHO)	12.6% (Wu et al, 2016) 17.04% (Cahill et al, 2021)	29.6%	27.1%	↓
Suicidal Ideation	3.1% (Nock et al, 2018), 3.9% (CDC)	4.1% (Wu et al, 2016) 7.9% (Cahill et al, 2020).	11.6%	11%	↓
Anxiety (GAD 7: Threshold for Moderate Depression, >10)	3.6% (WHO)	-	24.1%	23%	↓

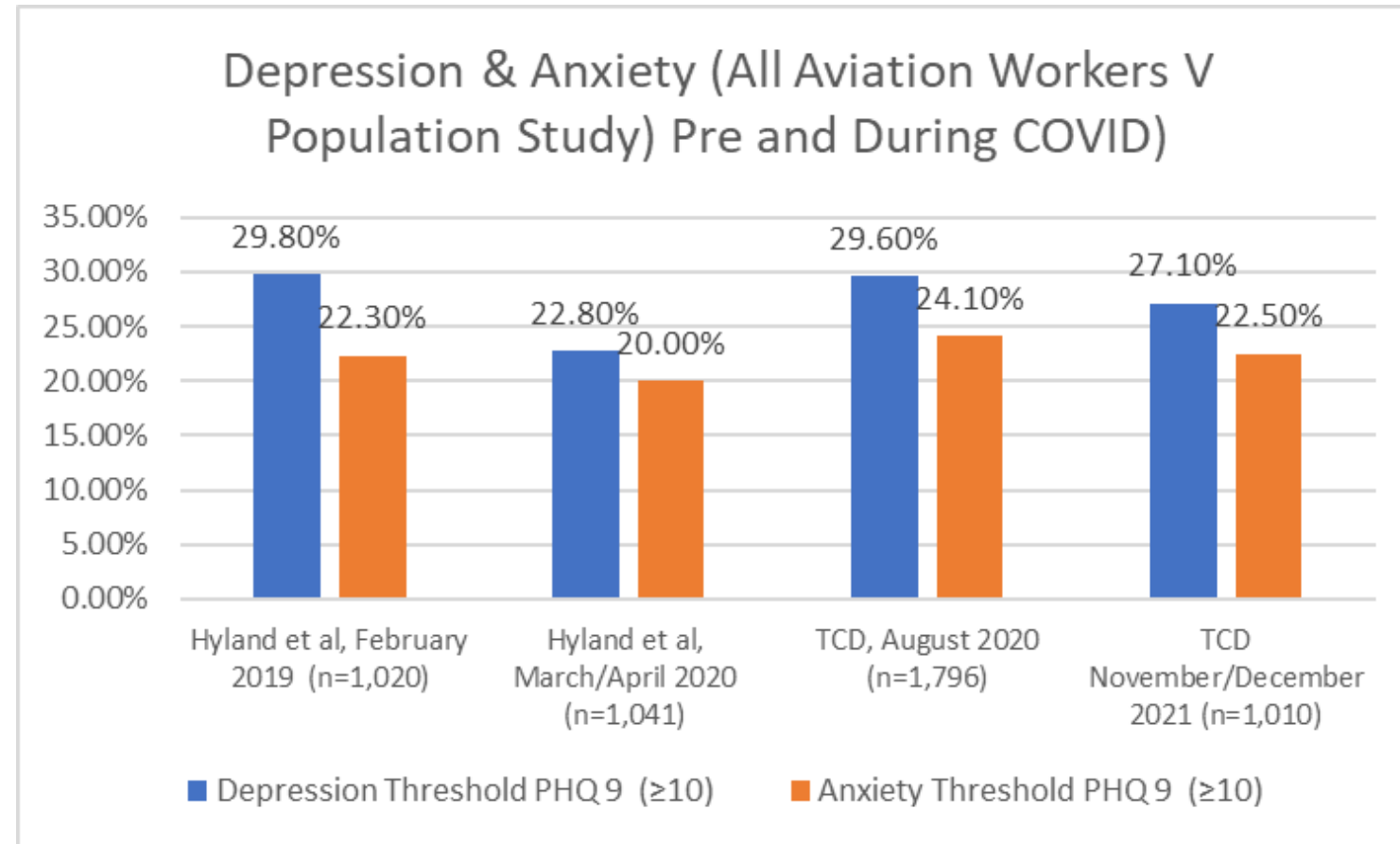
All Aviation Workers: Life Satisfaction, Depression, Suicidal Ideation & Anxiety (2020 & 2021)



Depression & Suicidal Ideation: Pilots (Pre & Since COVID)

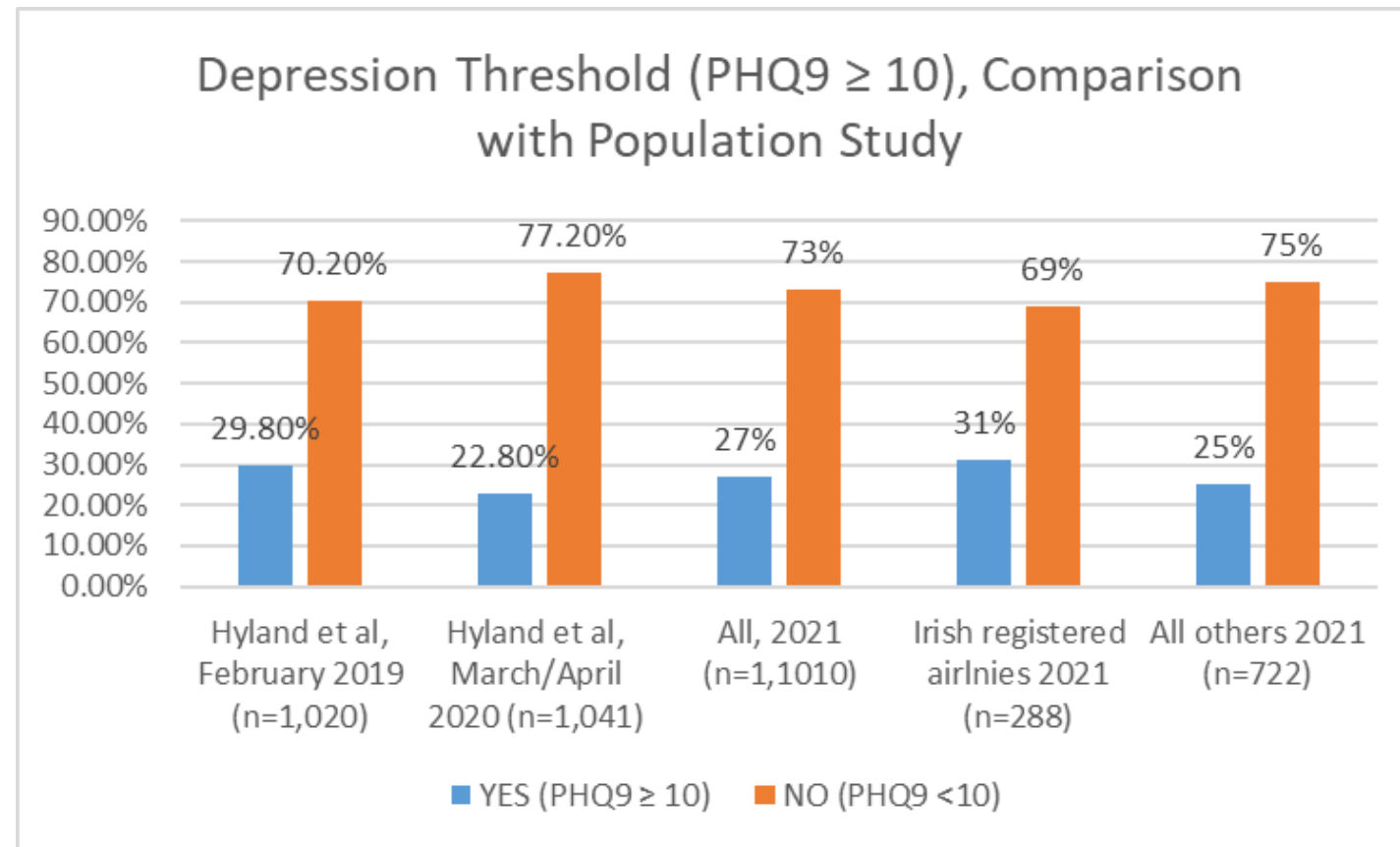


Comparison with Population Study - Depression & Anxiety Threshold, (Pre & Since COVID)



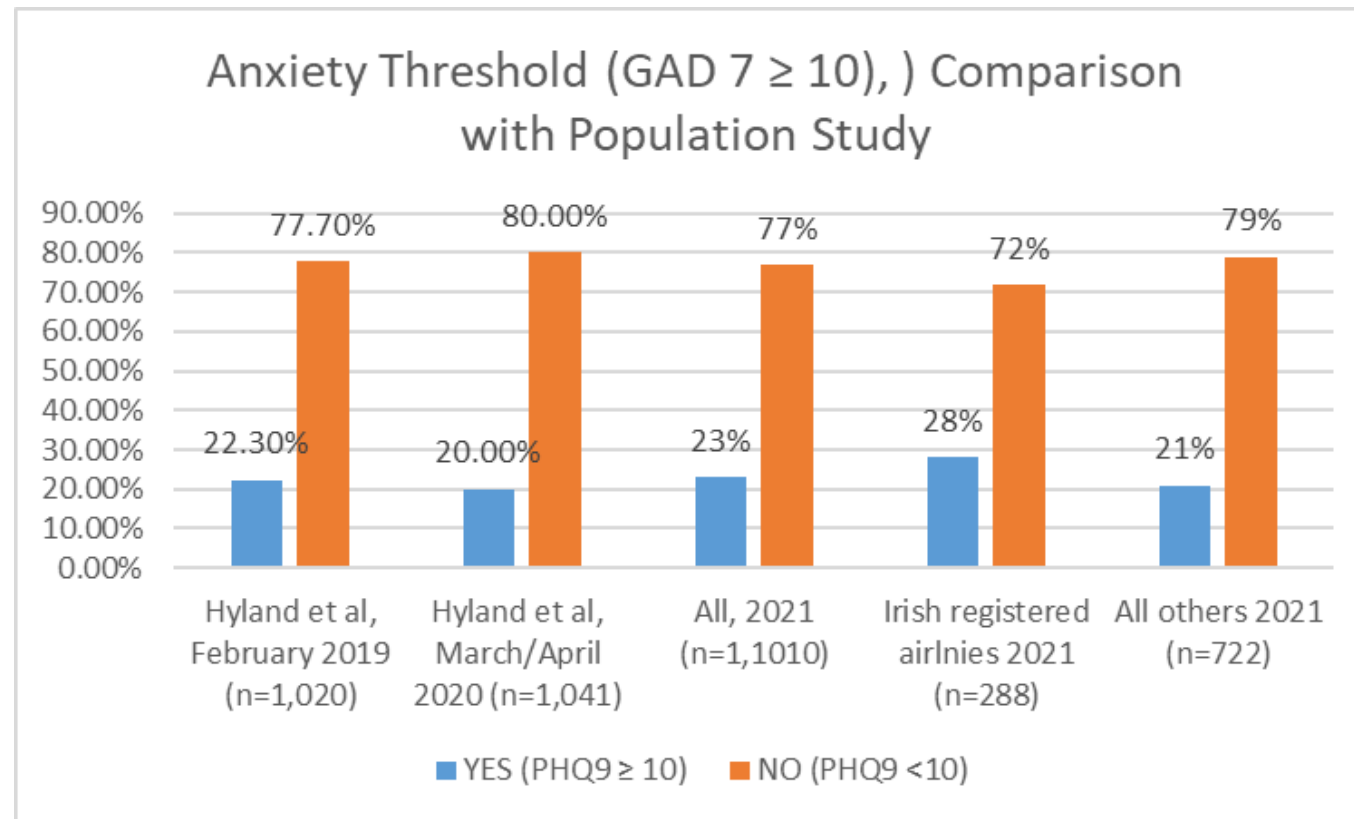
Hyland P, Shevlin M, Murphy J, McBride O, Fox R, Bondjers K, Karatzias T, Bentall RP, Martinez A, Vallières F. A longitudinal assessment of depression and anxiety in the Republic of Ireland before and during the COVID-19 pandemic. *Psychiatry Res.* 2021 Jun;300:113905. doi: 10.1016/j.psychres.2021.113905. Epub 2021 Mar 31. PMID: 33827013.

Depression Threshold, (PHQ9 \geq 10), Irish Registered Airlines & Comparison with Population Study



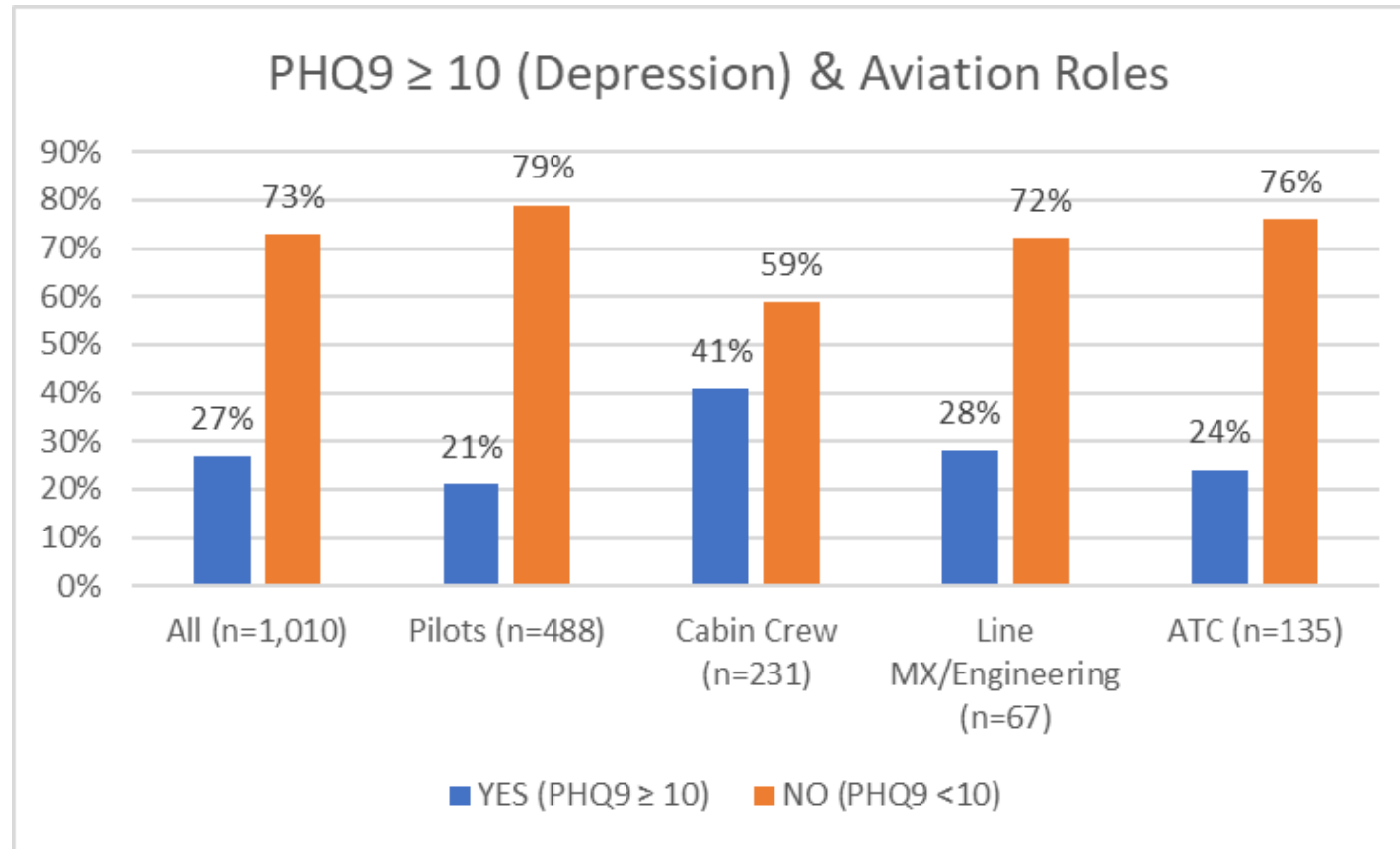
Hyland P, Shevlin M, Murphy J, McBride O, Fox R, Bondjers K, Karatzias T, Bentall RP, Martinez A, Vallières F. A longitudinal assessment of depression and anxiety in the Republic of Ireland before and during the COVID-19 pandemic. *Psychiatry Res.* 2021 Jun;300:113905. doi: 10.1016/j.psychres.2021.113905. Epub 2021 Mar 31. PMID: 33827013.

Anxiety Threshold, (GAD 7 \geq 10), Irish Registered Airlines & Comparison with Population Study

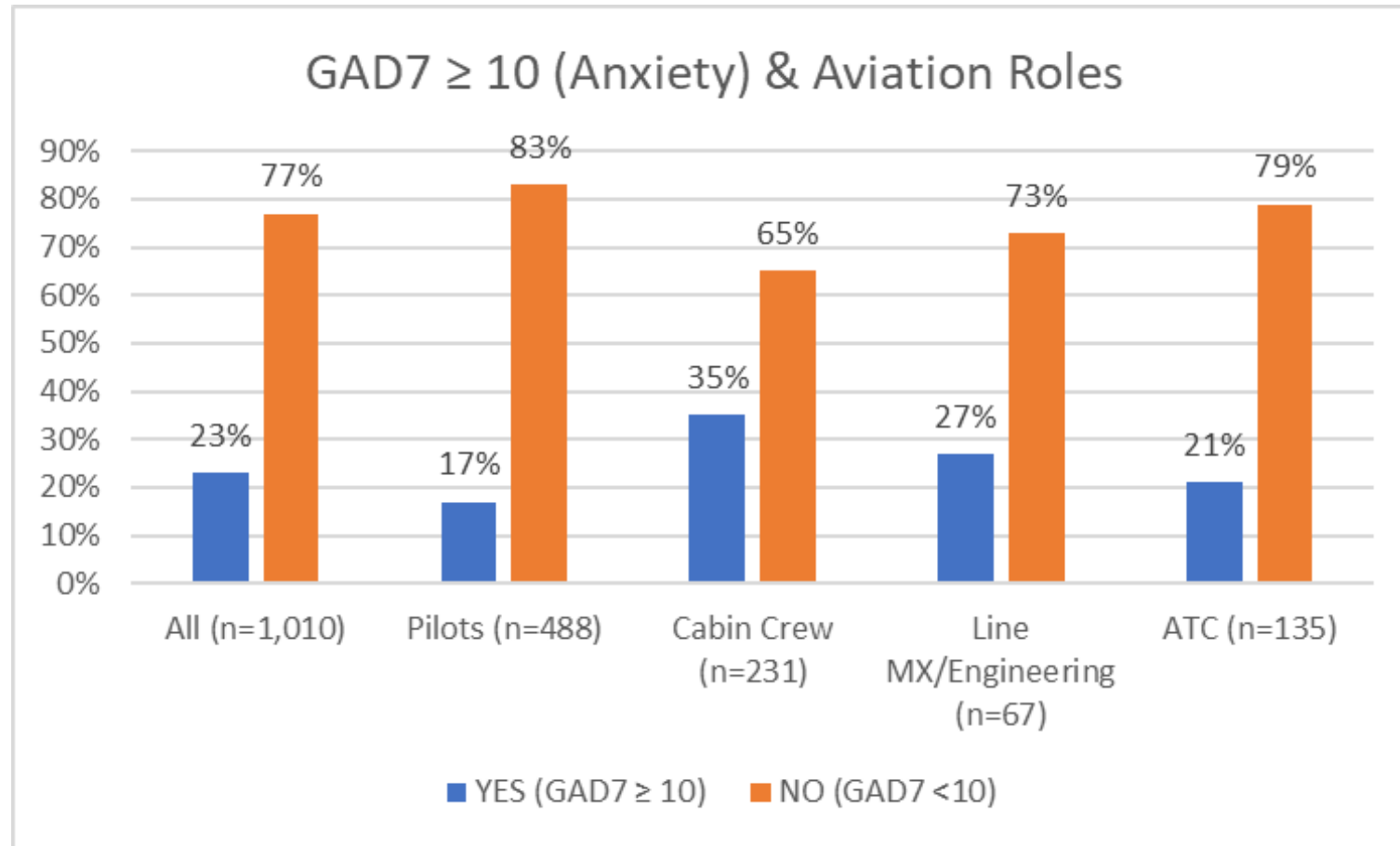


Hyland P, Shevlin M, Murphy J, McBride O, Fox R, Bondjers K, Karatzias T, Bentall RP, Martinez A, Vallières F. A longitudinal assessment of depression and anxiety in the Republic of Ireland before and during the COVID-19 pandemic. *Psychiatry Res.* 2021 Jun;300:113905. doi: 10.1016/j.psychres.2021.113905. Epub 2021 Mar 31. PMID: 33827013.

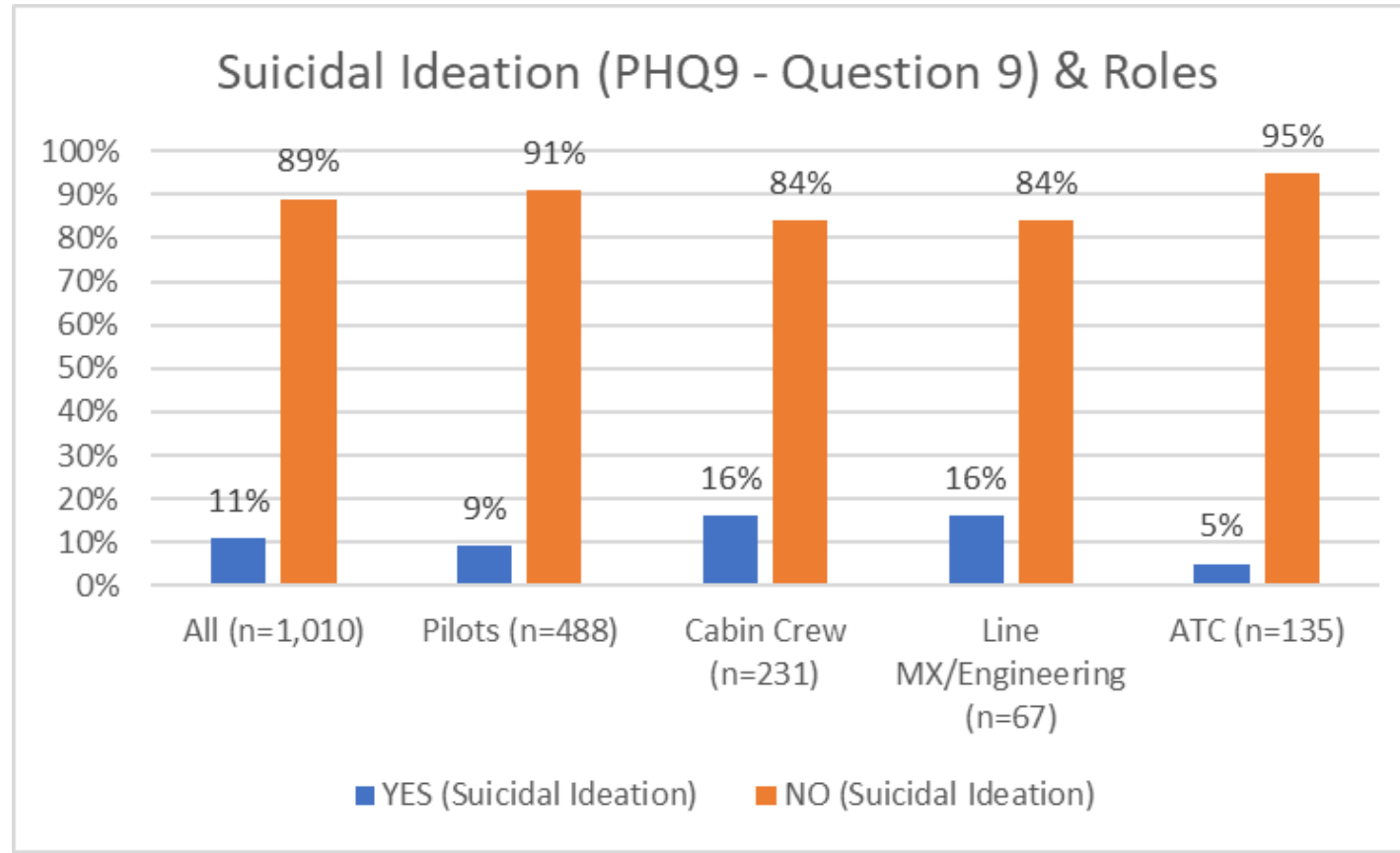
2021 Survey: Depression & Roles



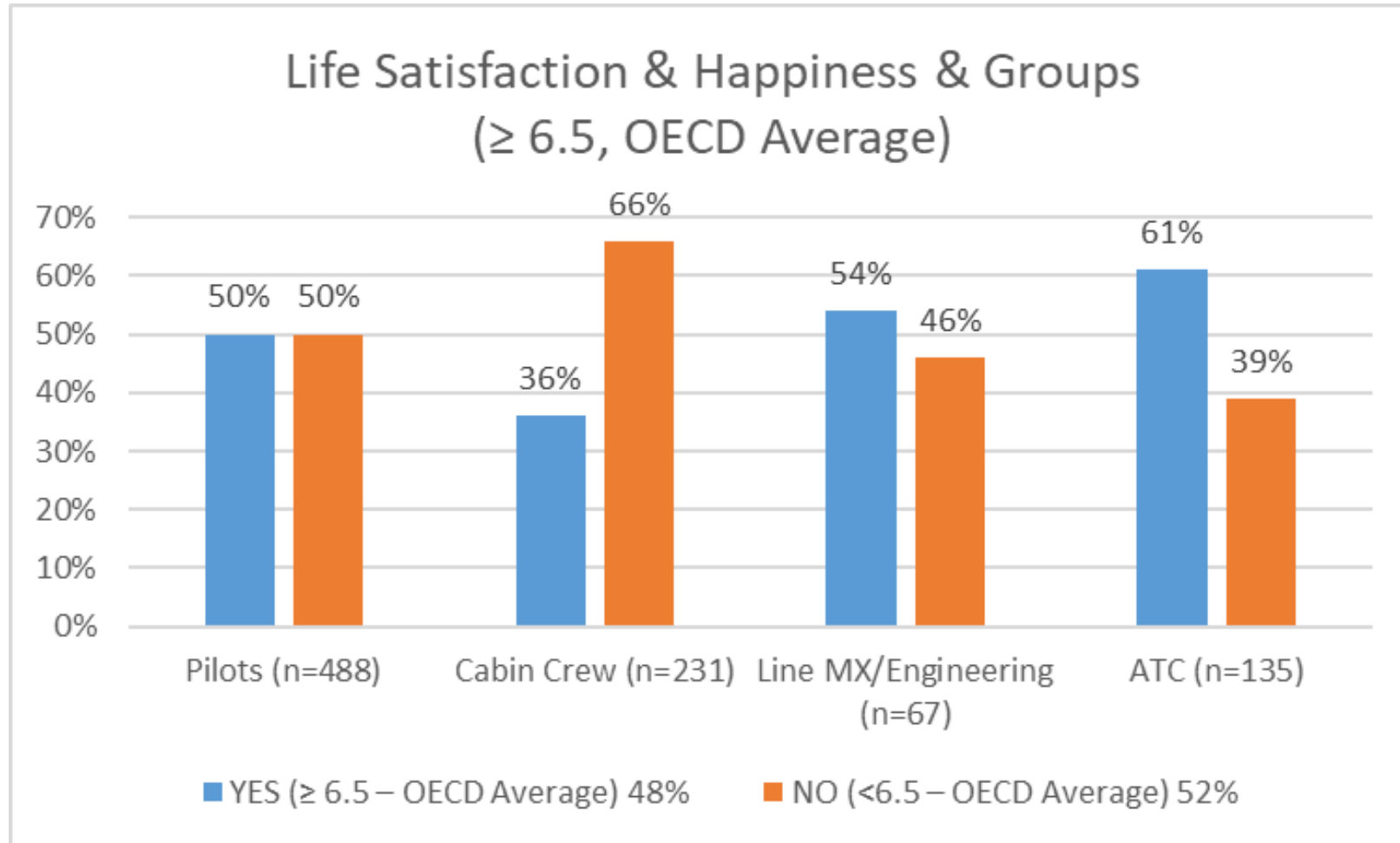
2021 Survey: Anxiety & Roles



S2021 Survey: Suicidal Ideation & Roles

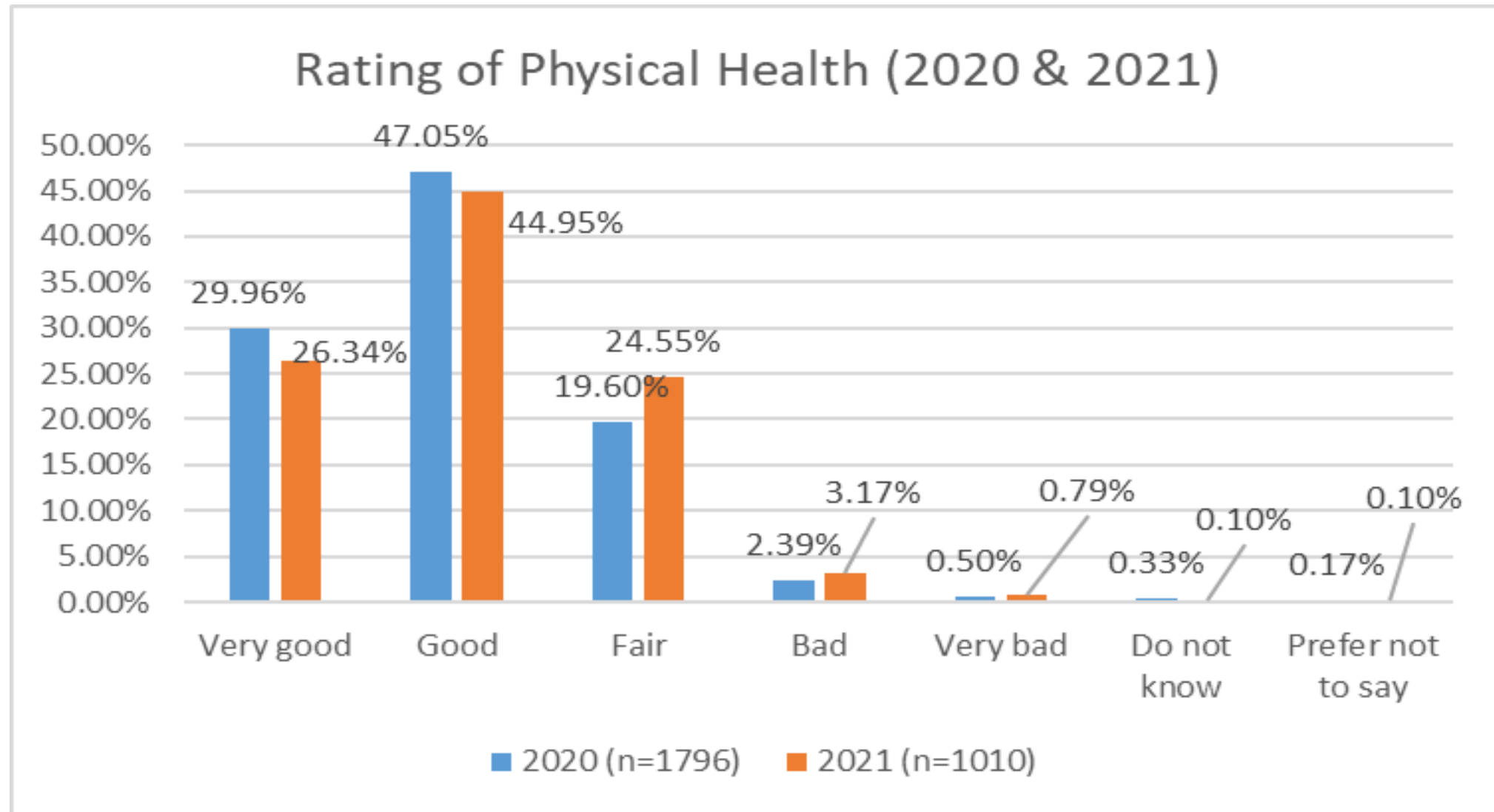


2021 Survey: Life Satisfaction/Happiness & Roles

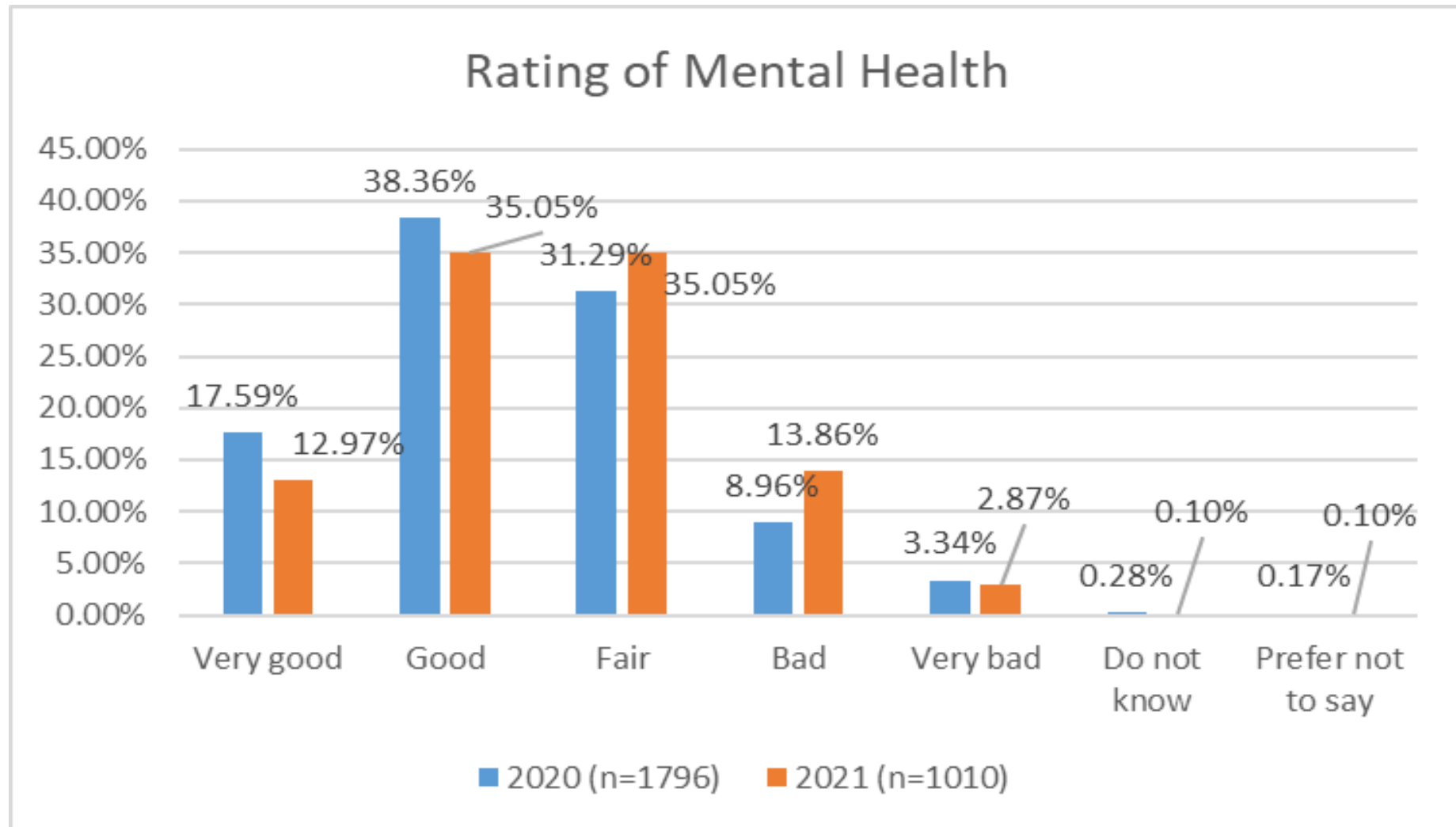


Comparing 2021 and 2020 Surveys, Wellbeing Measures

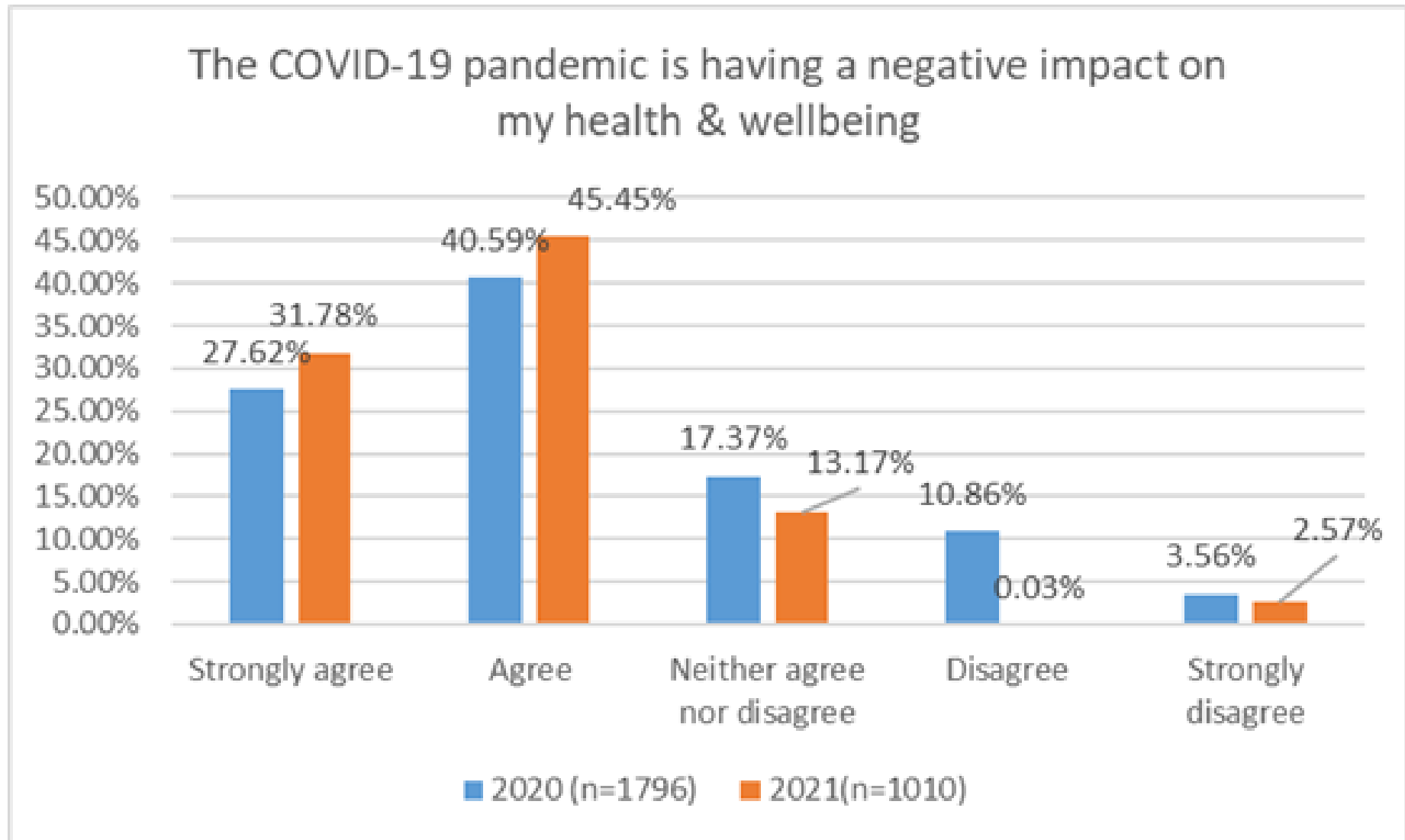
Rating of Physical Health



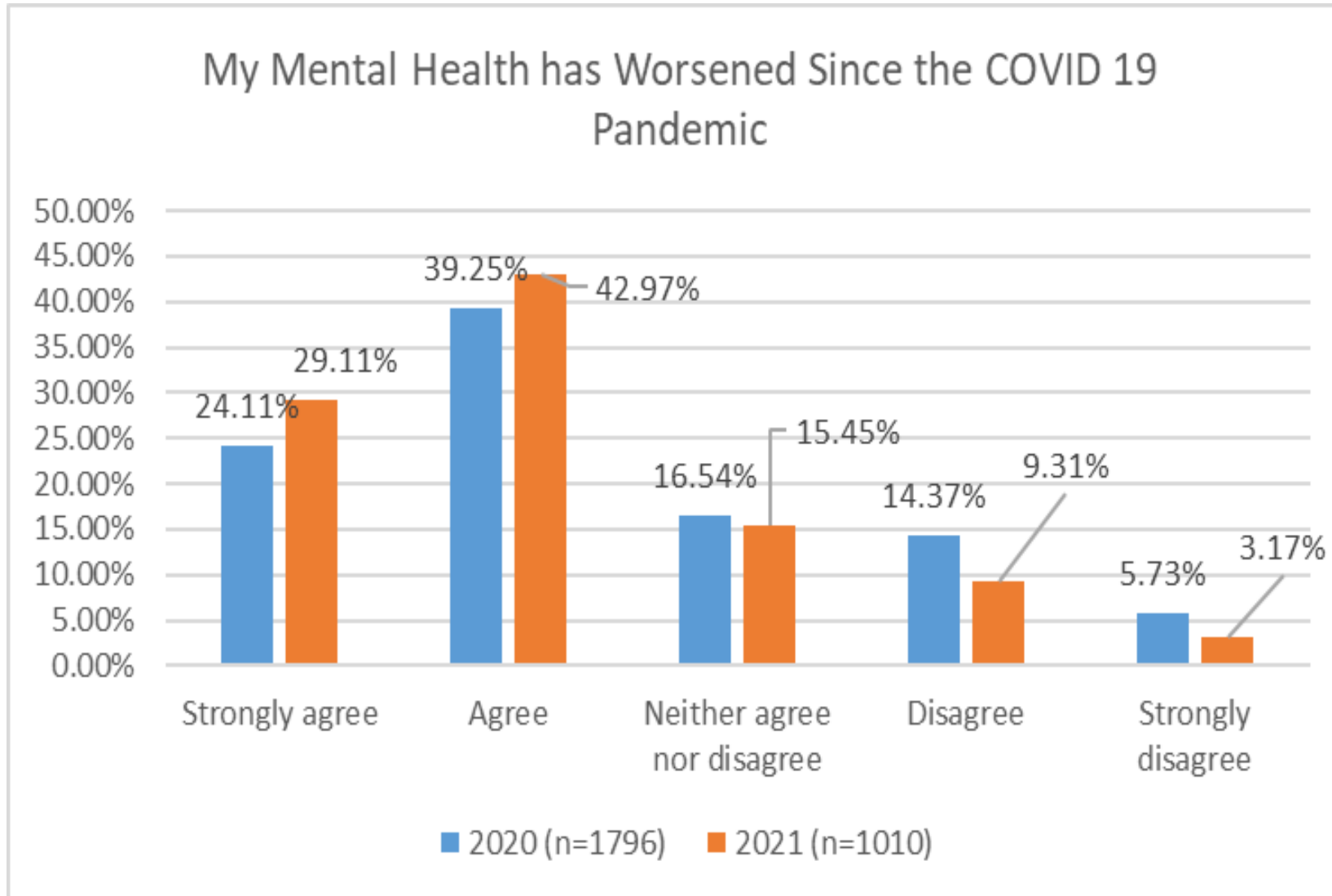
Rating of Mental Health



Negative Impact of COVID on Health & Wellbeing



MH Worsened Since COVID

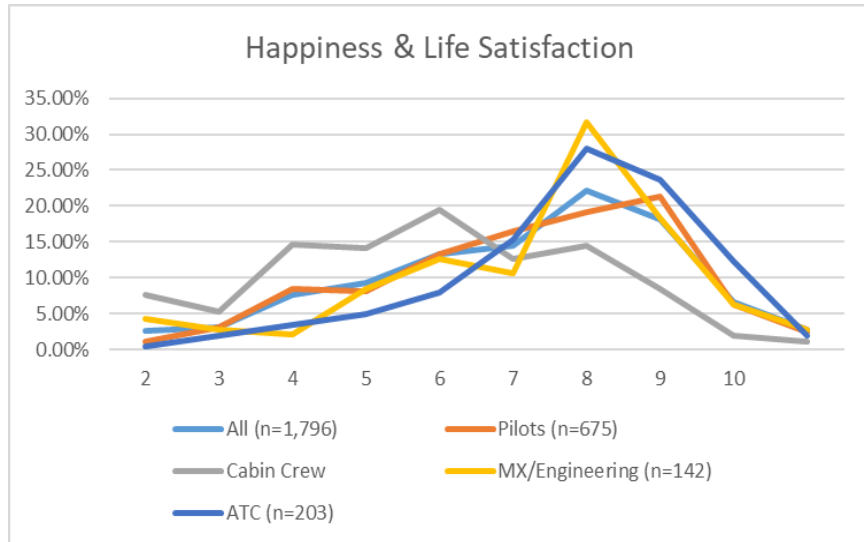


Happiness & Life Satisfaction (2020 & 2021)

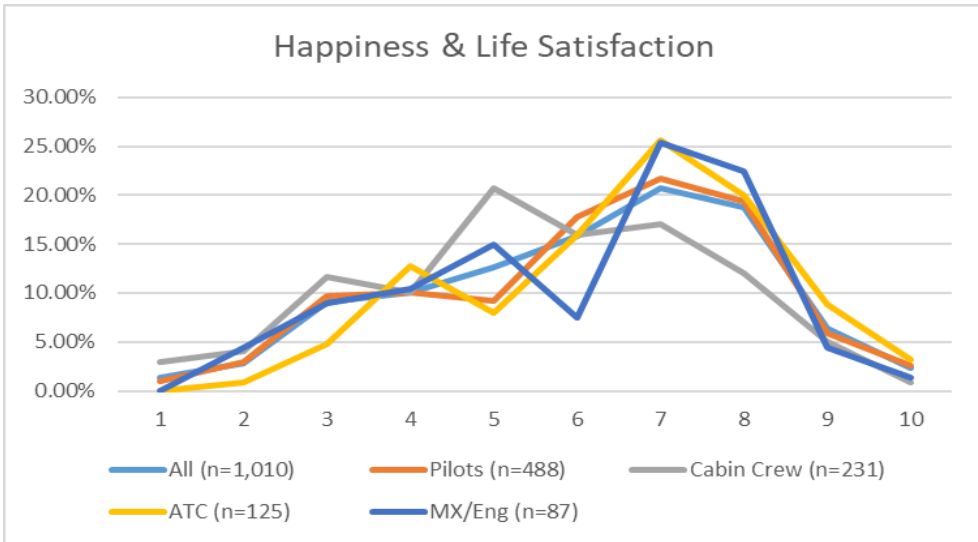


Happiness & Life Satisfaction (2020 & 2021)

2020



2021



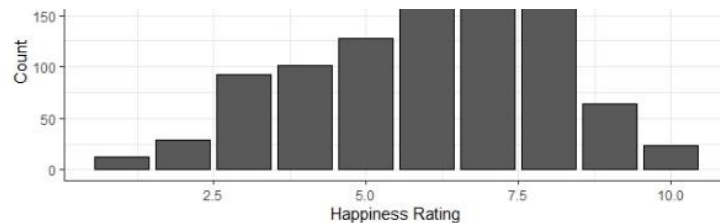
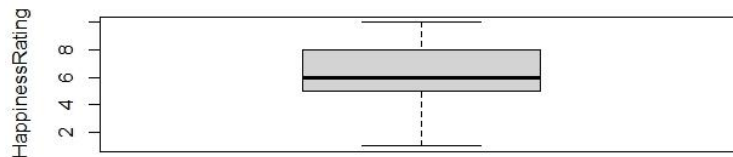
Happiness & Life Satisfaction (2020 & 2021)

	Min	1 st Qu (25% fall below)	Median/ (Middle)	Mean	3 rd Qu (75% fall below)	IQR (Middle 50%)	Max.
Score 2021	1	5	6	6.089	8	3	10
Score 2020	1	5	6	6.086	8	3	10

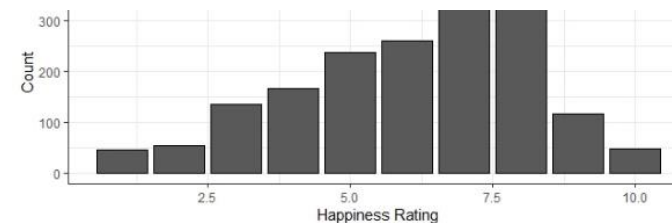
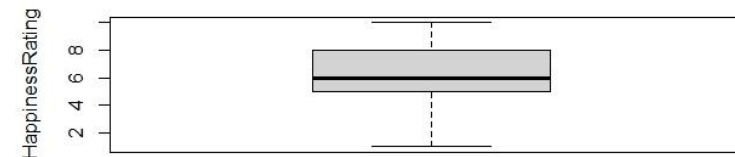
2021

2020

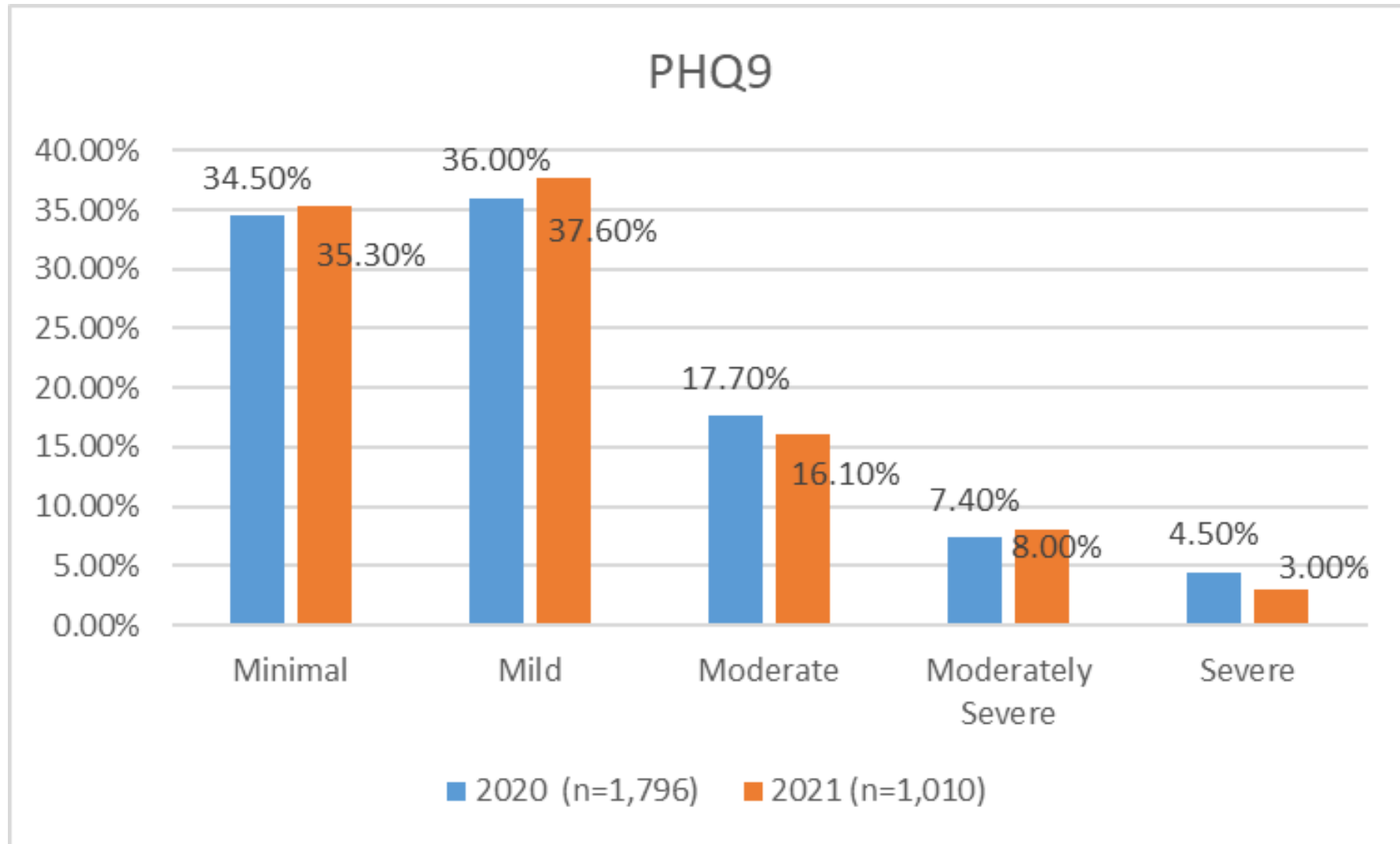
Boxplot of Happiness Rating



Boxplot of Happiness Rating 2020 Survey

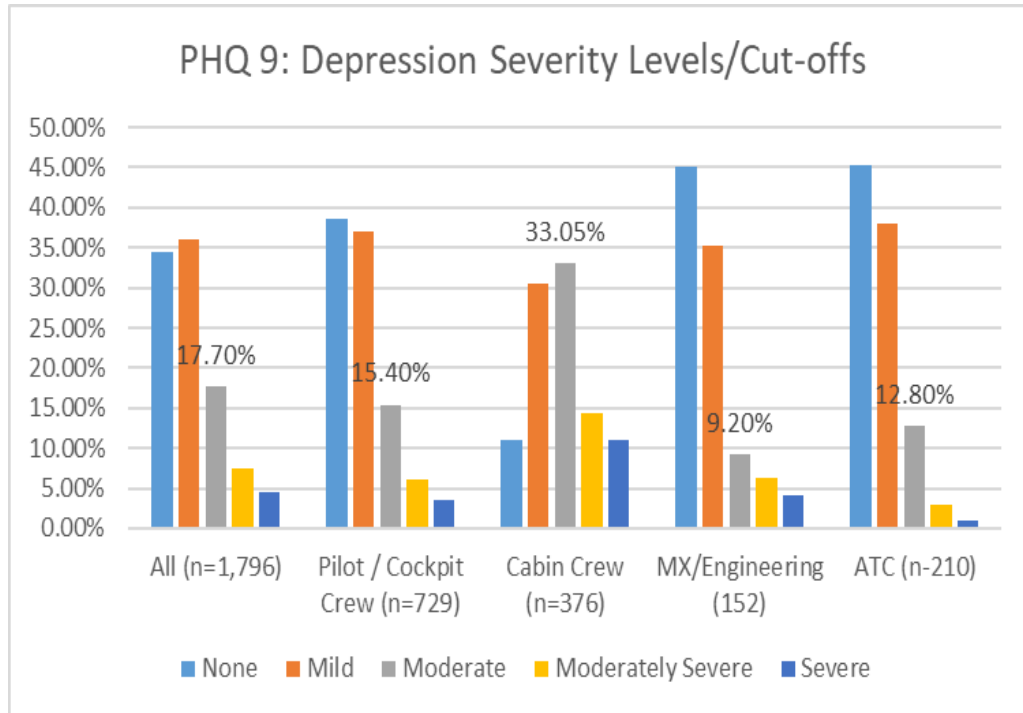


PHQ 9 – Cut-offs (2020 v 2021)

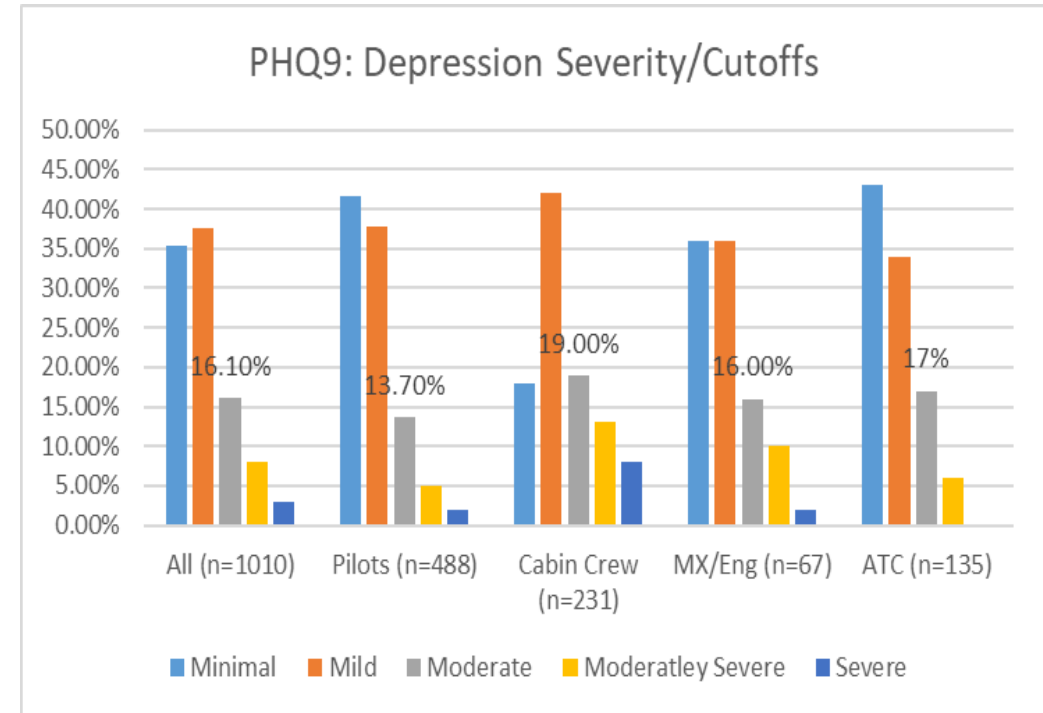


PHQ 9 – Cut-offs (2020 v 2021)

2020

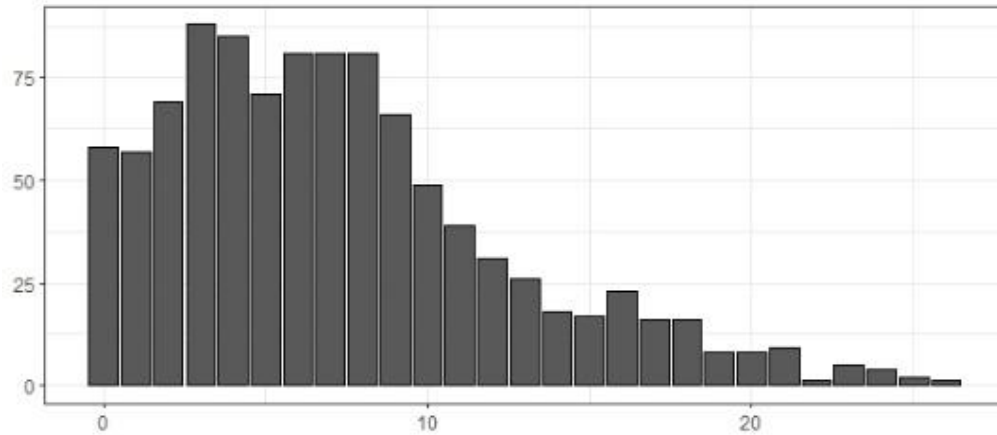


2021

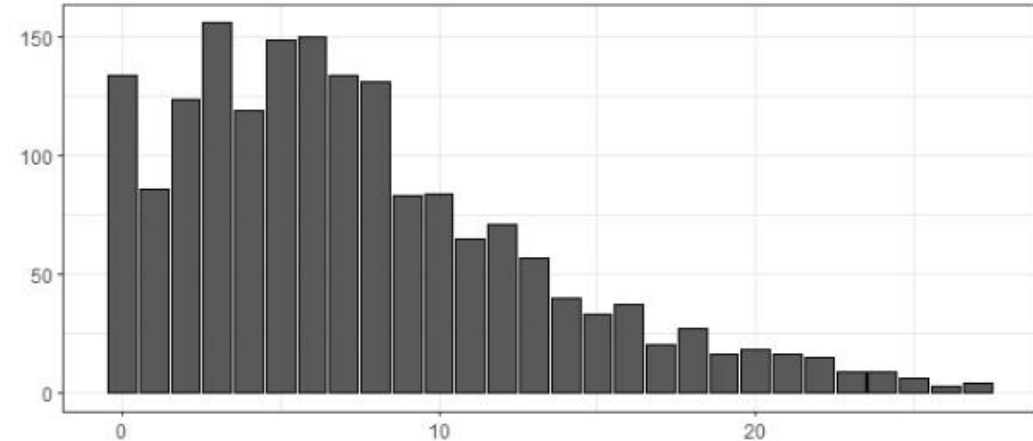


PHQ 9: Comparing Means & Cut-offs (2020 & 2021)

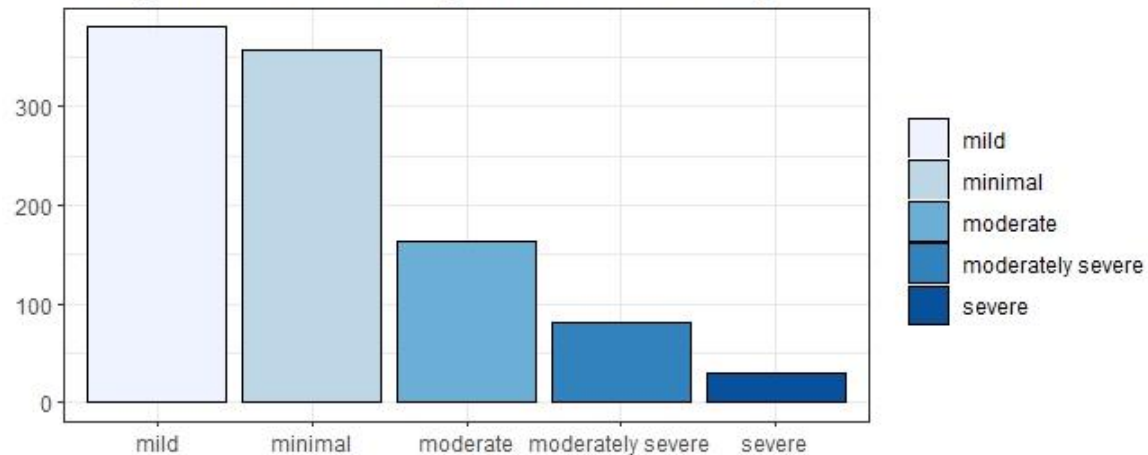
2021



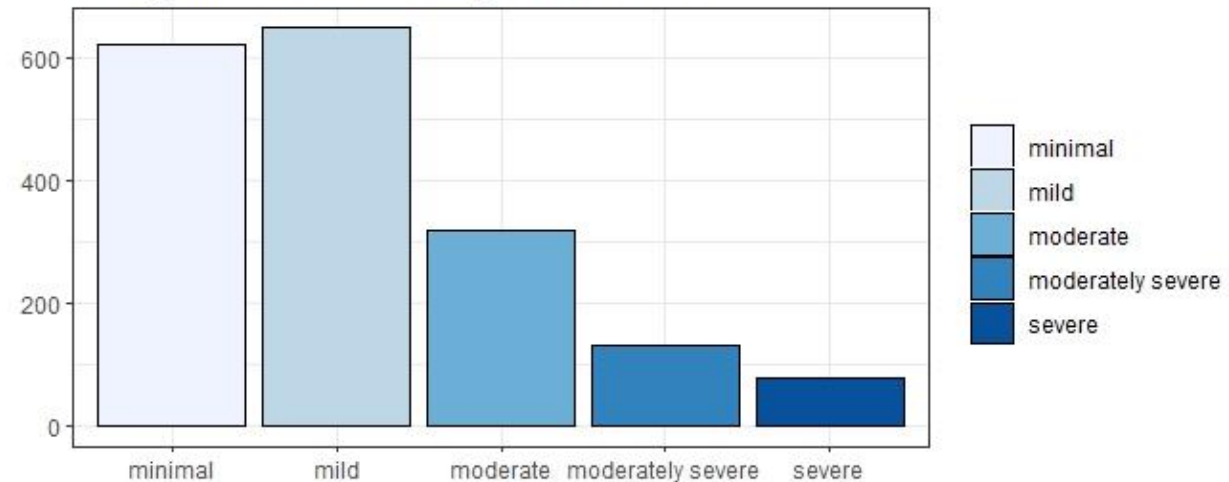
2020



Histogram for PHQ Severity Levels - 2021 Survey



Histogram for PHQ Severity Levels - 2020



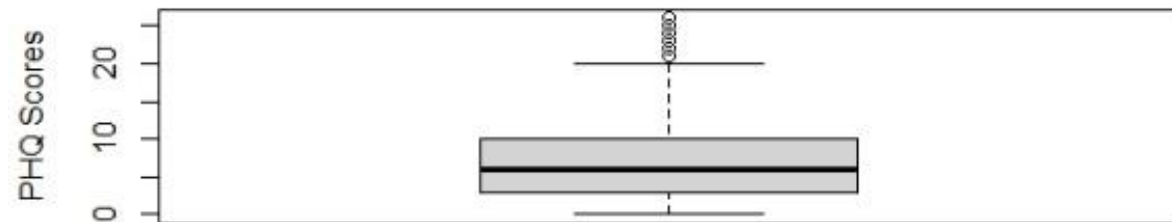
PHQ 9: Comparing Means & Cut-offs (2020 & 2021)

	Min	1 st Qu	Median	Mean	3 rd Qu	IQR	Max.
Score 2021	0	3.00	6.00	7.25	10.00	7	26.00
Score 2020	0	3.000	6.000	7.442	10.000	7	27.000
PHQ 9 Cut-offs 2020	Minimal	Minimal	Mild	Mild	Moderate	Mild	Severe

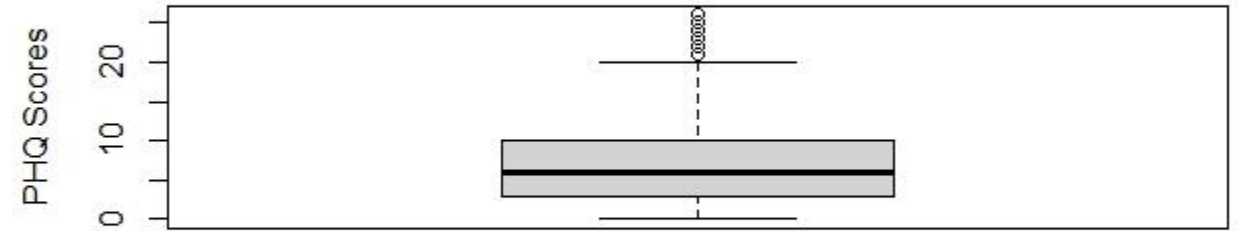
2021

2020

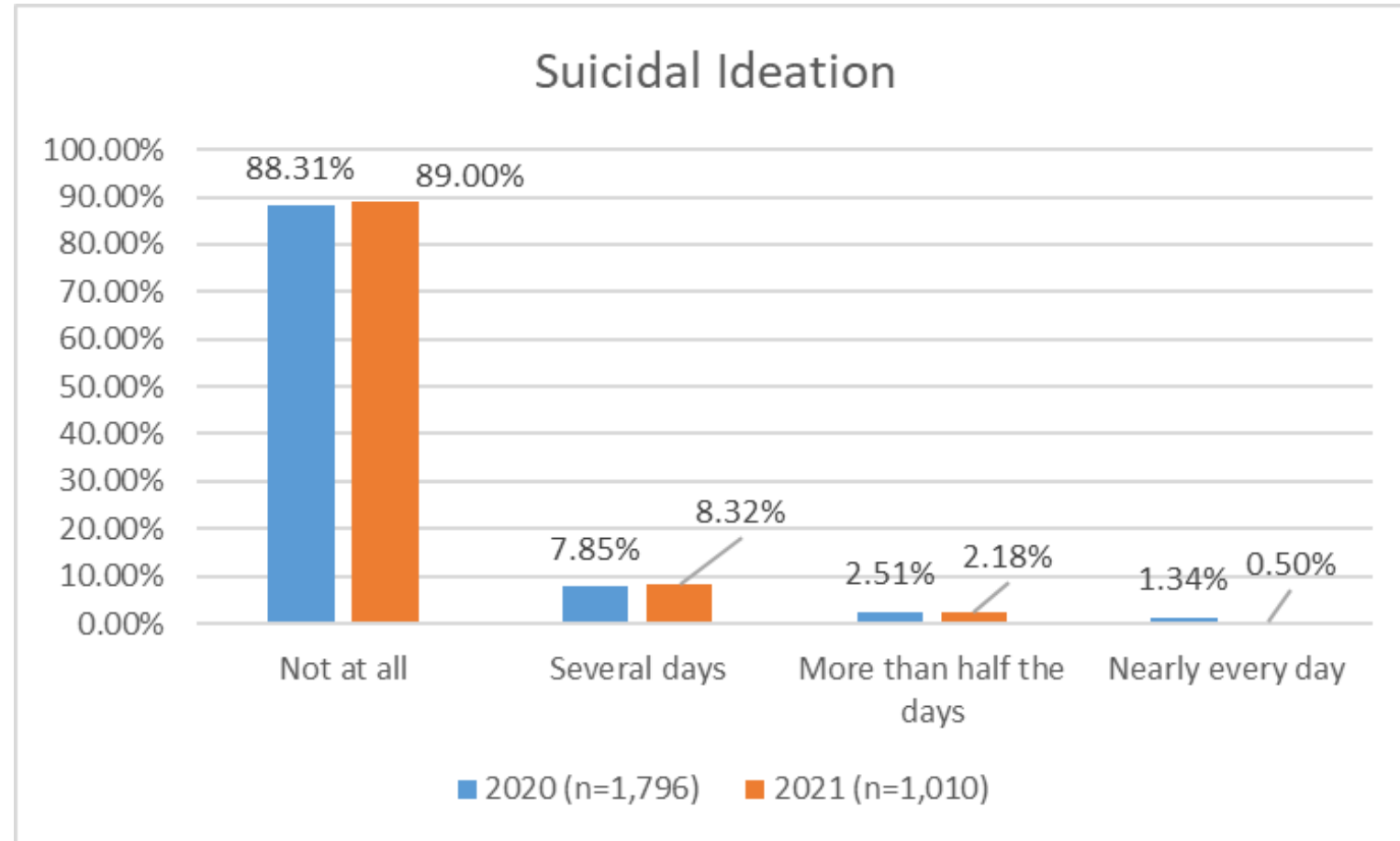
Boxplot of PHQ Scores



Boxplot of PHQ Scores 2020 Survey

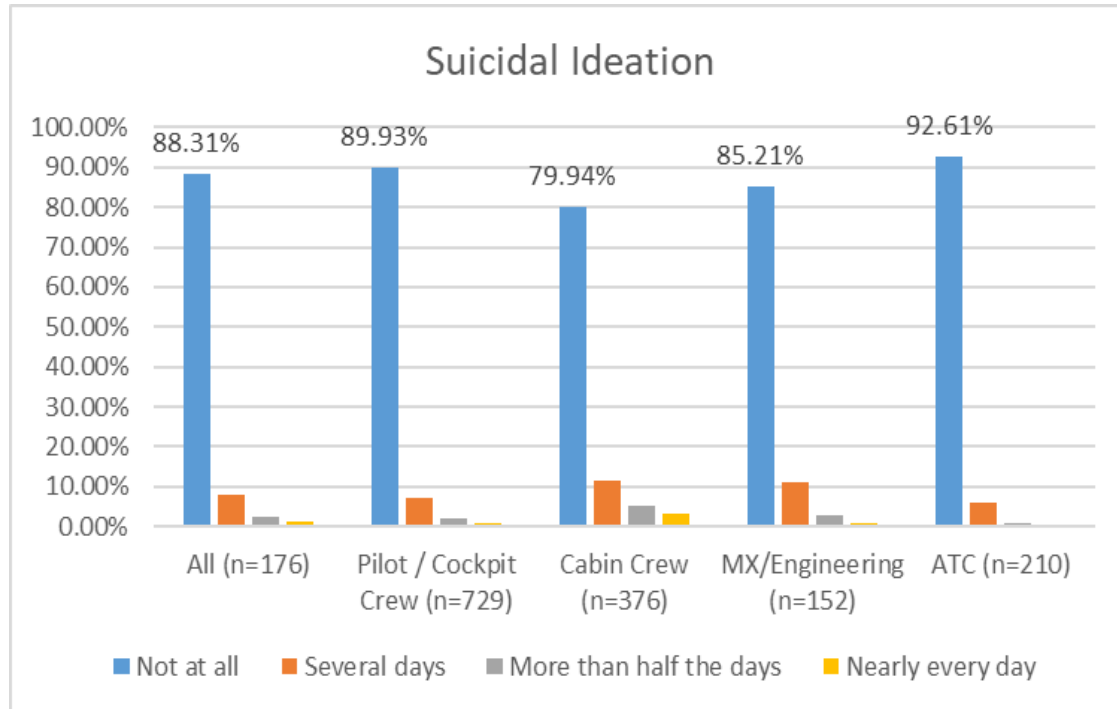


Suicidal Ideation (2020 v 2021)

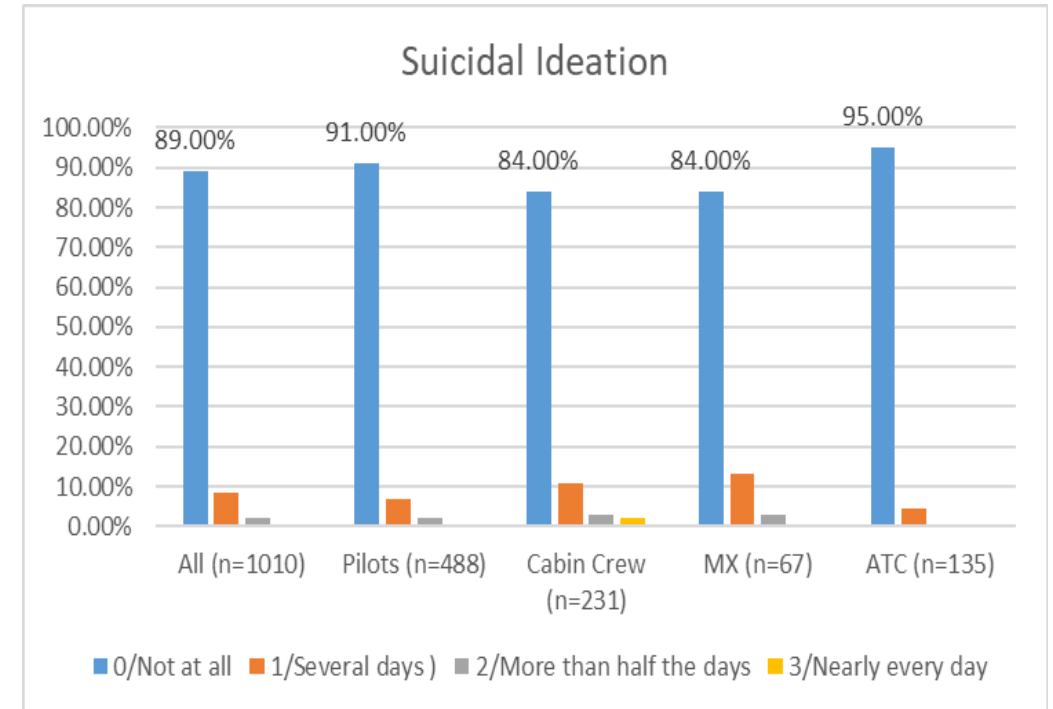


Suicidal Ideation (2020 v 2021)

2020



2021



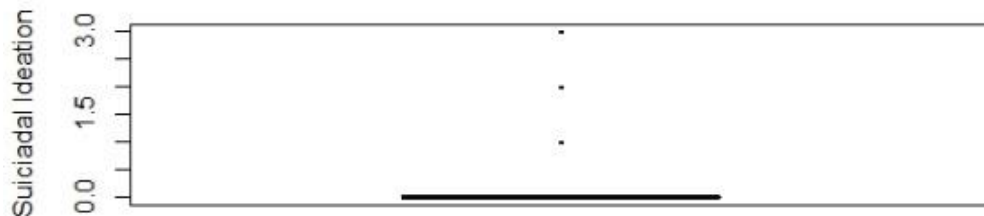
Suicidal Ideation

Comparing Means & Cut-offs (2020 & 2021)

	Min	1 st Qu	Median	Mean	3 rd Qu	IQR	Max.
Score 2021	0.0000	0.0000	0.0000	0.1416	0.0000	0	3.0000
Score 2020	0.0000	0.0000	0.0000	0.1687	0.0000	0	3.0000

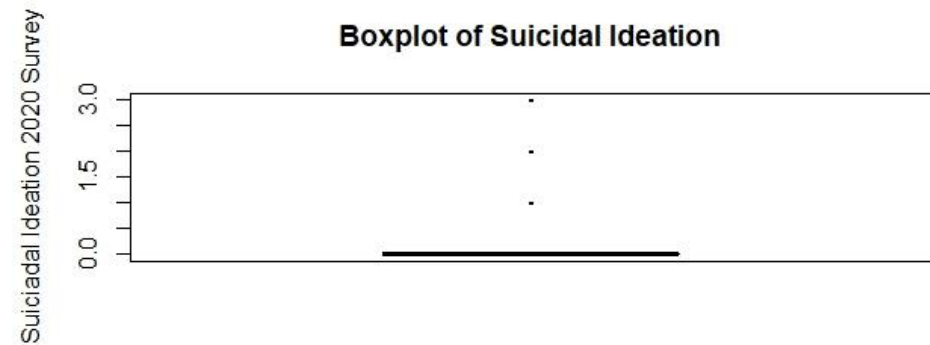
2021

Boxplot of Suicidal Ideation

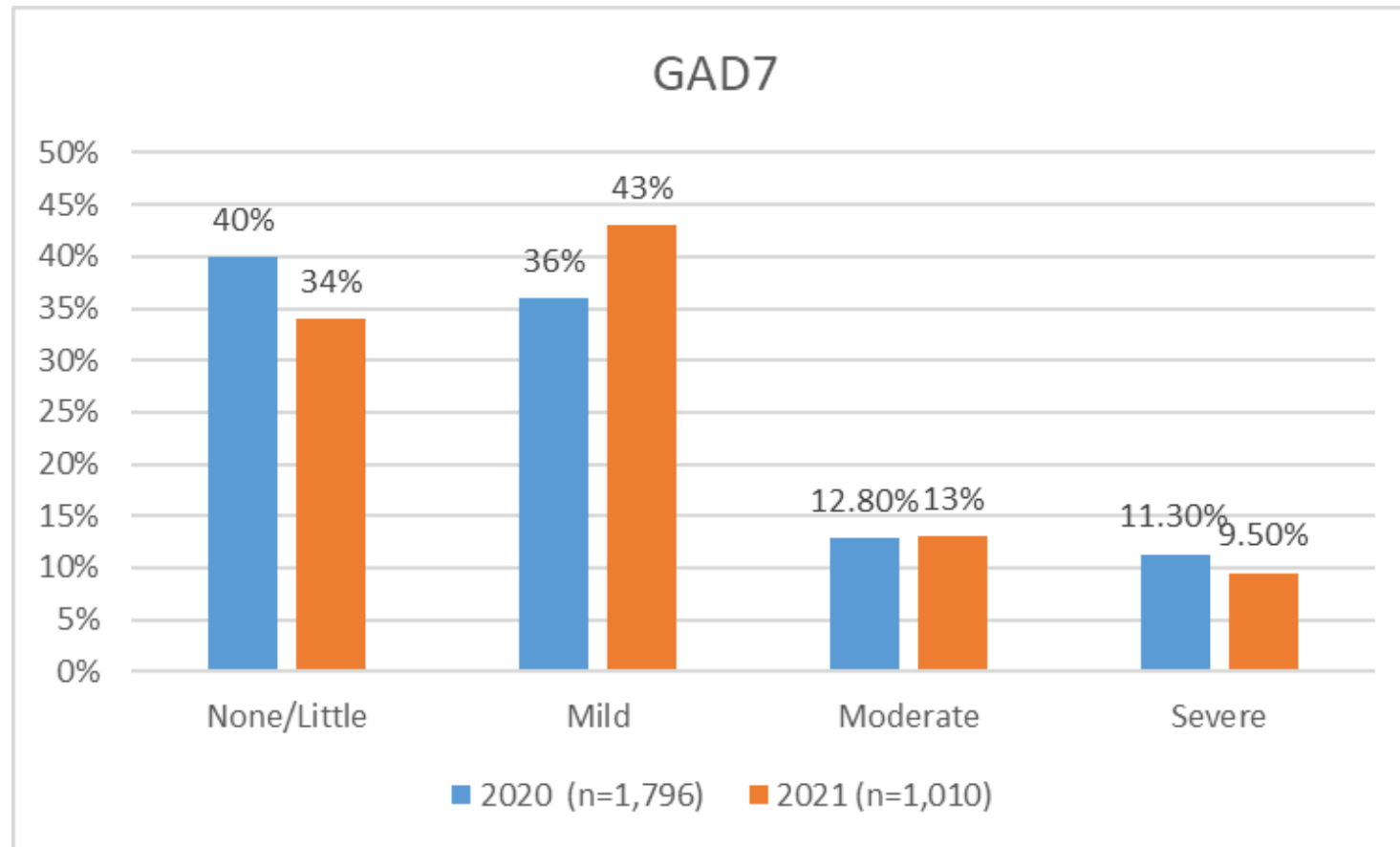


2020

Boxplot of Suicidal Ideation

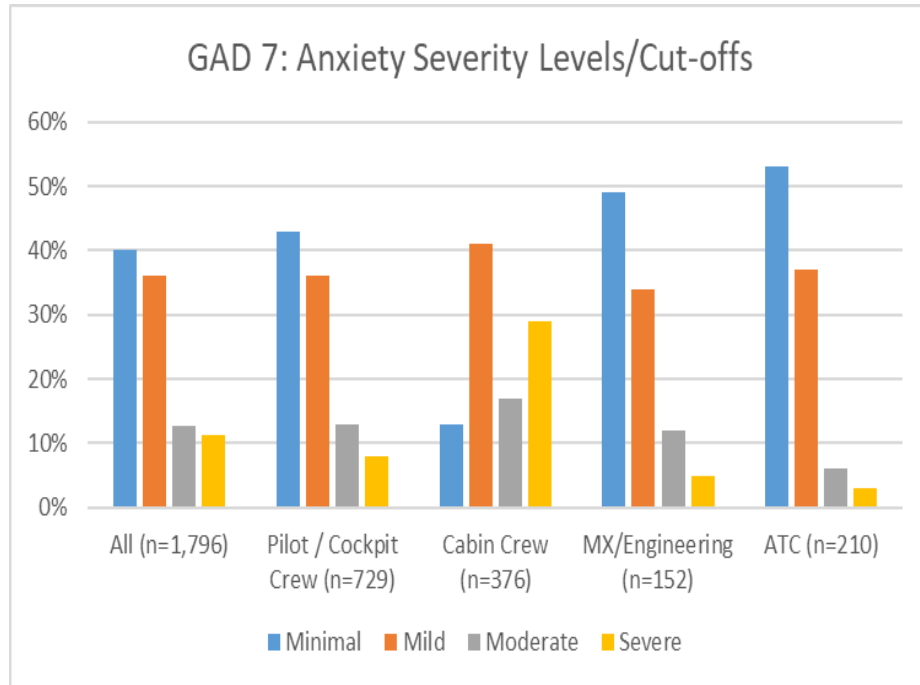


GAD 7, Anxiety Cut-offs (2020 v 2021)

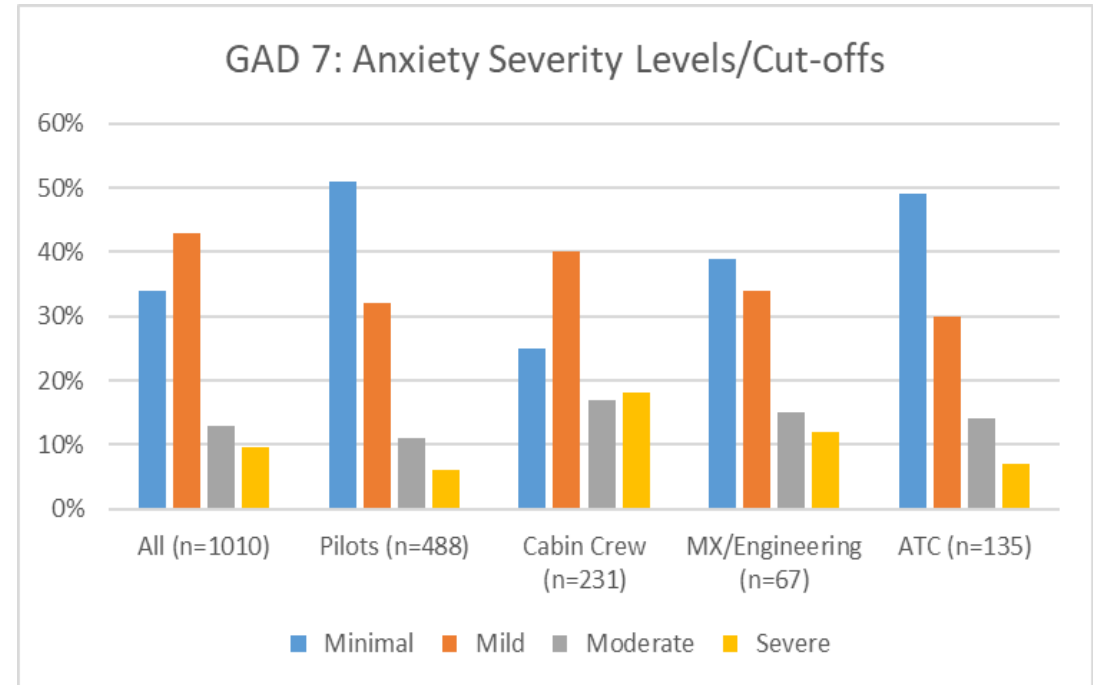


GAD 7, Anxiety Cut-offs (2020 v 2021)

2020



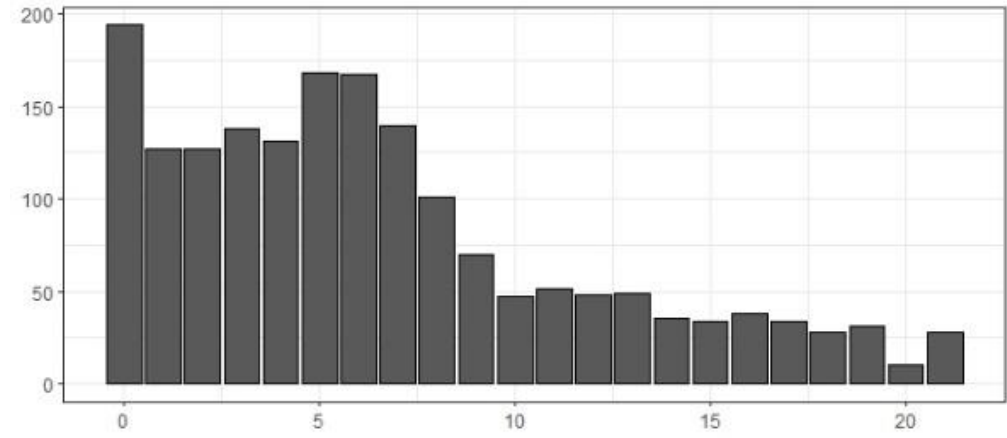
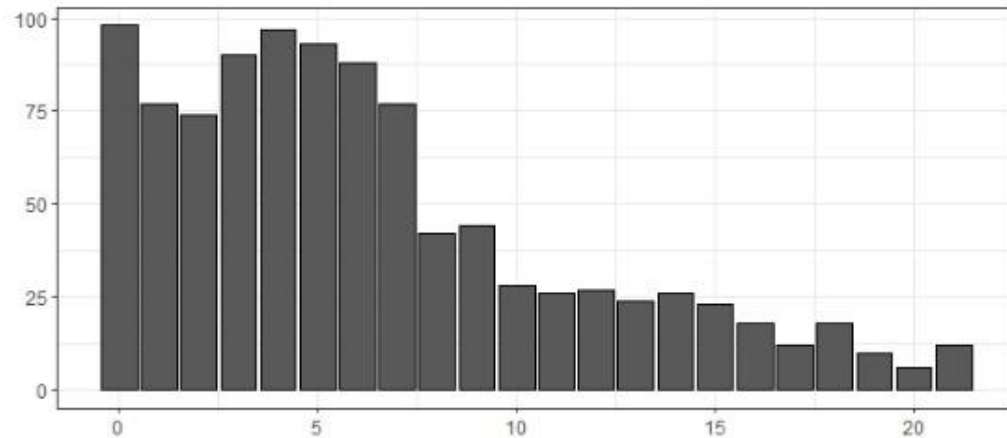
2021



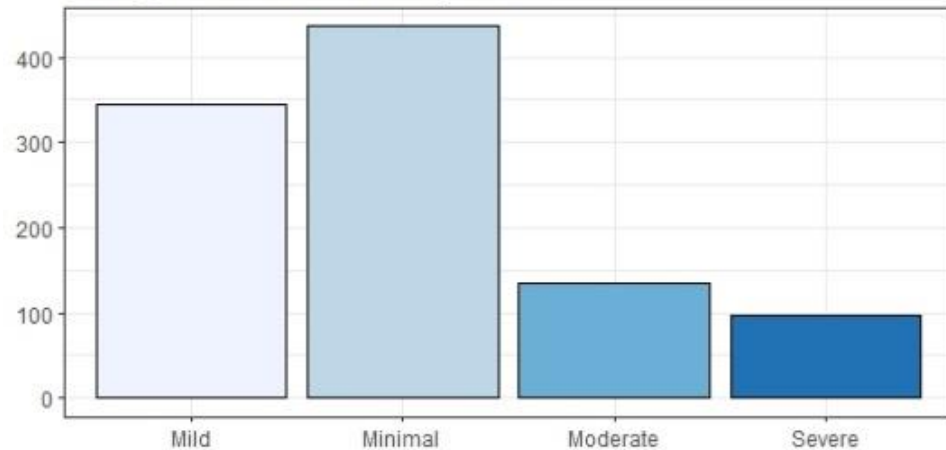
GAD7: Comparing Means & Cut-offs (2020 & 2021)

2021

2020

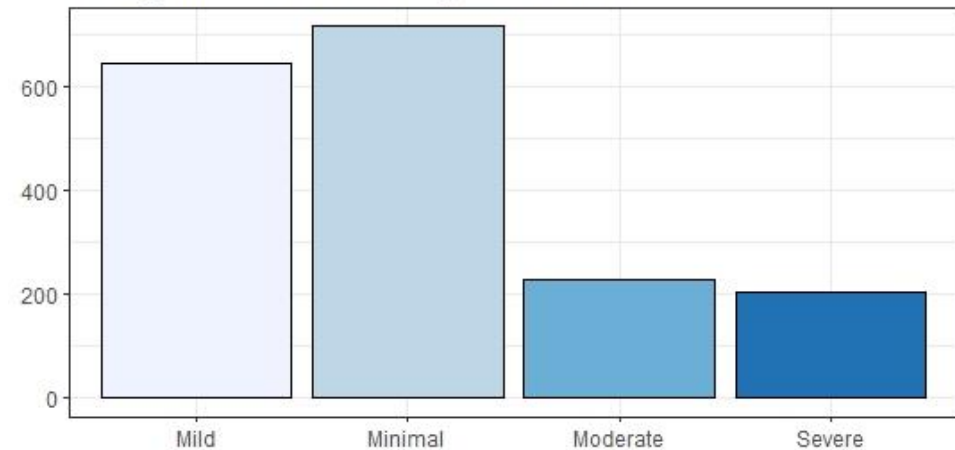


Histogram for GAD Severity Levels



Mild
Minimal
Moderate
Severe

Histogram for GAD Severity Levels 2020



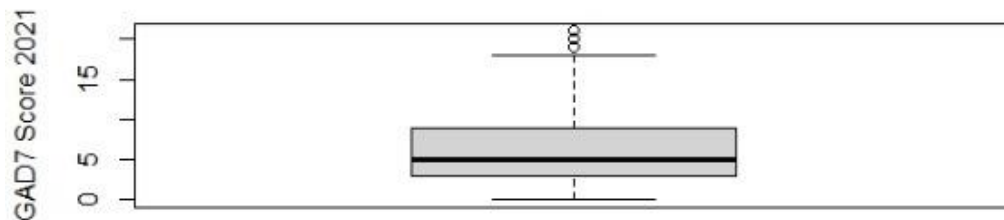
Mild
Minimal
Moderate
Severe

GAD7: Comparing Means & Cut-offs (2020 & 2021)

	Min	1 st Qu	Median	Mean	3 rd Qu	IQR	Max.
Score 2021	0	3	5	6.372	9	6	21
Score 2020	0	3	6	6.62	9	6	21
Interpretation	Minimal	Minimal	Mild	Mild	Mild	Mild	Severe
SD 2021	5.135626			SD 2020	5.340914		
Variance 2021	26.37465			Variance 2020	28.52536		

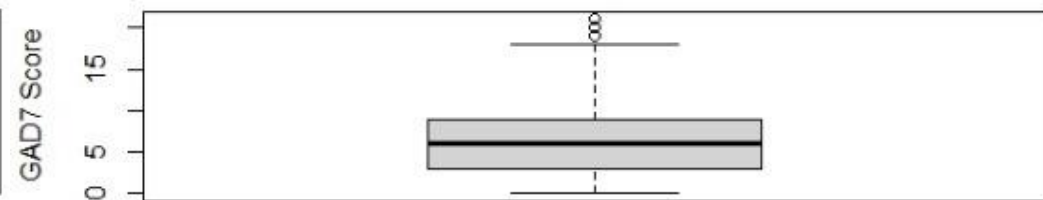
2021

Boxplot of GAD7 Score 2021



2020

Boxplot of GAD7 Score 2020



Comparing 2021 and 2020 Surveys, General Findings

COVID & Impact on Wellbeing

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

COVID & Impact on Employment

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

Impact on Performance & Safety

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

Coping Methods & Seeking Help

2021	2020	Survey Question/Metric/Rating
56.27%	56.10%	Before the COVID-19 pandemic, were you doing anything to help you cope with stress generally (i.e., self-care routines/coping strategies)?
55.75%	54.75%	Before the COVID-19 pandemic, were you doing anything to help you cope with work related stress (i.e., self-care routines/coping strategies)?
62.8%	58.27%	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?
67%	68%	Would look for help if had a MH issue.
67%	68.92	Would approach the Peer Support Group for peer support services, if needed.
57%	60.14%	Would use organisational supports if provided.
26.62%	20%	Used outside supports to help them cope with stress arising from the COVID 10 pandemic and changes to their wellbeing.

Attitudes to Talking About Mental Health

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

Company Supports & Wellbeing Culture

2021	2020	Survey Question/Metric/Rating
21%	25%	Airline provided you with specific support to cope with stresses arising from COVID and any changes to your wellbeing?
25%	24.27%	Used supports provided by their company
57%	60.14%	Use company supports if provided
27%	19.83%	Accessed supports outside their airline to cope with stress arising from the COVID-19 pandemic and any changes to your wellbeing
15%	19.83%	Agree or strongly agree that their company cares about their wellbeing
64%	32%	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
79%	69.62	Aware of the existence of a Peer Support Group within their company or staff representative association
69.80%	60%	Indicated that if a Peer Support Group were in place, and if needed, they would approach the Peer Support Group for peer support services.

COVID & Experience of Remote Work

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

Requirements for Wellbeing Supports

2021	2020	Survey Question/Metric/Rating
93%	94%	Agree or strongly agree - need for wellbeing supports for those currently in work.
94%	92%	Agree or strongly agree - wellbeing supports are required for those off work.

Requirements for Fitness for Work Evaluation

2021	2020	Survey Question/Metric/Rating
81%	86%	Feel they will be fit to return to work, post the COVID-19 pandemic.
67%	61%	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.
61%	64%	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

COVID Survey 2 (2021), Participants Profiles

Survey 2: Response Summary & Participant Profiles

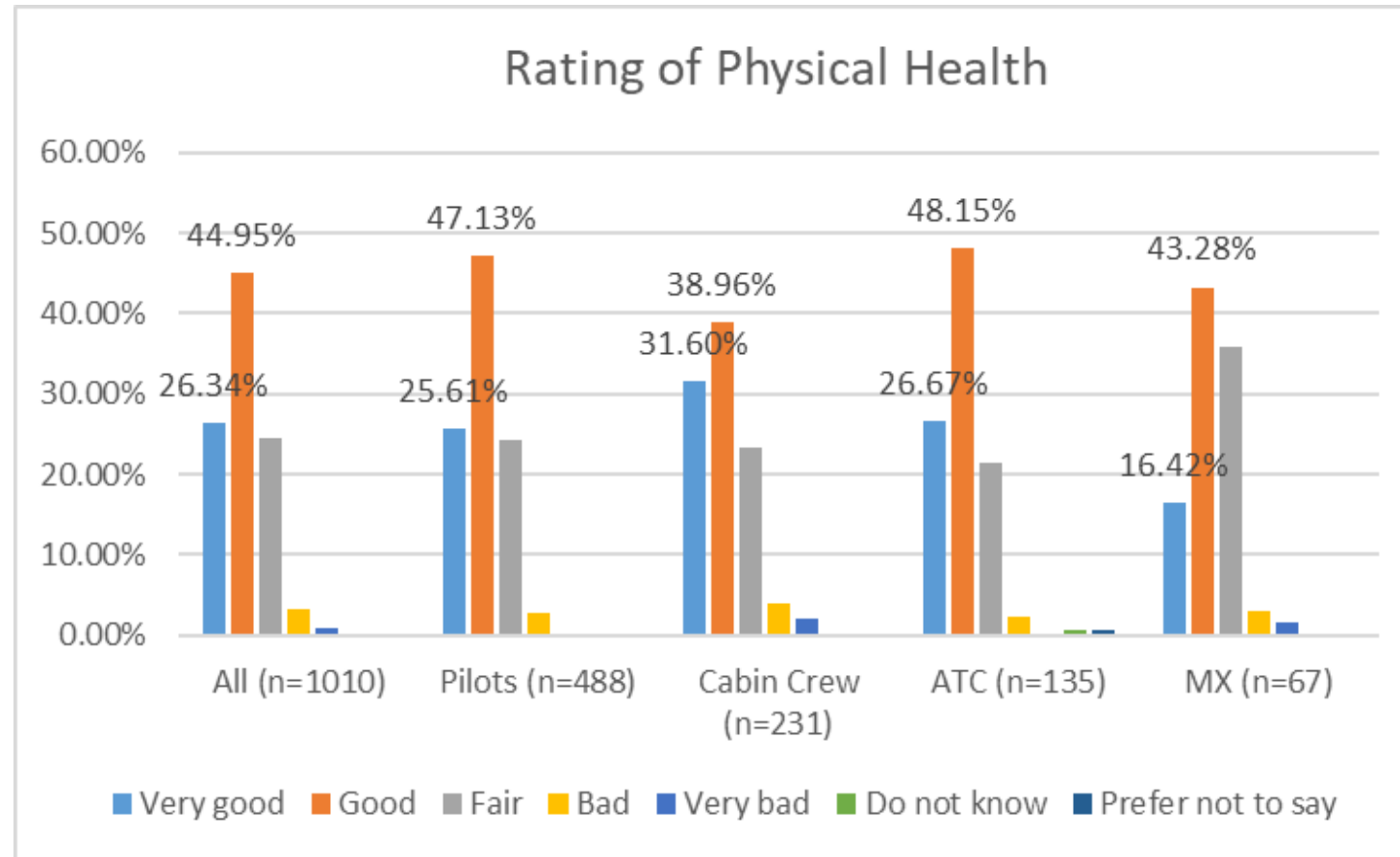
- 1172 respondents participated in the survey.
- 1010 completed the PHQ
- 1010 completed the GAD 7



- 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)

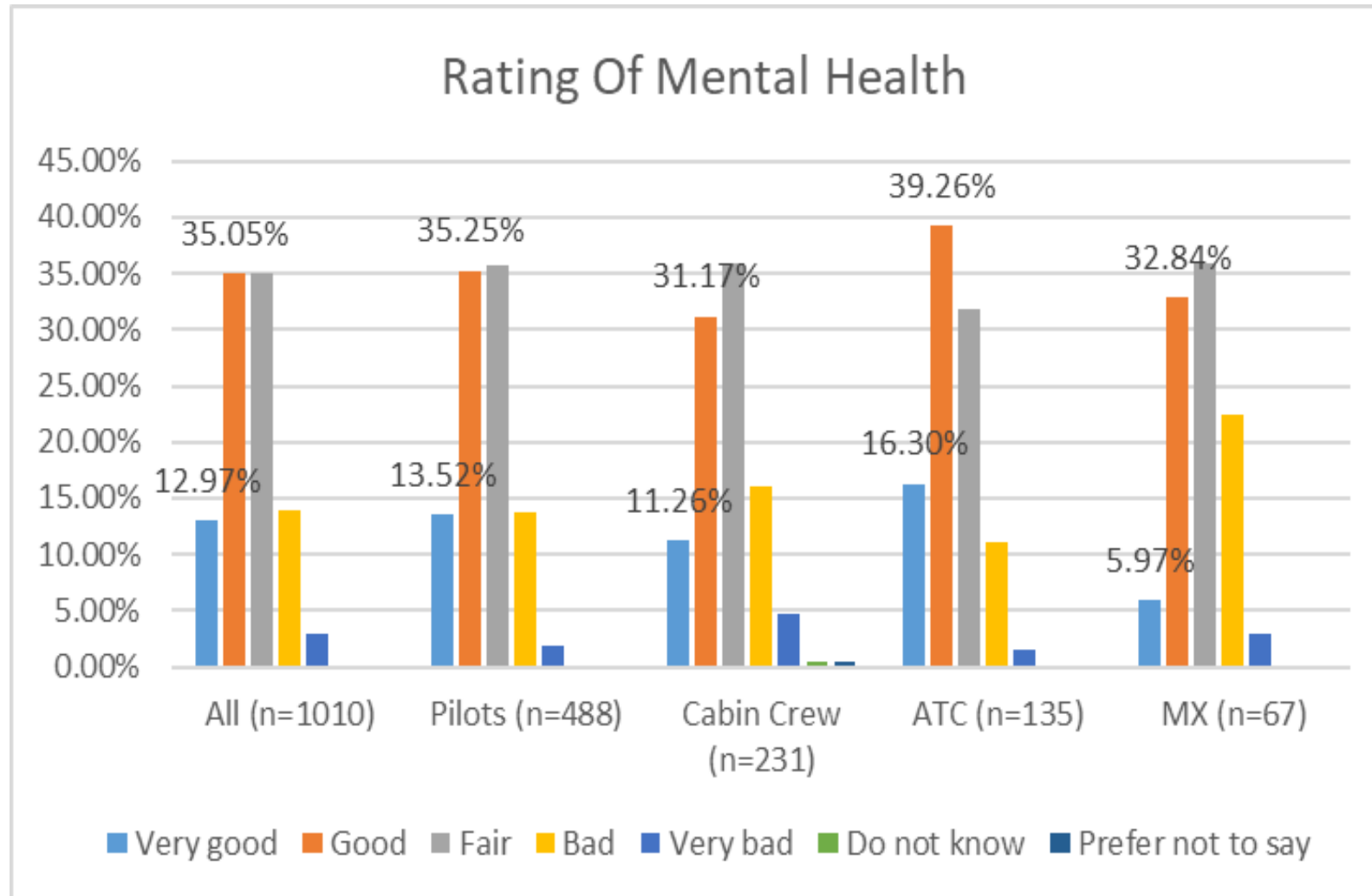
COVID Survey 2 (2021), Physical Health

Physical Health



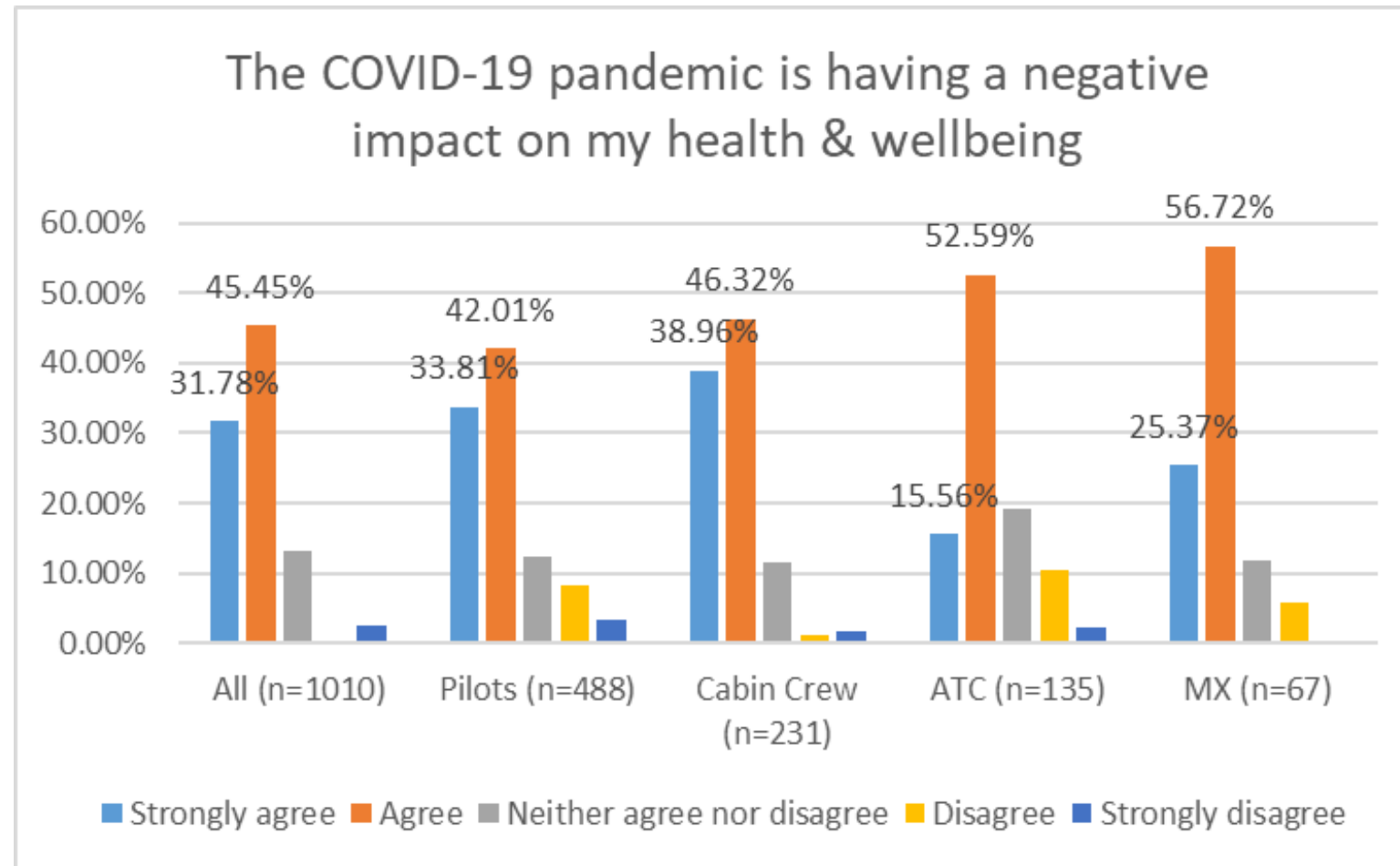
COVID Survey 2 (2021), Mental Health

Mental Health

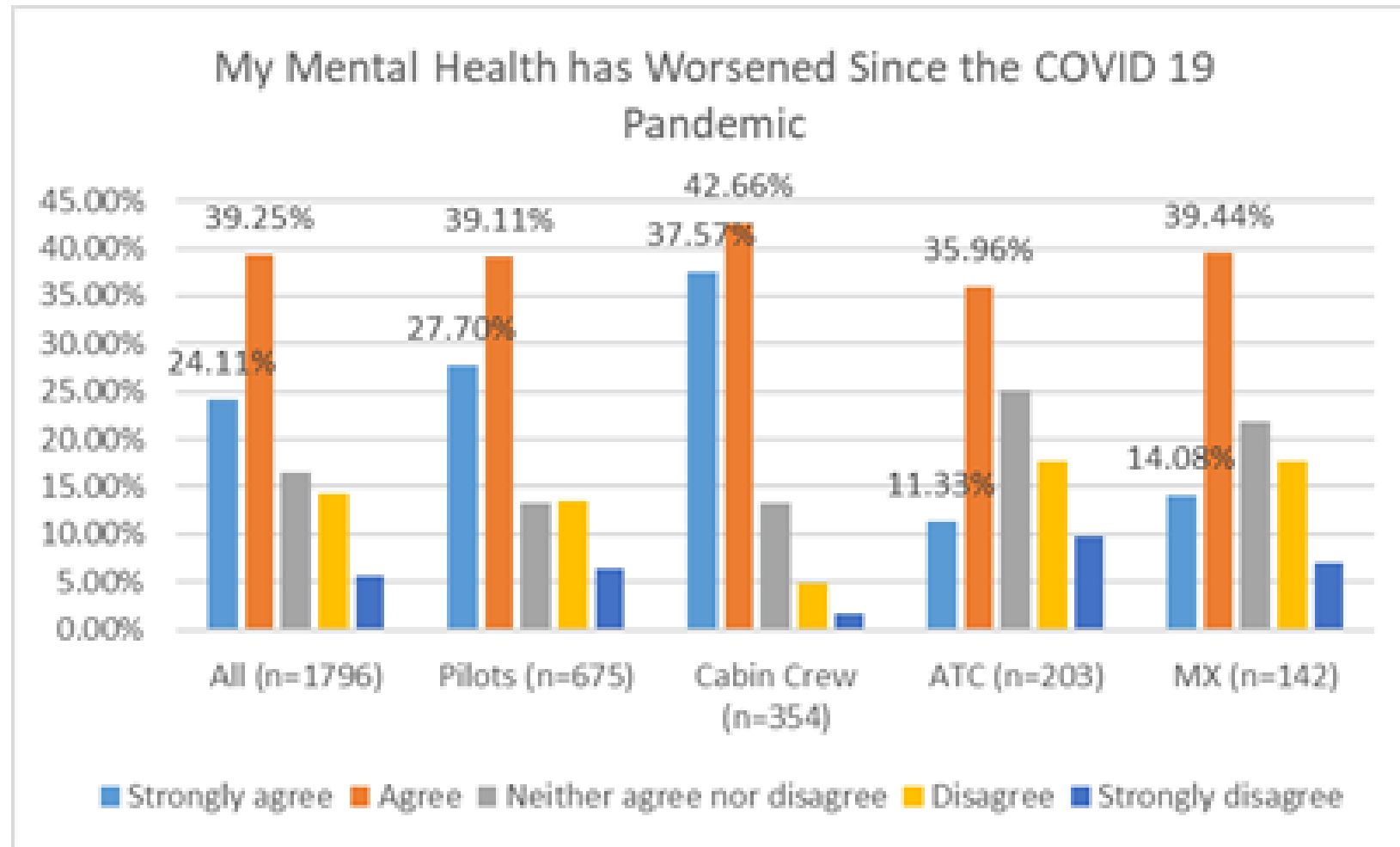


COVID Survey 2 (2021),
Impact of COVID on Health &
Wellbeing

Negative Impact of COVID on Health & Wellbeing



Worsening MH



COVID Survey 2 (2021),
Happiness & Life Satisfaction

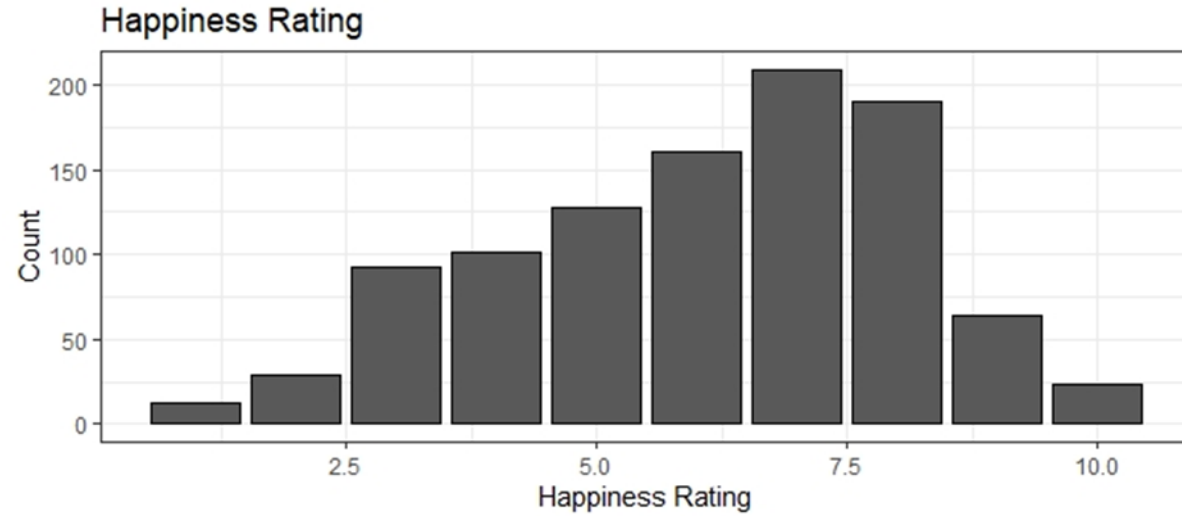
Happiness & Life Satisfaction (2021)

	Min	1 st Qu (25% fall below)	Median/ (Middle)	Mean	3 rd Qu (75% fall below)	IQR (Middle 50%)	Max.
Score	1	5	6	6.089	8	3	10

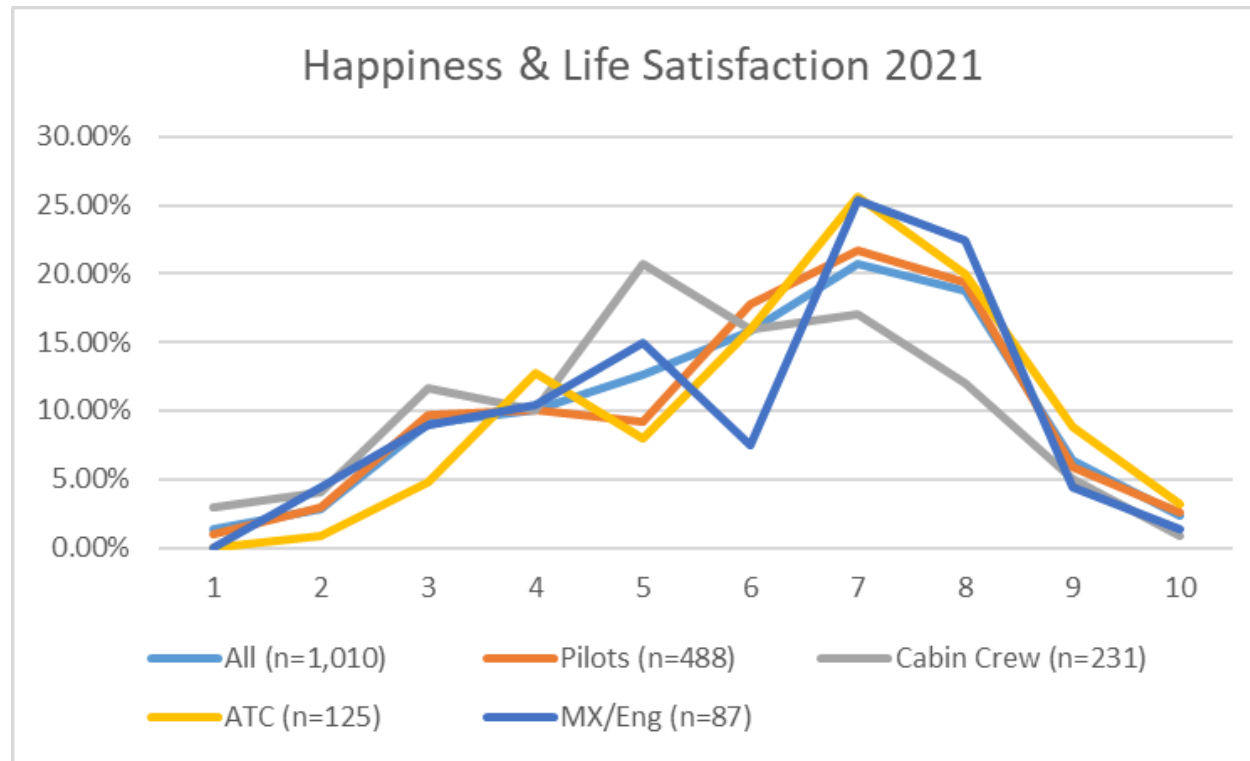
When asked to rate their general satisfaction with life on a scale from 0 to 10, people on average across the OECD gave it a **6.5**.

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

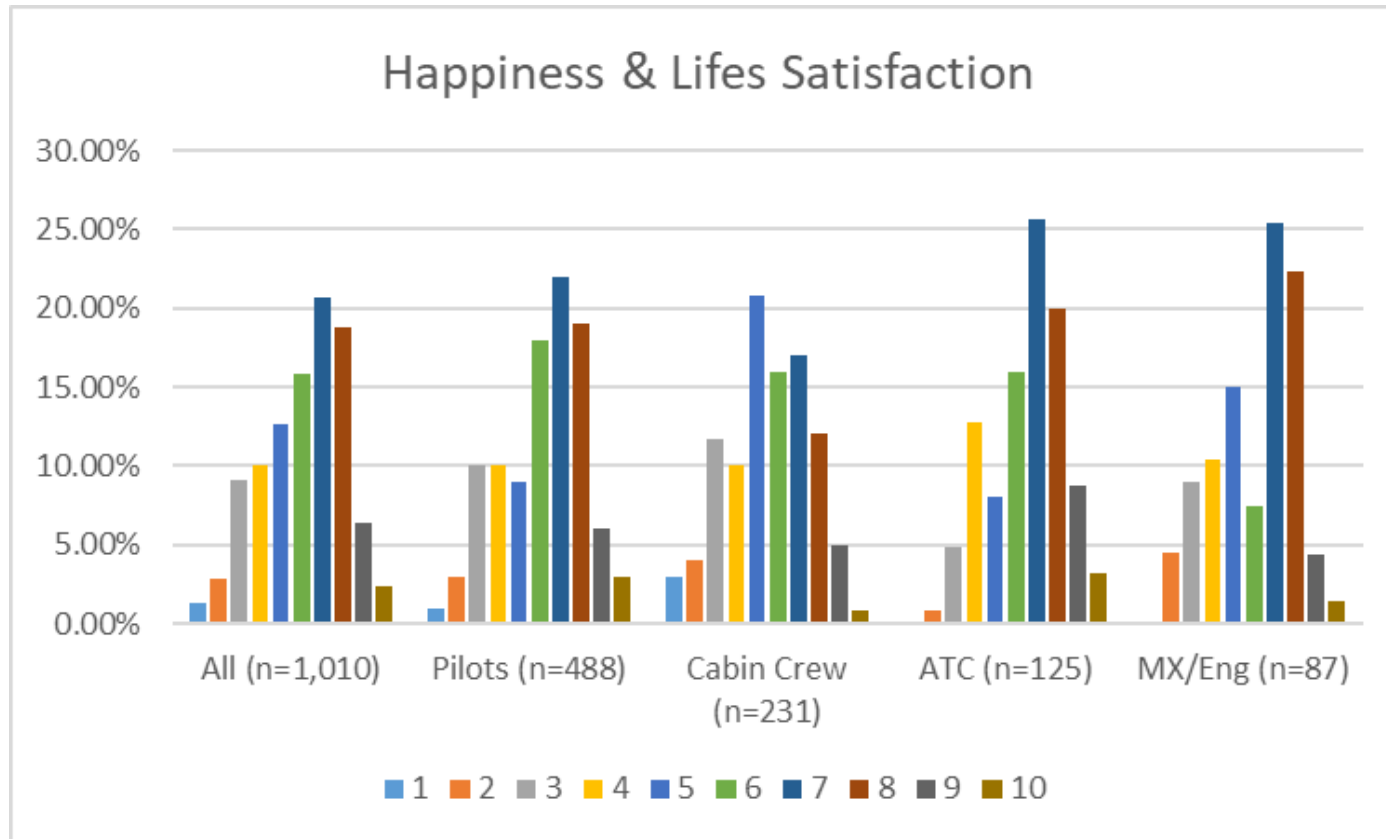


Happiness & Life Satisfaction & Roles (2021)



One Way ANOVA, p value (4.45e-07)
Statistically significant difference in mean scores across roles

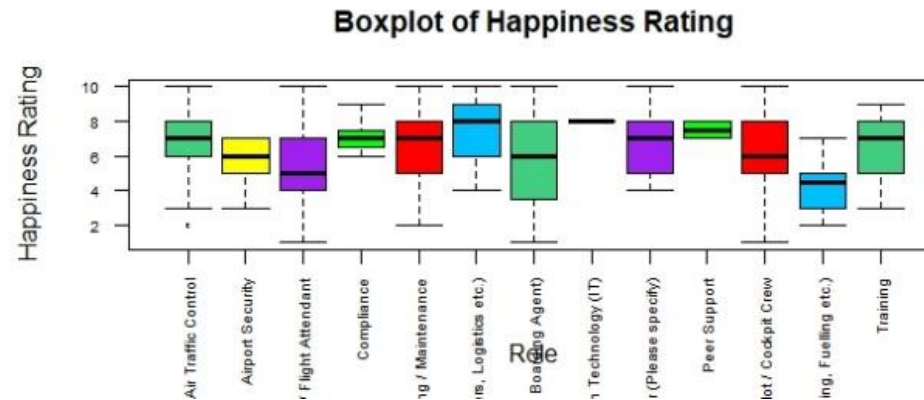
Happiness & Life Satisfaction & Roles (2021)



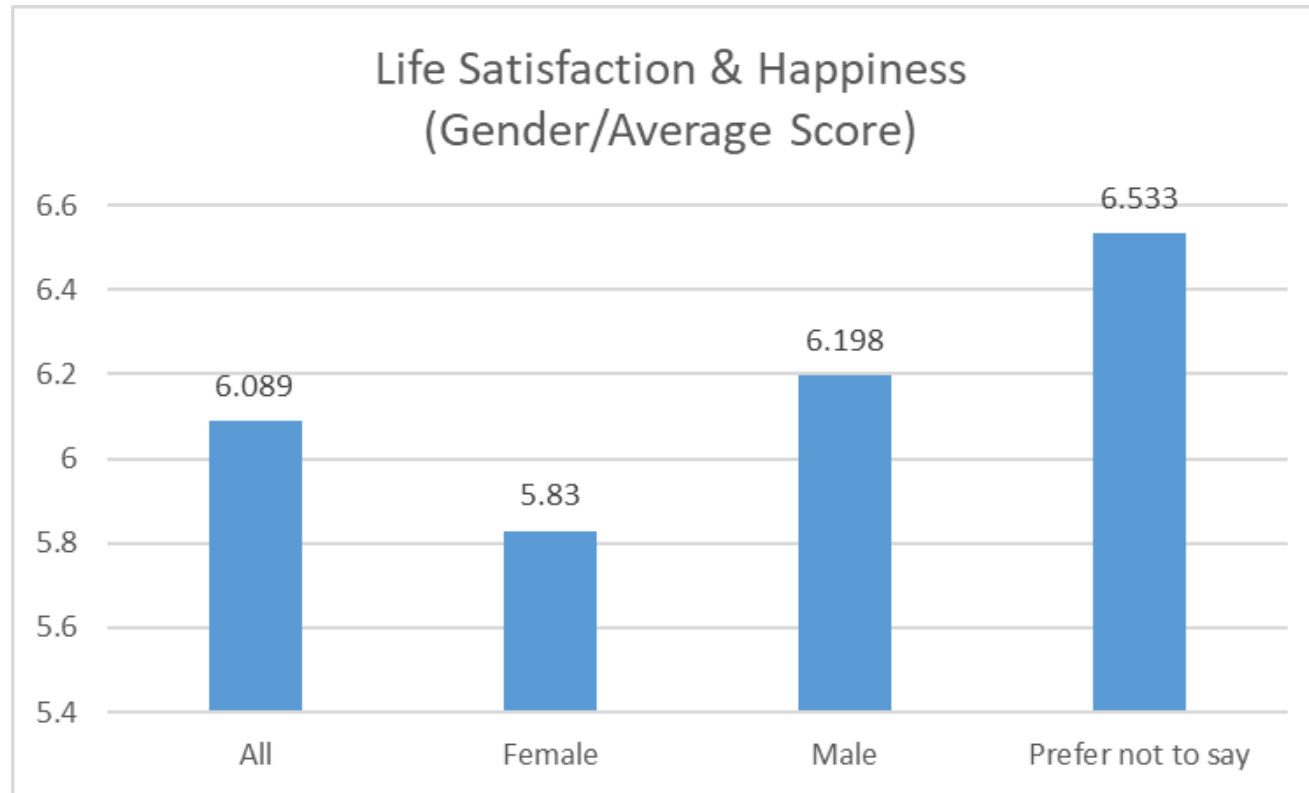
One Way ANOVA, p value (4.45e-07)
Statistically significant difference in mean scores across roles

Happiness & Life Satisfaction - Roles (2021)

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



Happiness & Life Satisfaction & Gender (2021)

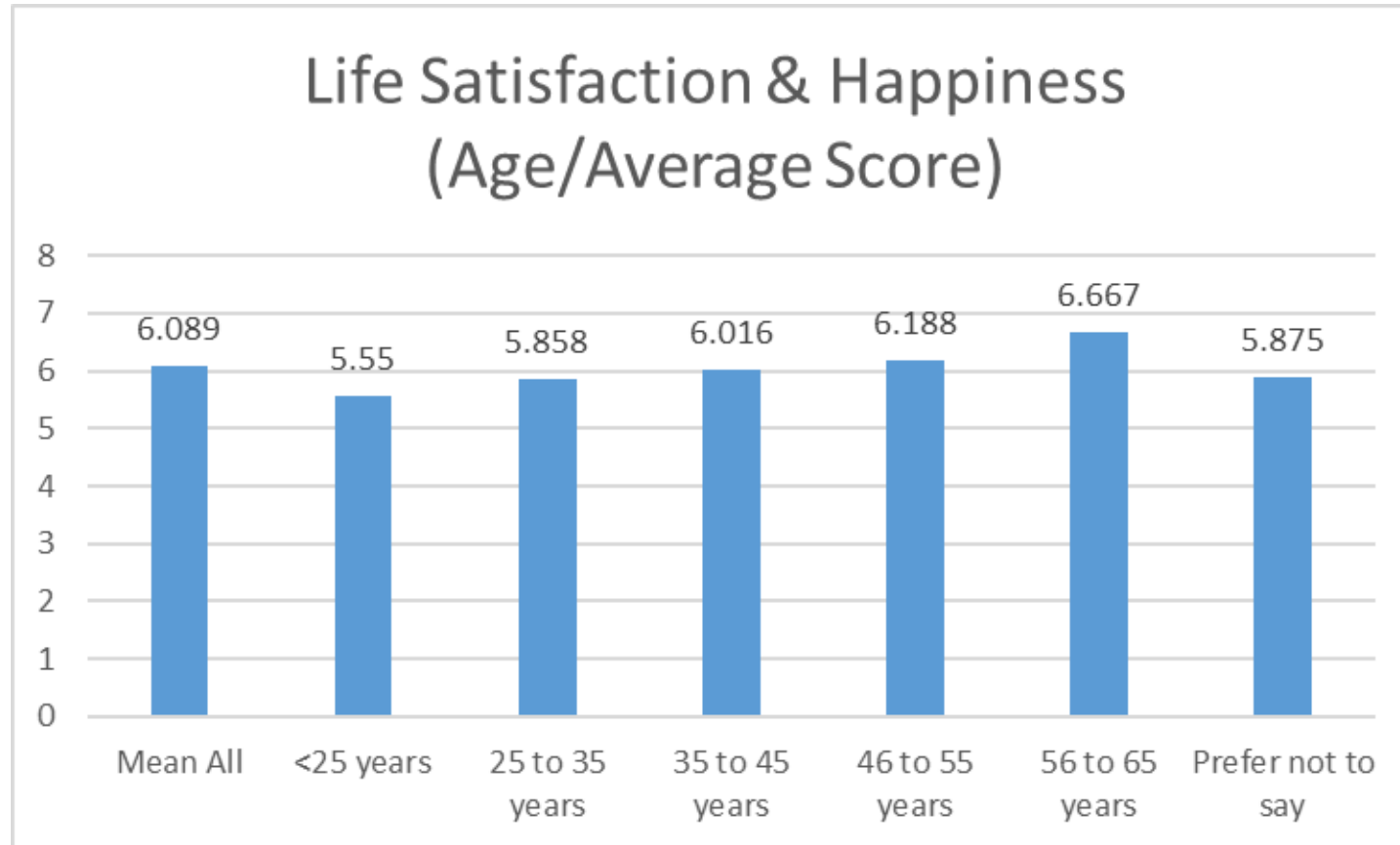


One Way ANOVA, p value (0.0236)
Statistically significant difference in mean scores for groups

Happiness & Life Satisfaction & Gender (2021)

	Min	1 st Qu (25% fall below)	Median/ (Middle)	Mean	3 rd Qu (75% fall below)	Max.
Score 2021	1	5	6	6.089	8	10
Female	1	5	6	5.83	7	10
Male	1	5	7	6.198	8	10
Prefer not to say	4	5.5	7	6.533	8	8

Happiness & Life Satisfaction & Age (2021)

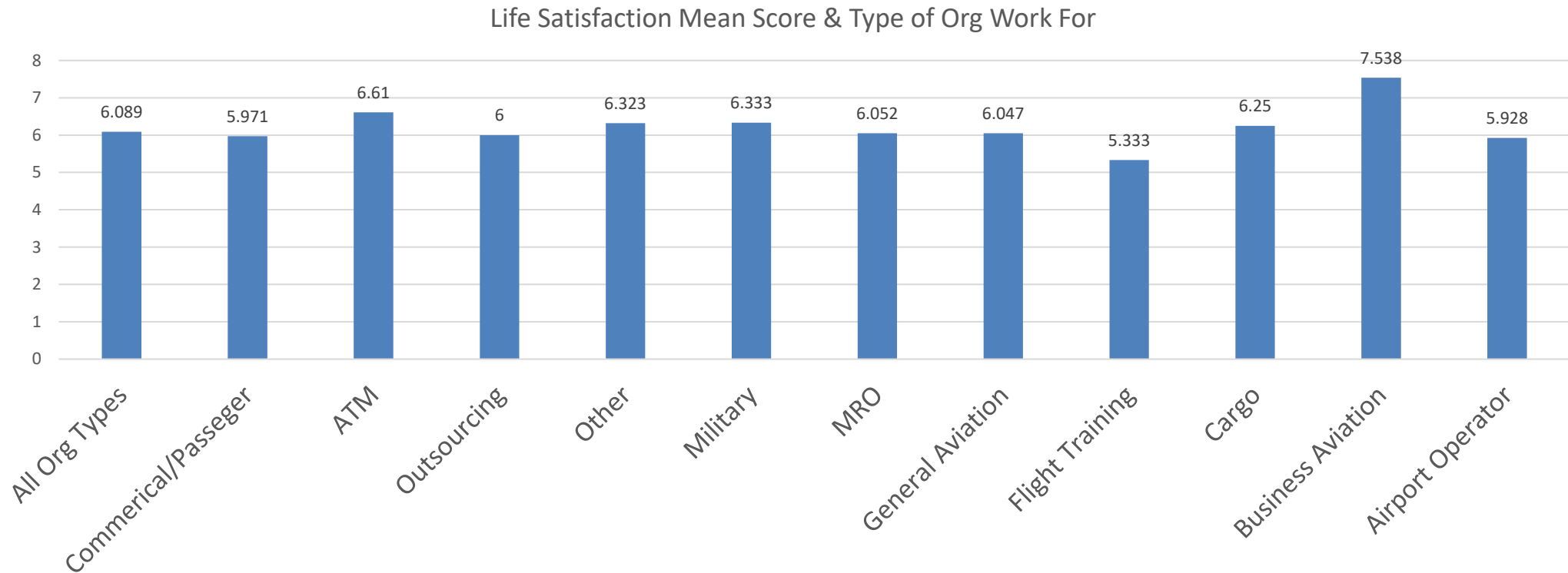


One Way ANOVA, p value (0.0135)
Statistically significant difference in mean scores for age groups

Happiness & Life Satisfaction & Age (2021)

	Min	1 st Qu	Median	Mean	3 rd Qu	Max.
Score All Age Groups	1	5	6	6.089	8	10
<25 years	3	4	6	5.55	7	8
25 to 35 years	1	4	6	5.858	7	10
35 to 45 years	1	5	6	6.016	8	10
46 to 55 years	1	5	6	6.188	8	10
56 to 65 years	1	6	7	6.667	8	10
Prefer not to say	3	5	5.5	5.875	7.25	8

Happiness & Life Satisfaction & Type of Org Work for



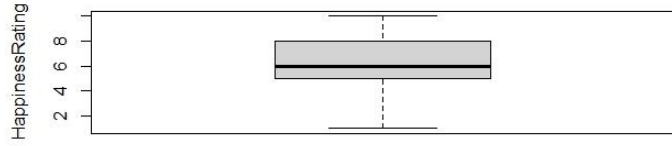
One Way ANOVA, p value (0.0272)
Statistically significant difference in mean scores for age groups

Happiness & Life Satisfaction & Type of Org Work for

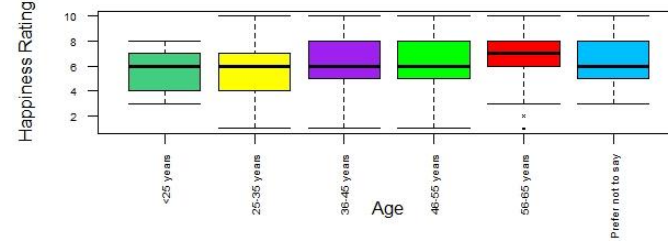
	Min	1 st Qu (25% fall below)	Median/ (Middle)	Mean	3 rd Qu (75% fall below)	Max
Score 2021 (All)	1	5	6	6.089	8	10
Commercial/Passenger airline (n=748)	1	5	6	5.972	8	10
Air Traffic Management (n=131)	2	6	7	6.611	8	10
Cargo airline (n=16)	2	4	7	6.25	9	9
Airport Operator (n=14)	2	5	6.5	5.929	7.75	9
General aviation (n=21)	4	5	6	6.048	7	9
Business aviation (n=13)	5	6	8	7.538	9	10
Maintenance and Repair Organisation (MRO) (n=19)	3	4	6	6.053	7.5	10
Military Air Force (n=3)	3	4	6	6.053	7.5	10
Flight Training (n=9)	3	4	5	5.333	7	8
Outsourcing company (n=2)	4	5	6	6	7	9
Other (Please specify) (n= 134)	1	5	7	6.324	8	10

Happiness & Life Satisfaction

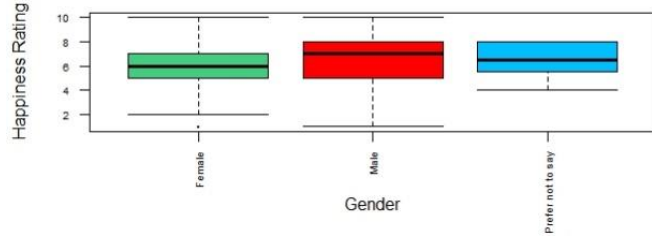
Boxplot of Happiness Rating



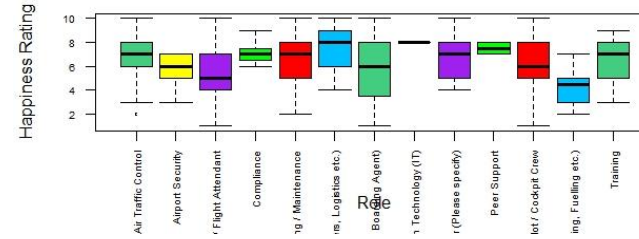
Boxplot of Happiness Rating



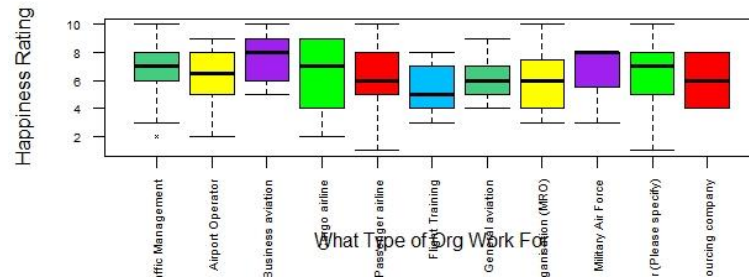
Boxplot of Happiness Rating



Boxplot of Happiness Rating

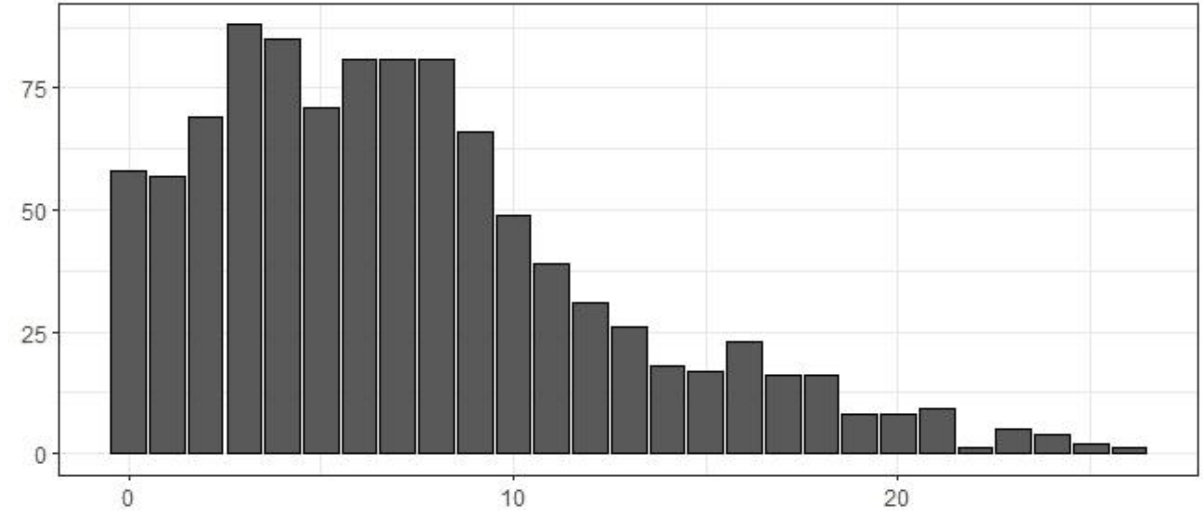
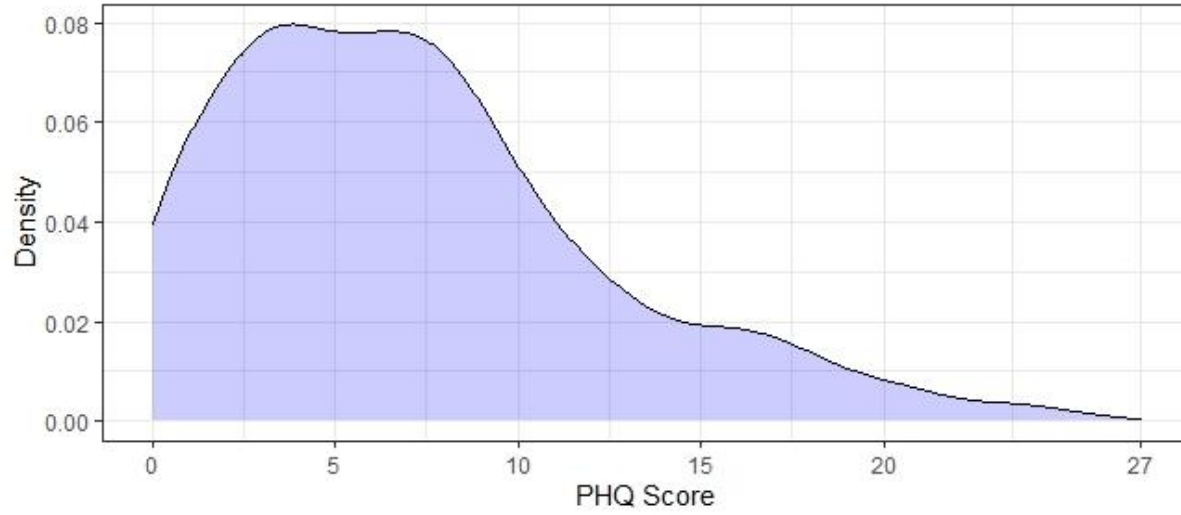


Boxplot of Happiness Rating

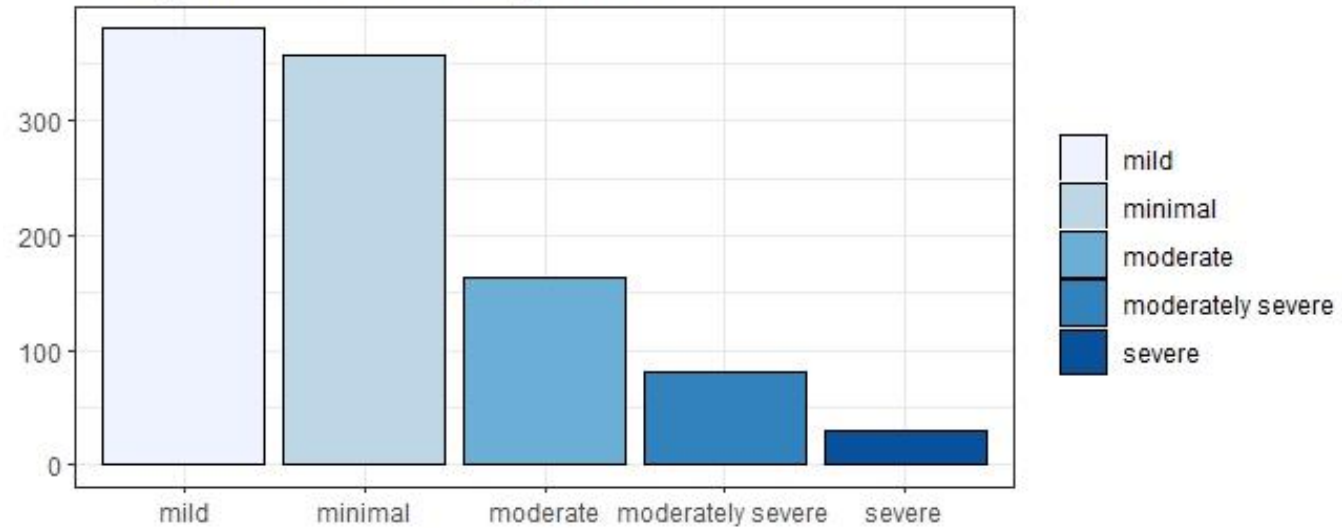


COVID Survey 2 (2021),
Depression Severity/PHQ 9

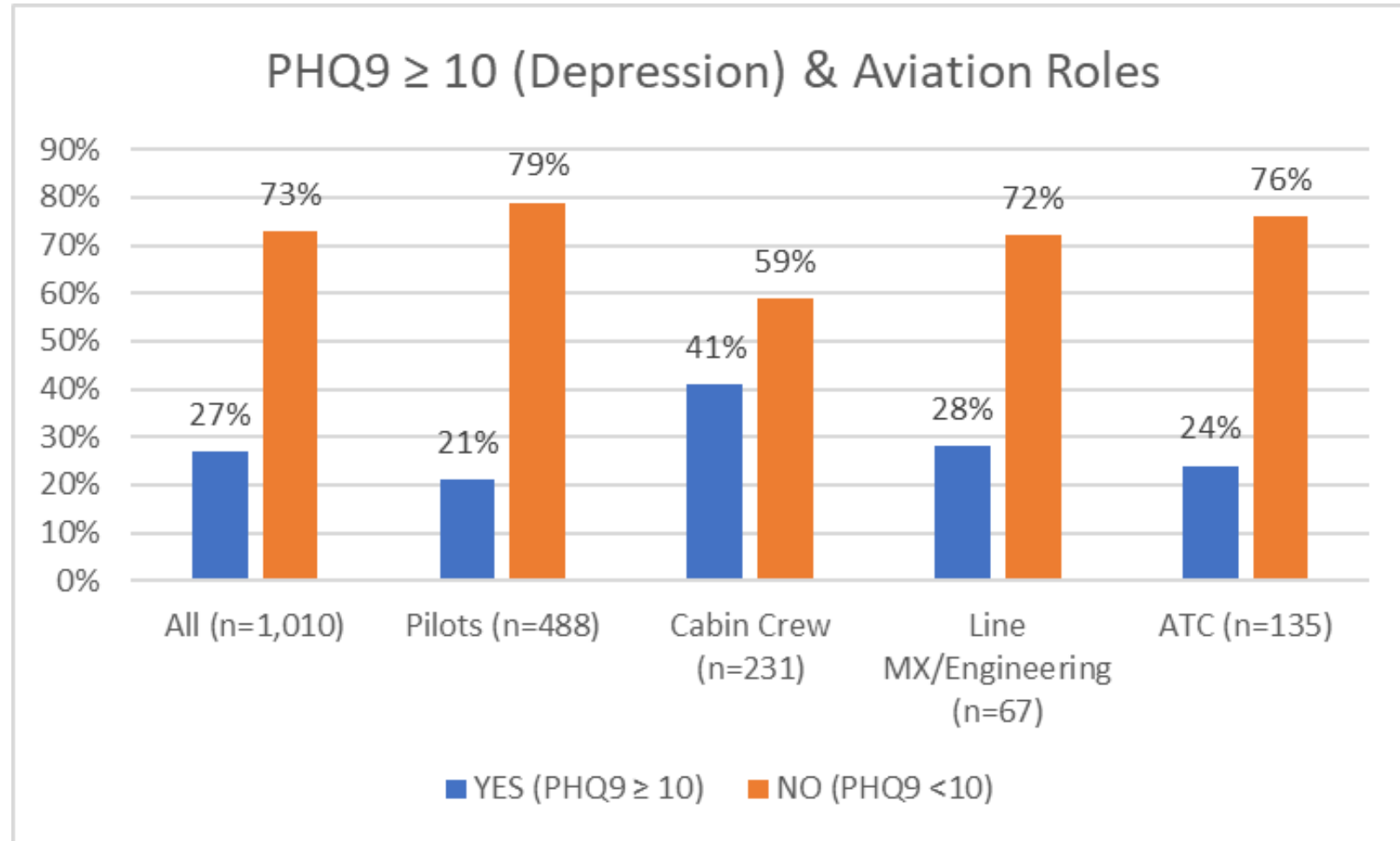
PHQ9, 2021



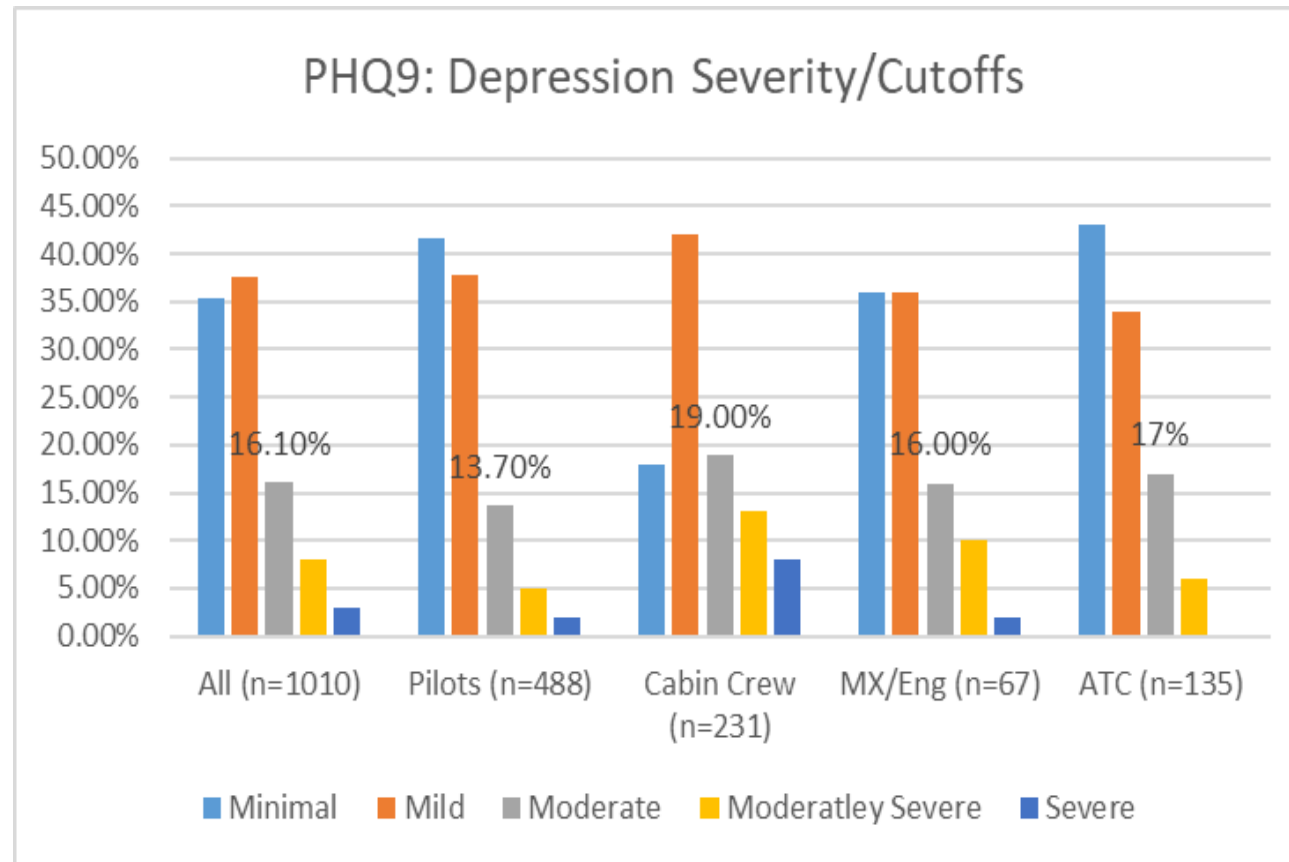
Histogram for PHQ Severity Levels



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

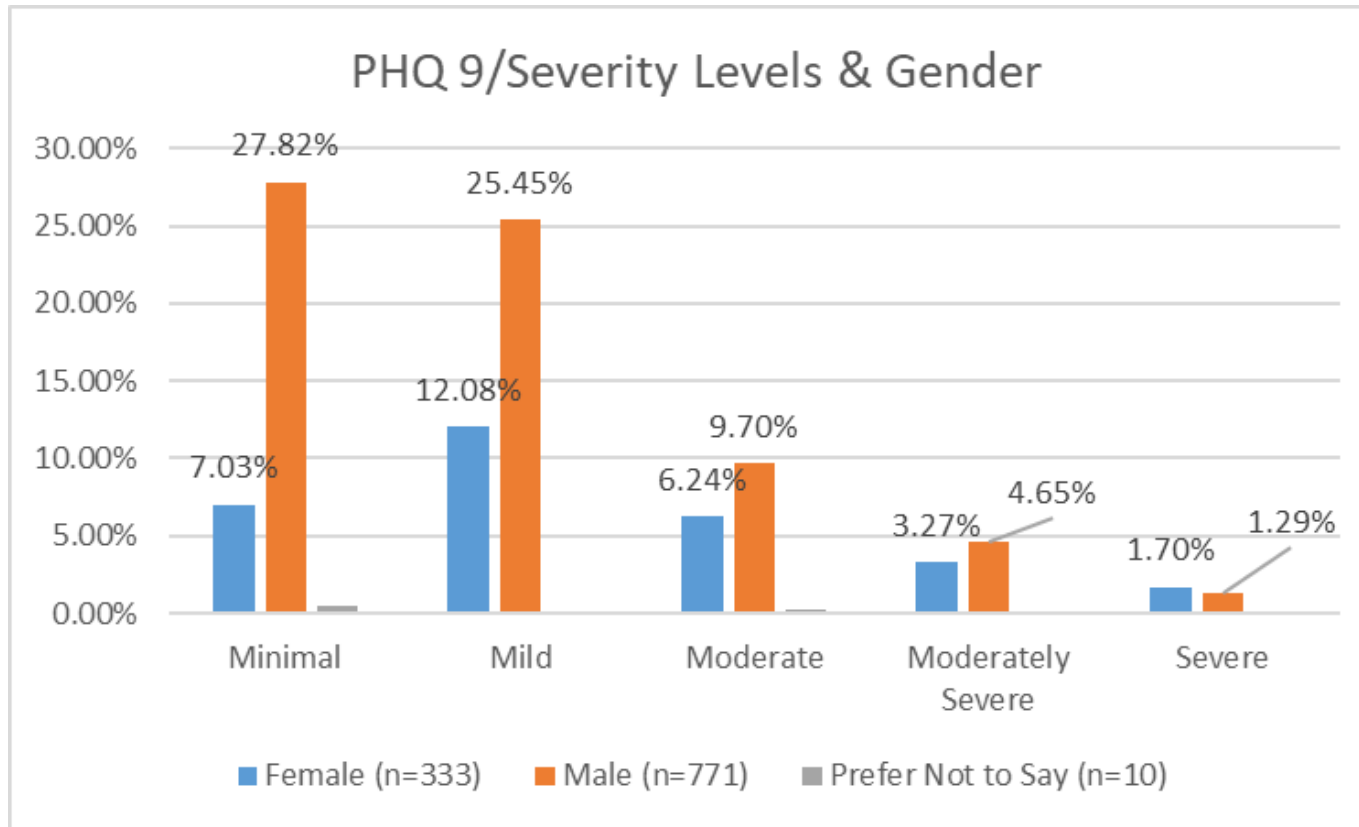
PHQ9 Severity Levels and Worker Profiles

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

- 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)



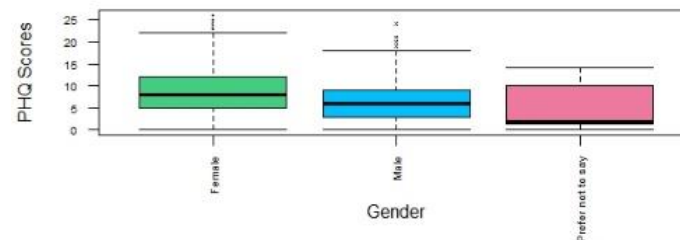
Pearson's Chi Squared Test, p value (1.244415e-06)
Relationship between gender and depression severity is statistically significant

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)

Gender/Response	Female	Male	Prefer Not to Say
Proportion & N	29.89% (n=333)	69.21% (n=771)	0.90% (n=10)
Minimal	7.03%	27.82%	0.50%
Mild	12.08%	25.45%	0.10%
Moderate	6.24%	9.70%	0.20%
Moderately Severe	3.27%	4.65%	0%
Severe	1.7%	1.29%	0%

Boxplot of PHQ Scores & Gender



PHQ 9, 2021

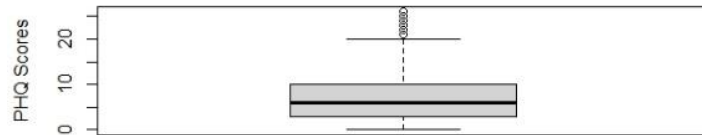
	Min	1 st Qu	Median	Mean	3 rd Qu	IQR	Max.
Score	0	3.00	6.00	7.25	10.00	7	26.00
PHQ 9 Cut-offs	Minimal	Minimal	Mild	Mild	Moderate	Mild	Severe

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%)**.

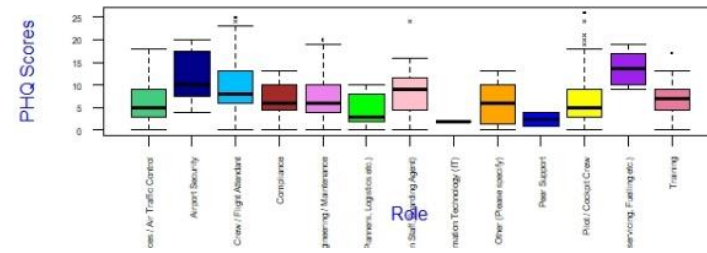
Prevalence rates vary by age, **peaking in older adulthood** (above 7.5% among females aged 55-74 years, and above 5.5% among males).

PHQ 9, 2021

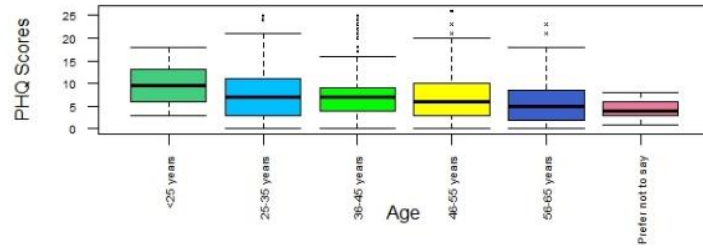
Boxplot of PHQ Scores



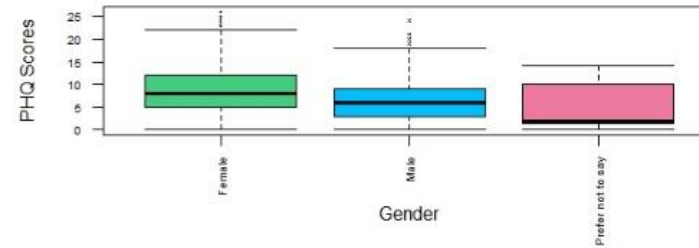
Boxplot of PHQ Scores & Role



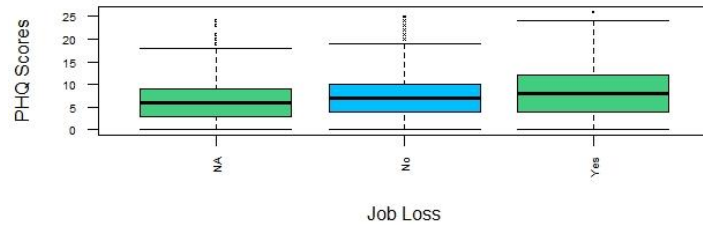
Boxplot of PHQ Scores & Age



Boxplot of PHQ Scores & Gender



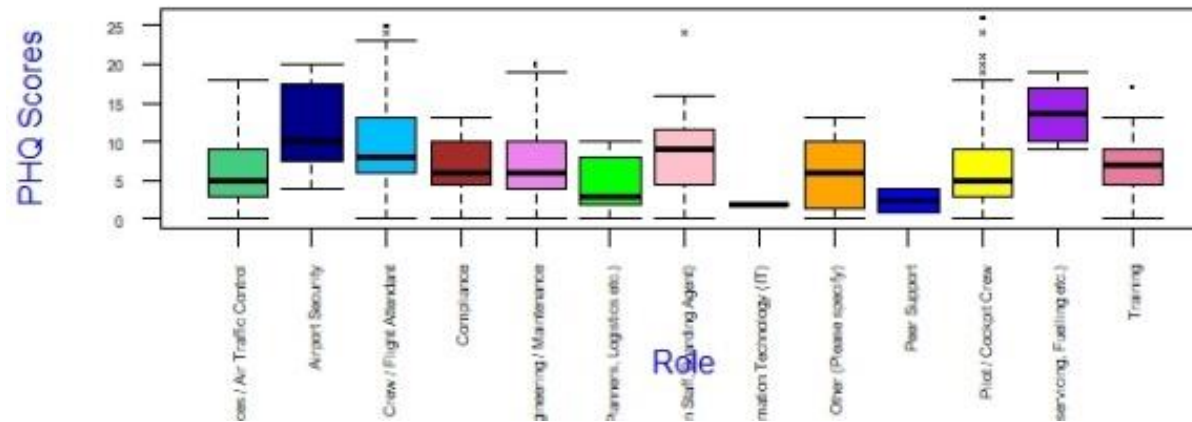
Boxplot of PHQ Scores & Job Loss



PHQ 9 – Roles, 2021

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

Boxplot of PHQ Scores & Role



PHQ 9 – Gender, 2021

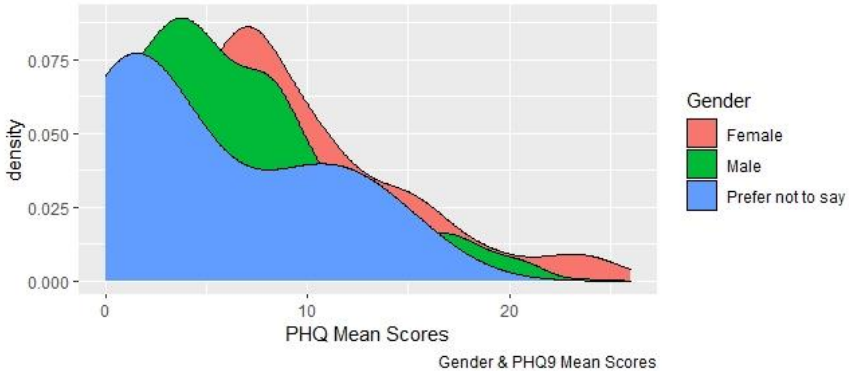
	Min	1 st Qu	Median	Mean	3 rd Qu	IQR	Max.
Score All	0	3.00	6.00	7.25	10.00	7	26.00
Score Males	0.000	3.00	6.00	6.579	9.000		24.00
Score Females	0.000	5.000	8.000	8.833	12.000		26.00

SD: All Aviation Workers	SD: Males	SD: Females
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5.222656

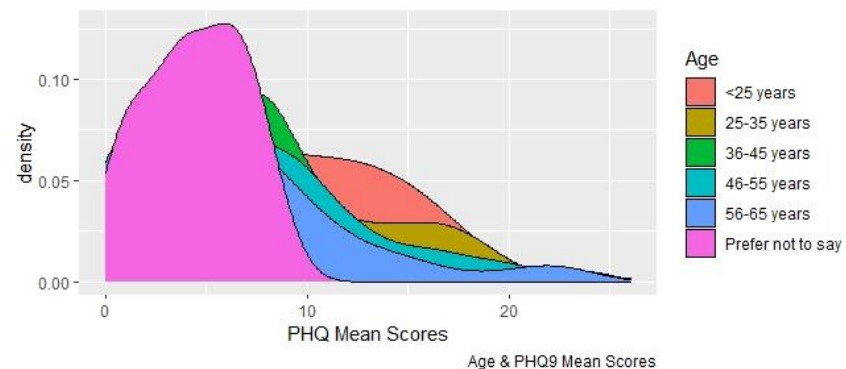
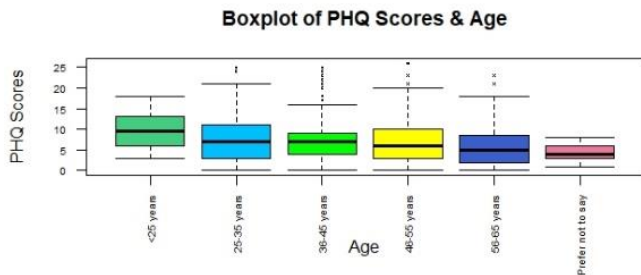
4.936088

5.513173



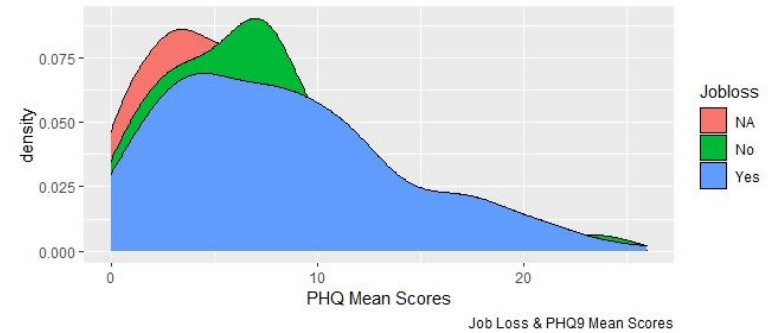
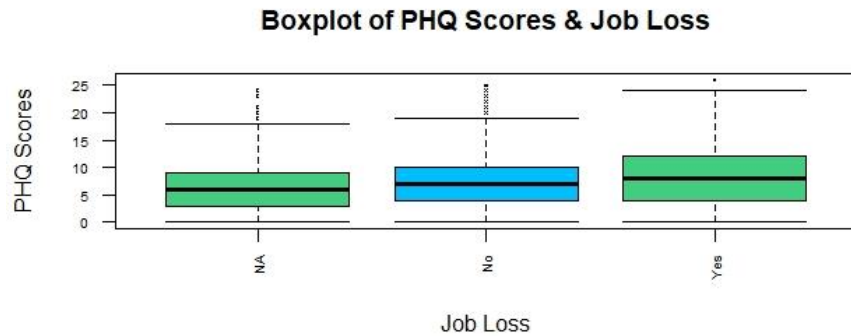
PHQ 9 – Age Range, 2021

	Min	1 st Qu	Median	Mean	3 rd Qu	IQR	Max.
Score All Age Groups	0	3.00	6.00	7.25	10.00	7	26.00
<25 years	3	6	9.5	9.4	13		18
25 to 35 years	0	3	7	7.834	11		25
35 to 45 years	0	4	7	7.298	9		25
46 to 55 years	0	3	6	7.059	10		26
56 to 65 years	0	2	5	6.061	8.5		23
Prefer not to say	1	3	4	4.444	6	8	



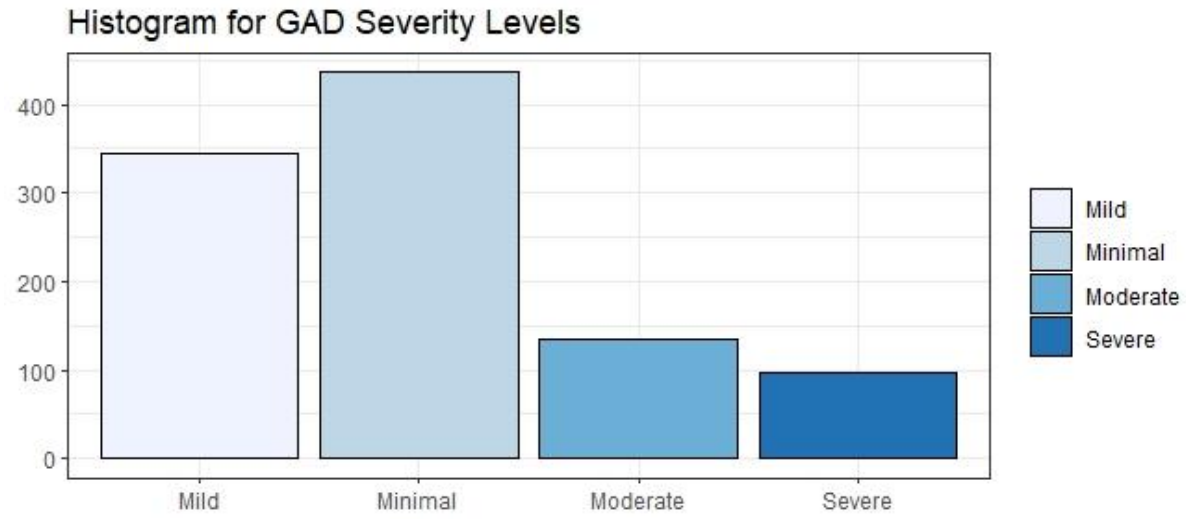
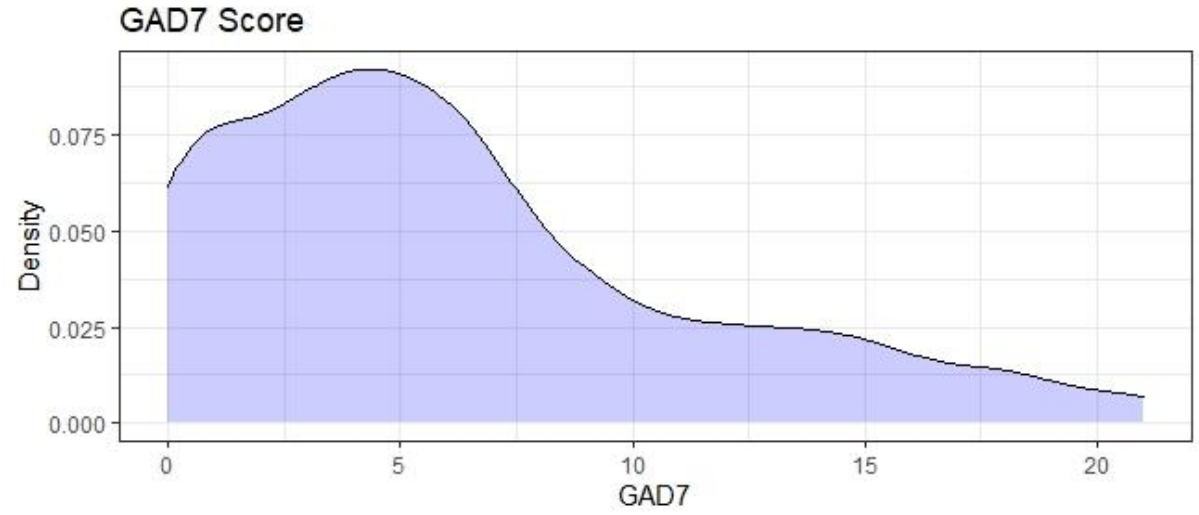
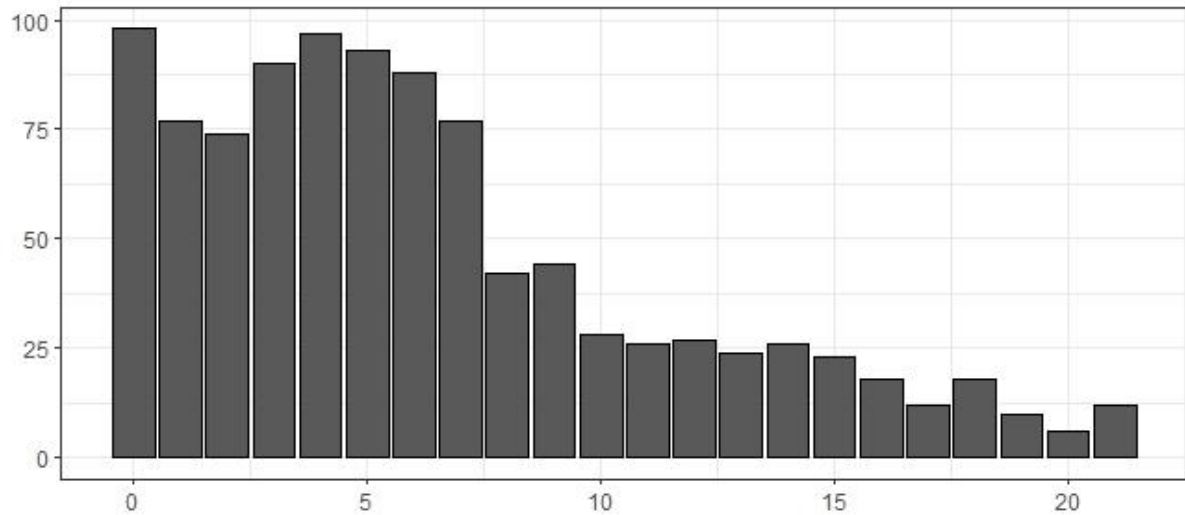
PHQ 9 – Job Loss, 2021

	Min	1 st Qu	Median	Mean	3 rd Qu	Max.
Score 2021 (All)	0	3	6	7.25	10	26
Job Loss - Yes	0	4	8	8.418	12	26
Job Loss - No	0	4	7	7.429	10	25

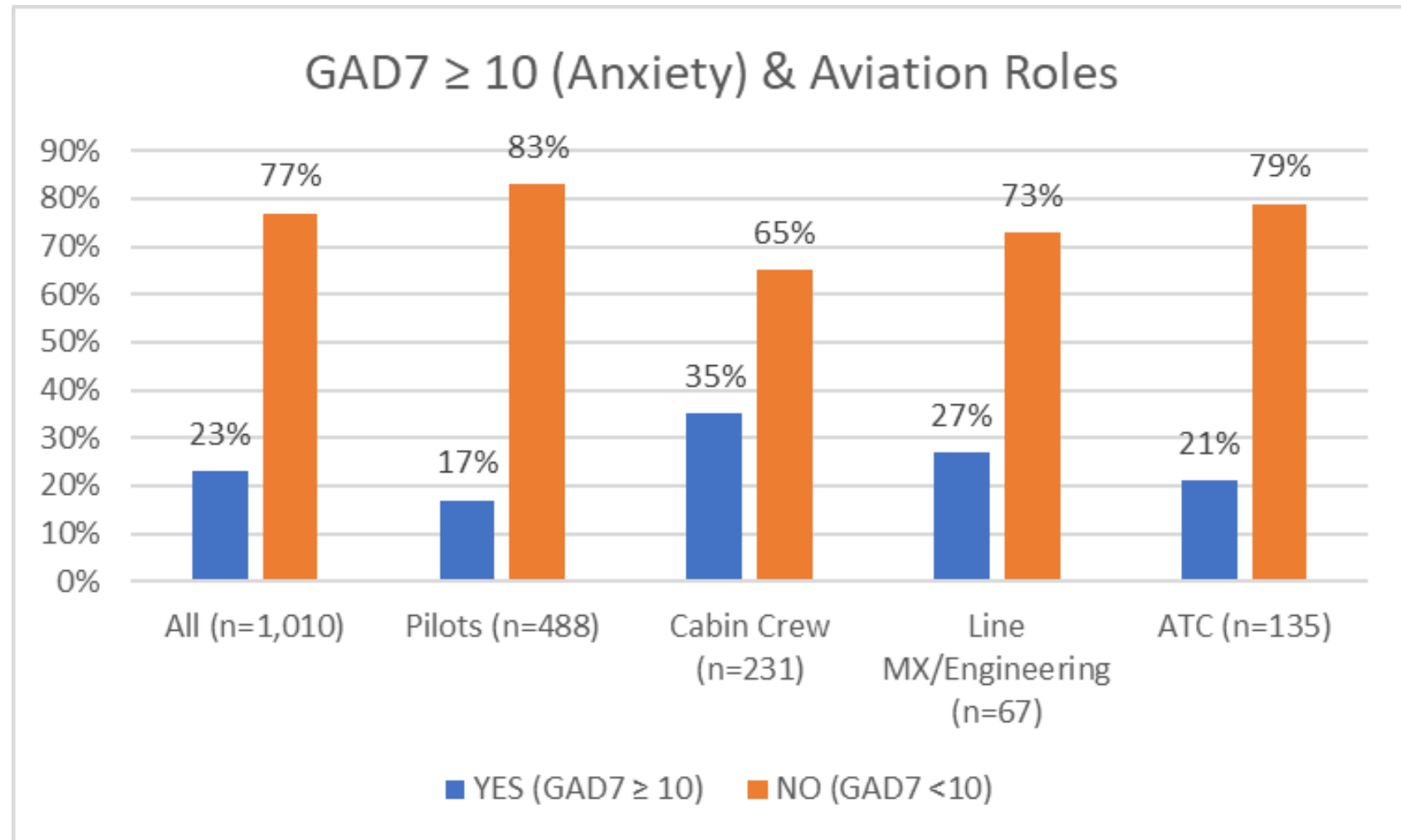


COVID Survey 2 (2021),
Anxiety/GAD 7

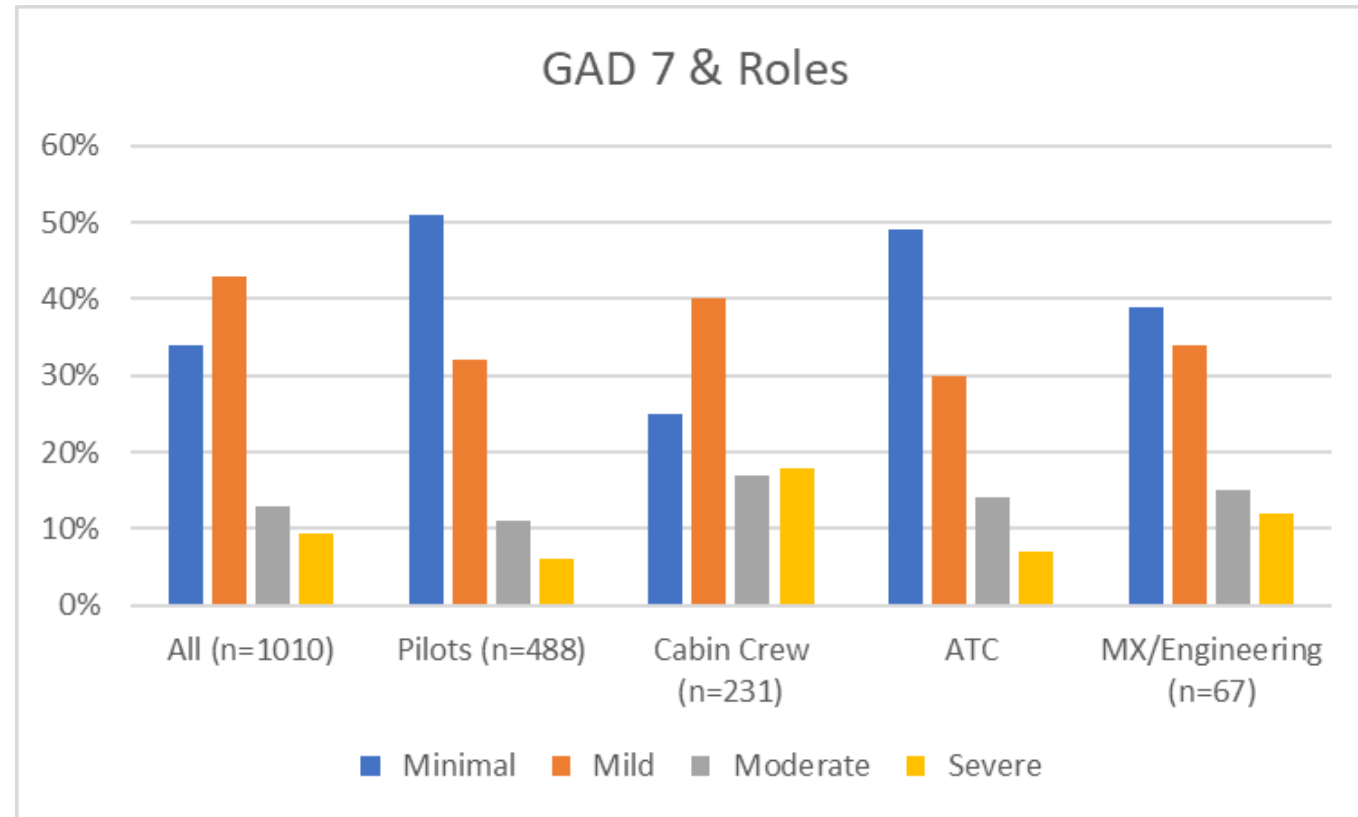
Anxiety/GAD 7, 2021



GAD7 \geq 10 (Anxiety) & Aviation Roles



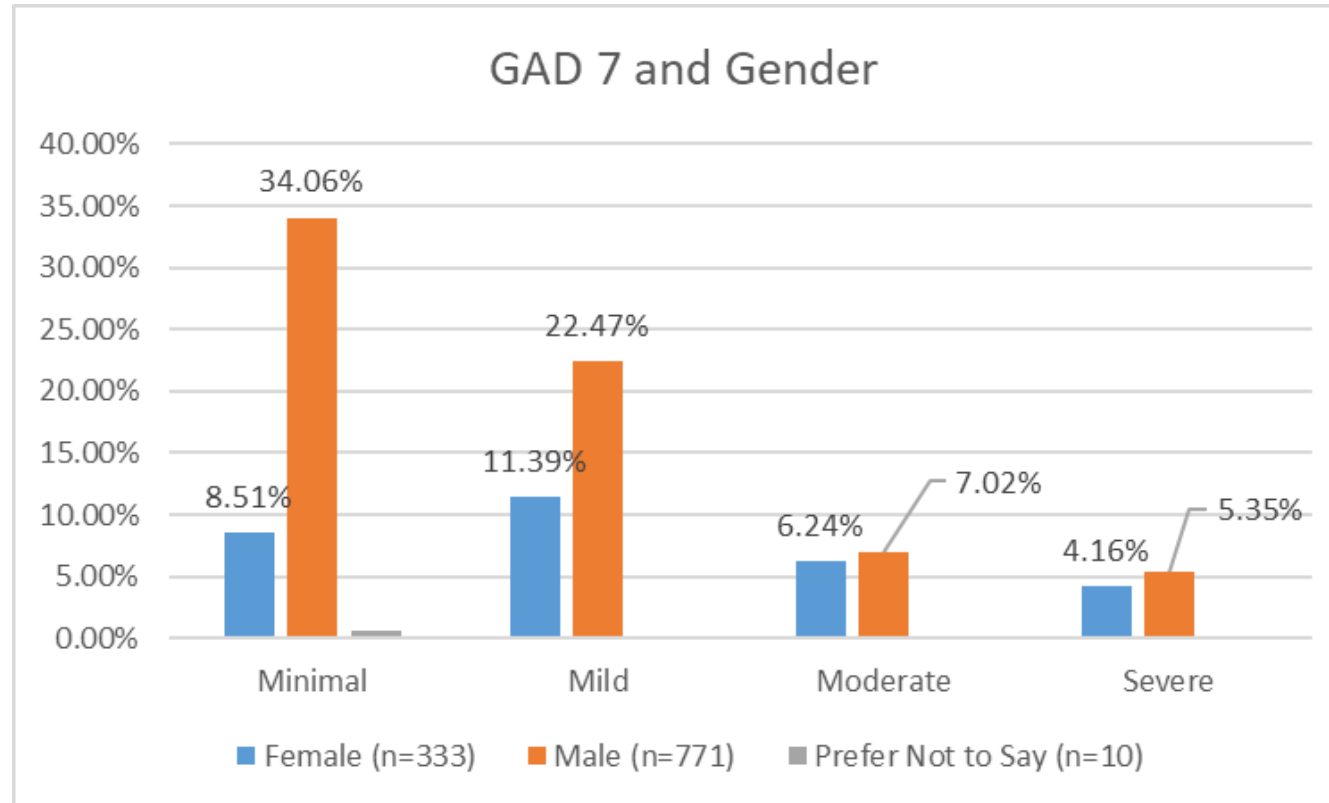
Anxiety Cut-offs & Roles, 2021



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

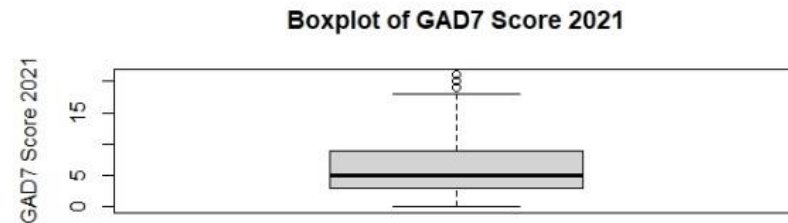
Over twice as much men in sample, yet numbers close for moderate and severe

	Female	Male	Prefer Not to Say
Proportion & N	29.89% (n=333)	69.21% (n=771)	0.90% (n=10)
Minimal	8.51%	34.06%	0.60%
Mild	11.39%	22.47%	0.20%
Moderate	6.24%	7.02%	0%
Severe	4.16%	5.35%	0%

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).

Anxiety/GAD 7, 2021

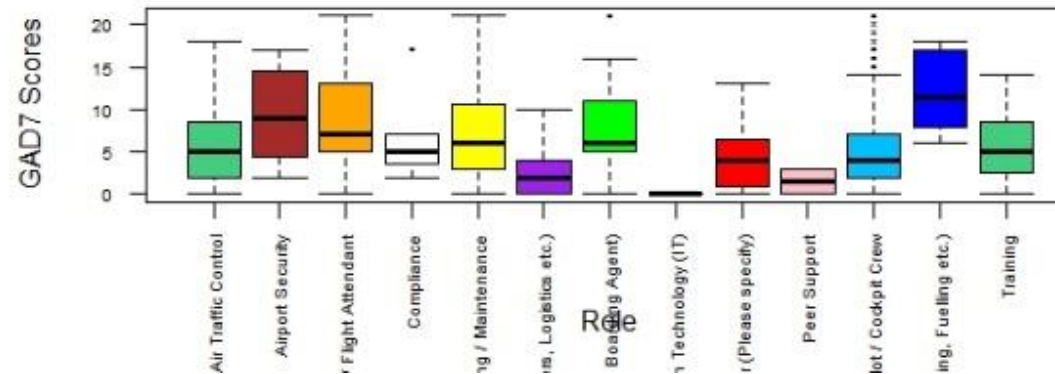
	Min	1 st Qu	Median	Mean	3 rd Qu	IQR	Max.
Score	0	3	5	6.372	9	6	21
Interpretation	Minimal	Minimal	Mild	Mild	Mild	Mild	Severe



Anxiety/GAD 7 Mean Score & Roles

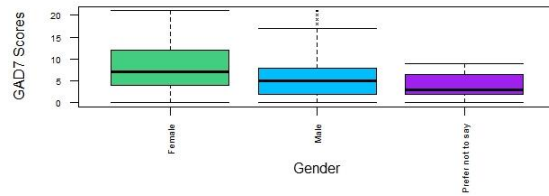
	Min	1 st Qu	Median	Mean	3 rd Qu	Max.
Score 2021 (All)	0	3	5	6.372	9	6
Pilots	0	2	4	5	7	21
Cabin Crew	0	5	7	8.667	13	21
Maintenance/Engineering	0	3	6	6.881	10.5	21
ATC	0	2	5	5.585	8.500	18

Boxplot of GAD7 Scores & Role

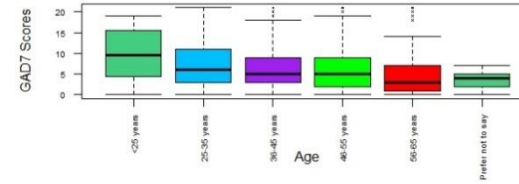


Anxiety/GAD 7, 2021

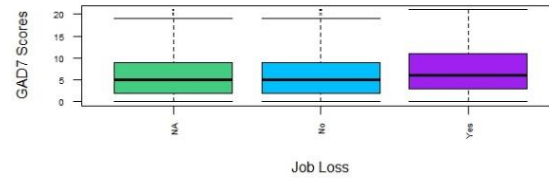
Boxplot of GAD7 Scores & Gender



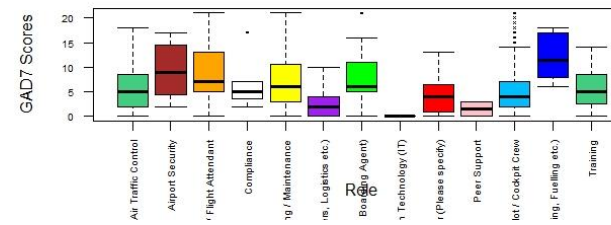
Boxplot of GAD7 Scores & Age



Boxplot of GAD7 Scores & Job Loss

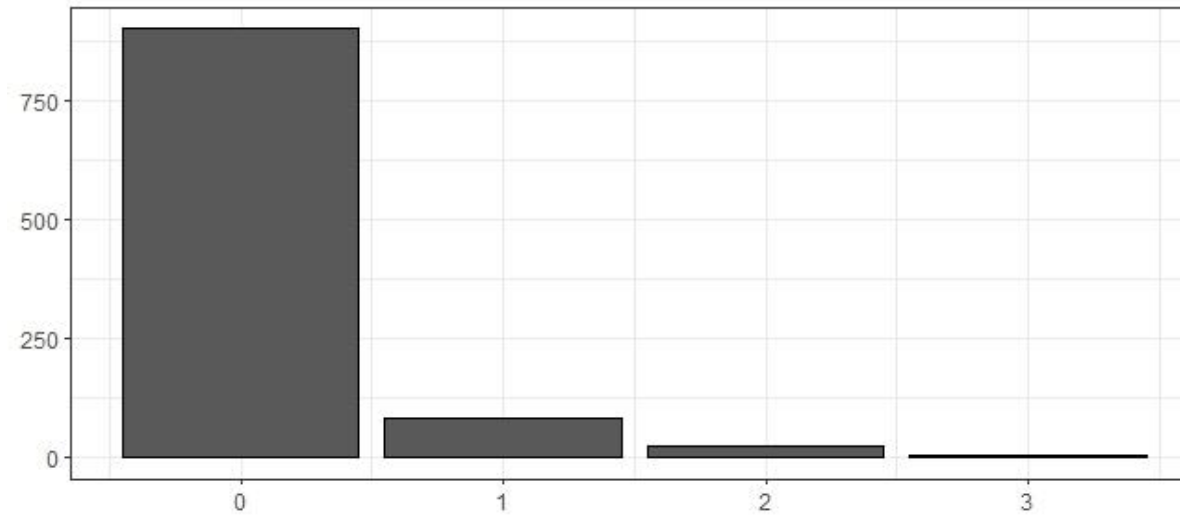


Boxplot of GAD7 Scores & Role

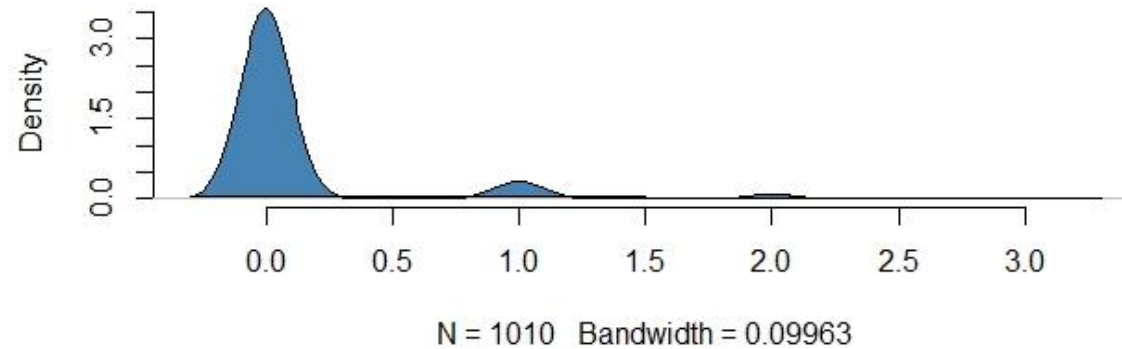


COVID Survey 2 (2021), Suicidal Ideation

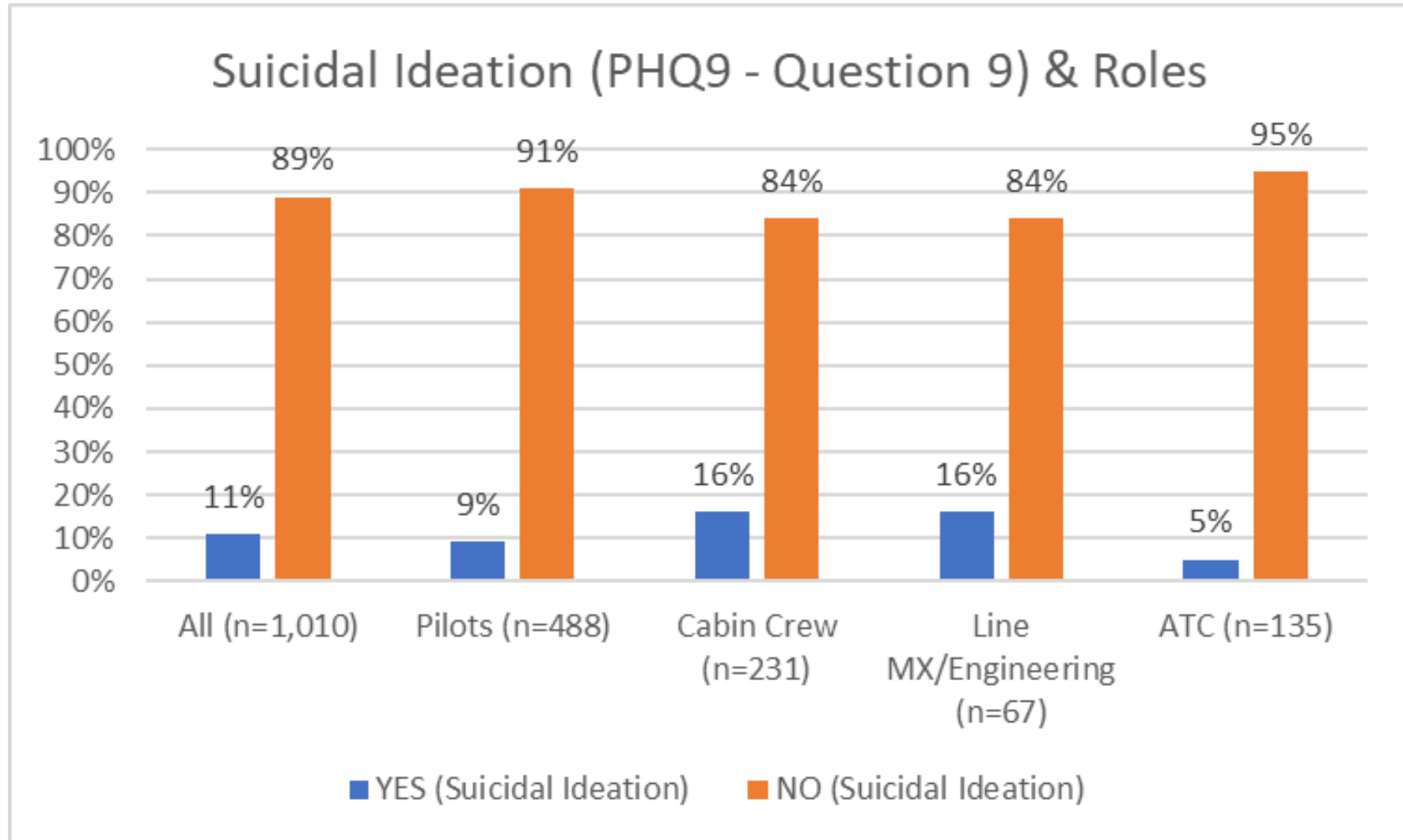
Suicidal Ideation, 2021



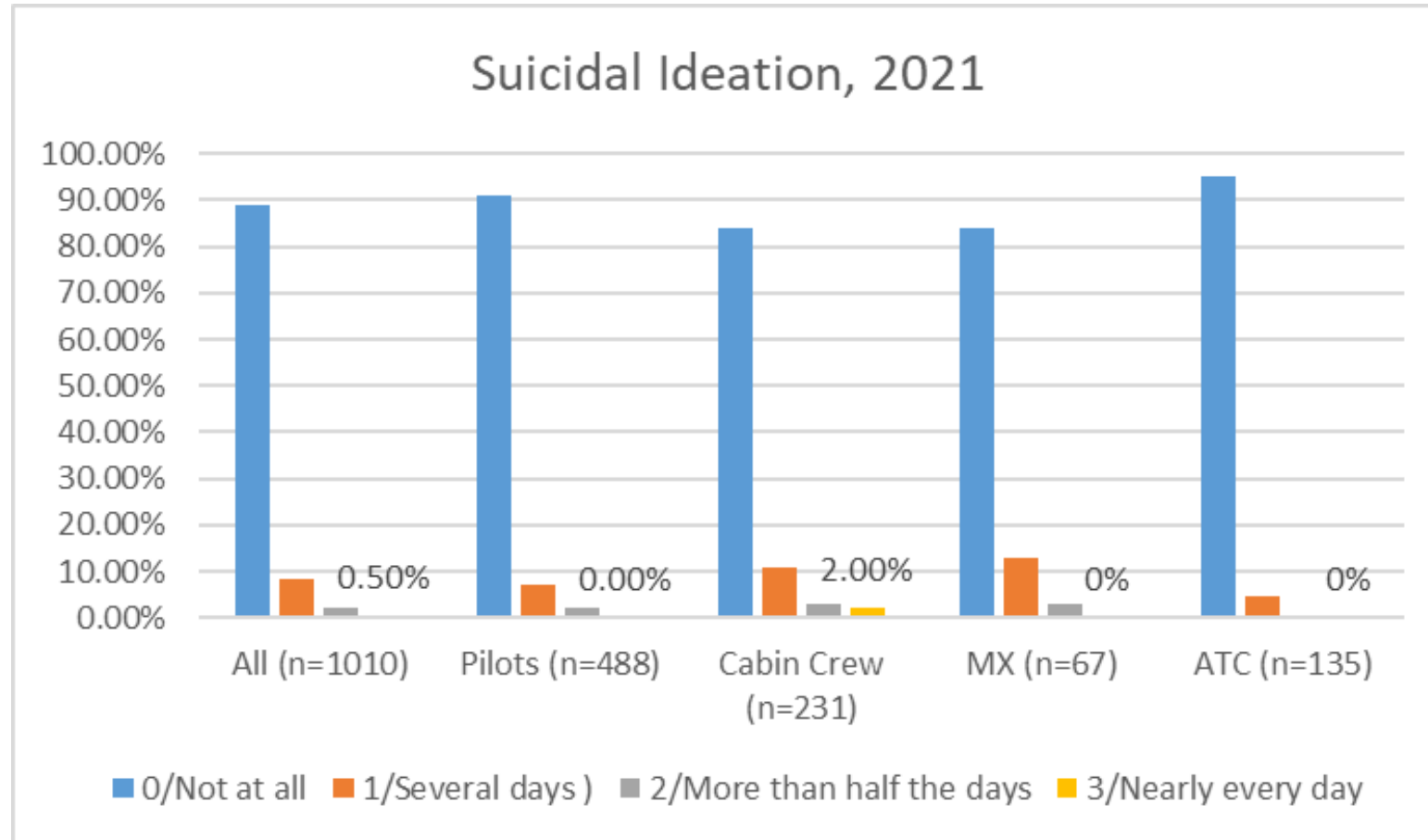
Density plot of Suicidal Ideation



Suicidal Ideation & Roles



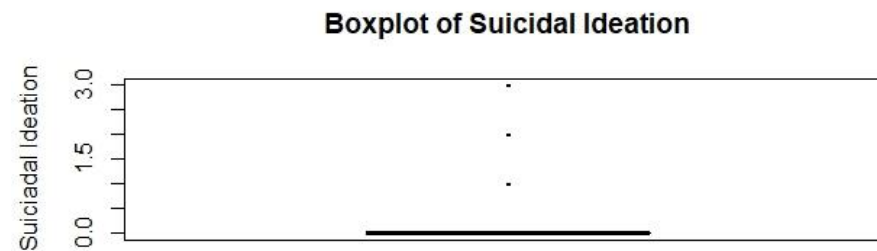
Suicidal Ideation & Roles, 2021



% shown for 3/nearly every day

Suicidal Ideation, 2021

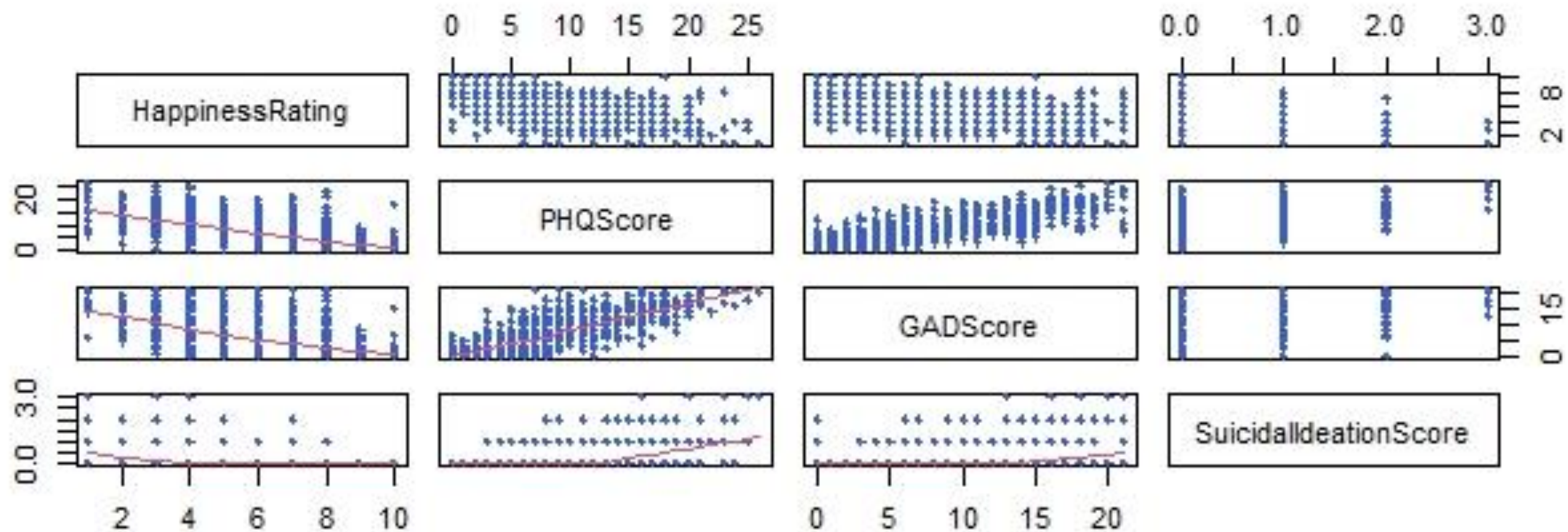
	Min	1 st Qu	Median	Mean	3 rd Qu	IQR	Max.
Score	0.0000	0.0000	0.0000	0.1416	0.0000	0	3.0000



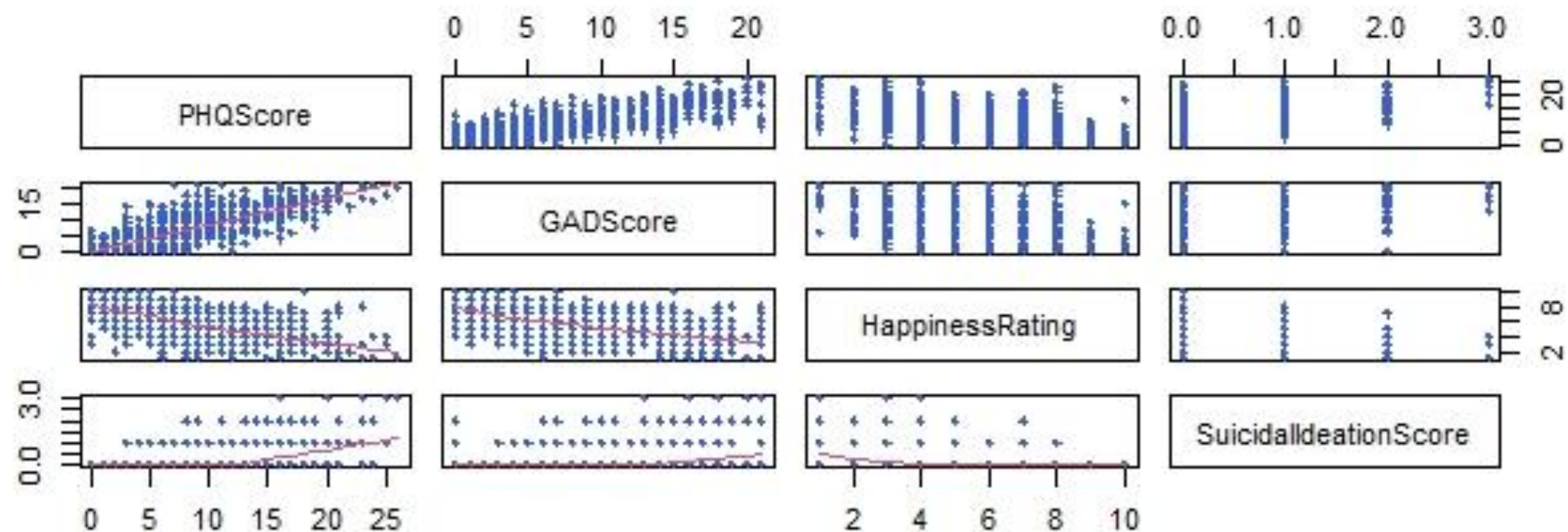
11% have suicidal thoughts (TCD, COVID Survey 2021), Harvard Study 4.1% (2016)

COVID Survey 2 (2021)
Scatterplot Matrices:
4 Measures of Wellbeing

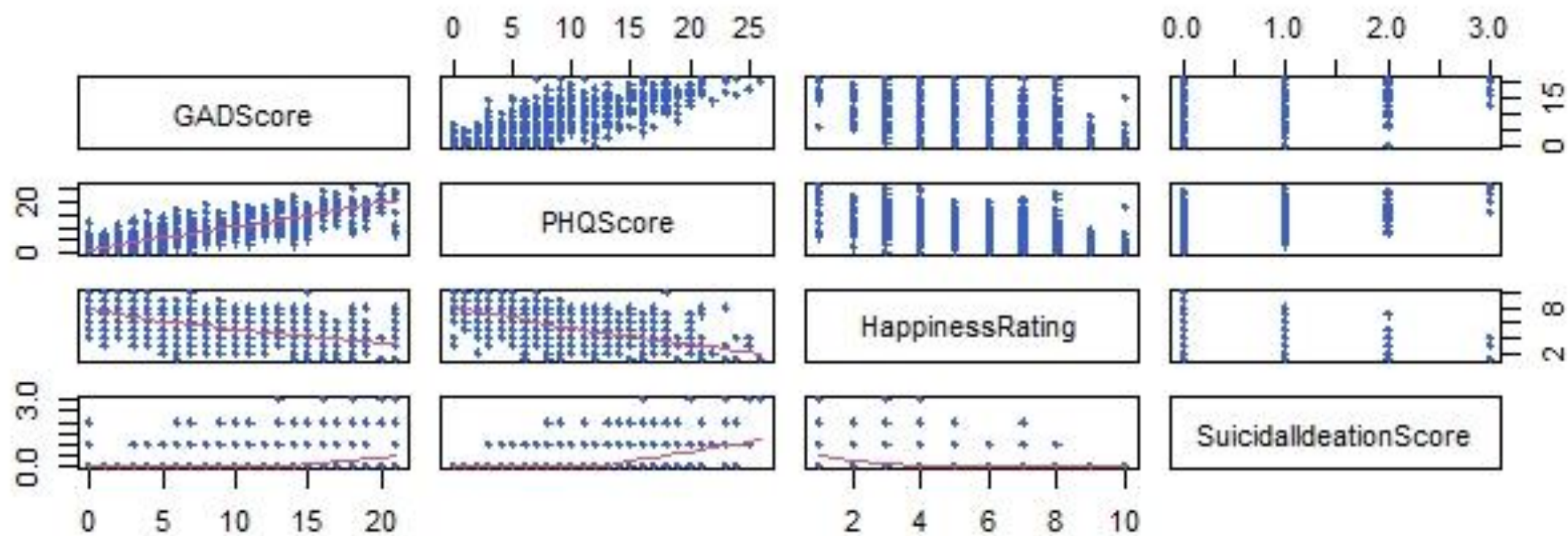
Scatterplot Matrix of Happiness & Life Satisfaction



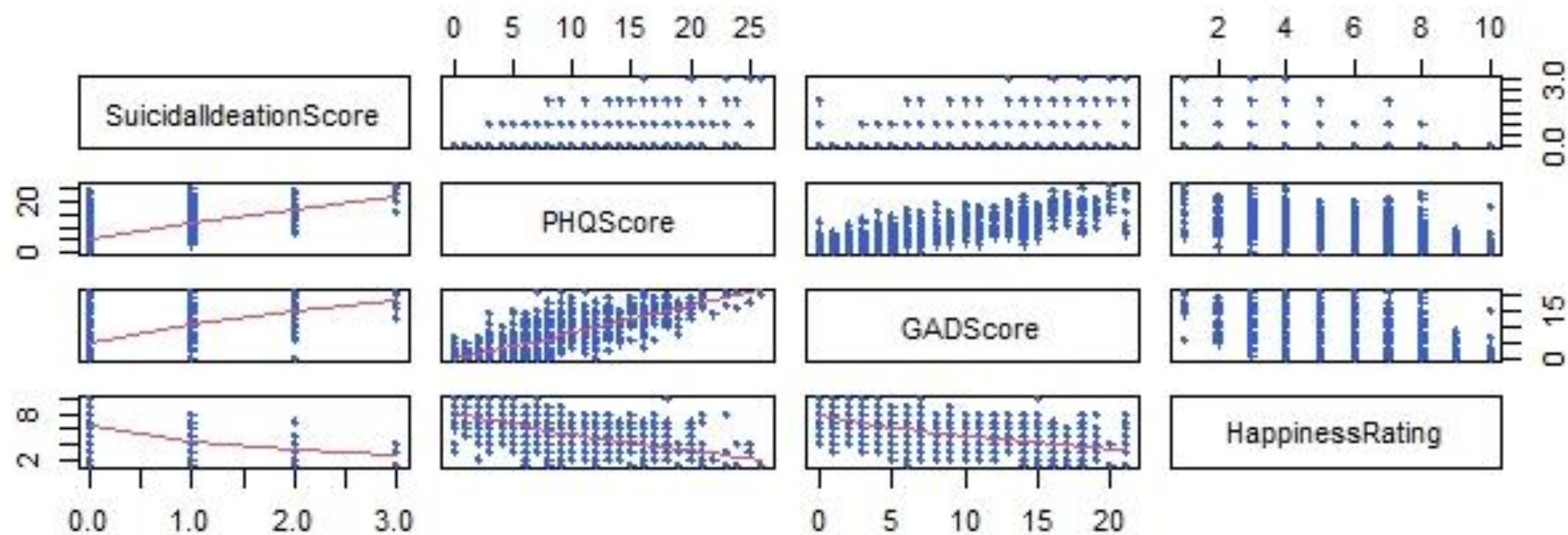
Scatterplot Matrix of PHQ & Variables



Scatterplot Matrix of GAD & Variables

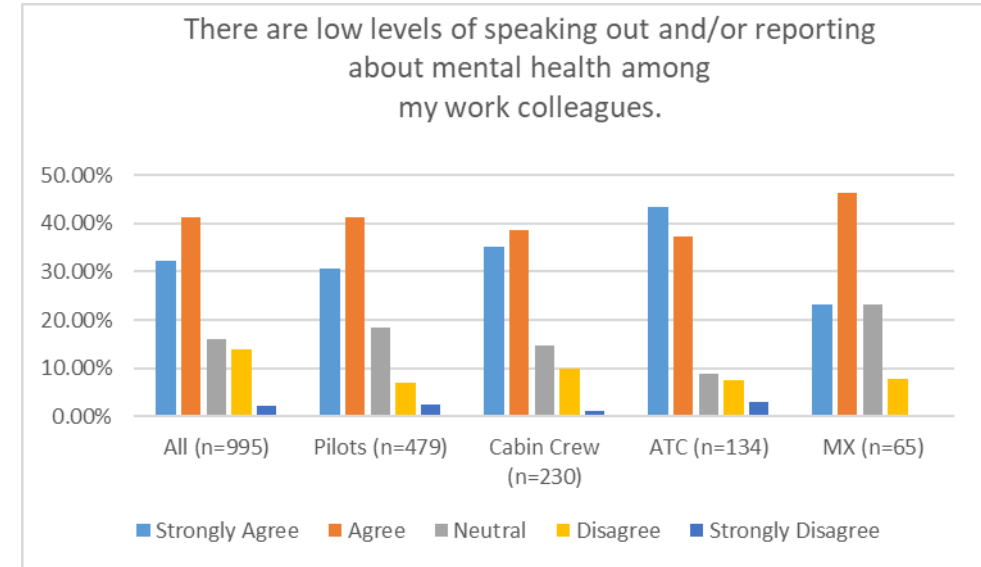
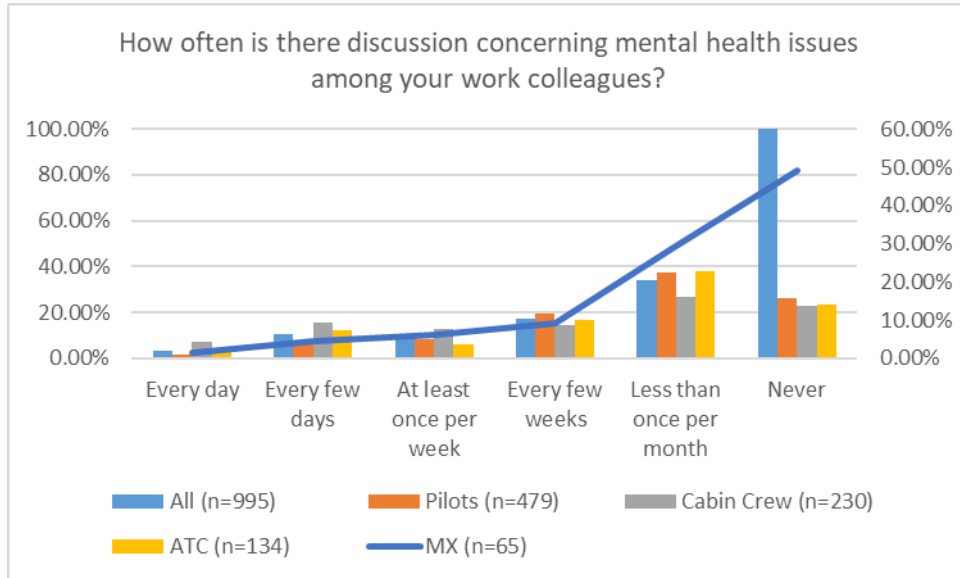


Scatterplot Matrix of Suicidal Ideation

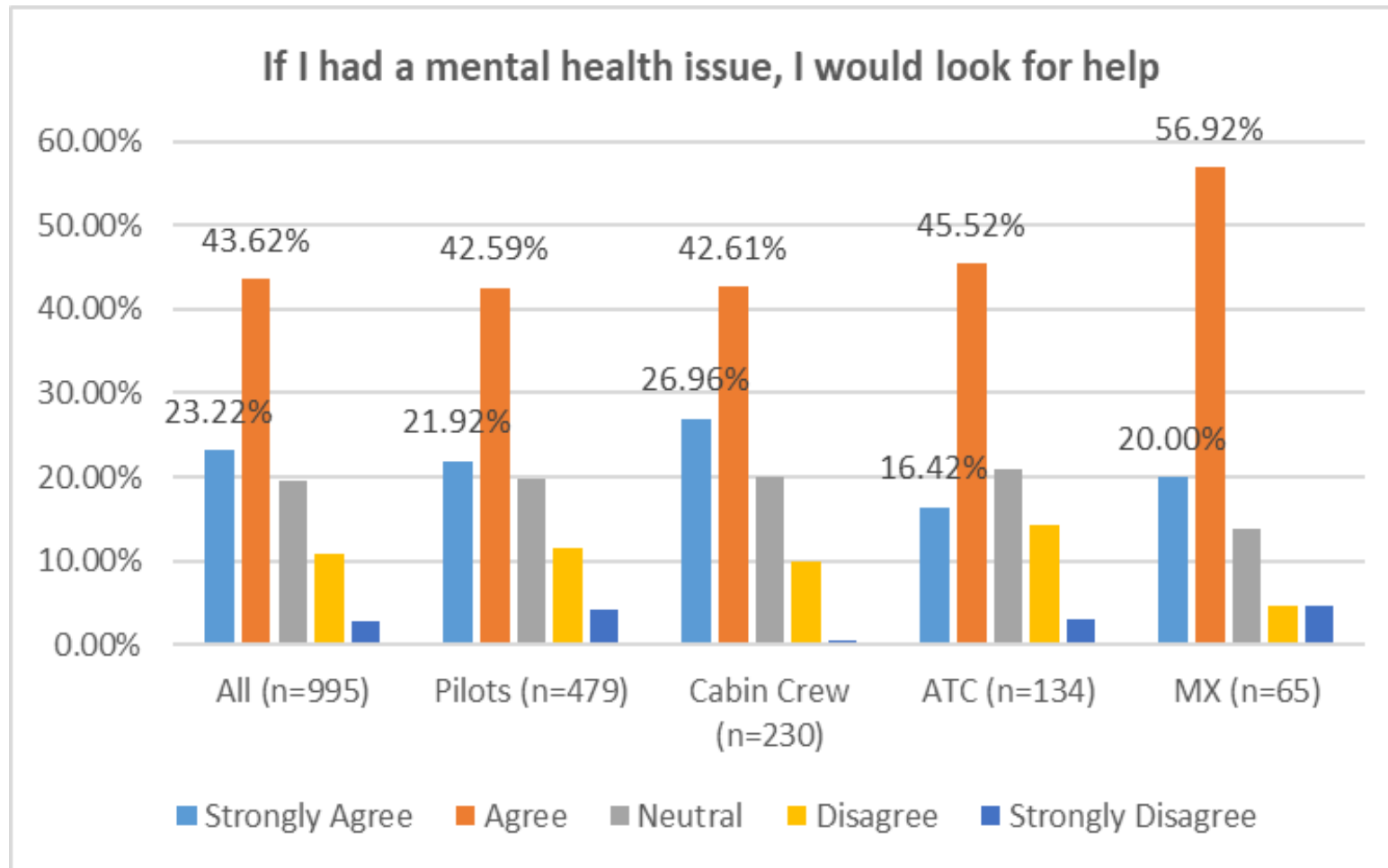


COVID Survey 2 (2021)
Disclosure & Attitudes to MH

Disclosure & Attitudes to MH

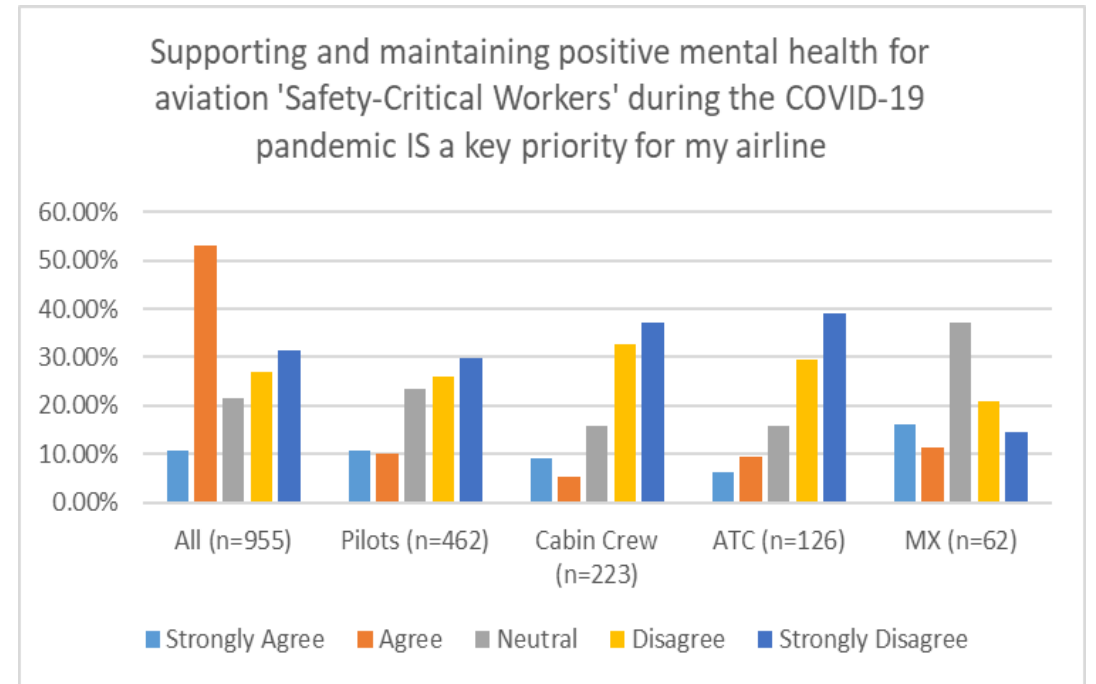
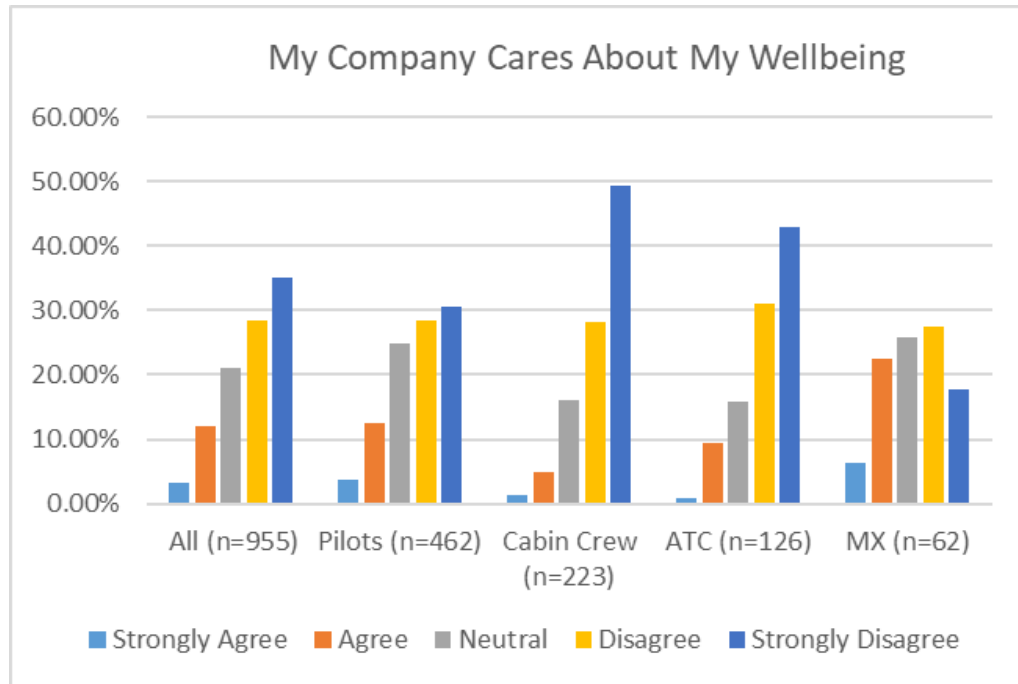


Disclosure & Attitudes to MH



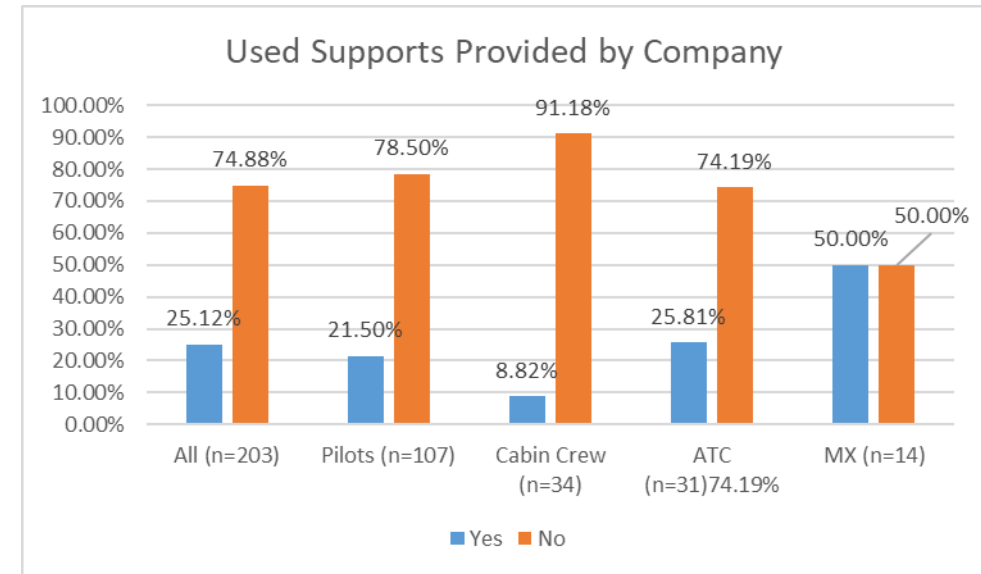
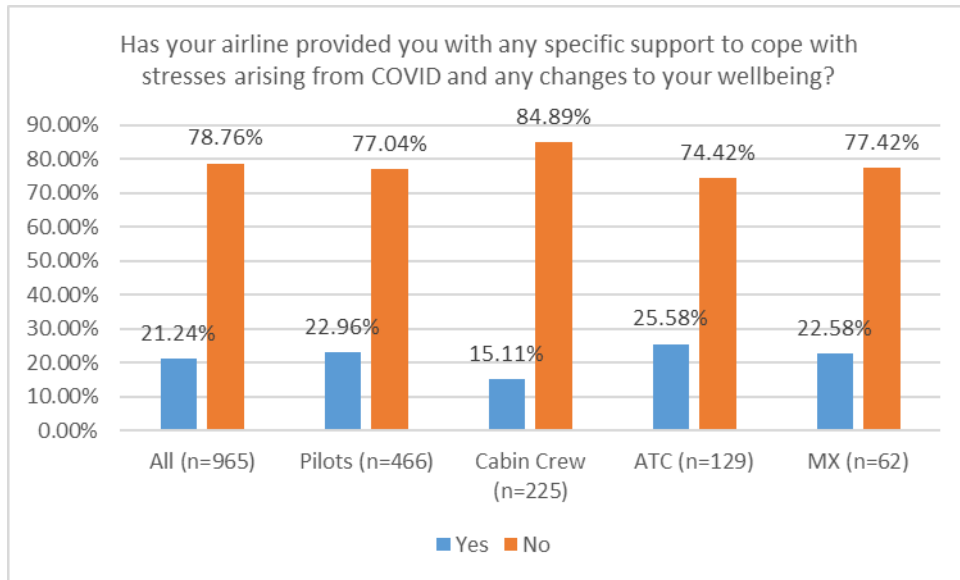
COVID Survey 2 (2021)
Org Culture & Priorities

Org Culture & Priorities



COVID Survey 2 (2021)
Org Wellness Culture &
Supports Provided

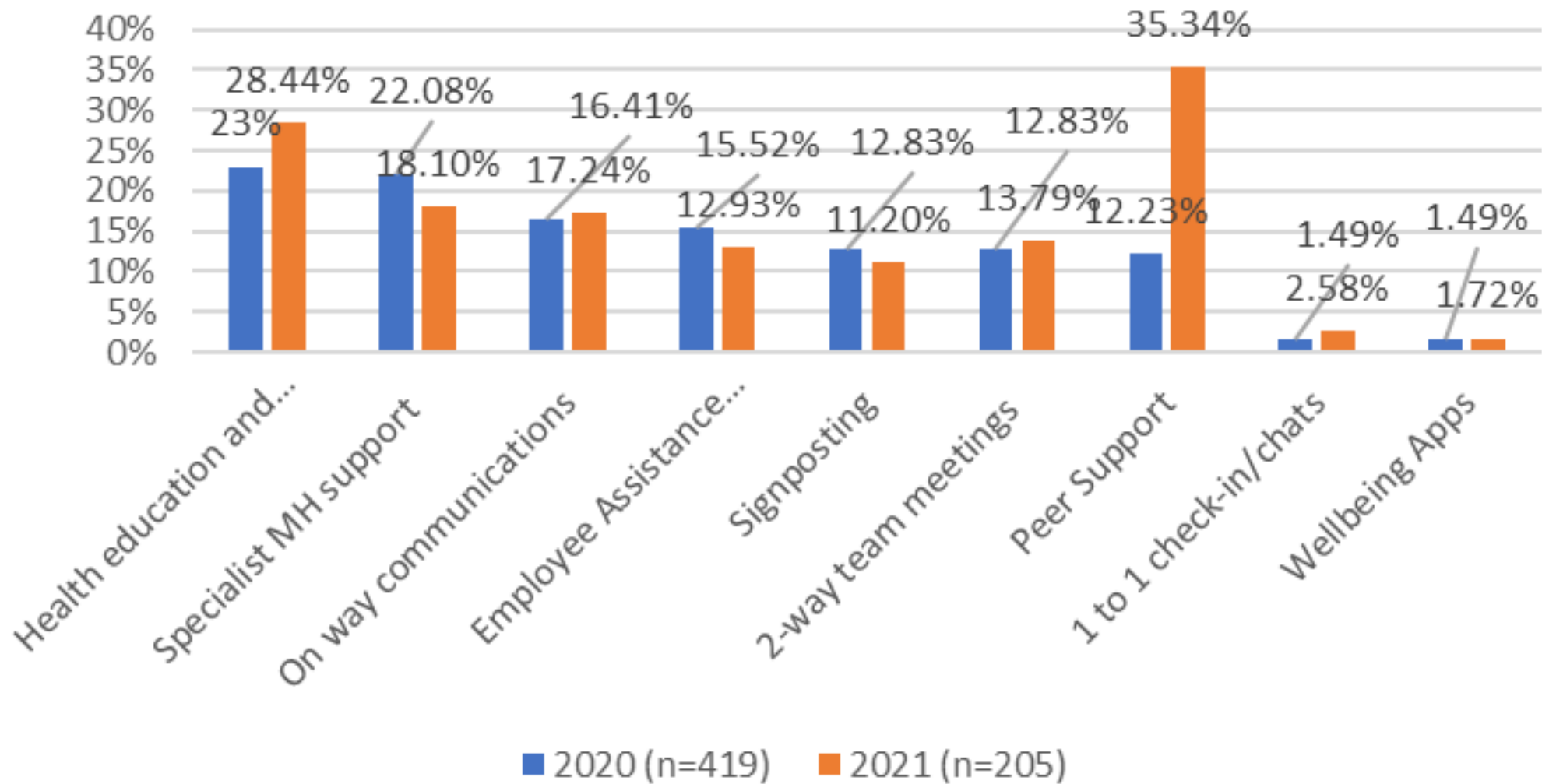
Org Wellness Culture & Supports Provided



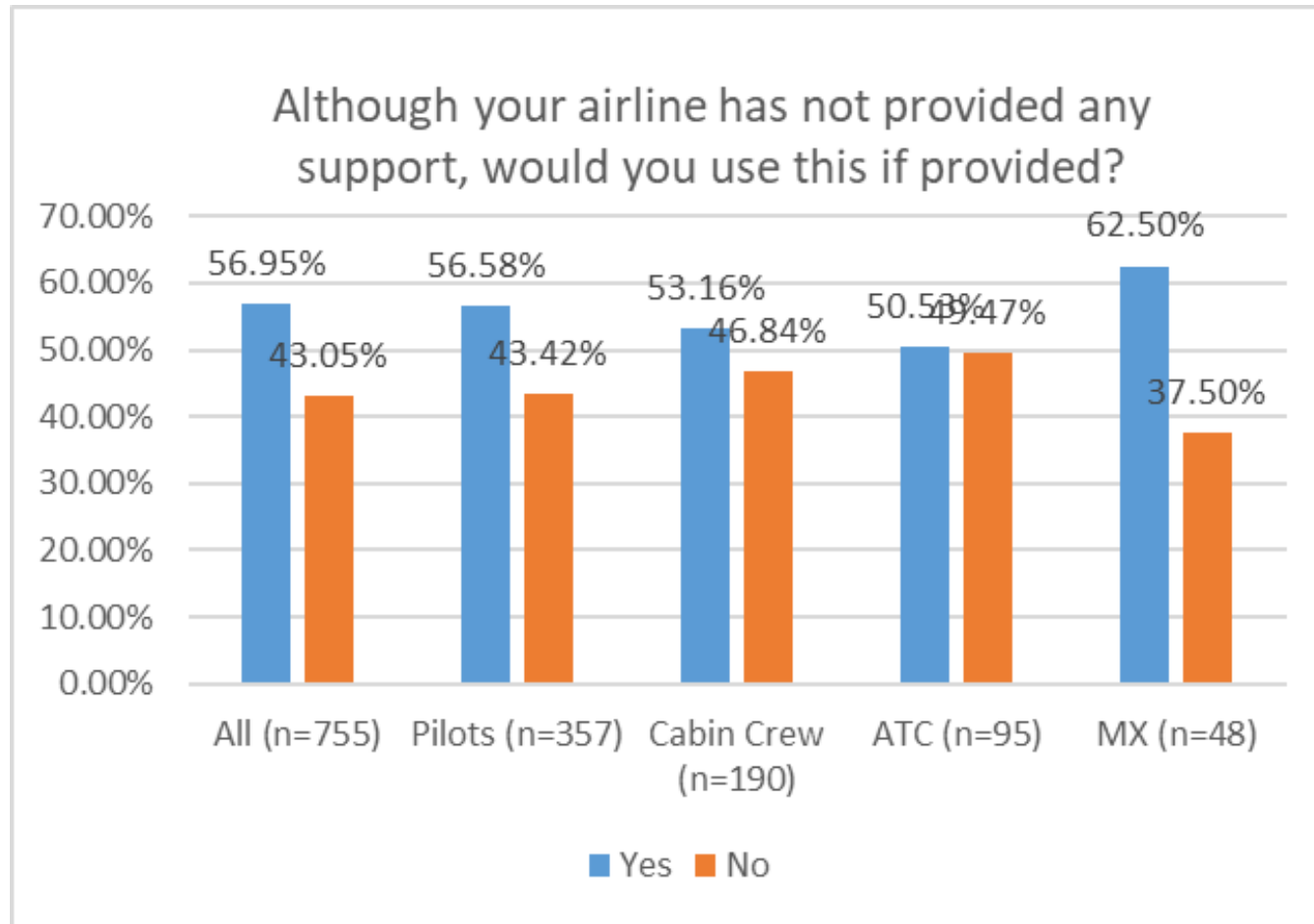
Org Wellness Culture & Supports Provided

Frequency Ranking	2021	Type	Category
1	35.34% (n= 41)	Peer Support	Tertiary
2	28.44 (n=33)	Health education and training	Secondary
3	18.10% (n=21)	Specialist MH support	Tertiary
4	17.24% (n=20)	One-way emails/communications promoting wellbeing	Secondary
5	13.79% (n=16)	2-way team meetings to communicate updates and provide feedback/support	Secondary
6	12.93%(n=15)	Employee Assistance Program (internal/external)	Tertiary
7	11.2% (n=13)	Signposting (internal/external)	Secondary
8	2.58% (n=3)	1 to 1 check-in/chats	Secondary
9	1.72, (n=2)	Wellbeing Apps	Primary
10	1.72, (n=2)	Exercise Class	Primary

Organisational Wellbeing Supports

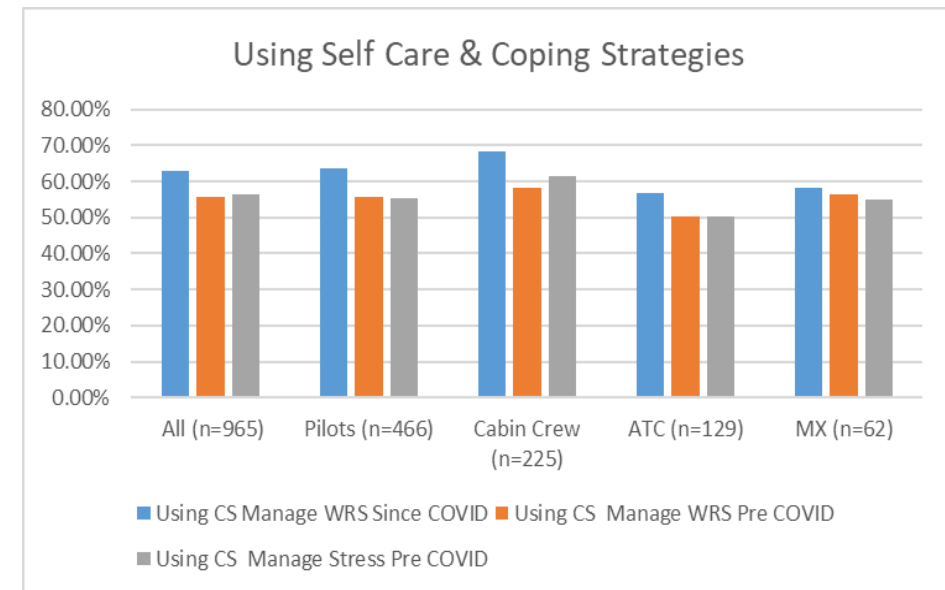
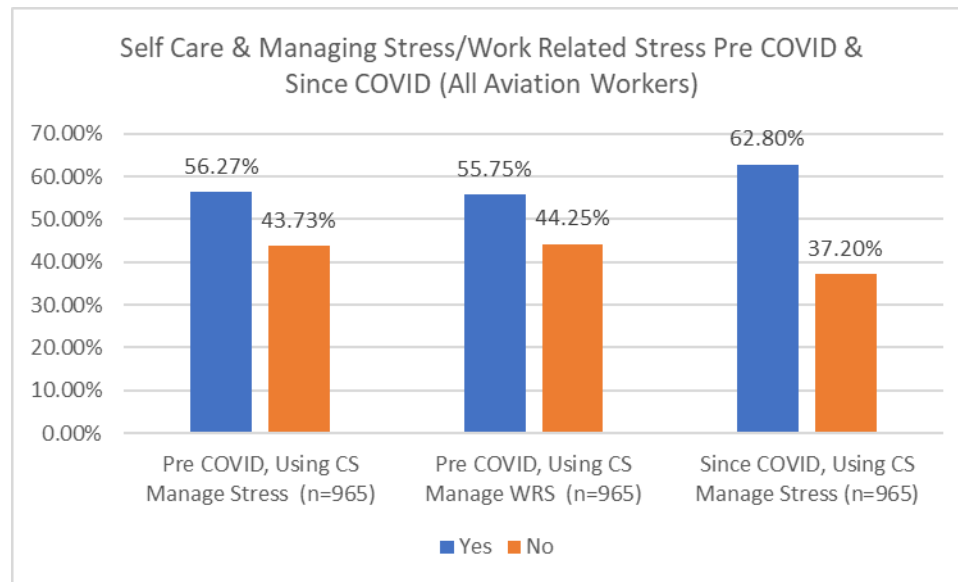


Org Wellness Culture & Supports Provided

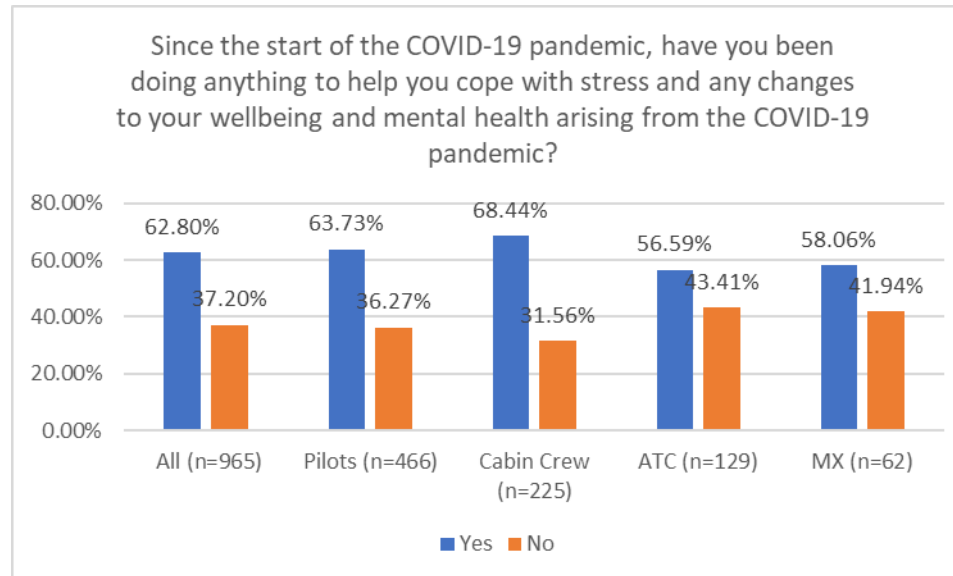
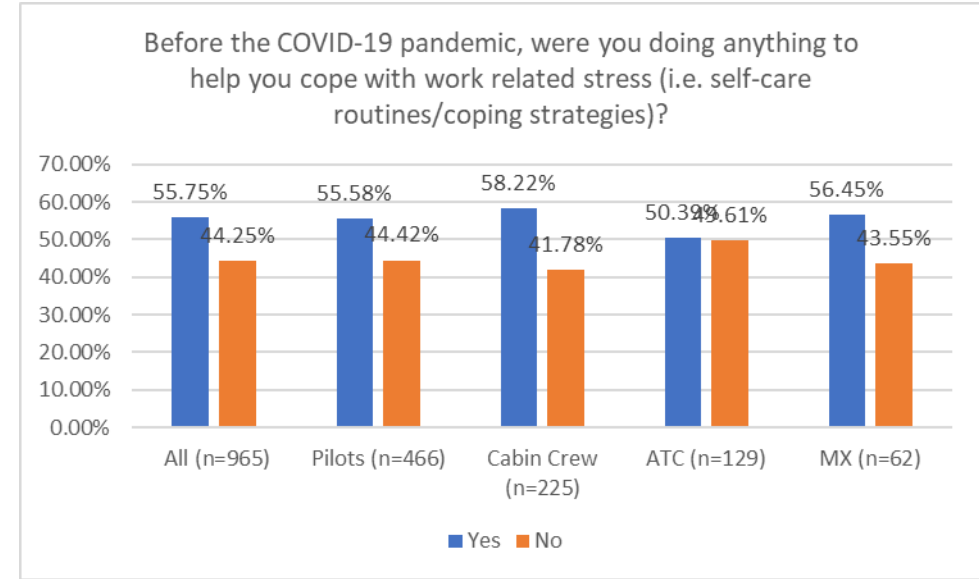
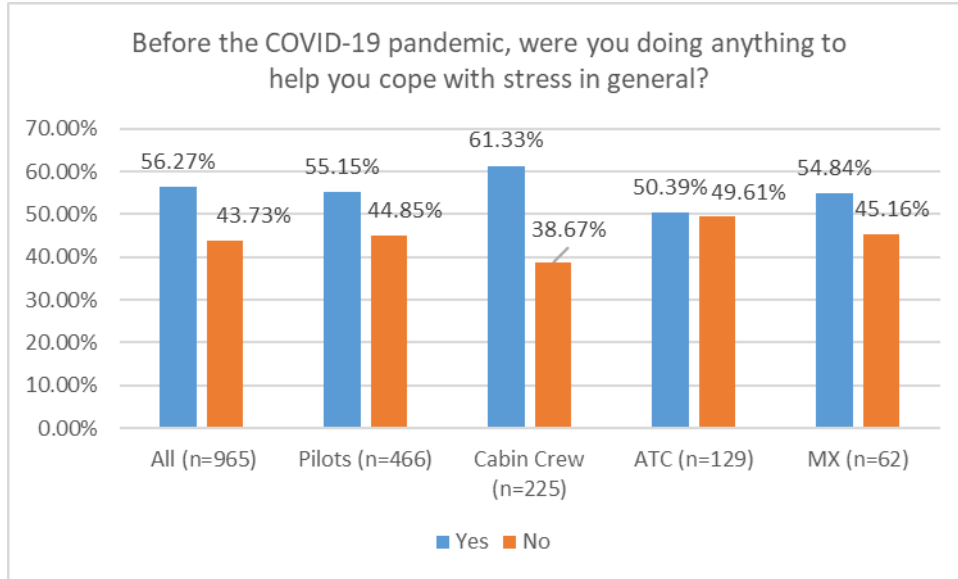


COVID Survey 2 (2021)
Self Care & Coping

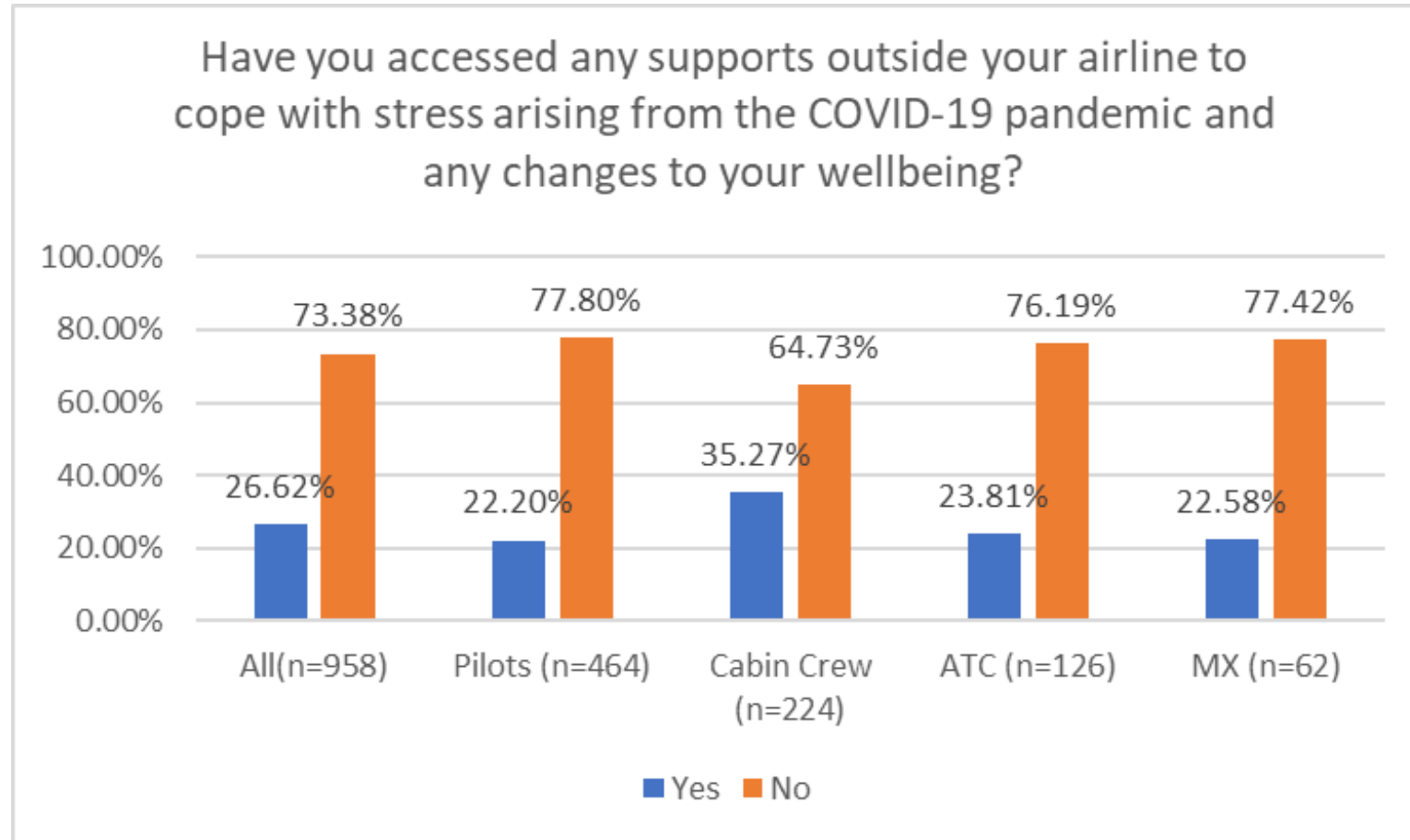
Self Care & Coping



Self Care & Coping

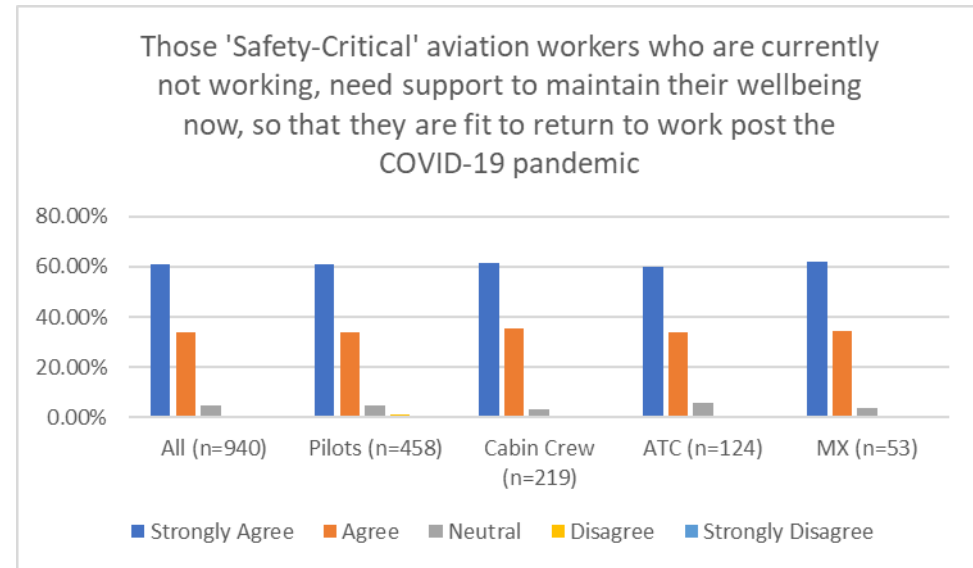
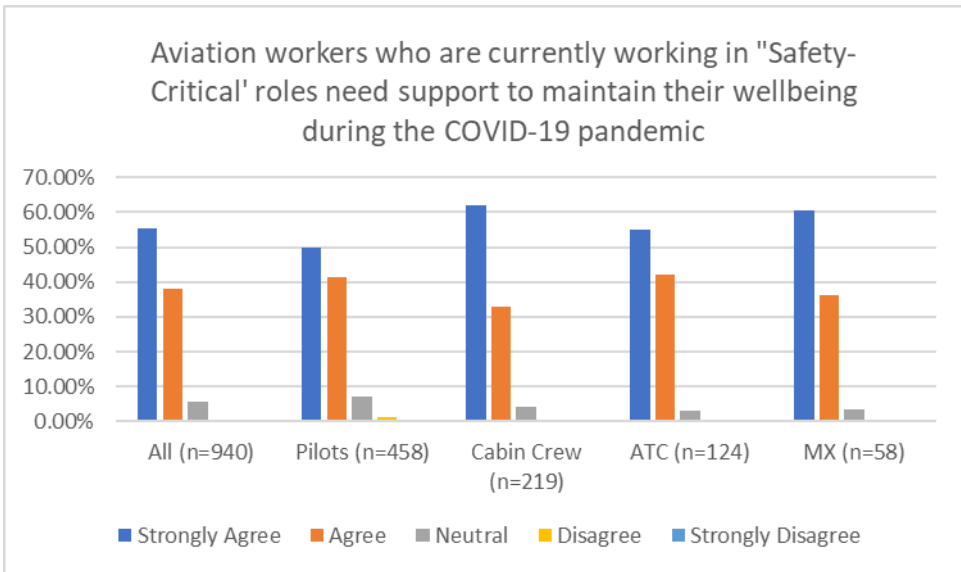


Self Care & Coping



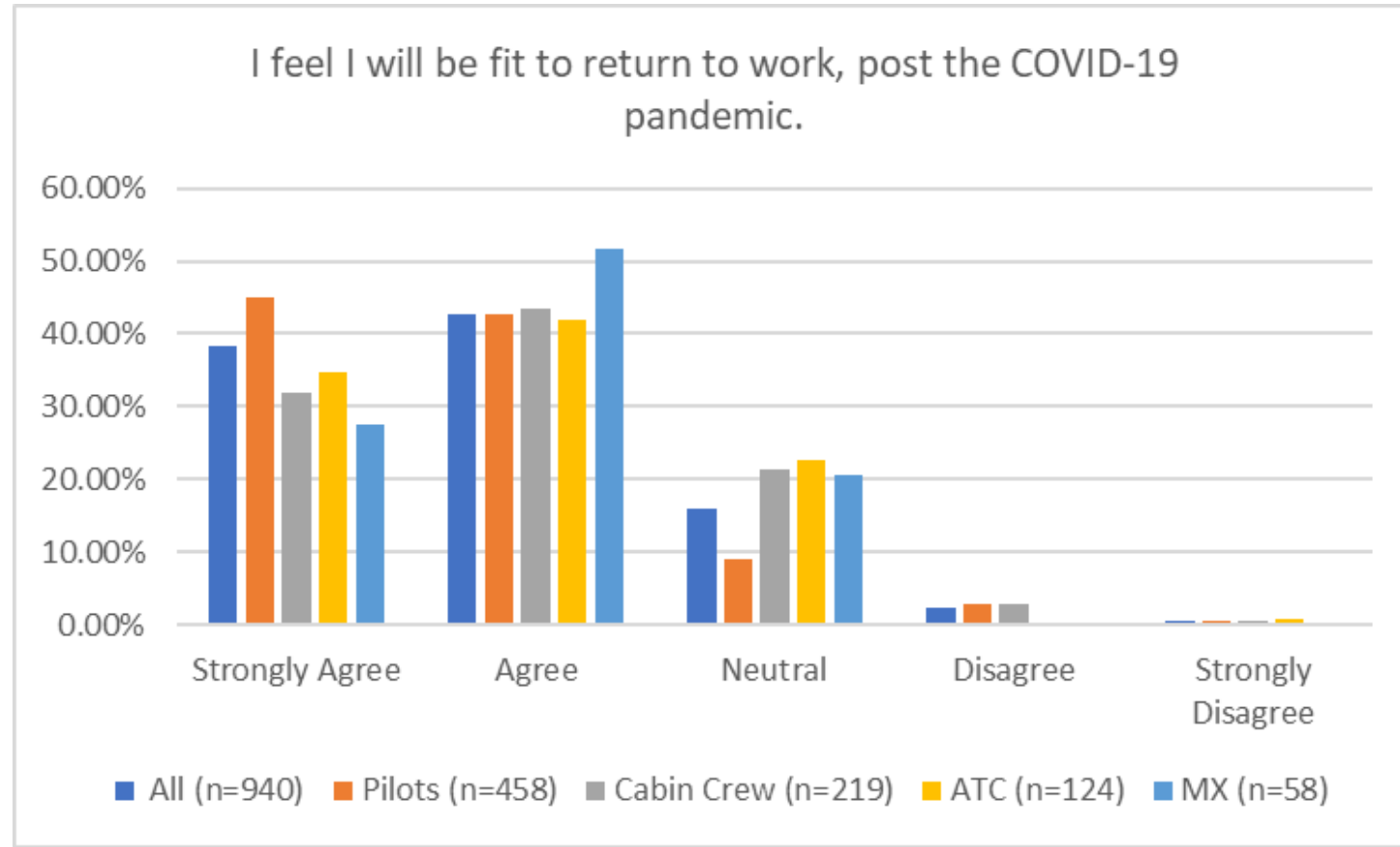
COVID Survey 2 (2021) Need for Supports

Need for Supports



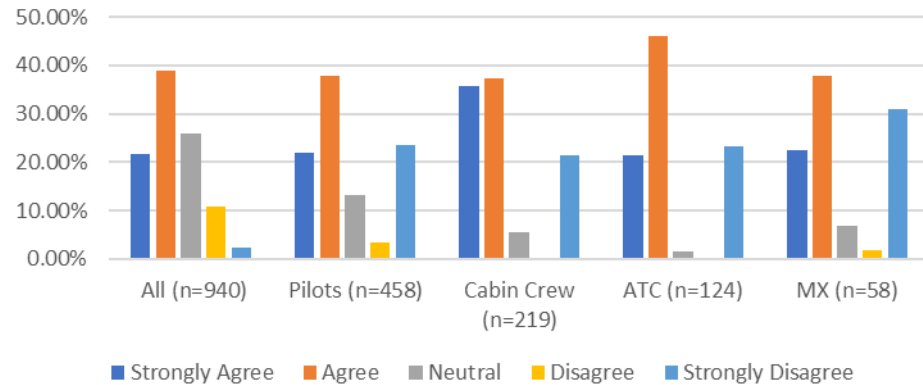
COVID Survey 2 (2021)
Fitness for Work & Assessment

Fitness for Work & Assessment

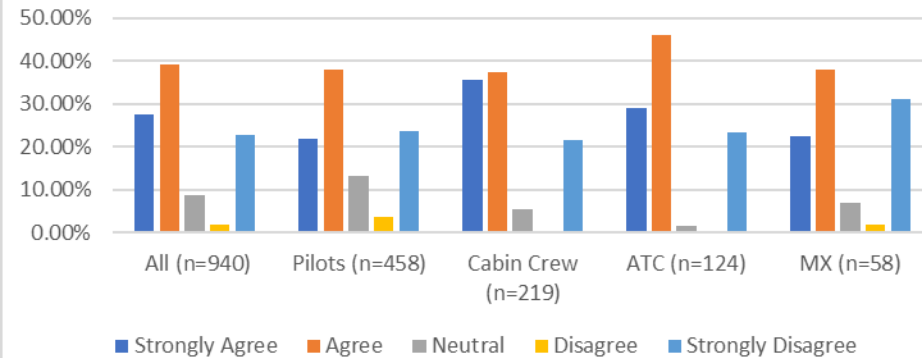


Fitness for Work & Assessment

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

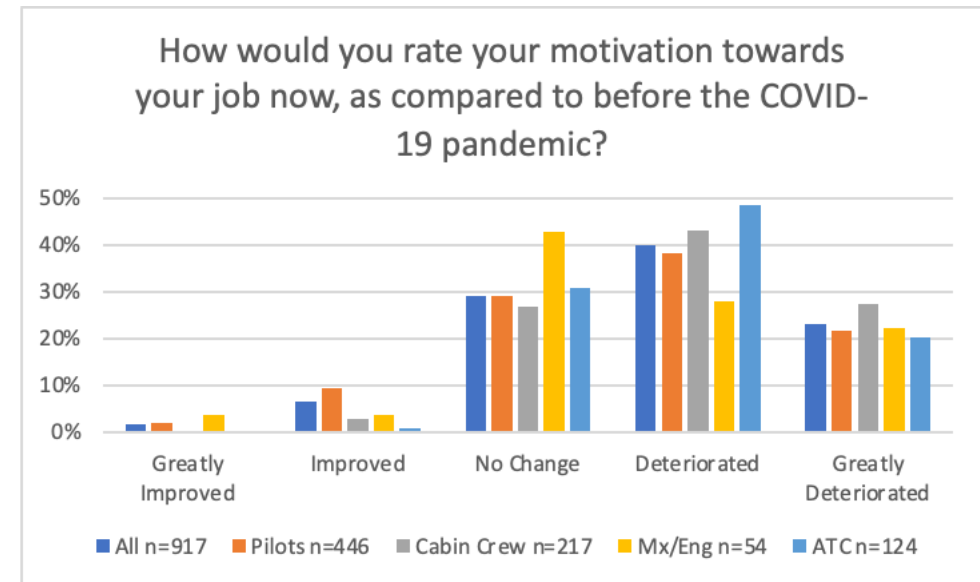
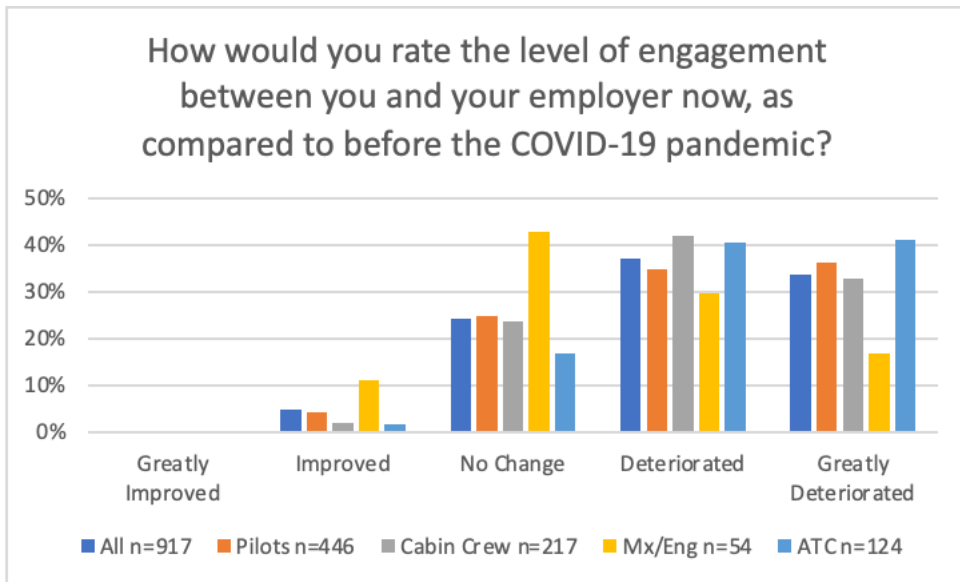
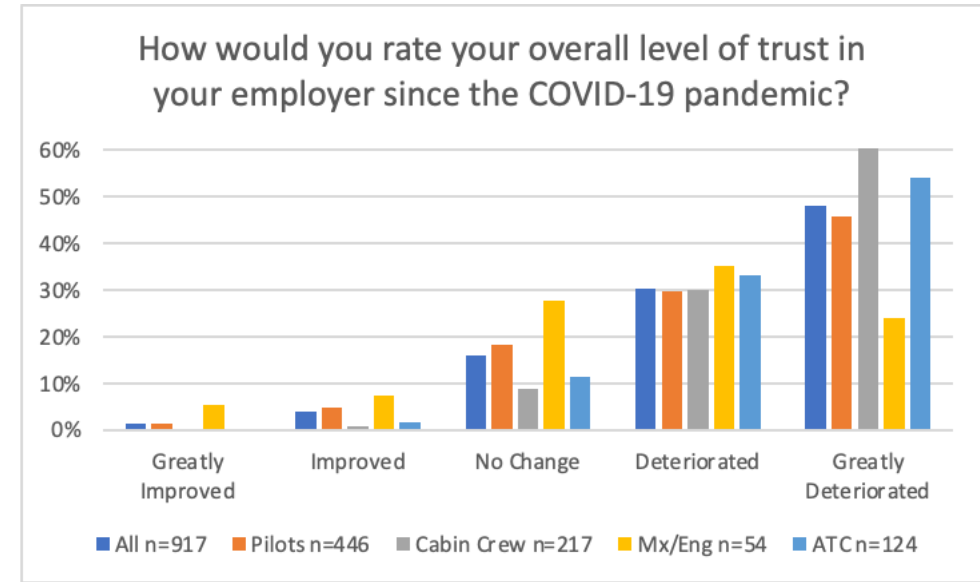


Those aviation 'Safety-Critical' workers who are currently not working, will need some form of 'Fitness for Duty' evaluation before they return to work after the COVID-19 pandemic.

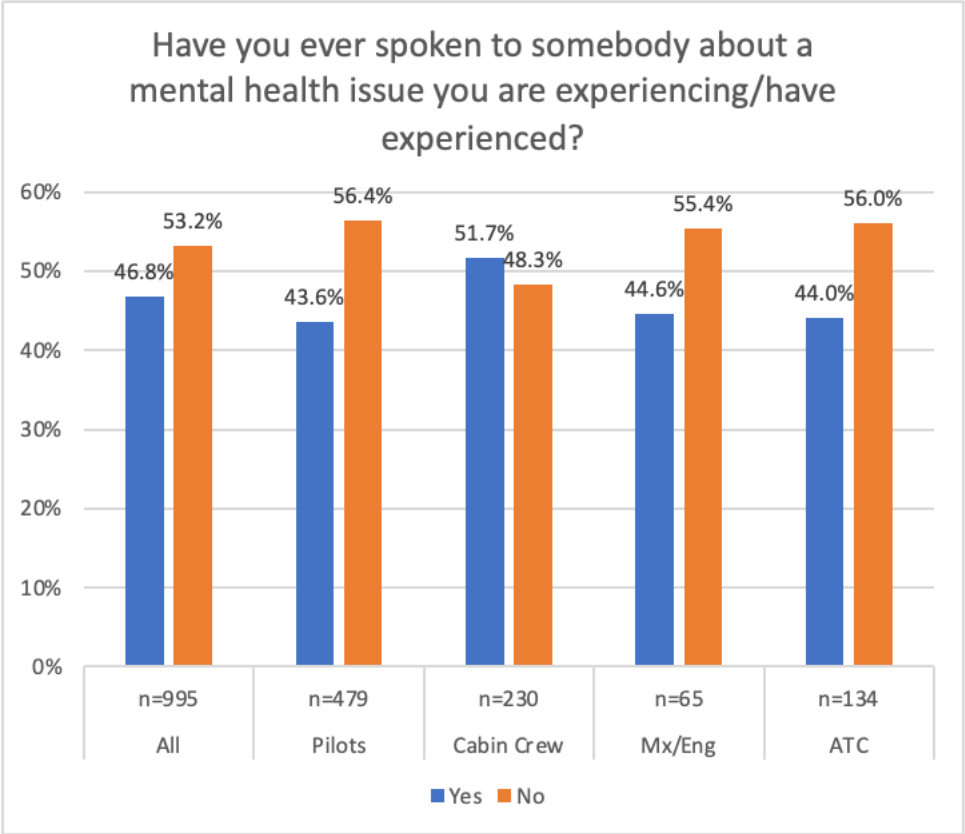


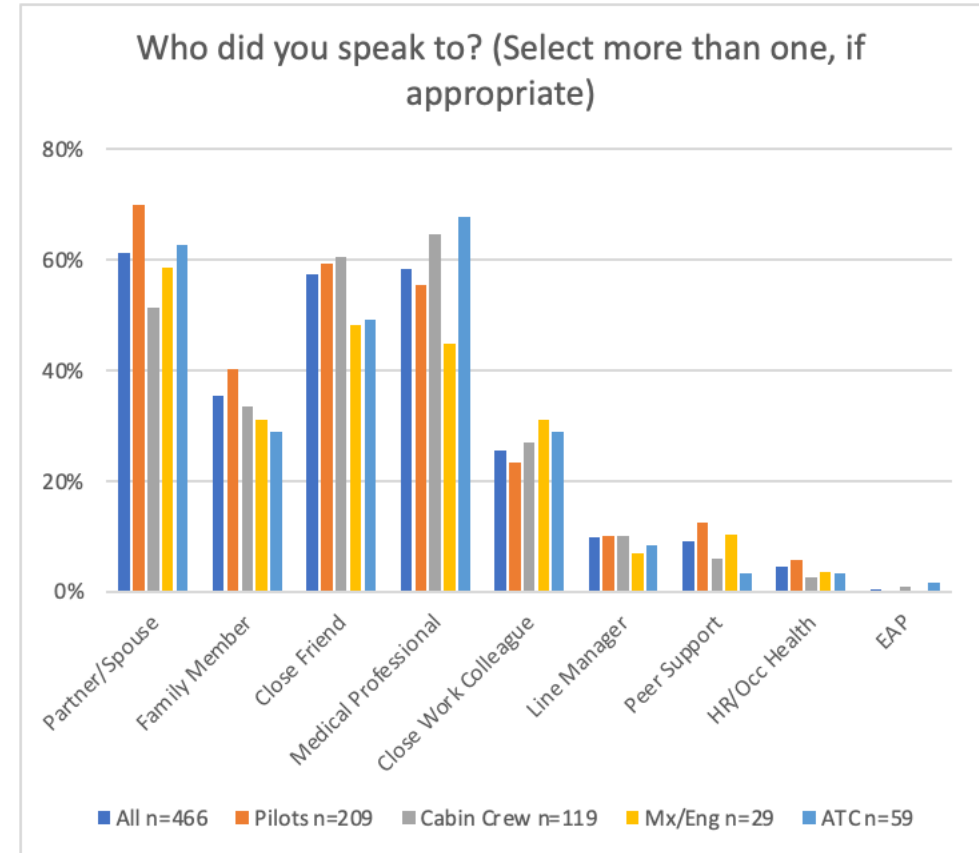
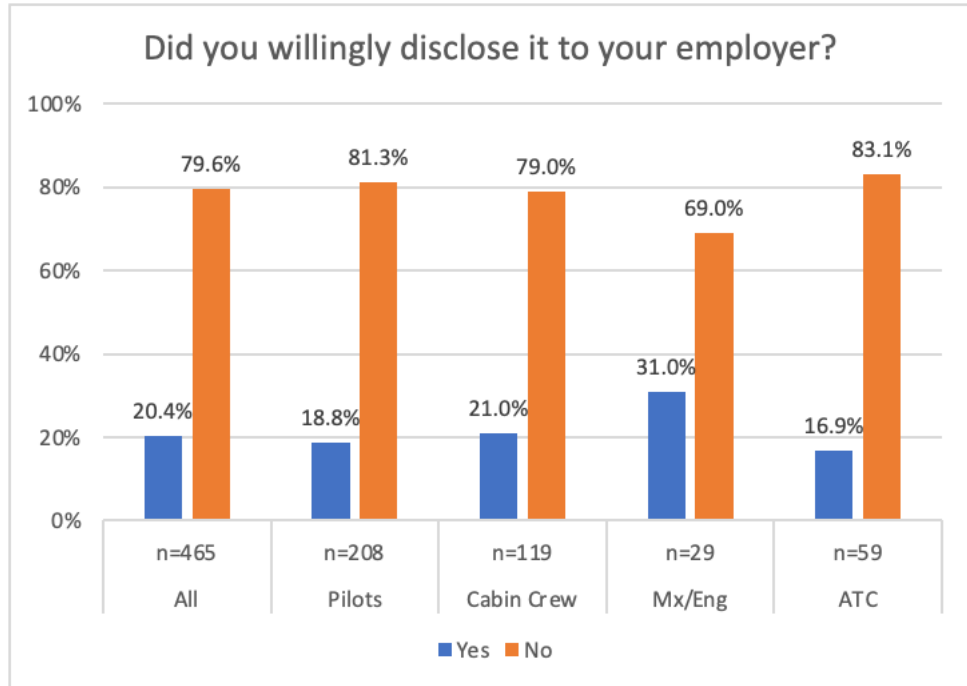
COVID Survey 2 (2021)
Trust, Engagement, Motivation
& Talking About MH

Trust, Engagement & Motivation

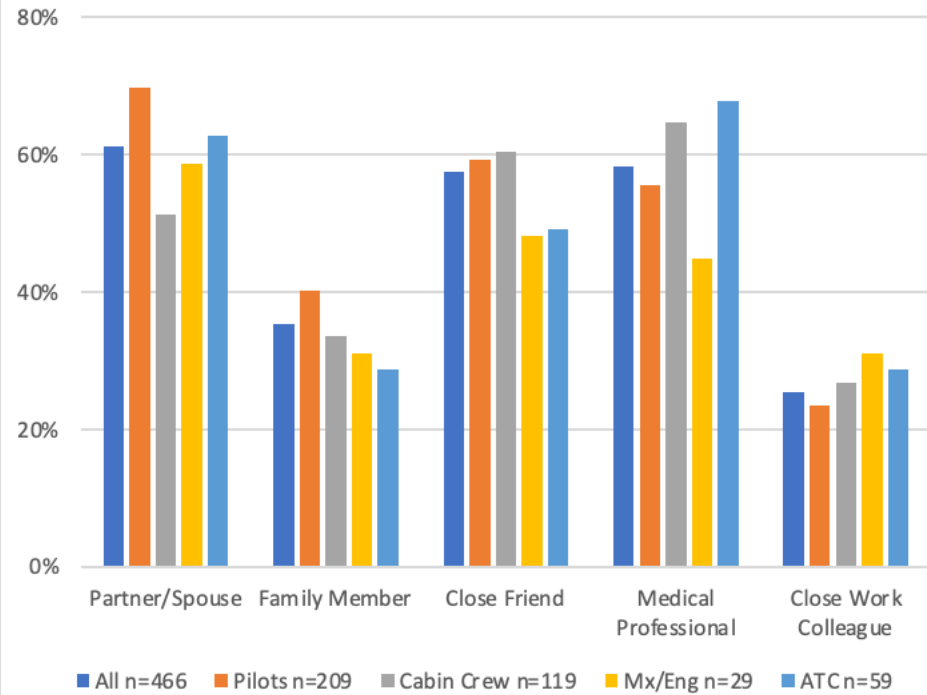


Talking about Mental Health

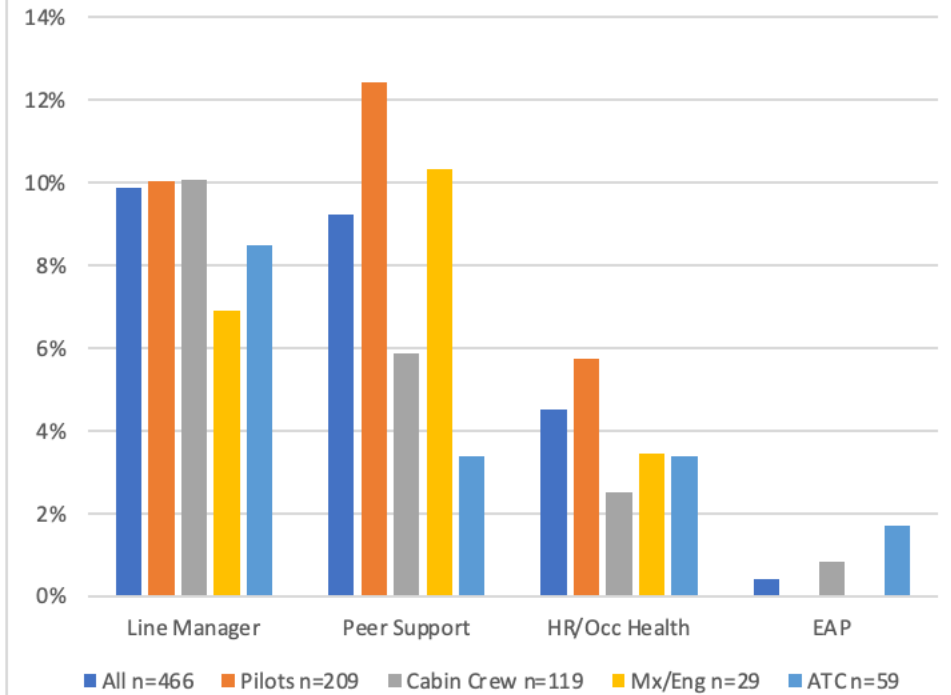


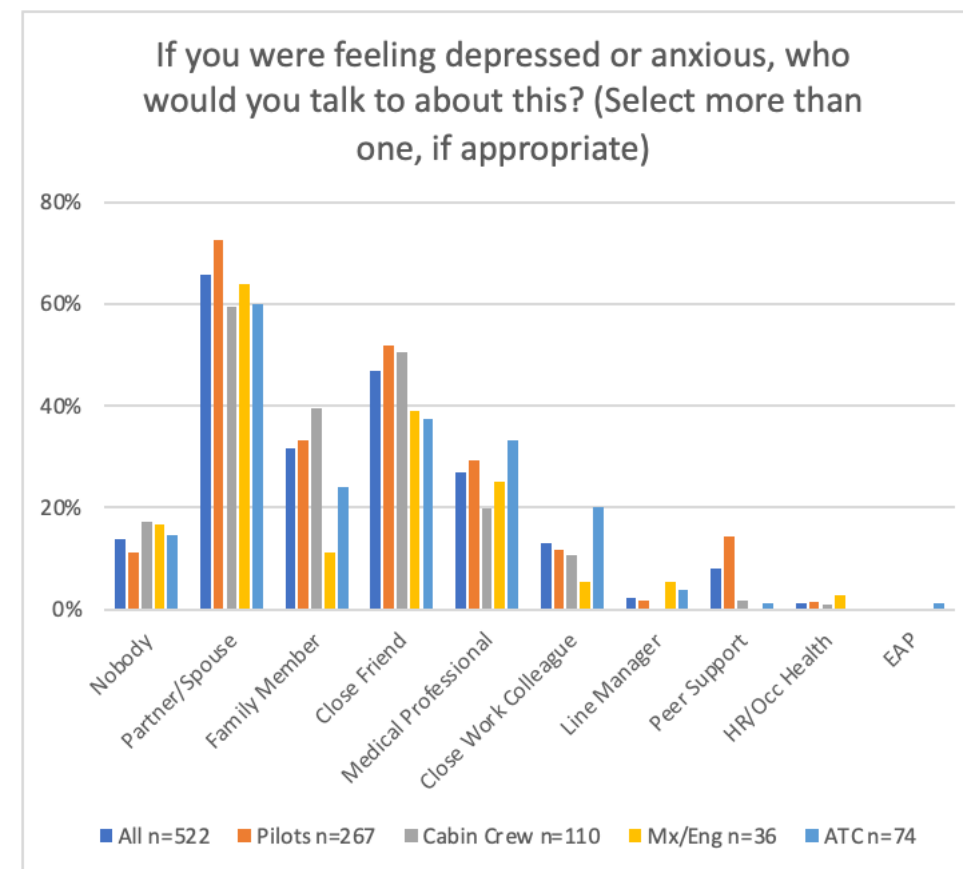
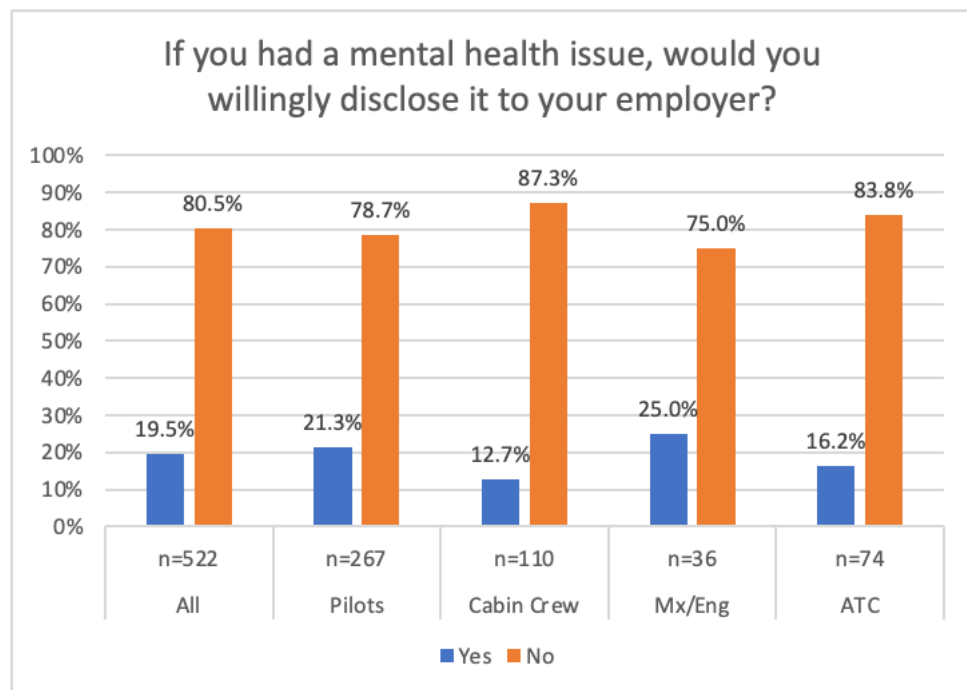


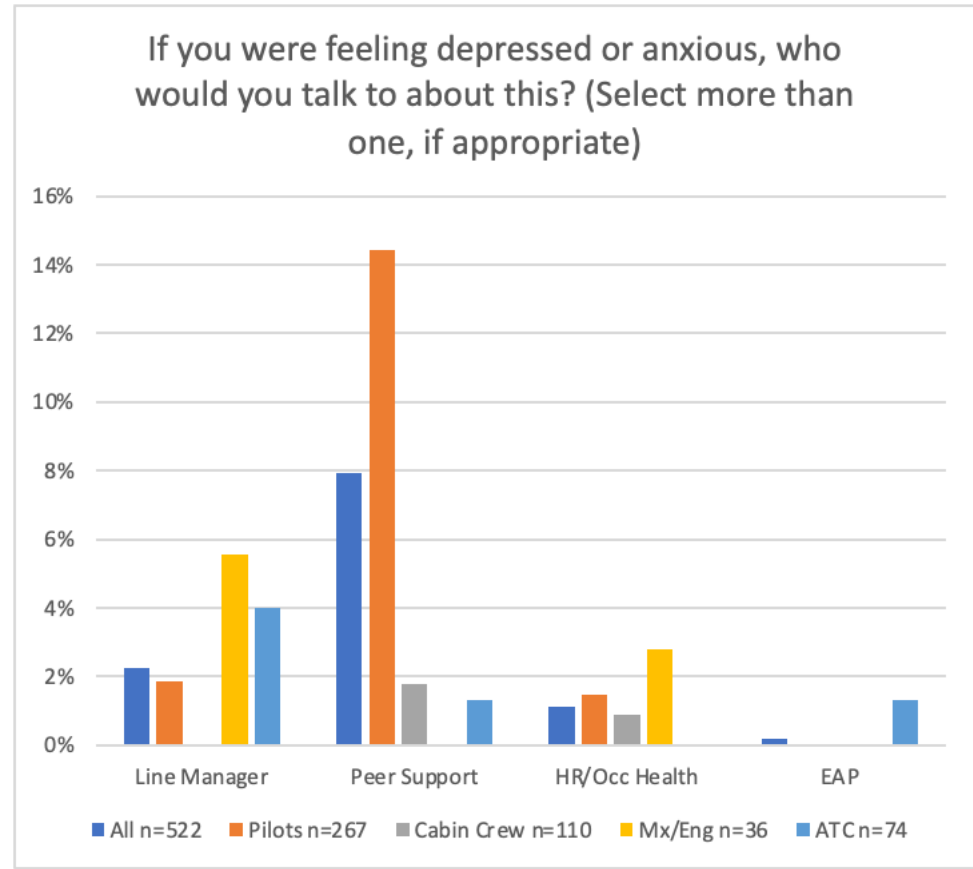
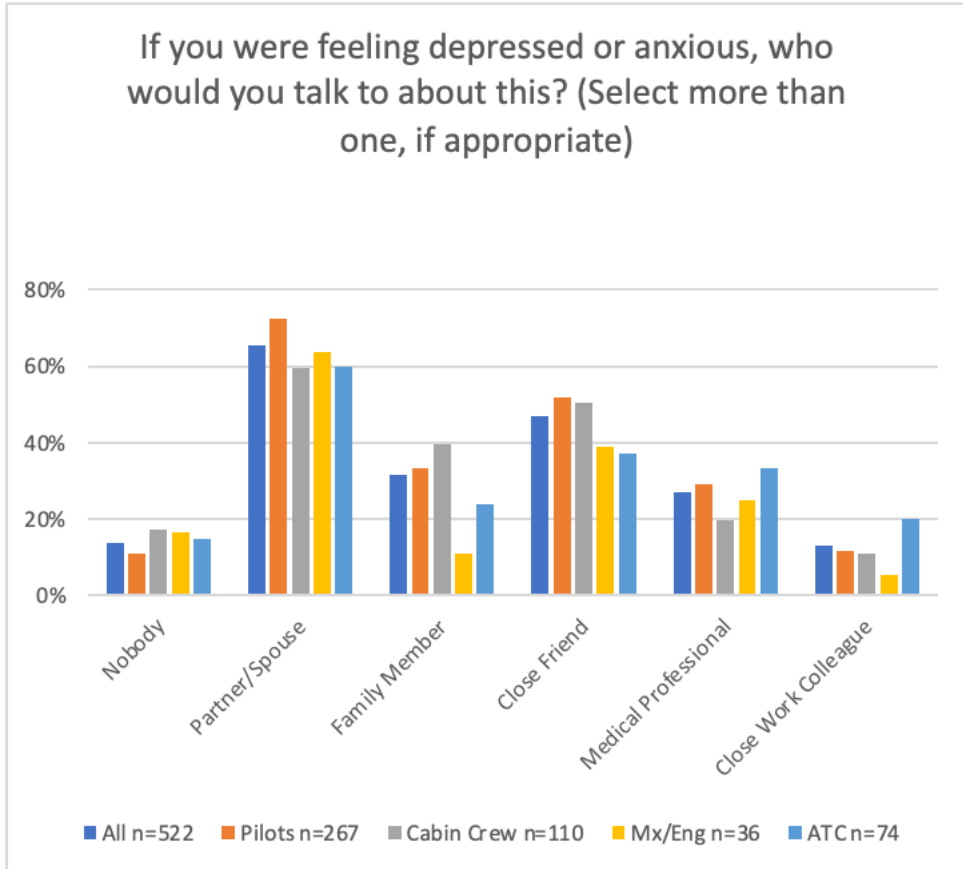
Who did you speak to? (Select more than one, if appropriate)



Who did you speak to? (Select more than one, if appropriate)







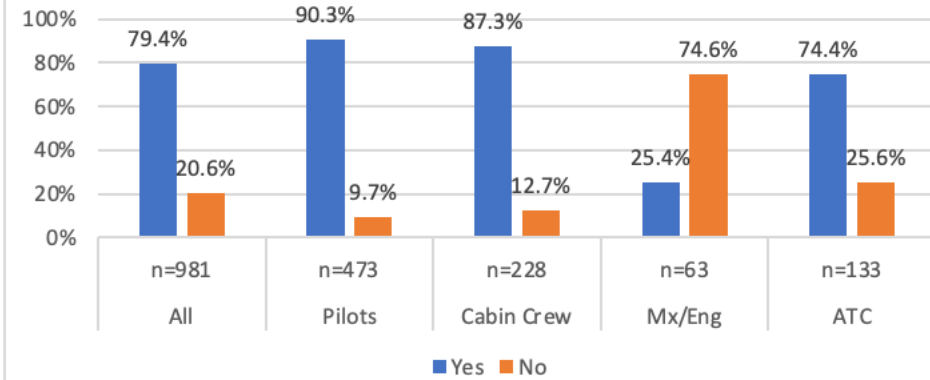
Note: With the exception of pilots, more respondents reported that they would talk to nobody rather than use PSP. The picture is slightly better for pilots, with 14% reporting they would speak to PSP, while 11% would speak to nobody.

COVID Survey 2 (2021)

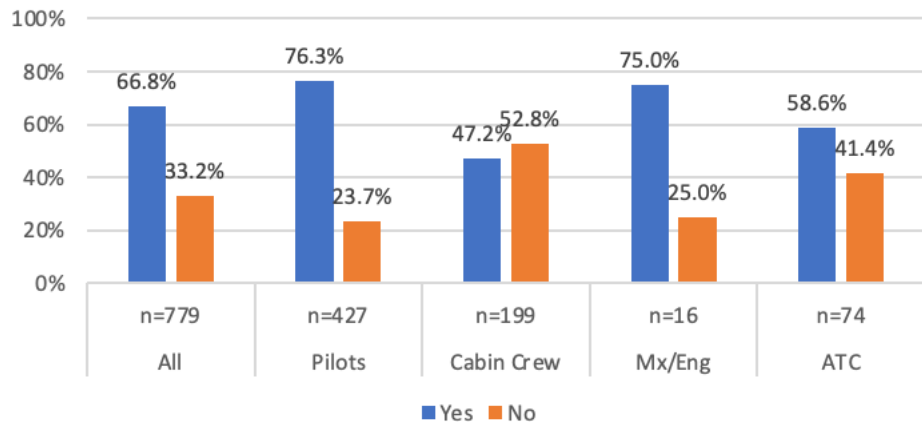
Peer Support

Peer Support

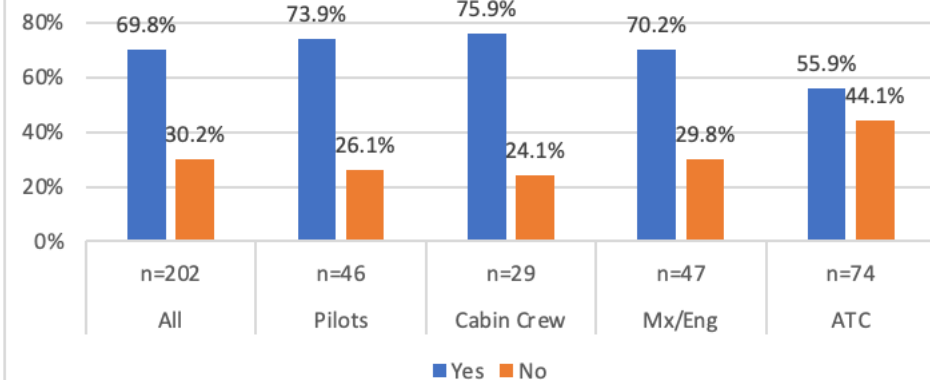
Are you aware of the existence of a Peer Support Group within your company or staff representative association?



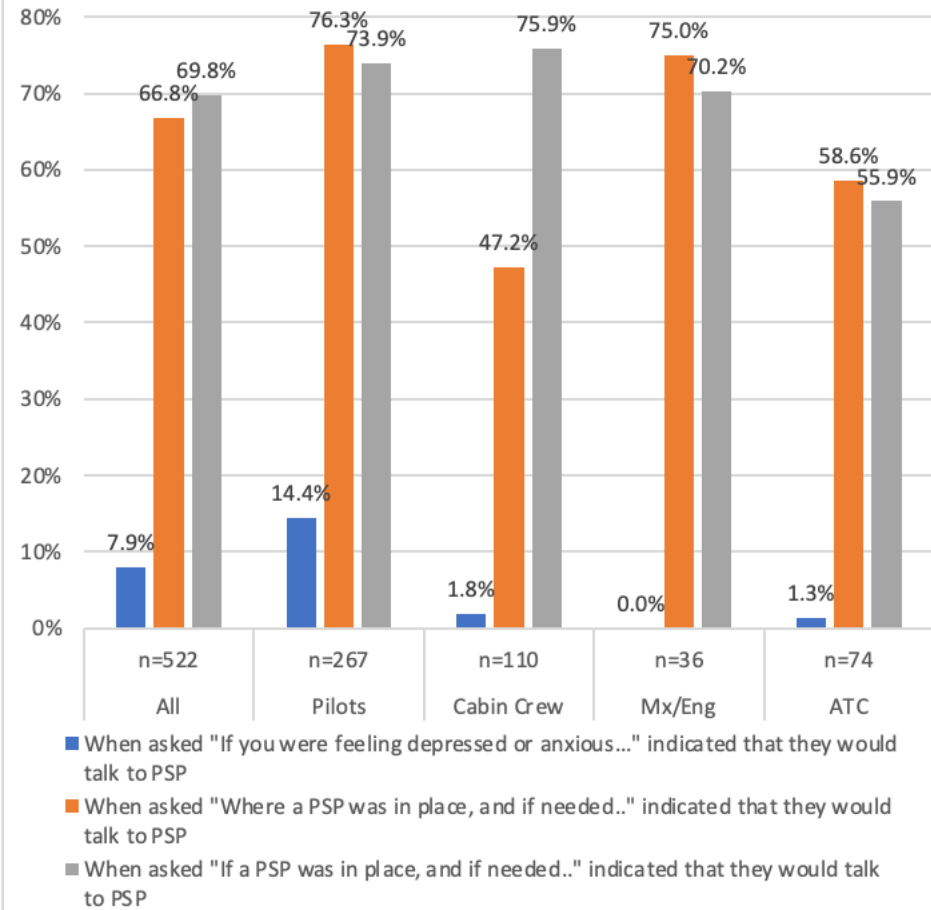
If needed, would you approach the Peer Support Group for peer support services?



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

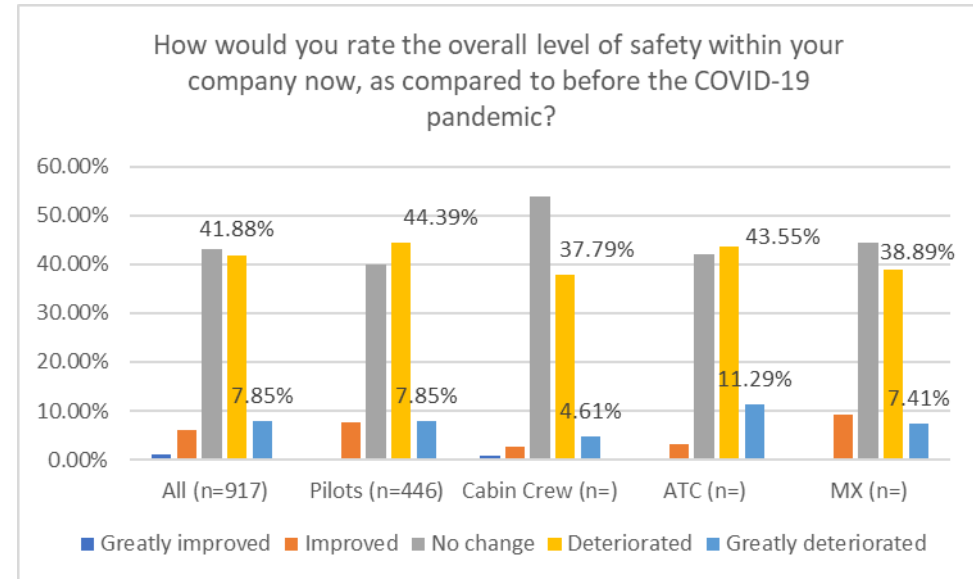
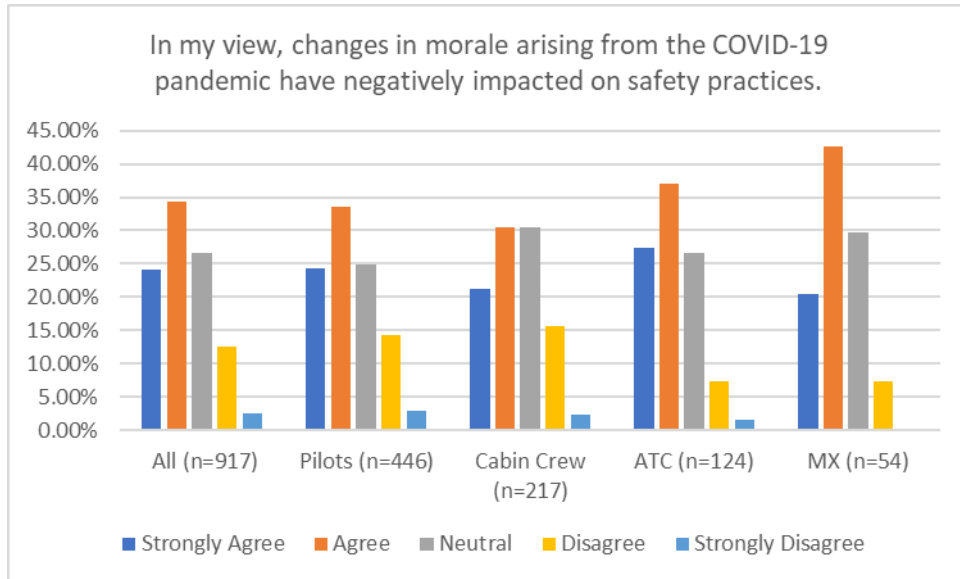


Reluctance to discuss Anxiety & Depression with Peer Support

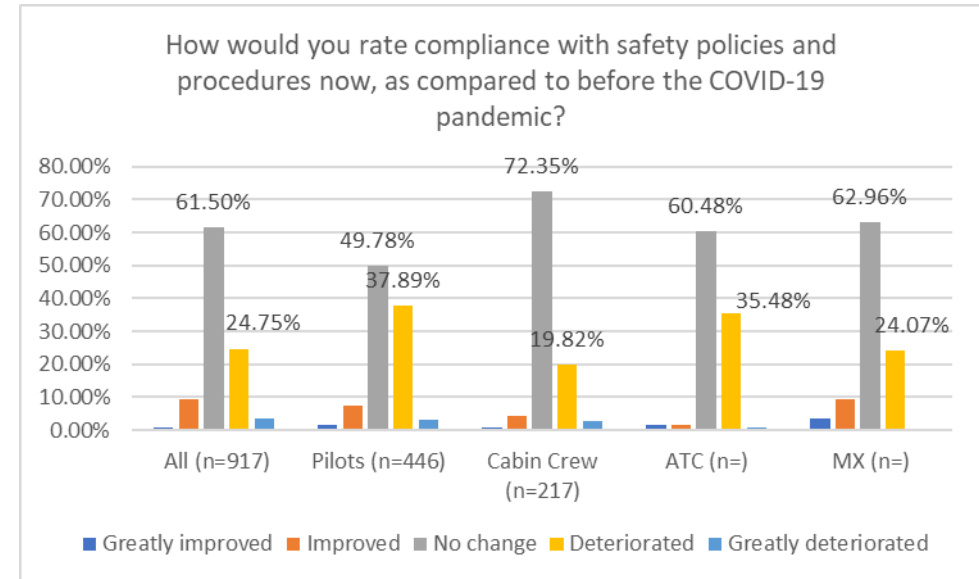
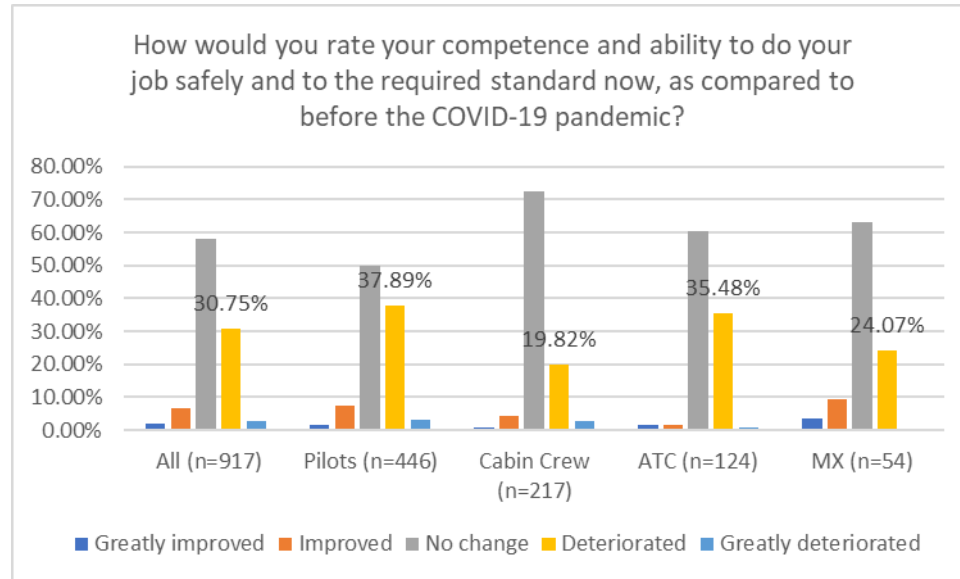


COVID Survey 2 (2021)
Wellbeing, Performance &
Safety Impact

Wellbeing, Performance & Safety Impact



Wellbeing, Performance & Safety Impact

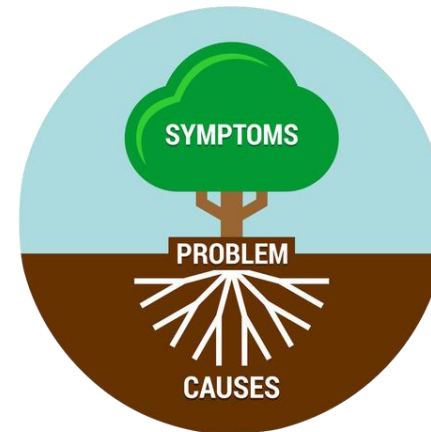
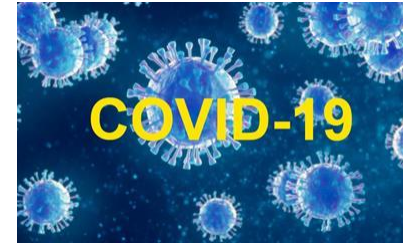


Key Takeaways

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.**

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

3 L's - licence, livelihood and life



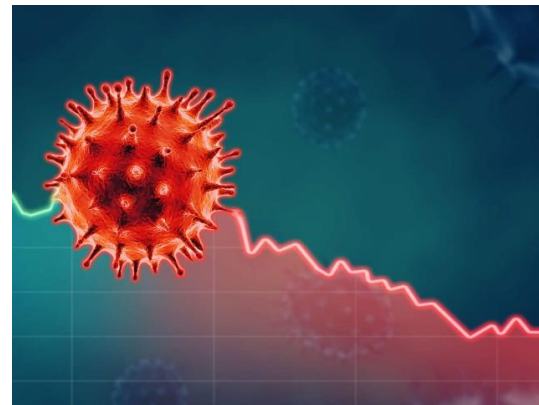
Using data and evidence

Trust, Privacy, Respect, Dignity

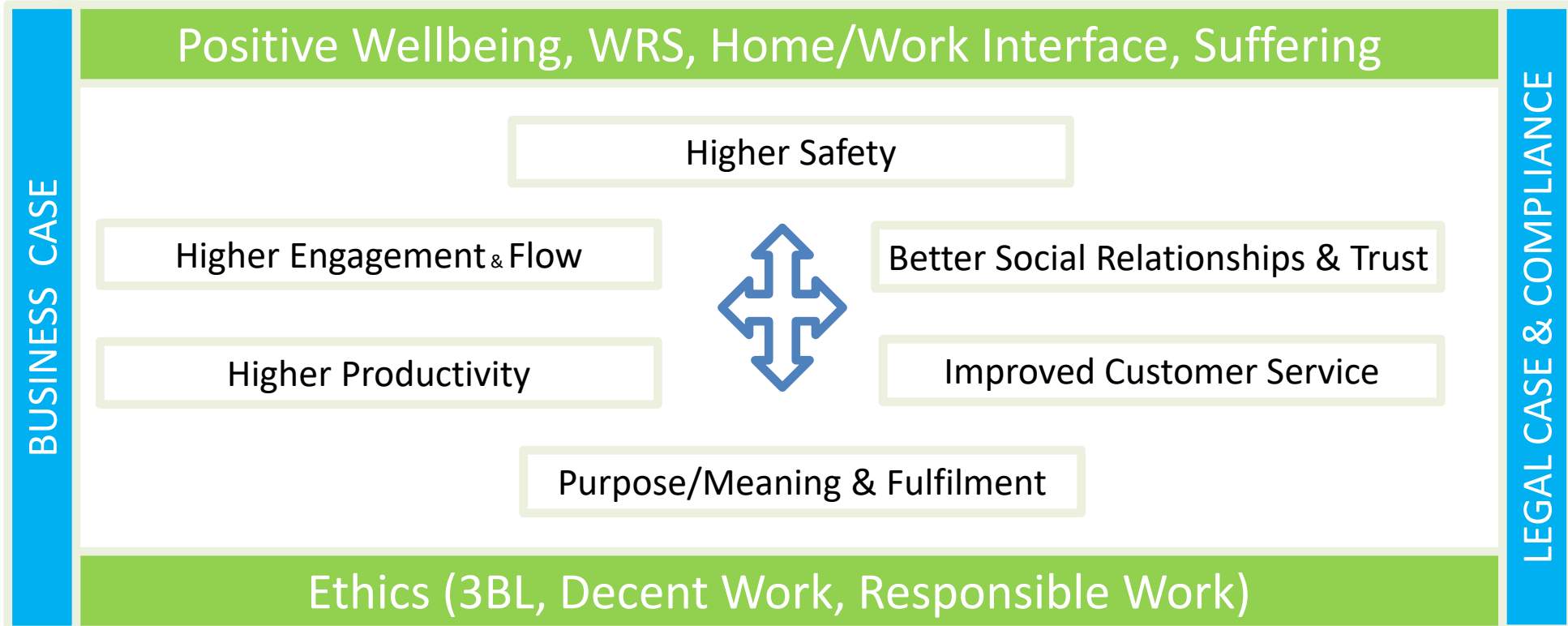
Crisis and Change/Transformation

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



Conclusions,
Acknowledgements & Contact

Conclusions

Anger. Rage. Exhaustion. New Lived Experience.

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



Ethics of Care Approach

Acknowledgements

- Thanks to all the aviation workers who participated in our research so far.
- Thanks also to the following groups who have supported this survey/research`.



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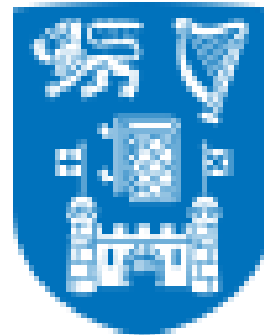
@joanccahill

<http://www.tcd.ie/cihs>



**Lived Experience
Wellbeing Project**

BIOLOGICAL - PSYCHOLOGICAL - SOCIAL



Trinity College Dublin

Coláiste na Tríonóide, Baile Átha Cliath

The University of Dublin