

U.S. Mariner Mental Health & Wellbeing During COVID- 19 and Beyond

Marissa G. Baker, PhD



**ENVIRONMENTAL
& OCCUPATIONAL
HEALTH SCIENCES**

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U.S. Mariner Mental Health & Wellbeing During COVID- 19 and Beyond

Survey Results

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Marissa G. Baker, PhD
Department of Environmental & Occupational Health Sciences
School of Public Health
University of Washington, Seattle

About the author

Dr. Marissa Baker is an Assistant Professor in the University of Washington Department of Environmental & Occupational Health Sciences (DEOHS) in the School of Public Health.

Dr. Baker's research primarily centers on occupational experiences of vulnerable or underrepresented groups. During the COVID-19 pandemic, she has worked with a variety of worker organizations, government and industry partners to characterize physical and mental health outcomes experienced by workers due to the pandemic and propose interventions. Dr. Baker also studies the experiences of women in the workplace.

Trained as an industrial hygienist, Dr. Baker has expertise in workplace exposure and risk assessment using techniques including air sampling, biomonitoring, exposure modeling, and surveys. Dr. Baker has served as a committee member for the International Agency for Research on Cancer and in 2021, was appointed by the administrator of the US Environmental Protection Agency to the Science Advisory Committee on Chemicals.

Dr. Baker received her BA from Northwestern University (Evanston, IL) in Biological Sciences in 2007, her MS in Exposure Sciences from University of Washington in 2011, and her PhD in Environmental and Occupational Hygiene from University of Washington in 2017.

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Contents (as hyperlinks)

About the author	2
Acknowledgments.....	2
EXECUTIVE SUMMARY	5
INTRODUCTION	7
Background.....	7
Methods & Data Analysis Overview.....	7
Table 1: Mental Health Outcomes Assessed.....	9
RESULTS AND DISCUSSION.....	10
Characteristics of the mariner population	10
SUMMARY OF DEMOGRAPHICS & OCCUPATIONAL CHARACTERISTICS.....	10
General Health of the Mariner Population.....	10
SUMMARY OF GENERAL HEALTH OF THE MARINER POPULATION.....	11
Table 2: Mariner Demographic and Occupational Characteristics.....	12
Table 3a: Self-reported Physical Health, Mental Health, and Sleep Quality.....	13
Table 3b: Self-reported Change in Mental Health, and Sleep Quality.....	13
Table 3c: Physical Activity in the Mariner Population.....	13
Figure 1: Self-reported Physical Health, Mental Health, and Sleep Quality.....	14
Mental Health Outcomes.....	14
DEPRESSION	14
ANXIETY.....	15
SUICIDAL IDEATION	15
PERCEIVED STRESS	15
POST-TRAUMATIC STRESS DISORDER.....	15
MENTAL HEALTH OUTCOMES BY MARINER CHARACTERISTICS	16
COMPARISONS OF MARINER MENTAL HEALTH TO OTHER POPULATIONS.....	16
SUMMARY OF MARINER MENTAL HEALTH OUTCOMES	16
Determinants of Adverse Mental Health during COVID-19.....	17
SUMMARY OF DETERMINANTS OF ADVERSE MENTAL HEALTH DURING COVID-19.....	17
Table 4: Mental Health Outcomes by Credential	19
Table 5: Mental Health Outcomes by Vessel Type.....	20
Table 6: Mental Health Outcomes by Gender	21
Table 7: Mental Health Outcomes by Age.....	21
Table 8: Study outcomes compared to population and occupational studies.....	22
Figure 2: Distribution of the number of mariners with 0-5 high mental health scores.....	23
Figure 3: How has COVID impacted mariner contract, by depression status	24
Figure 4: Time mariners spent on vessel without access to shore leave, by depression status.....	25
Figure 5: Percent of mariners who were concerned fairly often or very often, by depression status.....	26
Figure 6: Percent of mariners who experience these concerns fairly often or very often, by depression status.....	27

Mental Health Communication.....	28
SUMMARY OF MENTAL HEALTH COMMUNICATION	28
Mental Health Access and Barriers.....	28
SUMMARY OF MENTAL HEALTH ACCESS AND BARRIERS	29
Figure 7: Mental Health communication topics mariners reported receiving from the organization they work for during the COVID-19 pandemic (n=403 mariners).....	30
Figure 8: Mental Health Communication Topics Mariners would like to receive from the organization they work for (n=1,133)	31
Figure 9: Barriers to Accessing Mental Health Care while on a Vessel.....	32
Job Satisfaction in Mariner Population	33
SUMMARY OF JOB SATISFACTION IN MARINER POPULATION	33
COVID-19 Prevention and Controls in the Mariner Population.....	34
SUMMARY OF COVID-19 PREVENTION AND CONTROLS	34
Table 9: Measures of Job Satisfaction in Mariners, by depression status	35
Table 10: Measures of safety climate, by depression status.....	35
Table 11: COVID-19 on a Vessel.....	36
Table 12: Sources of stress during at home and hotel quarantine	37
The impact of COVID-19 on serving during a time of National Need.....	38
SUMMARY OF THE IMPACT OF COVID-19 ON SERVING DURING A TIME OF NATIONAL NEED.....	38
Table 13a, b, c: COVID-19 impacts to serving during a time of National Need	39
 OVERALL RECOMMENDATIONS AND CONCLUSIONS	 40
INCREASE SURVEILLANCE OF MENTAL HEALTH OUTCOMES IN MARINER POPULATIONS.....	40
INCREASE MENTAL HEALTH COMMUNICATION AND TRAINING FROM ALL RELEVANT COMMUNICATION CHANNELS	40
INCREASE ACCESS TO MENTAL HEALTH SERVICES ON A VESSEL.....	40
INCREASE SOCIAL SUPPORT ABOARD VESSELS	41
CONTINUE TO EMPHASIZE THE IMPORTANCE OF MENTAL HEALTH CARE IN MAINTAINING USCG CREDENTIAL	41
IF NOT ALREADY STANDARD, CONSIDER MEASURES OF MENTAL HEALTH IN ROOT CAUSE ANALYSES OF ACCIDENTS/INJURIES.....	41
IMPROVE THE EXPERIENCES OF WOMEN IN THE INDUSTRY.....	41
INCREASE OPPORTUNITIES FOR MARINERS TO SHARE THEIR MENTAL HEALTH EXPERIENCES AND NEEDS.....	42
 APPENDICES.....	 43
Appendix A: Copy of survey instrument	43
Appendix B: Promotional flyer used for this survey	43
Appendix C: List of mental health resources for mariners, given at the completion of the survey	43
References	44
Contact Info	47

Executive Summary

This report includes findings from an online survey of U.S. mariners conducted during the COVID-19 pandemic. Data were collected from January 25, 2021 through July 31, 2021 to assess five mental health outcomes (depression, anxiety, stress, post-traumatic stress disorder, suicidal ideation), job satisfaction, sources of concern and worry when aboard a vessel, stressful vessel experiences, barriers for accessing mental health care both when ashore and on a vessel, safety climate aboard a vessel, general health questions, and demographic questions. The survey received 1,559 total responses and 1,384 responses from mariners who had actively sailed during the COVID-19 pandemic (since March 1, 2020). This represents <1% of the total United States Coast Guard (USCG) credentialed mariners. Key findings are outlined below, and recommendations are detailed at the end of this report.

Key Findings Include:

- 20.7% of respondents had scores indicating major depressive disorder is likely; 22.7% of respondents had scores indicating generalized anxiety disorder is likely; 8.9% of respondents had scores indicating suicidal ideation; 38.2% of respondents had scores indicating elevated stress, and 18.4% of respondents had scores indicating post-traumatic stress disorder (PTSD).
 - 50% of respondents had a high score for at least one of the five mental health outcomes measured
- Overall, mariners reported enjoying the work they do and liking their job. The majority of mariners indicated they have enough time to rest/recharge on a vessel (62%) or have someone to talk to on the vessel if they are feeling sad or stressed (52%). However, among mariners who have scores indicating major depressive disorder, 47% indicate they have enough time to rest/recharge, and 35% indicate they have someone to talk to when feeling sad or stressed.
- Mental health outcomes were not evenly distributed: women, younger workers and workers with certain credentials (Cadet, Unlicensed engine—unlimited, Licensed deck officer—unlimited tonnage on oceans, and Licensed engineer officer—unlimited horsepower) and in certain industries (Great Lakes, Offshore Energy Support, Military Sealift Command, NOAA) tended to have higher rates of adverse mental health outcomes.
- Mariners self-reported worse mental health and sleep quality during the COVID-19 pandemic.

- The majority of respondents reported restricted ability to get on/off the vessel, cancelled shore leave, and affected port calls during the pandemic. Respondents with a score indicating depression were more likely to report these impacts.
- While on a vessel, mariners reported worrying fairly often or very often about being away from family, contract length, and family members getting COVID-19. Mariners with scores indicating depression had higher rates of worry while on a vessel.
- While on a vessel, mariners reporting experiencing the following fairly often or very often: being denied shore leave, no access to internet or phone, restrictions in joining family, and feelings of isolation. Mariners with scores indicating depression experienced these scenarios more frequently.
- Fewer than half of respondents received any communication on mental health during the pandemic. Mariners indicated they would like to receive information on how to access mental health help, warning signs to look for in crewmates, protections/help they have access to through their employer, and who to contact with concerns.
- Despite the high prevalence of adverse mental health outcomes in this population, few are accessing mental healthcare either at home or aboard a vessel. Top-reported barriers to accessing care on a vessel include: lack of phone/internet, no privacy, concerns about USCG credential, and not how the mariners would want to spend their rest time. Those mariners with a score indicating depression were more likely to report barriers to accessing mental healthcare on a vessel.
- Overall, mariners reported enjoying the work they do and liking their job. However, fewer mariners indicated they have enough time to rest/recharge on a vessel or have someone to talk to on the vessel if they are feeling sad or stressed.
- While the majority of mariners indicated that both senior vessel officers and their organization's management encourage mariners to work in accordance with safety rules (including COVID-19 guidelines) fewer mariners reported that senior vessel officers and their organization's management encourage mariners to seek mental healthcare if needed.
- Overall recommendations include: increasing mental health surveillance in the maritime industry, increase and improve mental health communication and training, make mental healthcare more accessible on the vessels, increase social support for mariners aboard a vessel, continue to emphasize the importance of mental healthcare in maintaining USCG credential, and improving experiences for women mariners

Introduction

Background

There is a growing recognition of the impact that work has on mental health, and the relationship between mental health and injury and illness risk in the working population. During the COVID-19 pandemic, this awareness has increased, particularly in worker populations that have been deemed essential, and as such have not been able to work from home during the pandemic, such as maritime workers (1). These workers not only encounter general stress from working during a pandemic, but also stress from witnessing co-workers fall ill with COVID-19, fearing potential job insecurity or displacement, changes to work practices and policies related to COVID-19, and balancing work with increasing personal commitments. Research from June 2020 found essential workers had more adverse mental or behavioral health symptoms than the general public in a broad survey of USA adults (2), further emphasizing the impact work has on mental health.

The job characteristics of maritime operations can increase a mariner's susceptibility to adverse mental health outcomes even when a pandemic is not occurring, given the months they often spend away from home with decreased communication, the physically challenging nature of the job, and the long hours worked. However, mariners have high levels of job satisfaction, take pride in their work, enjoy flexibility in their schedules, and receive favorable compensation, which can positively influence their overall well-being at work.

A previous survey of international seafarers before the COVID-19 pandemic assessing injury, illness, and mental health risk factors found 25% of survey respondents had scores suggesting depression (3). Seventeen percent of respondents were experiencing generalized anxiety disorder, and 20% of respondents surveyed had suicide ideation at least several days in the two-week period preceding the survey.

Given the increased understanding on the important role that work plays in mental health, the large burden of adverse mental health outcomes associated with COVID-19, and the essential nature of U.S. mariners, understanding the mental health needs of mariners both during and after COVID-19 is of high occupational health need, and could have a large impact on overall worker health.

Methods & Data Analysis Overview

An online survey was developed with input from the CMTS COVID-19 Working Group, CDC/NIOSH, and SOCP. The survey used validated scales to assess five mental health outcomes: perceived stress (PSS-4 scale), depression (PHQ-2 scale), generalized anxiety disorder (GAD-3 scale), suicidal ideation (single question from PHQ-9), and post-traumatic stress disorder (PTSD). In addition, we asked questions about job satisfaction, sources of concern when aboard a vessel, barriers for accessing mental health care both when ashore and on a vessel, safety climate aboard a vessel, general health questions, and demographic questions. A full copy of the survey is included as Appendix A. The survey was open to all U.S. Mariners from January 25, 2021 through July 31, 2021.

The survey was actively promoted during this six-month period by governmental and private organizations to increase response rates. When the survey period ended, there were 1,559 responses from merchant mariners that met our inclusion criteria of being a U.S. citizen or permanent resident who works on a U.S. vessel. Of these respondents, 1,384 respondents had actively sailed at some point during the COVID-19 pandemic, which we defined as starting March 1, 2020. As is common in surveys, particularly those that may represent information of a sensitive nature, not all respondents answered all questions. In order for the mariners to be comfortable, we did not make any question required. Similarly, given the length of this survey, some respondents did not make it to the end due to survey fatigue, or needing to stop to perform work or personal duties.

This final report includes an overview of the responses received on this survey, including characteristics of the mariners who responded, the mental health outcomes reported, concerns and needs of mariners, barriers mariners indicated in accessing mental health care, and metrics related to their well-being when on and off a vessel. Recommendations for improving the well-being of mariners, both during COVID-19 and after, are also included. Results are summarized in tables and figures, with narrative and interpretation to accompany the tables and figures. Results are not presented for groups with fewer than 10 responses to maintain anonymity. Data were analyzed and summarized in R Studio 1.2.5.003.

Particularly for the mental health outcomes, often multiple questions were combined to produce an overall score. Below, Table 1 outlines how we assessed the mental health outcomes, the range of the scores, what we defined as a high score for this report, and how to interpret the scores.

Table 1: Mental Health Outcomes Assessed

Scale	Outcome Measured	How assessed	Score Range	High Score	Score Interpretation
PSS-4	Perceived Stress	Four questions on how frequently the respondent felt stresses in the last month	0 – 16	≥6	Higher score indicates increased stress
PHQ-2	Depression	Two questions on how frequently the respondent exhibited symptoms of depression in the last two weeks	0 – 6	≥3	Score of 3 or greater indicates major depressive disorder is likely
GAD-2	Generalized Anxiety disorder	Two questions on how frequently the respondent exhibited symptoms of anxiety in the past two weeks.	0 – 6	≥3	Score of 3 or greater indicates generalized anxiety disorder is likely
Question from PHQ-9 scale	Suicidal ideation	A single question assessing how often the respondent felt they would be better off dead, or had thoughts of hurting themselves in the past two weeks	0 -- 3	≥1	Score of 1 or greater (at least several days) indicates suicidal ideation
PC-PTSD-2	Post-traumatic stress disorder	Yes/No whether the respondent experienced symptoms consistent with PTSD	0 – 2	≥1	Score of 1 or 2 indicates potential PTSD

Results and Discussion

Characteristics of the mariner population

Table 2 displays the demographic and work characteristics of the 1,559 mariners who took this survey. Respondents were primarily male (1,001, 64.2%), with fewer female respondents (125, 8.0%). However, nearly 30% of respondents declined to answer, and a small number selected another gender.

Respondents were fairly evenly distributed by age, with fewer respondents in the 18-24 age category and 65+ age category. The majority of respondents identified as white (948, 60.8%) followed by Hispanic, Latinx, Spanish Origin (45, 2.9%), Black or African (41, 2.6%), and Asian (41, 2.6%). Many respondents (408, 26.2%) declined to specify their race/ethnicity.

Mariners were asked about their position and industry. The most common position represented by our survey is Licensed Deck Officer—Unlimited Tonnage on Oceans (462, 29.6%), followed by Licensed Deck Officer—Limited by tonnage or waters (321, 20.6%) and Licensed Engineer Officer—Unlimited Horsepower (219, 14.0%). For industry, most respondents were from Ocean—International (250, 16.0%), followed by Military Sealift Command Vessel (245, 15.7%), and Coastwise—Jones Act (200, 12.8%). A complete breakdown by demographics and occupational characteristics is found in Table 2.

United States Coast Guard (USCG) data reported a total of just under 200,000 active USCG credentialed mariners; thus this survey represents 0.8% of the total. In the USCG data, 92.3% of USCG credential mariners are male, and 7.7% are female. This corresponds similarly to the gender distribution seen in this survey when considering only mariners who disclosed gender. More detailed break-down of USCG totals by age, race/ethnicity, industry, or credential are not available.

Summary of Demographics & Occupational Characteristics

The demographics represented by this survey represent the demographics of the industry as a whole, which is predominantly white males of working age. The demographic questions were at the end of the survey, which can contribute to a higher non-response rate (about 30% non-response across the demographic questions). This high non-response rate can also indicate that the mariners didn't want to share potentially identifiable data. However, demographic questions at the start of a survey have been shown to discourage participation. Overall, the survey is representative of the industry as a whole, but also has perspectives from more minority mariner groups, including women and mariners of color.

General Health of the Mariner Population

The survey assessed self-reported health status of the respondents, asking them to rank their physical health, mental health, and sleep quality on the scale of Excellent, Very Good, Good, Fair, or Poor, and how their mental health, and sleep quality had changed over the course of the pandemic. Respondents were also asked how many days per week they get at least 30 minutes of physical activity outside of work activities. These results are summarized in

Tables 3a-3c. Figure 1 graphically presents self-rated measures of physical health, mental health, and sleep quality.

Summary of General Health of the Mariner Population

Overall, mariners reported changes in sleep quality and mental health associated with the COVID-19 pandemic, with nearly half of respondents (49%) reporting that their mental health got worse during the pandemic, and 26% of respondents reporting their sleep getting worse. This can have implications for safe work on board, job satisfaction, physical health, and diagnosable mental health outcomes. While 29% of respondents report exercising at least five days a week, 45% only exercise two days or less per week. 83% of respondents rated their physical health as at least good, 75% rated their mental health as at least good, and 54% of respondents rated their sleep quality as at least good. However, those who rated their health or sleep as only fair or poor may be at increased risk of work related accidents or injury, decreased job satisfaction, and diagnosable mental health outcomes.

Table 2: Mariner Demographic and Occupational Characteristics

All mariner respondents (n=1,559)		n	%
Age (years)	18-24	60	3.8
	25-34	254	16.3
	35-44	254	16.3
	45-54	204	13.1
	55-64	290	18.6
	65+	90	5.8
	Prefer not to answer	407	26.1
Gender	Male	1001	64.2
	Female	125	8.0
	Other	<10	<0.6%
	Other/Prefer not to answer	433	27.8
Race/Ethnicity	American Indian or Alaska Native	33	2.1
	Asian	41	2.6
	Black or African	41	2.6
	Hispanic, Latinx, Spanish Origin	45	2.9
	Native Hawaiian or other Pacific Islander	19	1.2
	White	948	60.8
	Not Listed/Other	24	1.5
	Prefer not to answer	408	26.2
Position	Cadet	45	2.9
	Unlicensed Deck--Limited	71	4.6
	Unlicensed Deck--Unlimited	120	7.7
	Unlicensed Engine--Limited	22	1.4
	Unlicensed Engine--Unlimited	47	3.0
	Pilot	46	2.9
	Licensed Deck Officer--Limited by tonnage or waters	321	20.6
	Licensed Deck Officer--Unlimited tonnage on oceans	462	29.6
	Licensed Engineer Officer--Limited Horsepower	19	1.2
	Licensed Engineer Officer--Unlimited Horsepower	219	14.0
	Other	163	10.5
	Prefer not to answer	24	1.5
Industry	Inland waterways	110	7.1
	Harbor tugs	71	4.6
	Ferries & passenger vessels	104	6.7
	Pilotage	24	1.5
	Dredging & marine construction	35	2.2
	Great Lakes	46	3.0
	Coastwise--Jones Act	200	12.8
	Offshore Energy Support	77	4.9
	Ocean--Jones Act	97	6.2
	Ocean--International	250	16.0
	Military Sealift Command Vessel	245	15.7
	MARAD RRF Ship	97	6.2
	NOAA Vessel	50	3.2
	US Army Corps of Engineers Vessel	16	1.0
	Other	115	7.4
	Prefer not to answer	22	1.4

Table 3a: Self-reported Physical Health, Mental Health, and Sleep Quality

	Physical Health n=1274		Mental Health n=1268		Sleep Quality n=1264	
	n	%	n	%	n	%
Excellent	146	11%	206	16%	94	7%
Very Good	438	34%	384	30%	243	19%
Good	480	38%	366	29%	350	28%
Fair	185	15%	250	20%	391	31%
Poor	25	2%	62	5%	186	15%

Question: In general, how would you rate your [physical health/mental health/sleep quality] now?

Table 3b: Self-reported Change in Mental Health, and Sleep Quality

	Mental Health Change n=1290		Sleep Quality Change n=1290	
	n	%	n	%
Much Better	55	4%	29	2%
Somewhat Better	70	5%	62	5%
The Same	544	42%	737	57%
Somewhat Worse	498	39%	360	28%
Much Worse	123	10%	102	8%

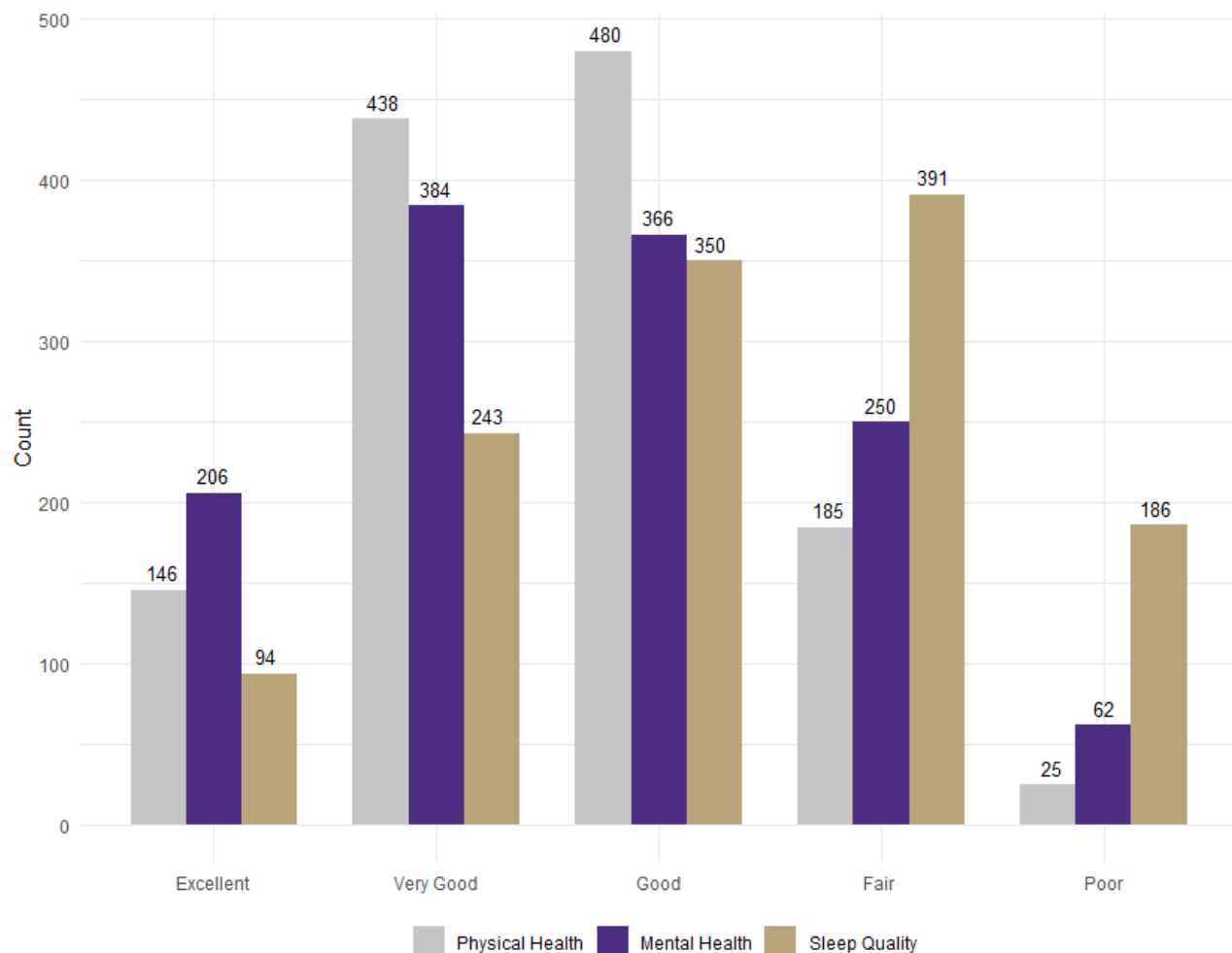
Question: Compared to before the COVID-19 pandemic (before March 1, 2020) how would you rate your [mental health/sleep quality] now?

Table 3c: Physical Activity in the Mariner Population

	Physical Activity Frequency n=1290	
	n	%
5 or more days	376	29%
3-4 days	338	26%
1-2 days	359	28%
No days	217	17%

Question: In a typical week, how many days do you get at least 30 minutes of physical activity, outside of work activities?

Figure 1: Self-reported Physical Health, Mental Health, and Sleep Quality



Mental Health Outcomes

In this survey, five mental health outcomes were assessed using validated scales as summarized in Table 1. Further details about these metrics are described below.

Depression

Depression was assessed using the PHQ-2 screening tool, which consists of two questions: 1) Over the last two weeks how often have you been bothered by little interest or pleasure in doing things, and 2) Over the last two weeks how often have you been bothered by feeling down, depressed, or hopeless? Both questions were answered as “Not at all”, “Several Days”, “More than half the days”, or “Nearly Every day”. Responses were converted to a numerical score between 0-3, and summed for the two questions for a total PHQ-2 score out of 6. A score of 3 or above is considered a high score for depression, indicating major depressive disorder is likely.

Anxiety

Anxiety was assessed using the GAD-2 screening tool, which consists of two questions: 1) Over the last two weeks how often have you been bothered by feeling nervous, anxious or on edge, and 2) Over the last two weeks how often have you been bothered by not being able to stop or control worrying? Like the PHQ-2, both questions were answered as “Not at all”, “Several Days”, “More than half the days”, or “Nearly Every day”. Responses were converted to a numerical score between 0-3, and summed for the two questions for a total GAD-2 score out of 6. A score of 3 or above is considered a high score for anxiety, indicating a possible case of generalized anxiety disorder and the need for further diagnostic evaluation.

Suicidal Ideation

Suicidal ideation was assessed using a single question from the PHQ-9 screener, which is: Over the last two weeks how often have you been bothered by thoughts that you would be better off dead, or thoughts of hurting yourself in some way? This question was answered as “Not at all”, “Several Days”, “More than half the days”, or “Nearly Every day.” Responses were converted to a numerical score between 0-3. A score of 1 or above is considered a high score for suicidal ideation indicating concern for suicidal ideation and the need for intervention.

Perceived Stress

Perceived Stress was assessed using the PSS-4 screening tool which consists of four questions: 1) In the last month how often have you felt that you were unable to control the important things in your life, 2) In the last month, how often have you felt confident about your ability to handle your personal problems, 3) In the last month, how often have you felt that things were going your way, 4) In the last month, how often have you felt difficulties were piling up so high that you could not overcome them? All questions were answered as “Never”, “Almost Never”, “Sometimes”, “Fairly Often”, or “Very Often”. Responses were converted to a numerical score between 0-4, and summed for the four questions for a total PSS-4 score out of 16. In general, a higher score indicates more stress. For this project, high stress was defined as a score of 6 or above.

Post-Traumatic Stress Disorder

PTSD was assessed using the PC-PTSD-2 screening tool. All respondents read the text: *Sometimes things happen to people that are unusually or especially frightening, horrible, or traumatic. For example:*

- *A serious accident or fire*
- *A physical or sexual assault or abuse*
- *An earthquake or flood*
- *A war*
- *Seeing someone be killed or seriously injured*
- *Having a loved one die through homicide or suicide*

Respondents were then asked “Have you ever experienced this type of event?” For respondents who answered “yes”, they were given two more yes/no questions: 1) In the past month have you had nightmares about the event(s) or thought about the event(s) when you did not want to, and 2) In the past month have you tried hard not to think about the event(s) or

went out of your way to avoid situations that reminded you of the event(s)? A yes answer was given a score of 1, and a no answer was given a score of 0, respondents with a score of 1 or 2 were considered to have a high score, defined as potential PTSD for the purposes of this survey.

Mental Health Outcomes by Mariner Characteristics

The five mental health outcomes detailed above were investigated in groups defined by credential (Table 4), industry (Table 5), gender (Table 6), and age (Table 7). Each measure was summarized by their mean (average score across all respondents) and the percentage of respondents that had what is considered a “high” score for each of the measures. Means and percent of respondents that were high were compared to scores from all respondents (the background level), and colored red if the score was above the background level. This was used to assign a risk score to each of the categories, based on the number of metrics that were increased across all five outcomes. The risk score would range from 0 to 10, with higher risk scores indicating a category of mariners that tend to have worse mental health outcomes. Those in groups with higher scores should be prioritized for mental health interventions. Figure 2 shows the distribution of the count of mental health outcomes in this population. More than half of mariners in this study (50.5%) have at least one high mental health outcome.

Comparisons of Mariner Mental Health to Other Populations

It can be challenging to compare the prevalence of mental health outcomes in the mariner population to other populations given that the validated screening tools used with the mariners may not have been used in exactly the same way with other groups, the COVID-19 pandemic has impacted mental health for all groups, making surveys from before the COVID-19 pandemic less comparable, the demographics of mariners differs from the general population (i.e. fewer women, who typically have worse mental health outcomes), and a certain degree of mental fitness is required for mariners to obtain and maintain employment. However, Table 8 outlines some comparisons between the mental health outcomes measured in this survey and other surveys of mariners, community members, or worker populations in order to understand how the burden of mental health outcomes in mariners compares to other groups, from both before and during the pandemic. In general, mariners exhibited a higher prevalence of mental health outcomes than the general population prior to the pandemic (as assessed by the National Institute for Mental Health, NIMH) though the prevalence of these outcomes increased during the pandemic as assessed by the U.S. Census Bureau. The rates of depression and anxiety in the mariners were comparable to those experienced by healthcare workers and other essential workers during the pandemic, and long haul truckers and offshore gas/oil rig workers before the pandemic.

Summary of Mariner Mental Health Outcomes

Overall, the mariners who participated in this survey tend to have a larger burden of mental health outcomes than seen in the general public (pre-COVID-19) and had elevated rates as seen in other worker populations during COVID-19. The survey design doesn’t allow us to understand if this was due to COVID-19, the nature of work the mariners are doing, or other factors. It was also noticed that some groups had worse mental health outcomes than other

groups. When looking at credentials, Cadets, Unlicensed Engine—Unlimited, Licensed Deck Officer—Unlimited Tonnage on oceans, and Licensed Engineer Officer—Unlimited Horsepower tended to have worse mental health outcomes across the board, however some of these groups had relatively small sample sizes.

When looking at results by vessel type, those on a Military Sealift Command Vessel or Great Lakes vessel consistently had highest rates of adverse mental health outcomes. Offshore Energy Support vessels and NOAA vessels also had higher than average rates of adverse mental health outcomes. Considering gender, females consistently had worse mental health outcomes than males. Too few respondents choose a gender other than male or female, making it impossible to further stratify by gender. When looking at age, mariners age 25-34 had the worst mental health outcomes across all five outcomes characterized. Mental health tended to improve as the mariner got older, which could be due to a healthy worker effect (mariners who don't have adverse mental health outcomes are more likely to stay in the profession and therefore be older mariners), different personal and professional pressures on younger mariners, or the survey wasn't able to reach a representative sample of mariners. When stratifying by race/ethnicity no clear differences were seen, such that those results are not presented in this final report. Groups highlighted in red in Tables 4, 5, 6, 7 should be prioritized for mental health interventions in order to reach the most vulnerable populations.

Determinants of Adverse Mental Health during COVID-19

Various questions were asked in the survey to understand the possible determinants of adverse mariner mental health during the COVID-19 pandemic, including asking mariners about how COVID-19 had impacted their vessel, experiences they had on their vessel, and sources of worry. Figure 3 outlines how respondents reported their vessel or mariner contracts were impacted by COVID-19. Figure 4 shows how long mariners reported being onboard a vessel continuously, without shore leave. Figure 5 outlines what aspects mariners worried about while on a vessel during COVID-19, and Figure 6 outlines how often mariners experienced potentially stressful situations on board a vessel during COVID-19.

Summary of Determinants of Adverse Mental Health during COVID-19

From Figures 3-6, it is clear that mariner's experiences have been impacted during the COVID-19 pandemic. Mariners have worried while on the vessel, and experienced stressful situations. Notably, it is clear that those mariners who had a PHQ score indicating depression experienced these stressful situations more frequently, worried more frequently, and appeared to be more impacted on a vessel. Specifically, mariners experiencing depression were more likely to have affected port calls, restricted ability to get on/off the vessel, and impacted shore medical visits. They were more likely to have spent four or more months on a vessel without access to shore leave than mariners who were not exhibiting symptoms of depression. Regarding worries, mariners experiencing depression worried much more about being away from family, extra work on board, contract length, money, and either themselves or a family

member getting COVID-19 than did the mariners who were not experiencing depression. Mariners with depressive symptoms were also more likely to have feelings of isolation on board, report lack of access to both internet or phone on board, be denied shore leave, and be restricted in being able to see their families.

Table 4: Mental Health Outcomes by Credential

Credential	Depression (0-6) n=1312		Anxiety (0-6) n=1318		Suicidal Ideation (0-3) n=1319		Perceived Stress (0-16) n=1285		PTSD (0-2) n=1367		Risk Score
	Mean	% High	Mean	% High	Mean	% High	Mean	% High	Mean	% High	
Cadet	1.53	27.8%	1.89	38.9%	0.17	11.1%	5.06	42.9%	0.21	15.8%	8
Unlicensed Deck--Limited	1.25	21.8%	1.48	26.8%	0.16	12.5%	4.19	30.0%	0.28	16.4%	4
Unlicensed Deck--Unlimited	1.46	24.3%	1.32	21.3%	0.10	8.3%	4.50	40.6%	0.28	20.2%	3
Unlicensed Engine--Limited	1.06	11.7%	1.06	23.5%	0.12	5.8%	3.53	17.6%	0.06	5.8%	1
Unlicensed Engine--Unlimited	1.74	23.1%	1.59	23.1%	0.21	10.3%	4.90	41.0%	0.28	16.3%	8
Pilot	1.00	9.1%	1.37	20.0%	0.03	3.0%	4.94	50.0%	0.08	5.4%	2
Licensed Deck Officer—Lim. by tonnage or waters	1.22	14.8%	1.39	18.1%	0.11	7.6%	4.30	31.5%	0.27	18.1%	1
Licensed Deck Officer—Unlim. tonnage on oceans	1.59	21.7%	1.70	24.3%	0.13	9.4%	4.77	39.1%	0.29	18.8%	8
Licensed Engineer Officer—Lim. Horsepower	1.75	16.7%	2.00	38.5%	0.38	14.3%	4.25	33.3%	0.31	15.4%	6
Licensed Engineer Officer—Unlim. Horsepower	1.67	27.4%	1.51	23.8%	0.16	10.1%	5.27	45.7%	0.32	20.1%	9
Other	1.33	17.4%	1.36	19.3%	0.09	7.4%	4.68	37.3%	0.30	19.6%	2
All Respondents	1.46	20.7%	1.52	22.7%	0.13	8.9%	4.69	38.2%	0.28	18.4%	

Table 5: Mental Health Outcomes by Vessel Type

Vessel	Depression (0-6) n=1312		Anxiety (0-3) n=1318		Suicidal Ideation (0-3) n=1319		Perceived Stress (0-16) n=1285		PTSD (0-2) n=1367		Risk Score
	Mean	% High	Mean	% High	Mean	% High	Mean	% High	Mean	% High	
Inland waterways	1.24	15.4%	1.25	19.0%	0.09	5.1%	4.23	32.4%	0.28	18.1%	0
Harbor tugs	1.27	14.1%	1.44	18.2%	0.12	12.1%	4.23	35.4%	0.30	21.2%	3
Ferries & passenger vessels	1.43	19.6%	1.44	21.5%	0.11	7.5%	4.33	29.3%	0.35	22.9%	2
Pilotage	0.84	5.3%	1.11	15.8%	0.00	0.0%	4.47	41.1%	0.10	10.0%	0
Dredging & marine construction	1.17	17.2%	1.38	24.1%	0.10	6.9%	4.08	30.8%	0.27	16.7%	1
Great Lakes	1.65	27.5%	2.36	50.0%	0.22	14.6%	5.95	53.7%	0.26	18.6%	9
Coastwise--Jones Act	1.27	17.1%	1.40	18.1%	0.08	5.8%	4.88	38.1%	0.20	13.6%	1
Offshore Energy Support	1.49	25.4%	1.67	26.6%	0.19	12.5%	4.58	35.5%	0.17	10.6%	6
Ocean--Jones Act	1.67	26.4%	1.45	19.3%	0.15	10.2%	4.37	34.9%	0.29	16.5%	5
Ocean--International	1.29	16.7%	1.41	20.9%	0.13	9.8%	4.45	36.7%	0.27	17.3%	2
Military Sealift Command Vessel	1.95	31.3%	1.79	27.6%	0.18	11.1%	5.18	45.7%	0.43	26.3%	10
MARAD RRF Ship	1.21	16.3%	1.20	16.5%	0.07	5.8%	4.39	31.8%	0.17	13.6%	0
NOAA Vessel	1.84	26.7%	2.00	32.6%	0.07	6.5%	5.50	54.5%	0.22	15.2%	6
US Army Corps of Engineers Vessel	1.17	8.3%	1.33	16.7%	0.17	8.3%	3.92	25.0%	0.08	7.7%	1
Other	1.37	16.5%	1.49	21.6%	0.14	10.3%	4.76	38.3%	0.30	20.6%	6
All Respondents	1.46	20.7%	1.52	22.7%	0.13	8.9%	4.69	38.2%	0.28	18.4%	

Table 6: Mental Health Outcomes by Gender

	Depression n=1312		Anxiety n=1318		Suicidal Ideation n=1319		Perceived Stress n=1285		PTSD n=1367		Risk Score
Gender	Mean	% High	Mean	% High	Mean	% High	Mean	% High	Mean	% High	
Male	1.48	21.4%	1.47	21.8%	0.13	8.6%	4.60	37.0%	0.26	17.3%	3
Female	1.71	21.0%	2.17	33.6%	0.14	12.0%	5.46	48.0%	0.48	29.6%	10
No answer	1.19	15.7%	1.36	19.6%	0.13	8.8%	4.60	38.1%	0.25	16.6%	1
All Respondents	1.46	20.7%	1.52	22.7%	0.13	8.9%	4.69	38.2%	0.28	18.4%	

Table 7: Mental Health Outcomes by Age

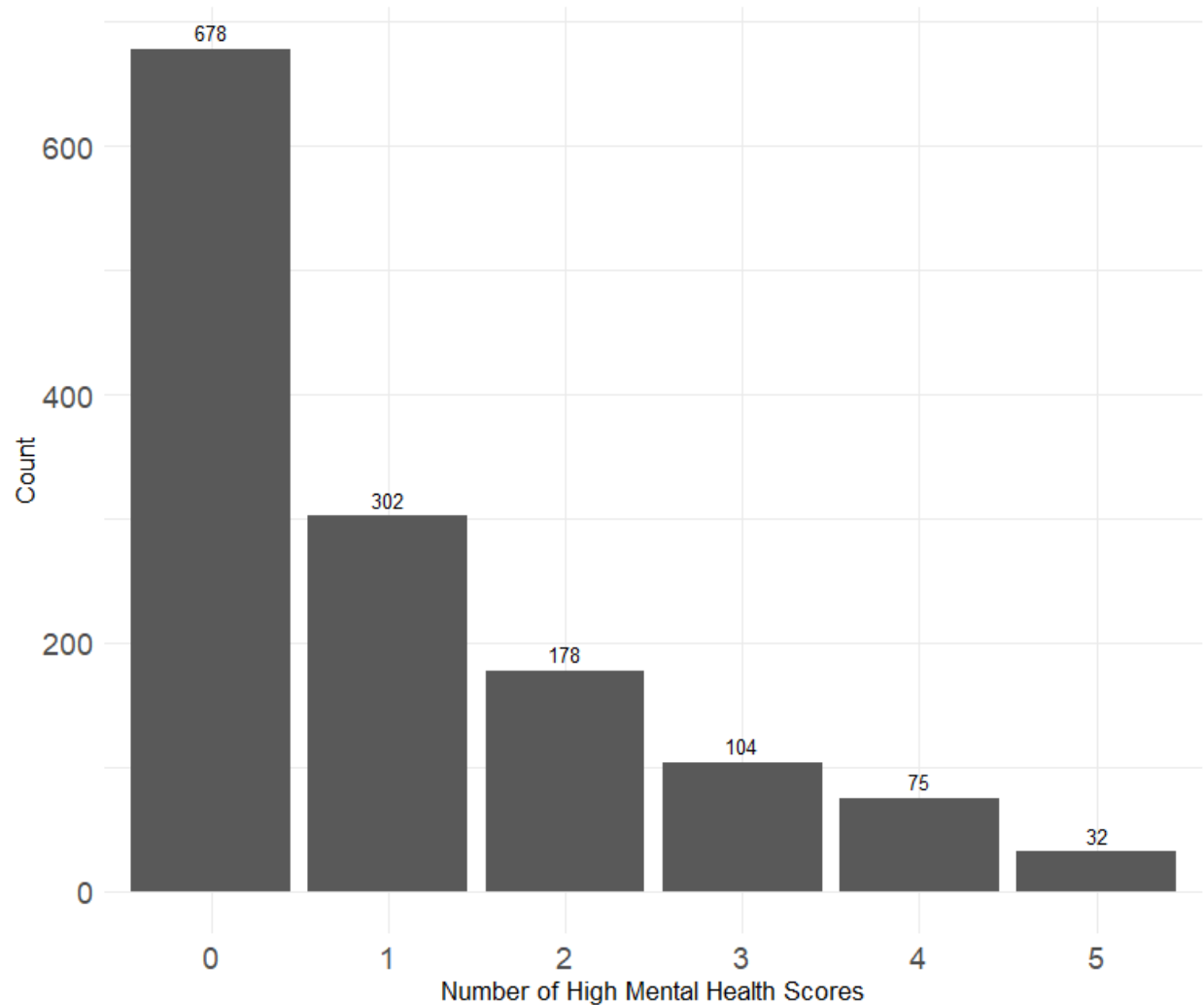
	Depression n=1312		Anxiety n=1318		Suicidal Ideation n=1319		Perceived Stress n=1285		PTSD n=1367		Risk Score
Age	Mean	% High	Mean	% High	Mean	% High	Mean	% High	Mean	% High	
18-24	1.55	25.9%	1.71	32.2%	0.10	10.0%	5.02	41.4%	0.10	6.7%	7
25-34	1.93	28.7%	2.10	37.0%	0.20	13.8%	5.64	48.6%	0.34	22.0%	10
25-44	1.63	23.7%	1.73	25.1%	0.15	9.6%	5.05	43.2%	0.33	20.6%	10
45-54	1.38	18.8%	1.40	19.7%	0.10	5.9%	4.42	36.0%	0.33	21.1%	2
55-64	1.24	16.5%	1.09	11.9%	0.09	7.0%	4.14	30.6%	0.25	17.2%	0
65+	1.01	12.6%	1.17	14.6%	0.07	5.6%	3.57	22.1%	0.24	17.8%	0
No Answer	1.20	15.8%	1.32	20.5%	0.13	9.0%	4.45	38.2%	0.22	13.9%	2
All Respondents	1.46	20.7%	1.52	22.7%	0.13	8.9%	4.69	38.2%	0.28	18.4%	

Table 8: Study outcomes compared to population and occupational studies

Outcome	Population	During COVID-19	% in study	% In mariner C19 study	Source
Anxiety	Global Seafarers		4.0%	22.7%	(3)
Anxiety	US Retail Workers	✓	24.0%	22.7%	(4)
Anxiety	Canadian non-healthcare essential workers	✓	43.0%	22.7%	(5)
Anxiety	German Healthcare workers	✓	19.1%	22.7%	(6)
Anxiety	UK Healthcare workers	✓	22.0%	22.7%	(7)
Anxiety	US Male Long Truck drivers		14.5%	22.7%	(8)
Anxiety	Offshore Gas & Oil Workers		15.0%	22.7%	(9)
Anxiety	US European American Veterans		16.2%	22.7%	(10)
Anxiety	US African American Veterans		26.1%	22.7%	(10)
Anxiety	US Veterans		8.0%	22.7%	(11)
Anxiety	US General Population	✓	30.8%	22.7%	(12)
Anxiety	US General Population		8.2%	22.7%	(12)
Anxiety	US General Population		2.7%	22.7%	(13)
Depression	Global Seafarers		15.0%	20.7%	(3)
Depression	US Mariners		16.0%	20.7%	(14)
Depression	US Retail Workers	✓	8.0%	20.7%	(4)
Depression	Canadian non-healthcare essential workers	✓	34.6%	20.7%	(5)
Depression	German Healthcare workers	✓	20.9%	20.7%	(6)
Depression	US Male Long Truck drivers		26.9%	20.7%	(8)
Depression	Offshore Gas & Oil Workers		18.0%	20.7%	(9)
Depression	US Airline Pilots		12.6%	20.7%	(15)
Depression	Post deployed US Air Force Medical Personnel		16.0%	20.7%	(16)
Depression	US Veterans		7.8%	20.7%	(11)
Depression	US General Population	✓	23.5%	20.7%	(12)
Depression	US General Population		6.6%	20.7%	(12)
Depression	US General Population		11.3%	20.7%	(17)
Depression	US General Population		7.1%	20.7%	(18)
Perceived Stress*	Seafarers at large shipping organization		5.44	4.69	(19)
Perceived Stress*	App-based Drivers	✓	9.20	4.69	(20)
Perceived Stress*	English General Population		6.11	4.69	(21)
PTSD	US Veterans		4.8%	18.4%	(11)
PTSD	US General Population		3.6%	18.4%	(22)
Suicidal Ideation	Global Seafarers		20.0%	8.9%	(3)
Suicidal Ideation	US Veterans		9.5%	8.9%	(11)
Suicidal Ideation	US General Population		3.7%	8.9%	(23)
Suicidal Ideation	US General Population		4.8%	8.9%	(24)

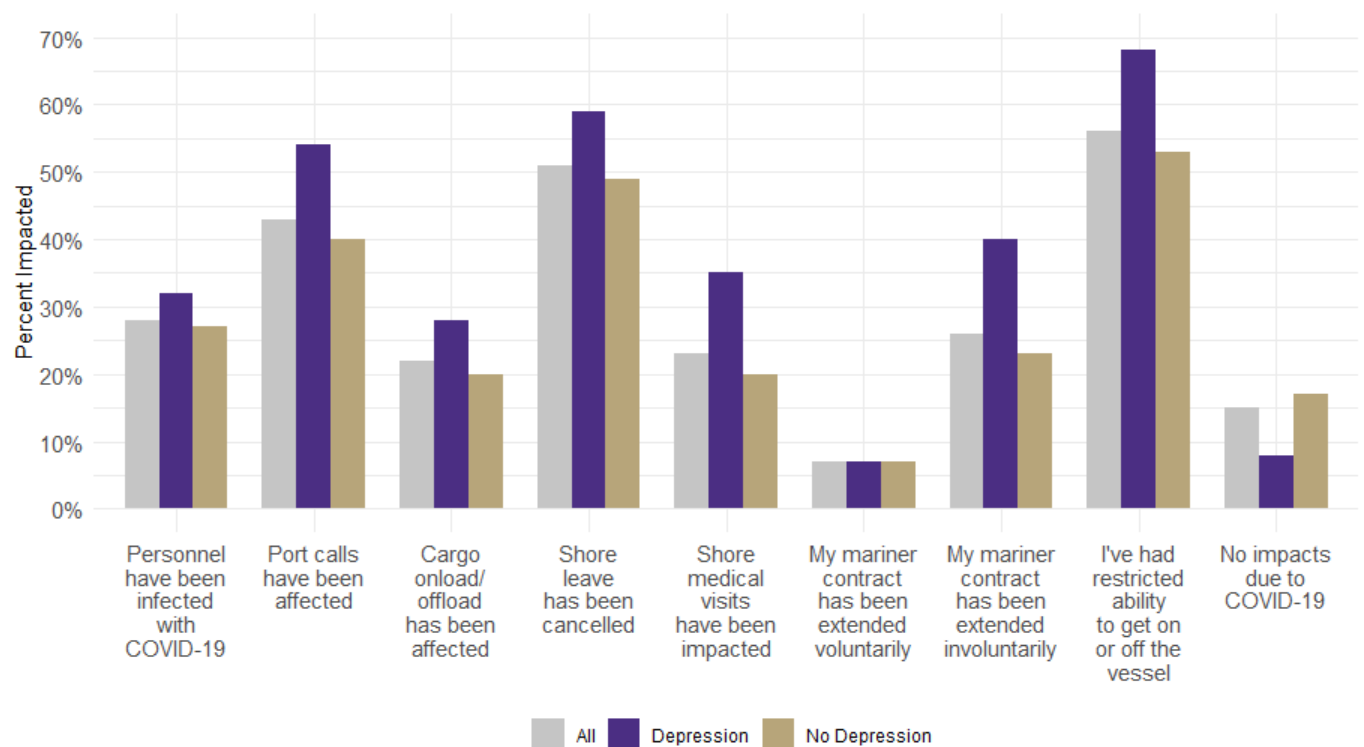
*Reported as mean PSS-4 score (out of 16)

Figure 2: Distribution of the number of mariners with 0-5 high mental health scores



0 means a respondent did not have any high mental health scores, indicating no mental health outcomes, whereas 5 means a respondent had five high mental health scores indicating they had all five mental health outcomes studied in this survey. From this figure we see 302 respondents had high scores for one mental health outcome, and 178 respondents had high scores for 2 mental health outcomes, meaning 480 total mariners had one or two high mental health scores. See table 1 (page 9) for an explanation of what a high mental health score is.

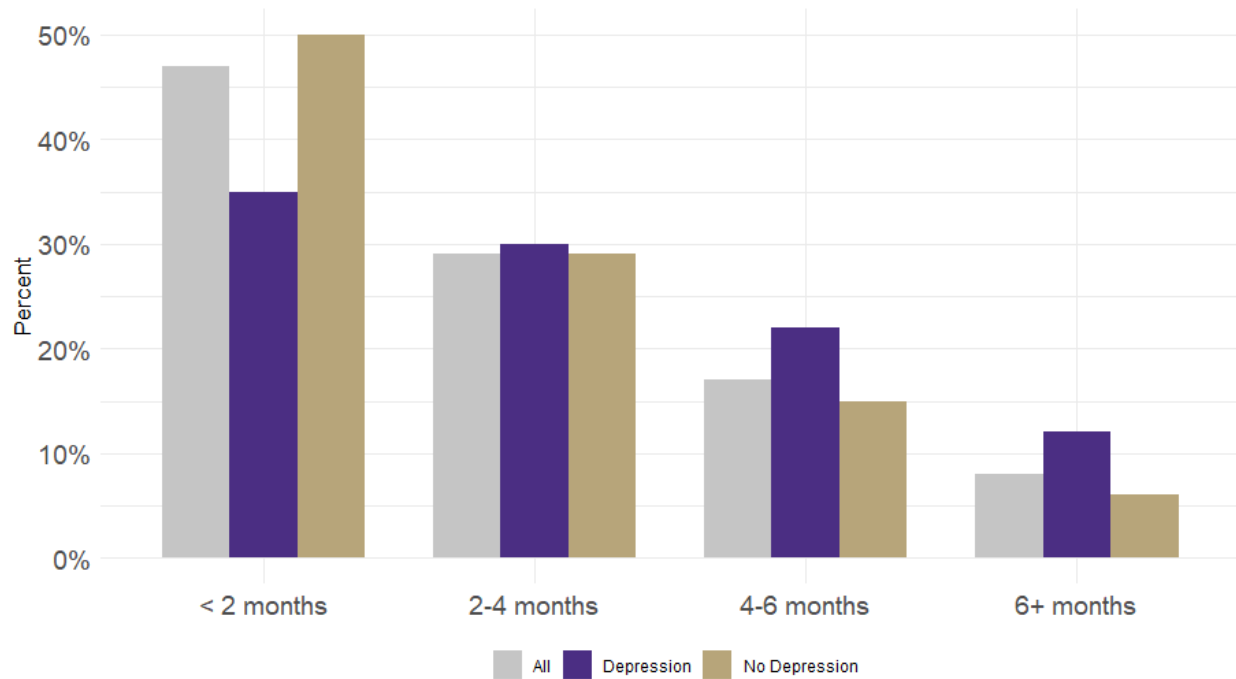
Figure 3: How has COVID impacted mariner contract, by depression status



Question: How has your vessel or your mariner contract been impacted by the COVID-19 pandemic since March 1, 2020? Please check all that apply.

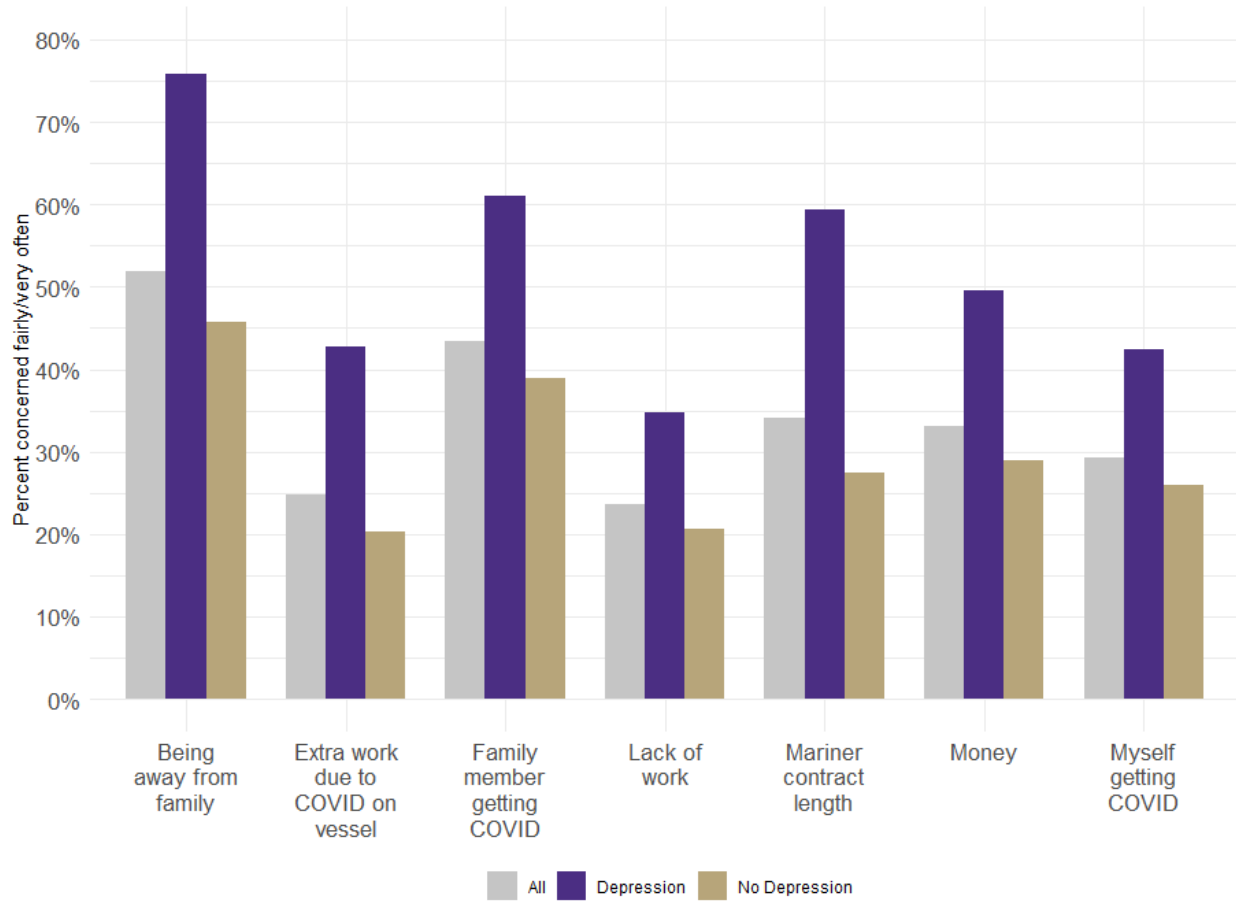
Bars on the graph above indicate the percent of mariners who said their vessel or mariner contract had been impacted.

Figure 4: Time mariners spent on vessel without access to shore leave, by depression status



Question: Since March 1, 2020 what is the longest you have been onboard a vessel continuously, without shore leave?

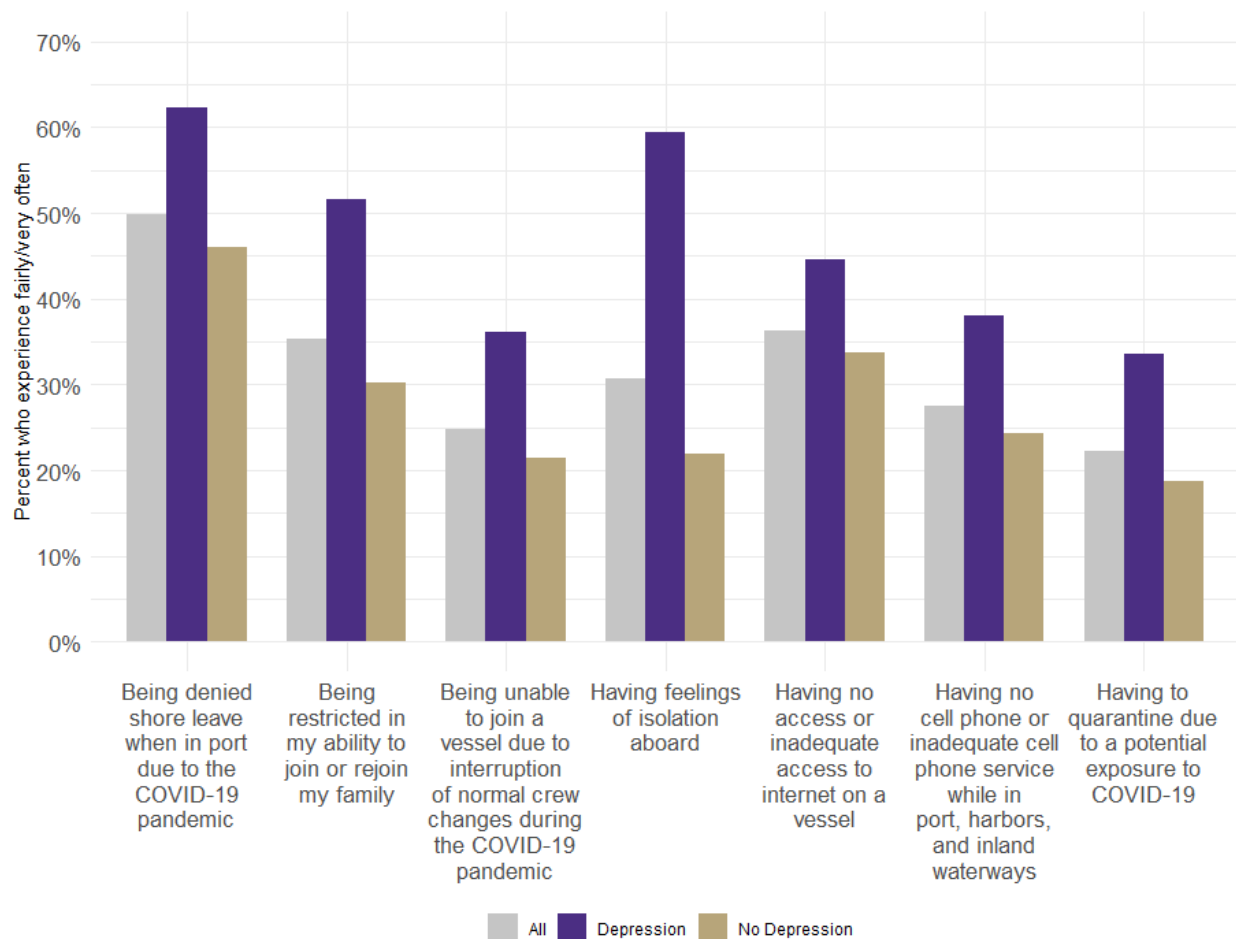
Figure 5: Percent of mariners who were concerned fairly often or very often, by depression status



Question: Since March 1, 2020 how often have you been concerned about the things below when on a vessel? (Answer Options: Never, Almost Never, Sometimes, Fairly Often, Very Often)

Bars on the graph above indicate the number of mariners who reported being concerned either Fairly Often or Very Often for each of the experiences.

Figure 6: Percent of mariners who experience these concerns fairly often or very often, by depression status



*Question: Since March 1, 2020 how often have you experienced the things listed below?
(Answer Options: Never, Almost Never, Sometimes, Fairly Often, Very Often)*

Bars on the graph above indicate the number of mariners who reported experiencing each scenario Fairly Often or Very Often.

Mental Health Communication

Mariners were asked whether they had received any information from the organization they work for related to mental health during the COVID-19 pandemic, and then asked to characterize what information they did receive (if they received any) and what information they would like to receive. Though these questions were specific to the COVID-19 pandemic, findings from them can still be widely applicable even outside of the pandemic. Of the 1,227 respondents to this question, 53.8% (n=660) reported not having received any information from the organization they work for related to mental health during the COVID-19 pandemic (since March 1, 2020). For the n=459 mariners who reported receiving information on mental health care, Figure 7 outlines the type of information they received. Figure 8 outlines information that mariners would like to receive from the organization they work for related to mental health, including both mariners who did receive information from their organization and those who did not.

Summary of Mental Health Communication

Fewer than half of mariners surveyed reported receiving any communication from the organization they work for focused on mental health during the pandemic. Those that did receive communication (only 42% of sample) received a range of information, with most receiving information on how to access help if needed, and about half receiving information on who to contact if they have concerns when on board, strategies to cope with stress, and warning signs to look for in themselves. Information was wanted on a range of topics, including how to access help (44% wanted this information), warning signs to look for in crewmates (44% wanted this information), protections/help the mariner has access to through their employer (41% wanted this information), who to contact with concerns when on board (39% wanted this information) and strategies to cope with stress (38%) wanted this information. About a quarter of respondents indicated they would not like to receive any information on mental health from their employer. However, of the 294 respondents who said they would not like to receive any information on mental health, 27.8% of them had a PSS-4 score indicating high stress, and 17.1% had a PHQ-2 score indicating major depression. This indicates that even those who may not want to receive mental health information would still benefit from it. Additionally, steps should be taken to ensure communication between onboard leaders and shoreside management is effective and frequent, to ensure crew is receiving communication from shoreside and shoreside is hearing concerns of the crew.

Mental Health Access and Barriers

Mariners were asked whether they thought mental health care (talk therapy or medication) can be an effective means to help people feel better if they are stressed, worried, or depressed, and the large majority of respondents indicated that they did. Only 93 (7.7%) of respondents said that mental health care is not an effective means to helping people feel better, whereas 894 (73.9%) of respondents said that it is effective. 223 respondents (18.4%) said they were not sure if mental health care is effective to help people feel better if they are stressed, worried, or depressed. Of the 93 respondents who do not think mental health care is

effective, 22.6% of respondents had scores indicating depression, 20.4% of respondents had scores indicating anxiety, and 34.4% of respondents had scores indicating high stress. These respondents may not have had success with mental health care in the past, don't acknowledge their own mental health struggles, or hold a bias that will make it challenging for them to get care.

Mariners who indicated they believe mental health care is effective or were not sure if it was effective were asked whether they felt there were barriers to accessing mental health care either when at home, or on a vessel. Mariners reported few barriers to accessing mental health care when at home, with 72.4% saying they would easily be able to access mental health care while at home, and about 4% of respondents indicating they were already accessing mental health care at home. For those indicating there were barriers to accessing mental health care at home, the primary concern was how accessing mental health care would affect their USCG Credential (49.1% indicated this was a barrier) followed by not being able to afford to pay (29.7%), and not knowing how to find a provider (28.3%). Timing was another concern, with mariner saying the wait to see a professional is too long (24.7%) and job demands make it too hard to find a time (26.2%). It must be noted that the list of barriers provided on this survey for mariners to choose from cannot be considered to be exhaustive. Mariners were able to check the option "Another reason not listed here", but the other barriers experienced were not recorded.

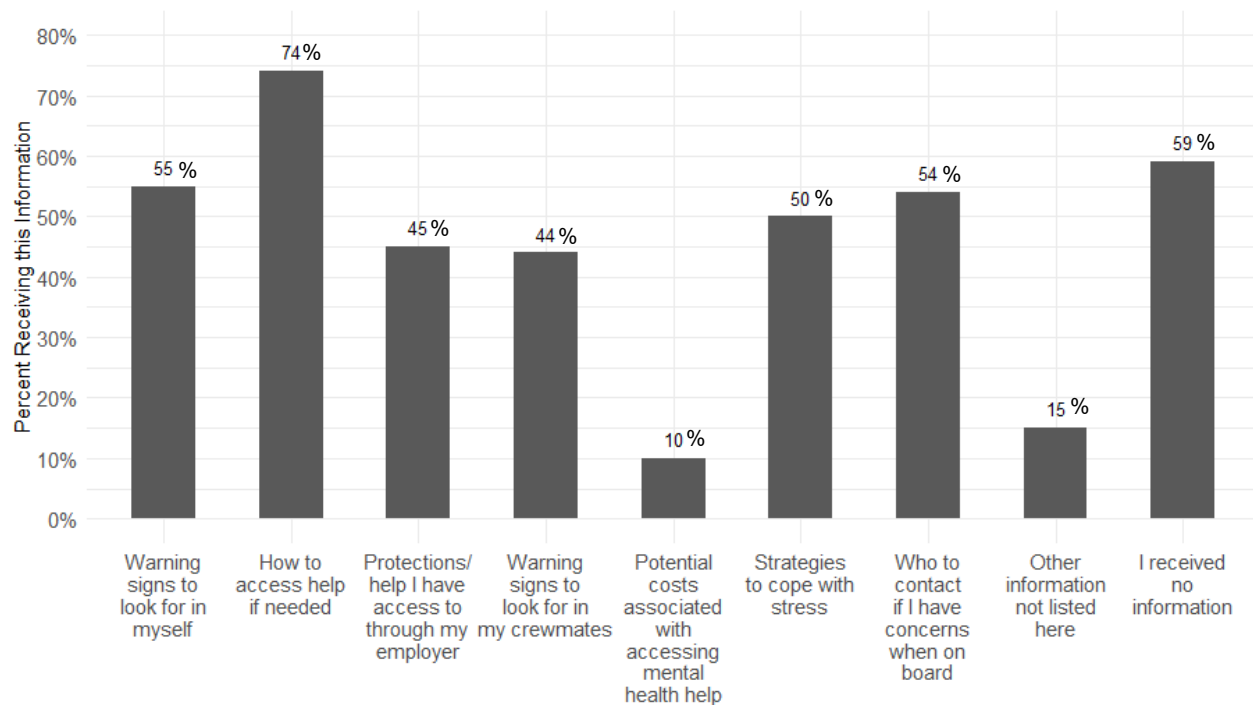
Mariners reported more barriers to accessing mental healthcare aboard a vessel, with 67.1% of respondents saying that they would not be able to easily continue or start mental health care while on a vessel. Figure 9 outlines the barriers mariners reported to accessing mental health care while on a vessel, with lack of internet/phone being the primary barrier, followed by concerns about the USCG credential, lack of privacy, and not knowing how to find a provider. Notably, barriers were greater in those mariners with scores indicating major depressive disorder¹. Perceived barriers and difficulty in accessing help is consistently seen in individuals with adverse mental health. Additionally, those with an existing adverse mental health outcome may have already tried to access mental health care on a vessel and encountered barriers, while those without an adverse mental health outcome may not recognize the barriers that exist. Again, the barriers provided on the survey for mariners to choose from cannot be considered to be exhaustive, and while they were able to check the option "Another reason not listed here", those other reasons were not recorded.

Summary of Mental Health Access and Barriers

Mariners, both with and without an existing adverse mental health outcome, report barriers to accessing mental health care aboard a vessel. Fewer report barriers to accessing mental health care while at home. Despite the high prevalence of adverse mental health outcomes in this population, very few mariners reported receiving any mental health care either while at home or on a vessel. Given that the large majority of mariners who took this survey hold a belief that mental health care is helpful, working to decrease barriers, identify mariners who need help, and ensuring they have access to help will be important for decreasing the prevalence of adverse mental health outcomes in the industry.

¹ Assessed as score on the PHQ-2 of ≥ 3 , see Table 1

Figure 7: Mental Health communication topics mariners reported receiving from the organization they work for during the COVID-19 pandemic (n=403 mariners)

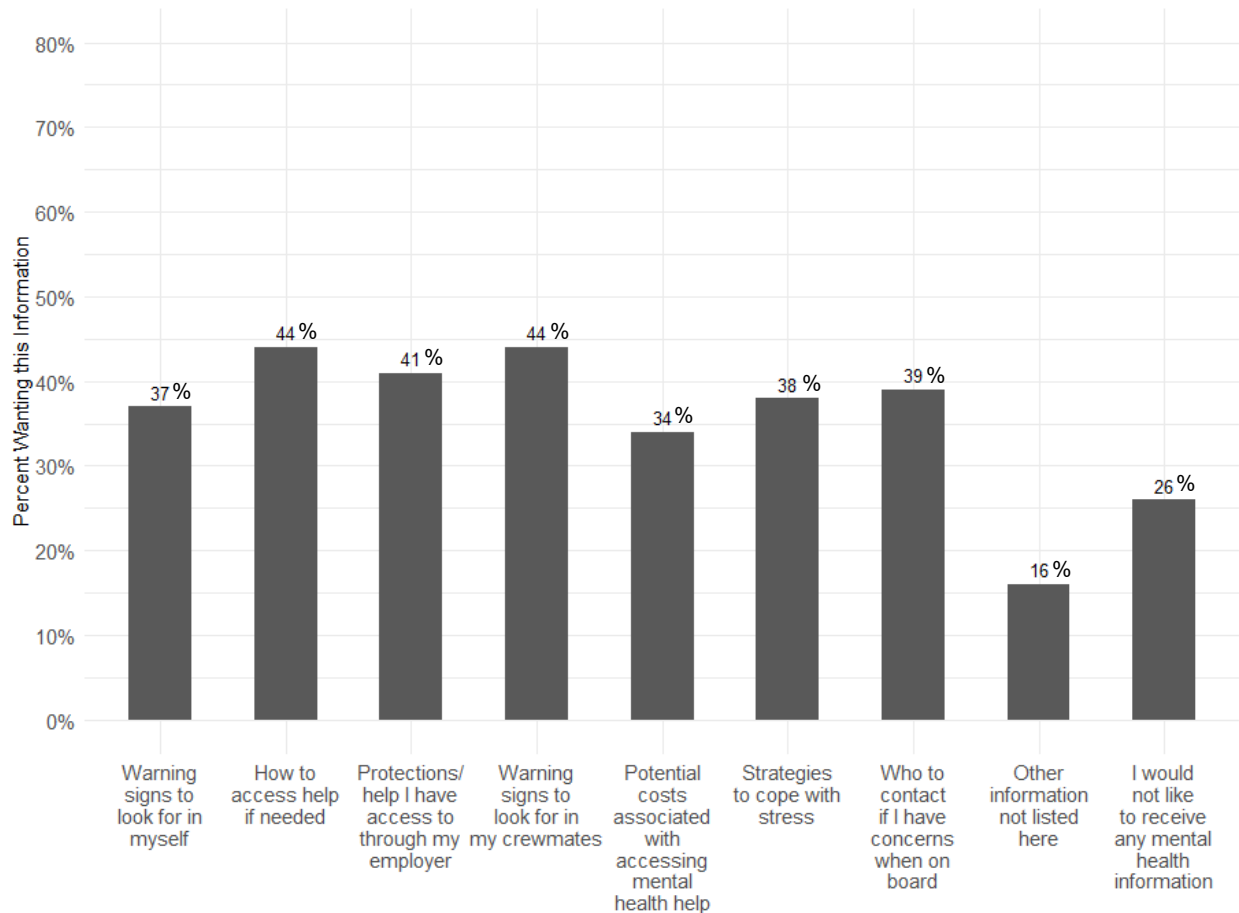


For mariners who indicated they have received any information from the organization they work for related to mental health, they were asked:

Question: What types of mental health resource information have you received from the organization you work for during the COVID-19 pandemic? Please check all that apply.

Bars on the graph above indicate the percent of mariners who received each type of information, out of the n=403 mariners who received any communication.

Figure 8: Mental Health Communication Topics Mariners would like to receive from the organization they work for (n=1,133)

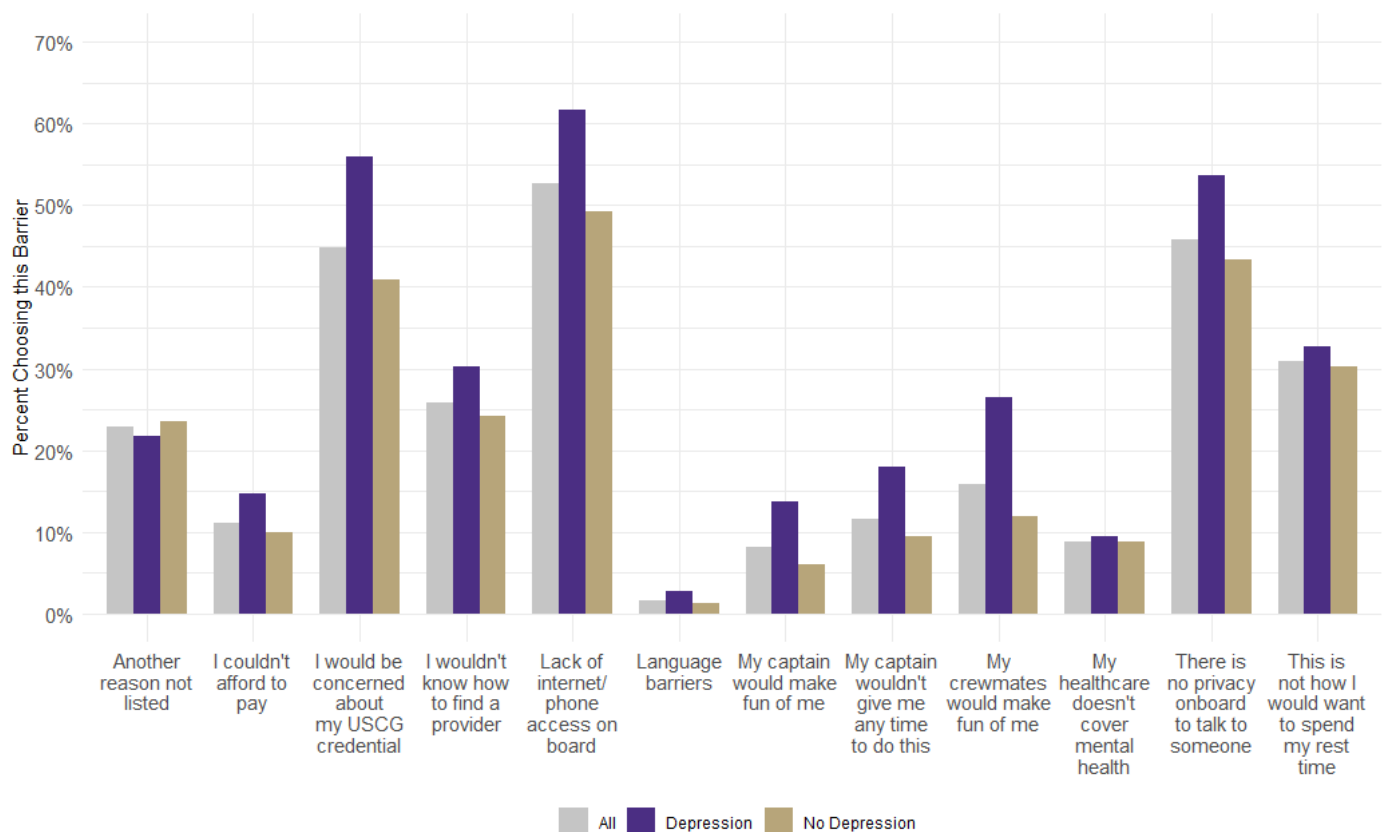


Asked of all mariners:

Question: What types of mental health resource information would you like to receive from the organization you work for during the COVID-19 pandemic? Please check all that apply.

Bars on the graph above indicate the percent of mariners who would want to receive this information.

Figure 9: Barriers to Accessing Mental Health Care while on a Vessel



Asked of mariners who indicated they would not be able to continue or start mental health care while on a vessel.

Question: Why do you feel like you could not seek mental health care aboard a vessel if you wanted to? Please check all that apply.

Bars on the graph above indicate the percent of mariners who selected each barrier

Job Satisfaction in Mariner Population

Mariners were asked a series of questions to better understand their job satisfaction while sailing during the pandemic, and the perceived supports they receive from their vessel senior officers and organization's management for not only accessing mental health care but also working in accordance with safety rules and COVID-19 protocols. Job satisfaction spanned four questions, where respondents were asked to rate their level of agreement (strongly disagree, disagree, agree, strongly agree) with a given statement about their job. The percent of respondents who agreed or strongly agreed with each of the four statements are presented in Table 9. Here we see that most all respondents agree that they like the people they work with, and the things they do at work. However, fewer respondents feel that they have enough time to relax and recharge on the vessel, and that they have someone to talk to when they feel stressed or sad. In particular, for those respondents with scores indicating depression, only 35% of respondents agree they have someone to talk to and less than half agree they have enough time to relax and recharge. These could be two important areas to intervene, and could particularly benefit those mariners with an adverse mental health outcome.

Five additional questions were asked around safety climate, asking mariners if their vessel senior officers and organization's management encourage the crew to get mental health help when needed, and if their vessel senior officers and organization's management encourage employees to work in accordance with safety rules, including COVID-19 protocols. Mariners were also asked if their officers/seafarers union has been supportive during the pandemic, with results found in Table 10. Twenty-five percent of respondents who answered the question about the support of a union indicated that it was not applicable to them (likely because they do not belong to an officers/seafarers union).

Summary of Job Satisfaction in Mariner Population

Overall, survey respondents like their job and people they work with, though there is a decrease in job satisfaction for mariners with adverse mental health outcomes. Regardless of depression status, many mariners feel that they lack someone to speak to on a vessel when they are feeling sad or stressed, which could lead to feelings of isolation and loneliness. In mariners with scores indicating depression, only 35% felt they had someone to talk to on the vessel when they were sad or stressed. This seems like an important place to intervene so all mariners have someone to talk to while on a vessel. About 62% of respondents felt they had enough time to relax and recharge while on a vessel, but for mariners with scores indicating depression, only 47% felt they had enough time to relax and recharge. Ensuring that mariners have ample time to rest and recharge can increase productivity, and feelings of job satisfaction.

Overall, mariners felt that both vessel senior officers and their organization's management encourage workers to work in accordance with safety rules, including COVID-19 protocols, which is encouraging to create a culture of safety on board a vessel. More than half of mariners agreed that vessel senior officers and their organization's management encourage the crew to get mental health help as needed, with 65% of mariners agreeing that vessel senior officers encourage the crew to get mental health help, and 61% agreeing that their organization's management encourages the crew to get mental health help as needed. However, the percent that agreed was much lower for those mariners with scores indicating

depression with fewer than half of the respondents agreeing that vessel senior officers or their organization's management encourage the crew to get mental health help if needed. Ensuring that senior officers and their organization's management are promoting mental health, encouraging mariners to get help, and de-stigmatizing its value will be another important consideration for improving both uptake of care and overall worker mental health aboard a vessel.

COVID-19 Prevention and Controls in the Mariner Population

Mariners were asked questions about their direct experiences with COVID-19 both on their vessel and in their personal life. Responses to questions about COVID-19 on their vessel are summarized in Table 11. It is important to note that these responses in particular could change for mariners over time, as protocols change and vaccine availability/mandates change. This represents views at the time the mariner took the survey, and caution should be taken interpreting these findings for other times during the pandemic.

Questions were also asked about how mariners were asked to quarantine before joining a vessel, and sources of stress they experienced while quarantining. About 29% of respondents indicated they had not been asked to quarantine before joining a vessel. Of the 1,133 respondents that did quarantine before joining a vessel, 55.5% self-quarantined at home, 37.6% quarantined at a hotel, and 6.9% quarantined in another way. Table 12 outlines the sources of stress mariners experienced when quarantining at home and at a hotel.

Summary of COVID-19 Prevention and Controls

At the time of the survey, there were relatively few cases of COVID-19 in this population, and of those who had a lab-confirmed case of COVID-19, few respondents indicated they were infected while on a vessel. However, about 30% of respondents sailed on a vessel that had a positive COVID-19 cases, indicating that there was transmission occurring. The majority of mariners (76%) were subject to testing before joining a vessel, and a majority of respondents (89%) indicated they participated in pre-joining protocols (which could include training, testing, and/or quarantines). However, only about half of respondents reported that the pre-joining protocols made them feel safer when on board.

Regarding vaccinations, the majority of respondents (71%) indicated they would be willing to get the COVID-19 vaccine at time of taking the survey. About 19% indicated they would not be willing, and a further 10% were unsure. This is similar to rates of vaccine hesitancy and vaccine refusal seen in the general population, though vaccine mandates will now likely drive uptake in the population that is hesitant or prone to refuse. Overall, more than half of the respondents (61%) felt that the COVID-19 vaccine would reduce concerns for infection. During quarantine, mariners that quarantined at a hotel as opposed to at home indicated more sources of stress, in particular due to separation from loved ones, not being allowed to leave, and boredom. During times when quarantine is used to protect mariners, acknowledgement of these sources of stress, and allowing safe interactions with loved ones or other mariners may help to alleviate stress and boredom from quarantining.

Table 9: Measures of Job Satisfaction in Mariners, by depression status

	% that agree or strongly agree		
	All	Depressed	Not Depressed
I like the people I work with.	90.7%	82.8%	92.7%
I like doing the things I do at work.	92.6%	84.4%	94.7%
I get enough time to relax and recharge when on the vessel.	62.4%	47.3%	66.0%
If I am feeling sad or stressed there is usually someone on the vessel I can talk to.	51.8%	35.2%	55.8%

Table 10: Measures of safety climate, by depression status

	% that agree or strongly agree		
	All	Depressed	Not Depressed
Vessel senior officers generally encourage employees to work in accordance with safety rules, including COVID-19 protocols.	89.9%	83.2%	91.6%
Vessel senior officers encourage the crew to get mental health help if needed.	65.0%	47.5%	70.2%
Organization's management generally encourage employees to work in accordance with safety rules, including COVID-19 protocols.	85.6%	77.4%	88.1%
Organization's management encourage the crew to get mental health help if needed.	61.8%	46.1%	66.3%
If applicable: My officers/seafarers union has been supportive during the pandemic.	55.2%	46.1%	57.9%

Table 11: COVID-19 on a Vessel

	n	%
Have you had a lab-confirmed case of COVID-19?		
Yes	116	8.7%
No	1195	89.5%
Not sure	24	1.8%
Do you think you were infected with COVID-19 while on a vessel?		
Yes	34	29.3%
No	55	47.4%
Not sure	27	23.3%
Have you been on a vessel that had a positive COVID-19 case, that was not you?		
Yes	406	30.8%
No	823	62.4%
Not sure	90	6.8%
Does your organization have a COVID-19 testing protocol before joining the vessel?		
Yes	1002	76.3%
No	268	20.4%
Not sure	43	3.3%
Do the pre-joining COVID-19 protocols you have participated in make you feel safer when on board?		
Yes	604	45.9%
No	437	33.2%
Not sure	128	9.7%
I haven't participated in any	148	11.2%
If a COVID-19 vaccine were available to you today, would you be willing to get it?		
Yes	925	70.6%
No	242	18.5%
Not sure	136	10.4%
Do you think having the COVID-19 vaccine would reduce your concerns for infection on a vessel?		
Yes	799	61.0%
No	352	26.9%
Not sure	147	11.2%

Table 12: Sources of stress during at home and hotel quarantine

	At home		In hotel	
	<i>n</i>	%	<i>n</i>	%
Uncertainty of my disease status	113	18.1%	89	21.2%
Not being allowed to leave my house/hotel	272	43.7%	294	70.0%
Restricted daily activities	390	62.6%	311	74.0%
Separation from loved ones	212	34.0%	253	60.2%
Boredom	291	46.7%	294	70.0%
Financial losses	168	27.0%	103	24.5%
Not comfortable away from home	--	--	81	19.6%
I did not experience any stressors	117	18.8%	32	7.6%
I experienced other stressors	104	16.7%	89	21.2%

The impact of COVID-19 on serving during a time of National Need

Mariners who identified as a Licensed Deck Officer—Unlimited Tonnage on Oceans or Licensed Engineer Officer—Unlimited Horsepower were asked about their willingness to serve during a time of National Need and how their willingness to serve may have been impacted by the mental health stresses related to COVID-19. Table 13a summarizes the types of vessels mariners reported they would have been willing to serve on before COVID-19, and during/after COVID-19, Table 13b summarizes the lengths of afloat tours mariners would have been willing to serve on before COVID-19 and during/after COVID-19, and Table 13c summarizes the minimum length of shore break mariners would accept between afloat tours both before COVID-19 and during/after COVID-19.

Summary of the impact of COVID-19 on serving during a time of National Need

Overall, most mariners were willing to serve during a time of National Need even with the added stresses due to the COVID-19 pandemic, though during/after the pandemic a preference was expressed for shorter afloat tours and longer shore breaks. Fewer would be willing to serve with a shorter shore break (less than one month) or shore break of 5 or more months, whether it was before or during COVID-19, but more would be willing to serve with a shore break of 5 or more months during/after the pandemic as compared to before, and fewer would accept a shore break of less than 2 months than would have before the pandemic. Both before and during the pandemic, mariners favored deployments of four months or less. However, during/after the pandemic this preference changed, with an increase in mariners favoring short deployments (less than 2 months).

Prior to the pandemic mariners were fairly equally willing to serve on all vessel types, with a preference for a government-owned vessels. However, during/after the pandemic there was a stated preference for a privately-owned vessels engaged in coastal and/or Great Lakes commercial trade and less willingness to serve on a government-owned vessel.

Earlier in this survey it was shown that mental health outcomes may be associated with length of time without shore leave (see Figure 4) and concerns about not being able to access shore leave or being away from family (Figures 3, 5). Considerations of optimal deployment times and optimal lengths of shore break should be considered for mariners serving during a time of National Need in order to promote optimal mental health.

Table 13a, b, c: COVID-19 impacts to serving during a time of National Need

a. *How do you think that mental health stresses related to COVID-19 have impacted your willingness to volunteer to serve as a paid crew member on the following types of vessels during a time of National Need (assuming that any necessary training would be provided)?*

Willingness to serve on:	Would have served before COVID-19		Would serve during/after COVID-19		% change
	<i>n</i>	%	<i>n</i>	%	
A government-owned vessel	426	79.0%	376	69.8%	-9.3%
A privately-owned vessel engaged by the government	417	77.4%	399	74.0%	-3.3%
A privately-owned vessel engaged in international commercial trade	412	76.4%	409	75.9%	-0.6%
A privately-owned vessel engaged in coastal and/or Great Lakes trade	381	70.7%	439	81.4%	10.8%

b. *How do you think COVID-19 related mental stresses have impacted your willingness to volunteer to serve for the lengths of afloat tours listed below during a period of National Need?*

Willingness to serve for:	Would have served before COVID-19		Would serve during/after COVID-19		% change
	<i>n</i>	%	<i>n</i>	%	
Less than a month	314	58.4%	352	65.4%	7.1%
1-2 months	337	62.6%	372	69.1%	6.5%
3-4 months	350	65.1%	307	57.1%	-8.0%
5-6 months	174	32.3%	109	20.3%	-12.1%
More than 6 months	117	21.7%	74	13.8%	-8.0%

c. *How do you think COVID-19 related stressors have impacted the minimum length of the shore break you would accept between afloat tours in a paid position aboard a vessel during a period of National Need?*

Willingness to accept leave of:	Would have accepted before COVID-19		Would accept during/after COVID-19		% change
	<i>n</i>	%	<i>n</i>	%	
Less than a month	164	31.1%	138	26.1%	-4.9%
1-2 months	325	61.6%	266	50.4%	-11.2%
3-4 months	294	55.7%	350	66.3%	10.6%
5-6 months	148	28.0%	186	35.2%	7.2%
More than 6 months	107	20.3%	136	25.8%	5.5%

Overall Recommendations and Conclusions

The results presented here represent a thorough look into the mental health of mariners during the COVID-19 pandemic, the needs of mariners, and possible determinants of stress in mariner populations. While the survey was completed during the COVID-19 pandemic, findings and recommendations are important to support mariner mental health at any time. The following are key recommendations to stakeholders as informed by the results presented in this final report.

Increase surveillance of mental health outcomes in mariner populations

Few surveys have characterized the prevalence of mental health outcomes in mariner populations, and those that have found higher rates than in the general population. In order to track changes in mariner mental health overtime, and to evaluate the effectiveness of any mental health interventions, **it is recommended that a mariner mental health survey be conducted at least every other year.**

Increase mental health communication and training from all relevant communication channels

Survey results indicate that most mariners did not receive communication during the pandemic regarding mental health. **Increased communication and training is recommended.** Communication should be accessible, frequent, and tailored to be specific to mariners. Communication from a trusted source is preferred, and topics of interest to mariners are presented in Figure 8, though this shouldn't be considered an exhaustive list. It is recommended to liaise with mental health experts to prioritize communications and trainings, ensure they are factually accurate, and appropriate for the audience.

Increase access to mental health services on a vessel

Perceived and real barriers to accessing mental health care, particularly while on a vessel, were high. Many mariners reported a lack of internet and telephone making conversations with a mental health care provider challenging. Many others felt there wasn't privacy or time to access mental health care. Recommendations for improving access onboard a vessel include (but are not limited to):

- Developing mental health care modules that can be accessed without internet or telephone;
- Ensuring mariners who need to access mental health care are given ample time to do so, as appropriate;
- Ensuring there is privacy onboard for mariners pursuing mental health care that also allows them to have confidential exchanges;

- Having a person appointed on the vessel or ashore who can help to confidentially coordinate mental health services for mariners who may need assistance
- Enforcing “zero tolerance” for bullying/teasing around mental health on a vessel
- Following-up with mariners when they are off a vessel or change vessels to help ensure they have continuity in care
- Give mariners opportunities to have “mental health check-ins” during a deployment

Increase social support aboard vessels

Notably, about half of respondents to this survey indicated that there is no one on a vessel they can talk to when they are feeling sad or stressed. Given the often isolating conditions on a vessel, it is recommended that steps be taken to increase social support aboard vessels. This could take several forms, including establishing a formal or informal mentoring or “buddy” program or ensuring someone on each vessel is trained in psychological first aid and is known to be accessible and able to talk.

Continue to emphasize the importance of mental health care in maintaining USCG credential

At the midpoint of this survey, many mariners had indicated that concerns about their USCG credential was a barrier to accessing mental health care (see Figure 9). This prompted updated guidance from the USCG in May 2021 to assure mariners that seeking mental health care would not jeopardize their credential. This was issued as Mariner Safety Information Bulletin number 07-21. It is important that this guidance continues, and communications continue to emphasize that seeking mental health care will not jeopardize a mariners USCG credential.

If not already standard, consider measures of mental health in root cause analyses of accidents/injuries

When investigating an accident or injury, considering the underlying mental health of the mariner can be important. Similarly, offering easy access to mental health care for mariners who may have witnessed or experienced traumatic events on board

and ensuring they have access to mental health care if warranted can help to normalize talking about mental health and

Improve the experiences of women in the industry

Women-identifying mariners were found to have worse mental health outcomes than men and represent a minority population in this industry. Further research investigating the experiences of women mariners and understanding what the barriers to entry are for women is warranted. Developing affinity groups for women and increasing social support between women both on and off vessels could be an important step to improve the experiences for women on a vessel.

Increase opportunities for mariners to share their mental health experiences and needs

Through focus groups or qualitative interviews with mariners, much could be learned about the needs of mariners, and barriers/facilitators to implementing interventions. While this survey helps to identify what some of the concerns or barriers may be, qualitative data would allow us to get richer context which could inform more appropriate interventions and understand greater nuance.

Appendices

Appended to this report are the following appendices, meant to serve as open resources for interested parties.

Appendix A: Copy of survey instrument

Appendix B: Promotional flyer used for this survey

Appendix C: List of mental health resources for mariners, given at the completion of the survey

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Contact Info

Marissa G. Baker, PhD
4225 Roosevelt Way NE, Suite 100
Seattle WA 98105
bakermg@uw.edu
<https://deohs.washington.edu/>

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The University of Washington occupies the traditional land of the Coast Salish peoples. Without them, we would not have access to this working, teaching, and learning environment. We honor and acknowledge the original caretakers of this land, who are still here.

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Mariner Mental Health Needs during COVID-19

Thank you for taking the time to participate in the Mariner Mental Health Needs during COVID-19 Survey. Your voice is very important to helping improve mental health access and outcomes for your fellow mariners, particularly during the COVID-19 pandemic.

Purpose: Your input is critical to understanding how the COVID-19 pandemic has affected mariners, particularly the mental health of mariners.

Process: In this 10-20 minute survey you will be asked a variety of questions about COVID-19, mental health, and your experiences and feelings when you are on a vessel.

The electronic survey will take about 10-20 minutes to complete. The survey is anonymous, and all results will be kept confidential at the University of Washington. You don't have to answer any questions you don't want to. **Payoff:** Results from this survey will be used by federal agencies, vessel owners/operators, mariner unions, maritime training institutions, seafarer welfare organizations and MTS stakeholders to develop effective solutions that benefit our mariners' mental health.

Questions: This survey is being conducted by Dr. Marissa Baker, Assistant Professor & Industrial Hygiene Program Director, University of Washington School of Public Health. You can email her with any questions, comments or concerns: bakermg@uw.edu

This survey is supported by Centers for Disease Prevention & Control (CDC) and the COVID-19 Working Group (C-19 WG) of the federal interagency U.S. Committee on the Marine Transportation System (CMTS).

The Ship Operations Cooperative Program (SOCP), whose members include vessel owners/operators, mariner unions, maritime academies, maritime training institutions, classification societies, other maritime industry stakeholders and government agencies, is actively supporting this project.

For more information on this survey, please [click here](#) (link opens in new window)

A little about you

The following questions will ask you about your credentials, vessels you sail on, and your merchant mariner status.

In order to participate in our study, you must be:

- 1. A U.S. citizen or permanent resident AND**
- 2. A merchant mariner who works on U.S. vessels**

Are you a U.S. citizen or permanent resident and a merchant mariner who works on U.S. vessels?

- ☐ No (end survey)
☐ Yes

If yes, you'll be asked 2 more questions on this page

Have you actively sailed at some point during the COVID-19 pandemic? (Since March 1, 2020)

- ☐ No
☐ Yes

What is the type of position in which you currently sail (or last sailed)?

- ☐ Cadet
- ☐ Unlicensed Deck -- Limited
- ☐ Unlicensed Deck -- Unlimited
- ☐ Unlicensed Engine -- Limited
- ☐ Unlicensed Engine -- Unlimited
- ☐ Pilot
- ☐ Licensed Deck Officer -- Limited by tonnage or waters
- ☐ Licensed Deck Officer -- Unlimited tonnage on Oceans
- ☐ Licensed Engineer Officer -- Limited horsepower
- ☐ Licensed Engineer Officer -- Unlimited horsepower
- ☐ Other (please specify)

Please specify "Other":

What is the maritime industry you currently sail in (or last sailed in)?

- ☐ Inland Waterways
- ☐ Harbor Tugs
- ☐ Ferries & Passenger vessels
- ☐ Pilotage
- ☐ Dredging and Marine Construction
- ☐ Great Lakes
- ☐ Coastwise -- Jones Act
- ☐ Offshore Energy Support
- ☐ Ocean -- Jones Act (US to Hawaii/Guam/Alaska/Puerto Rico)
- ☐ Ocean -- International (Commercial Vessel)
- ☐ Military Sealift Command (MSC) Vessel
- ☐ Maritime Administration (MARAD) Ready Reserve Force (RRF) ship
- ☐ NOAA vessel
- ☐ US Army Corps of Engineers vessel
- ☐ Other (please specify)

Please specify "Other":

[click here to return to instructions \(opens in new window\)](#) **Survey Progress Bar****5%****Part 1: COVID-19 On Your Vessel****The following questions will ask you about your experience with COVID-19 (coronavirus) on your vessel since March 1, 2020.**

Have you had a lab-confirmed case of COVID-19?

- ☐ No
☐ Yes
☐ I am not sure

If yes, you'll be asked up to 2 more questions on this page

Do you think you were infected with COVID-19 while on a vessel?

- ☐ No
☐ Yes
☐ I am not sure

If you were infected with COVID-19 while on a vessel, where were you isolated?

- ☐ Onboard
☐ Ashore
☐ I was not isolated at all

Since March 1, 2020 have you been on a vessel that had a positive COVID-19 case, that was not you?

- ☐ No
☐ Yes
☐ I am not sure

Does your organization have a COVID-19 testing protocol before joining the vessel?

- ☐ No
☐ Yes
☐ I am not sure

Do the pre-joining COVID-19 protocols (e.g. testing, quarantining, trainings) you have participated in make you feel safer when on board?

- ☐ No
☐ Yes
☐ I am not sure
☐ I haven't participated in any pre-joining COVID-19 protocols

If a COVID-19 vaccine were available to you today, would you be willing to get it?

- ☐ No
☐ Yes
☐ I am not sure

Do you think having the COVID-19 vaccine would reduce your concerns for infection on a vessel?

- ☐ No
☐ Yes
☐ I am not sure

The Pfizer and Moderna vaccines require a second dose 21 or 28 days after the first dose. Assuming one of these vaccines is available to you and you were willing to take it, would you be able to get a second dose in 21 or 28 days after the first dose, considering your vessel rotation schedule?

- ☐ No
☐ Yes
☐ I am not sure

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Survey Progress Bar

15%

In which ways have you been asked to quarantine prior to joining a vessel? Please check all that apply.

You will be asked a follow-up question about each location

- ☐ Self-quarantine at home
- ☐ Quarantine at a hotel
- ☐ Another way
- ☐ I have not been asked to quarantine before joining a vessel

What sources of stress did you experience when quarantining at home? Please check all that apply.

- ☐ Uncertainty of my disease status
- ☐ Not being allowed to leave my house
- ☐ Restricted daily activities
- ☐ Separation from loved ones
- ☐ Boredom
- ☐ Financial losses
- ☐ I did not experience any stressors
- ☐ I experienced other stressors not listed here

What sources of stress did you experience when quarantining at a hotel? Please check all that apply.

- ☐ Uncertainty of my disease status
- ☐ Not being allowed to leave the hotel
- ☐ Restricted daily activities
- ☐ Separation from loved ones
- ☐ Boredom
- ☐ Not comfortable away from my home
- ☐ Financial losses
- ☐ I did not experience any stressors
- ☐ I experienced other stressors not listed here

click here to return to instructions (opens in new window) Survey Progress Bar**20%**

How has your vessel or your mariner contract been impacted by the COVID-19 pandemic since March 1, 2020? Please check all that apply.

- ☐ Personnel have been infected with COVID-19
- ☐ Port calls have been affected
- ☐ Cargo onload/offload has been affected
- ☐ Shore leave has been cancelled
- ☐ Shore medical visits have been impacted
- ☐ My mariner contract has been extended voluntarily
- ☐ My mariner contract has been extended involuntarily
- ☐ I've had restricted ability to get on or off the vessel
- ☐ My vessel or mariner contract has not been impacted due to COVID-19

Since March 1, 2020 what is the longest you have been onboard a vessel continuously, without shore leave?

- ☐ Less than 2 months
- ☐ 2 to 4 months
- ☐ 4 to 6 months
- ☐ More than 6 months

[click here to return to instructions \(opens in new window\)](#) **Survey Progress Bar**
25%

Part 2: Mental Health Outcomes during COVID-19

In this section, we will use screening tools to assess whether you have symptoms and/or feelings related to common mental health outcomes, including depression, anxiety, stress, and PTSD. The questions here are similar to questions you may be asked by a doctor.

Sometimes things happen to people that are unusually or especially frightening, horrible, or traumatic. For example:

A serious accident or fire A physical or sexual assault or abuse An earthquake or flood A war Seeing someone be killed or seriously injured Having a loved one die through homicide or suicide

Have you ever experienced this type of event?

☐ No
☐ Yes

If yes, you'll be asked 2 more questions on this page

In the past month: Have you had nightmares about the event(s) or thought about the event(s) when you did not want to?

☐ No
☐ Yes

In the past month: Have you tried hard not to think about the event(s) or went out of your way to avoid situations that reminded you of the event(s)?

☐ No
☐ Yes

Survey Progress Bar**30%****In the LAST TWO WEEKS, how often have you been bothered by the things below:**

	Not at all	Several days	More than half the days	Nearly every day
Little interest or pleasure in doing things	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Feeling down, depressed, or hopeless	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Thoughts that you would be better off dead or hurting yourself in some way	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Feeling nervous, anxious, or on edge	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Not being able to stop or control worrying	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Worrying too much about different things	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Survey Progress Bar**35%****In the LAST MONTH how often have you felt:**

	Never	Almost never	Sometimes	Fairly often	Very often
You were able to control the important things in your life?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Confident about your ability to handle your personal problems?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Difficulties were piling up so high that you could not overcome them?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
That you are able to cope with the added stress due to COVID-19?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

[click here to return to instructions \(opens in new window\)](#) **Survey Progress Bar****40%****Part 3: General Health****In this section, we will ask you some general questions about your physical and mental health, including questions about your sleep habits.**

	Excellent	Very good	Good	Fair	Poor
In general, how would you rate your overall physical health now?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In general, how would you rate your overall mental health now?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In general, how would you rate your overall sleep quality now?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

In a typical week, how many days do you get at least 30 minutes of physical activity, outside of work activities?

- ☐ No days
- ☐ 1-2 days
- ☐ 3-4 days
- ☐ 5 or more days

Compared to before the COVID-19 pandemic (before March 1, 2020) how would you rate your mental health now?

- ☐ Much worse
- ☐ Somewhat worse
- ☐ The same
- ☐ Somewhat better
- ☐ Much better

Compared to before the COVID-19 pandemic (before March 1, 2020) how would you rate your sleep quality now?

- ☐ Much worse
- ☐ Somewhat worse
- ☐ The same
- ☐ Somewhat better
- ☐ Much better

[click here to return to instructions \(opens in new window\)](#) Survey Progress Bar

50%

Part 4: Life Aboard a Vessel During COVID-19

In this section, we will ask about your concerns and experiences on a vessel since the beginning of the COVID-19 pandemic (March 1, 2020).

Since March 1, 2020 how often have you been concerned about the things below when on a vessel?

	Never	Almost never	Sometimes	Fairly often	Very often
Being away from family	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mariner contract length	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Money	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A family member getting COVID-19 while I am away	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Myself getting COVID-19 while at sea or ashore	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Extra work onboard if there is a COVID-19 case on my vessel	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

[click here to return to instructions \(opens in new window\)](#) **Survey Progress Bar**

55%

Since March 1, 2020, how often have you experienced the things listed below?

	Never	Almost never	Sometimes	Fairly often	Very often
Having no access or inadequate access to internet on a vessel	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Having no cell phone or inadequate cell phone service while in port, harbors, and inland waterways	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Being restricted in my ability to join or rejoin my family	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Having feelings of isolation aboard	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Having to quarantine due to a potential exposure to COVID-19	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Being denied shore leave when in port due to the COVID-19 pandemic	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Being unable to join a vessel due to interruption of normal crew changes during the COVID-19 pandemic	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

[click here to return to instructions \(opens in new window\)](#) **Survey Progress Bar**

60%

Part 5: Job Satisfaction and Safety Climate Onboard

In this section, we will ask about you some questions about your job satisfaction, and what the safety climate is like both shoreside and onboard. If you are not currently sailing, think back to the last time you did.

Please let us know how much you agree or disagree with the statements below.

	Strongly disagree	Disagree	Agree	Strongly agree
I like the people I work with	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I like doing the things I do at work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I get enough time to relax and recharge when on the vessel	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If I am feeling stressed or sad, there is usually someone on the vessel I can talk to	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Vessel senior officers generally encourage employees to work in accordance with safety rules, including COVID-19 protocols	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Vessel senior officers encourage the crew to get mental health help if needed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Management at my organization generally encourages employees to work in accordance with safety rules, including COVID-19 protocols	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Management at my organization encourages the crew to get mental health help if needed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

My officers/seafarers union has been supportive during the pandemic

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Agree
- ☐ Strongly agree
- ☐ Not applicable

Survey Progress Bar**70%**

Is there anything else you would like to let us know about your experience with COVID-19 aboard your vessel? (Optional)

[click here to return to instructions \(opens in new window\)](#) **Survey Progress Bar**

75%

Part 6: Mental Health Access and Barriers

In this section we will ask about what mental health information you have received during the COVID-19 pandemic, and real and perceived barriers to receiving mental health treatment.

During the COVID-19 pandemic (since March 1, 2020) have you received any information from the organization you work for related to mental health?

- ☐ No
☐ Yes
☐ I am not sure

You will be asked up to 2 follow-up questions based on your answer

What types of mental health resource information have you received from the organization you work for during the COVID-19 pandemic? Please check all that apply.

- ☐ Information on warning to signs to look for in myself
☐ Information on how to access help if needed
☐ Information on warning signs to look for in my crewmates
☐ Information on the protections/help I have access to through my employer
☐ Information on the potential costs associated with accessing mental health help
☐ Information on strategies to cope with stress
☐ Information on who to contact if I have concerns about my mental health while on board
☐ Other information not listed here

What types of mental health resource information would you like to receive from the organization you work for during the COVID-19 pandemic? Please check all that apply.

- ☐ Information on warning to signs to look for in myself
☐ Information on how to access help if needed
☐ Information on warning signs to look for in my crewmates
☐ Information on the protections/help I have access to through my employer
☐ Information on the potential costs associated with accessing mental health help
☐ Information on strategies to cope with stress
☐ Information on who to contact if I have concerns about my mental health while on board
☐ Other information not listed here
☐ I would not like to receive any mental health information

[click here to return to instructions \(opens in new window\)](#) **Survey Progress Bar****80%**

In general, do you feel like mental health care can be an effective means to help people feel better if they are stressed, worried, or depressed? (Either talk therapy, or medication)

- ☐ No
☐ Yes
☐ I am not sure

If you wanted to seek mental health care while at home, do you feel you would be able to fairly easily? (Whether or not you need or want mental health care)

- ☐ No
☐ Yes
☐ I am already receiving mental health care when I am at home

You could be asked 1 follow-up questions on this page based on your answer

Did you face any barriers accessing mental health care while at home? Please check any barriers you face or faced below.

- ☐ I couldn't afford to pay
☐ Challenges with transportation, childcare, or scheduling
☐ Language barriers
☐ I thought accessing mental health care would make me feel weak
☐ A professional was not available in my area
☐ A professional was not available at a time that was convenient to me
☐ The waiting time to see a professional was long
☐ I didn't know how to find a provider
☐ My job demands made it hard to find a time
☐ My healthcare didn't cover mental health care
☐ My family or friends made fun of me
☐ I had concerns about how it would affect my USCG credential
☐ I faced other barriers not listed here
☐ I haven't faced any barriers accessing mental health care at home

Why do you feel like you could not seek mental health care while at home if you felt you wanted to? Please check all that apply.

- ☐ I couldn't afford to pay
☐ Challenges with transportation, childcare, or scheduling
☐ Language barriers
☐ Accessing mental health care would make me feel weak
☐ A professional is not available in my area
☐ A professional is not available at a time that is convenient to me
☐ The waiting time to see a professional is too long
☐ I wouldn't know how to find a provider
☐ My job demands make it too hard to find a time
☐ My healthcare doesn't cover mental health care
☐ My family or friends would make fun of me
☐ I would be concerned about my USCG credential
☐ Another reason not listed here

If you wanted to continue or start mental health care while on a vessel, do you feel like you would be able to fairly easily? (Whether or not you need or want mental health care)

- ☐ No
☐ Yes
☐ I am already receiving mental health care aboard a vessel

You could be asked 1 follow-up questions on this page based on your answer

Did you face any barriers accessing mental health care while on a vessel? Please check any barriers you face or faced below.

- ☐ There isn't privacy onboard to talk to someone
☐ My crewmates made fun of me
☐ My captain made fun of me
☐ My captain doesn't give me time to do this
☐ This isn't how I want to spend my rest time
☐ Lack of internet access/cell phone service on board
☐ Language barriers
☐ I didn't know how to find a provider
☐ My healthcare doesn't cover mental health care
☐ I can't afford to pay
☐ I had concerns about how it would affect my USCG credential
☐ Another reason not listed here
☐ I haven't faced any barriers in accessing mental health care while on a vessel

Why do you feel like you could not seek mental health care aboard a vessel if you wanted to? Please check all that apply.

- ☐ There is no privacy onboard to talk to someone
☐ My crewmates would make fun of me
☐ My captain would make fun of me
☐ My captain wouldn't give me any time to do this
☐ This is not how I would want to spend my rest time
☐ Lack of internet access/cell phone service on board
☐ Language barriers
☐ I wouldn't know how to find a provider
☐ My healthcare doesn't cover mental health care
☐ I couldn't afford to pay
☐ I would be concerned about my USCG credential
☐ Another reason not listed here

[click here to return to instructions \(opens in new window\)](#) Survey Progress Bar

90%

Part 7: Mental Health due to COVID-19 and Serving during a time of National Need

By law, merchant mariners have reemployment rights in the event of a war, armed conflict, national emergency, humanitarian aid and disaster relief (HADR), or other maritime mobilization need (called "National Need"). The following questions assess how the mental health impact of COVID-19 has influenced your willingness to serve during a period of national need.

How do you think that mental health stresses related to COVID-19 have impacted your willingness to volunteer to serve as a paid crew member on the following types of vessels during a time of National Need (assuming that any necessary training would be provided)?

	Would have served on this vessel before COVID-19	Would serve on this vessel during/after COVID-19
A government-owned vessel on a National Need mission	<input type="checkbox"/>	<input type="checkbox"/>
A privately-owned vessel engaged by the government for a National Need mission	<input type="checkbox"/>	<input type="checkbox"/>
A privately-owned vessel engaged in international commercial trade	<input type="checkbox"/>	<input type="checkbox"/>
A privately-owned vessel engaged in coastal (Jones Act) and/or Great Lakes commercial trade	<input type="checkbox"/>	<input type="checkbox"/>

[click here to return to instructions \(opens in new window\)](#) Survey Progress Bar

92%

How do you think COVID-19 related mental stresses have impacted your willingness to volunteer to serve for the lengths of afloat tours listed below during a period of National Need?

	Would have served this length before COVID-19	Would serve this length during/after COVID-19
Less than a month	<input type="checkbox"/>	<input type="checkbox"/>
1-2 months	<input type="checkbox"/>	<input type="checkbox"/>
3-4 months	<input type="checkbox"/>	<input type="checkbox"/>
5-6 months	<input type="checkbox"/>	<input type="checkbox"/>
More than 6 months	<input type="checkbox"/>	<input type="checkbox"/>

[click here to return to instructions \(opens in new window\)](#) **Survey Progress Bar**

94%

How do you think COVID-19 related stressors have impacted the minimum length of the shore break you would accept between afloat tours in a paid position aboard a vessel during a period of National Need?

	I would have accepted this minimum break ashore before COVID-19	I would accept this minimum break ashore during/after COVID-19
Less than a month	<input type="checkbox"/>	<input type="checkbox"/>
1-2 months	<input type="checkbox"/>	<input type="checkbox"/>
3-4 months	<input type="checkbox"/>	<input type="checkbox"/>
5-6 months	<input type="checkbox"/>	<input type="checkbox"/>
More than 6 months	<input type="checkbox"/>	<input type="checkbox"/>

[click here to return to instructions \(opens in new window\)](#)

96%

Final Sections: Demographics

Please answer the following demographic questions about yourself.

What gender identity best describes you?

- ☐ Male
- ☐ Female
- ☐ Non-binary/genderqueer
- ☐ Other
- ☐ Prefer not to answer

Which categories best describe you? (Check all that apply)

- ☐ American Indian or Alaska Native
- ☐ Asian
- ☐ Black or African
- ☐ Hispanic, Latinx, Spanish origin
- ☐ Middle Eastern or North African
- ☐ Native Hawaiian or other Pacific Islander
- ☐ White
- ☐ Race, ethnicity, or origin not listed
- ☐ Prefer not to answer

Which age group describes you?

- ☐ 18-24
- ☐ 25-34
- ☐ 35-44
- ☐ 45-54
- ☐ 55-64
- ☐ 65-74
- ☐ 75+
- ☐ Prefer not to answer



CMTS COVID-19 Working Group

U.S. Mariner Mental Health Needs during COVID-19 Survey

The [U.S. Committee on the Marine Transportation System](#) (CMTS) [COVID-19 Working Group](#) (C-19 WG) encourages mariners from all segments of the U.S. maritime industry to take ten minutes to anonymously complete the “Mariner Mental Health Needs during Covid-19” online survey at <https://redcap.link/mariners>.

The confidential survey asks mariners a variety of questions about COVID-19, mental health, and their experiences and feelings when aboard a vessel during the challenges of this worldwide pandemic. No mariner identification data will be collected. Survey participation from a significant portion of the mariners in each industry segment is critical to understanding how the COVID-19 pandemic has affected their mental health. The survey is available from January 22 through May 31, 2021.

Results from the survey will be shared with federal agencies, vessel owners/operators, mariner unions, maritime training institutions, seafarer welfare organizations and MTS stakeholders to facilitate development of effective solutions that benefit our mariners’ mental well-being.

Mariner unions, vessel operators, vessel owners, mariner training institutions and industry associations are requested to encourage and facilitate the prompt participation of their mariners in this survey. MTS stakeholders are requested to widely distribute this announcement within the U.S. maritime industry.

The survey is being conducted independently by [Dr. Marissa Baker](#), Assistant Professor & Industrial Hygiene Program Director, University of Washington School of Public Health. Individual responses will be kept confidential at the School. The survey allows mariners to skip any question which they do not wish to answer.

This survey is supported by [Centers for Disease Prevention & Control \(CDC\)](#) and the [COVID-19 Working Group \(C-19 WG\)](#) of the federal interagency [U.S. Committee on the Marine Transportation System \(CMTS\)](#). The C-19 WG serves as the CMTS forum for facilitating high-level interagency discussion, communication, and actions in support of the MTS under and after COVID-19. The C-19 WG has published the following resources for mariners and the U.S. Marine Transportation System:

- [CMTS COVID-19 Working Group Nov 18, 2020 Webinar: COVID-19 Testing Strategies for U.S. Merchant Mariners - Slides](#)
- [Catalog of COVID-19 Federal Guidance and References for the U.S. Maritime Industry](#)
- [Catalog of COVID-19 Best Management Practices for the U.S. Maritime Industry](#)
- [Catalog of Mental Health Resources for U.S. Merchant Mariners and Critical Workforce in the Marine Transportation System](#)

The [Ship Operations Cooperative Program \(SOCP\)](#) - whose members include vessel owners/operators, mariner unions, maritime academies, maritime training institutions, classification societies, other maritime industry stakeholders and government agencies - is also actively supporting this project to enhance the mental well-being of U.S. mariners.

For more information on this survey, please click [here](#). Please email any questions, comments, or concerns regarding this mariner survey to Dr. Marissa Baker, University of Washington, at bakermg@uw.edu and Nuns Jain, Staff Lead, C-19 WG, at C19WG@cmts.gov.

Appendix C

Below is a list of mental health resources which were provided to mariners at the completion of the survey.

For information on mental health and stress specific to the COVID-19 pandemic, including resources if you feel you need help, please follow the links:

1. [Catalog of Mental Health Resources for U.S. Merchant Mariners and Critical Workforce in the Marine Transportation System](#)
2. [Catalog of COVID-19 Federal Guidance and References for the U.S. Maritime Industry](#)
3. [CDC webpage on Ship Crew Well-Being](#)
4. [CDC Infographic: COVID-19 Stress on Board a Ship](#)
5. [CDC page on Coping with Stress During Pandemics](#)