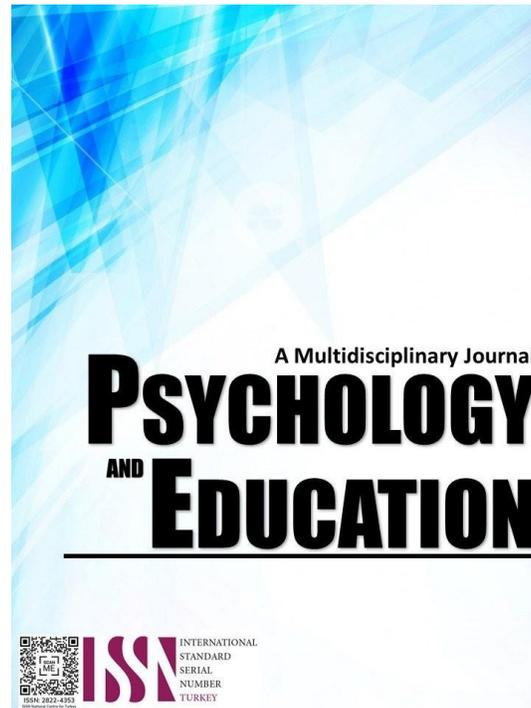


# **PREVALENCE OF MENTAL HEALTH ISSUES AND ITS ASSOCIATED RISK FACTORS AMONG PHILIPPINE NAVY PERSONNEL: A CROSS-SECTIONAL SURVEY**



**PSYCHOLOGY AND EDUCATION: A MULTIDISCIPLINARY JOURNAL**

Volume: 35

Issue 3

Pages: 336-341

Document ID: 2025PEMJ3366

DOI: 10.70838/pemj.350310

Manuscript Accepted: 03-24-2025

## Prevalence of Mental Health Issues and Its Associated Risk Factors among Philippine Navy Personnel: A Cross-Sectional Survey

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### Abstract

Mental health is a critical aspect of well-being, influencing an individual's ability to think, express emotions, interact with others, and work productively. Military personnel, particularly sailors and marines, are frequently exposed to psychological and physiological stressors due to prolonged deployments, separation from family, and the demanding nature of their duties. This study aims to assess the mental health status and associated risk factors among deployed and field-assigned Philippine Navy sailors and marines. A cross-sectional survey was conducted from May 6-20, 2022, using an online survey with responses from 345 personnel stationed in Cebu, Palawan, and Tawi-Tawi. The study utilized standardized psychological assessment tools: the Short General Health Questionnaire (GHQ-12) for distress, the Patient Health Questionnaire (PHQ-9) for depression, the Generalized Anxiety Disorder Scale-7 (GADS-7) for anxiety, and the Patient Health Questionnaire Somatic Symptoms-15 (PHQSS-15) for somatic symptoms. Statistical analyses, including ANOVA, Pearson correlations, and multiple linear regression, were applied to determine significant associations. Results indicate prevalence rates of 20.87% for distress, 47.83% for depression, 22.32% for generalized anxiety, and 33.33% for somatic symptoms. Officers and non-commissioned officers exhibited higher distress and depression levels. Tenure in service significantly influenced distress, depression, and anxiety, with symptoms peaking at five years of service and decreasing over time. Sleep duration and quality were critical factors, as shorter sleep was linked to heightened depression, anxiety, and somatic symptoms. These findings highlight the importance of routine mental health assessments, accessible psychological support, and targeted interventions, such as mindfulness training and stress management programs, to promote well-being among military personnel.

**Keywords:** *mental health, military personnel, depression, anxiety, sleep quality*

### Introduction

Emotional, psychological, and social well-being all fall under mental health. It influences our thoughts, feelings, and behavior. It also affects how you deal with stress, interact with people, and make decisions. From infancy and youth to maturity and beyond, mental health is critical for everyone (Alegria et al., 2017). People throughout the globe should see mental health as an essential issue that should be taken seriously by individuals, communities, and cultures alike. Uniformed personnel especially sailors and marines often experience a heavy workload and stressful environment when they are obliged to do their mandated tasks (de Terte, 2014) and they are more likely to suffer higher rates of mental illness (Goodwin, 2015). Their performance is also affected by exposure to physical and psychological stress. The nature of their work like being assigned afloat and field units may significantly impair their overall state of health. This impairment includes distress, attentional lapses, anxiety, narrowing of perceptual focus, short-term memory impairment, and biased information processing, which separately, and in combination, can contribute to their decision and performance (Driskell et al., 2006).

Efforts to enhance sailors' mental health must focus on proactive mental health programs that promote healthy social contact (both ashore and afloat) and increase sailors' chances to unwind and recharge. These categories have been examined in the research on sailors' mental well-being (Phinney, Zamorski, & Fikretoglu, 2019).

On the other hand, researchers are attempting to answer how sailors' mental health issues relate to those of their peers from the garrison. First and foremost, there has been an interest in discussing what may lead to poor mental health among sailors. A variety of situations may harm the mental health and well-being of sailors. Some may be seen as universal elements of the industry, while others are more specific to seafaring roles.

Additional risk and resilience factors extending beyond the workplace were strongly linked with burnout (e.g., workload, work-family conflict) (e.g., social support, mastery). Rothermund et al. (2017). Results showed a connection between occupational stress and psychological discomfort and variations in associations between variables for those serving on a ship and those on the field. According to these findings, Navy personnel's unique experiences and a wide variety of risk and resilience characteristics need to be considered while conducting research. Sailors' and marines' mental health and well-being may be improved by increasing these resilience characteristics and decreasing these risk variables.

Moreover, this study aims to assess the current mental health status and identify key risk factors affecting sailors and marines deployed in naval vessels and field assignments. Given the unique challenges of military service, including prolonged separations from family, demanding workloads, and exposure to high-stress environments, understanding the prevalence of distress, depression, anxiety, and somatic symptoms is crucial. By examining how factors such as rank, tenure, sleep patterns, and working conditions influence mental well-being, this research seeks to provide evidence-based insights that can inform targeted interventions.

## Methodology

### Research Design

This study utilized a cross-sectional survey conducted from May 6 to May 20, 2022, using facilitated survey questions. The research aimed to assess the mental health status and risk factors among Philippine Navy sailors and marines.

### Respondents

The study involved Philippine Navy personnel assigned to naval ships and marine field units in Cebu, Palawan, and Tawi-Tawi. Convenience sampling was used to select participants. Inclusion criteria required that respondents be (a) Philippine Navy personnel (sailors and marines), (b) assigned to ships or marine field units, (c) assigned for less than one year in their current post, and (d) have a recent medical examination or completed the Annual Physical Examination and Extension of Term of Enlistment. Exclusion criteria included individuals with a known history of or currently experiencing depressive symptoms, mood disorders, or other mental health conditions, as validated through recent physical and psychosocial examinations.

### Instrument

This study utilized psychological assessment tools adapted from the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5), and converted into an online survey for accessibility. A pilot test was conducted with expert consultation before full implementation. The study used the following standardized instruments: The General Health Questionnaire (GHQ-12) is a 12-item tool that assesses the severity of mental distress using a 4-point scale ranging from 0 to 3. The Patient Health Questionnaire (PHQ-9) measures depressive symptoms experienced over the past two weeks. The Generalized Anxiety Disorder Scale (GAD-7) is a seven-item scale that evaluates anxiety symptoms on a 4-point Likert scale from 0 to 3. The Patient Health Questionnaire-Somatic Symptoms (PHQ-15) is a 15-item scale that measures the severity of somatic symptoms, with each symptom scored from 0 (not bothered) to 2 (bothered a lot).

### Procedure

Survey data were collected through an online questionnaire administered via an online survey. Respondents accessed the survey through their mobile phones or personal computers. The questionnaire included demographic information, mental health assessment tools, and consent documentation.

### Data Analysis

The collected data were analyzed using IBM SPSS Statistics 25. Descriptive statistics were used to present the demographic profiles and calculate prevalence rates for distress, depression, anxiety, and somatic symptoms. The number of participants with severe symptoms was also tallied. One-way analysis of variance (ANOVA) was performed to identify significant differences in mental health scores across various demographic and occupational categories. Pearson Product Moment Correlations were used to assess associations between mental health scores and respondent profiles. Multiple Linear Regression Analysis was conducted to determine which factors had the most critical influence on mental health outcomes.

### Ethical Considerations

The study adhered to ethical and legal research standards. Institutional approval was granted by the Philippine Navy (Approved Disposition Form Nr EDF-OCNN-0422-011, dated April 30, 2022) and the Office of the Chief Nurse Navy. Participants were informed of the study's objectives, the importance of their participation, and the confidentiality of their responses. Informed consent was obtained through an online consent form, where participants voluntarily agreed to participate by selecting the "yes" option. They were also informed of their right to withdraw from the study at any time without consequences.

## Results and Discussion

Table 1. *Demographic Profile of the Respondents*

<i>Profile</i>	<i>Category</i>	<i>Frequency</i>	<i>Proportion (%)</i>
Age	Less than 25 years old	15	4.35
	26-35 years old	231	66.96
	36-45 years old	92	26.67
	46- 55 years old	7	2.03
Sex	Female	24	6.96
	Male	321	93.04
Level of Education	Highschool Graduate	106	30.72
	K-12 Graduate	30	8.70
	College Graduate	193	55.94
	with units in Master's	7	2.03
	Master's Graduate	9	2.61

The demographic of respondents mainly included age, gender, category, education, and their work-related data such as tenure in military service, years in unit assignment, daily working hours, daily sleep duration, and sleep quality. The gender distribution of the 345 responders was 93.04% male and 6.96% female. In terms of age, the majority of respondents were between the ages of 26-35 (66.96%), followed by 36-45 (26.67%), less than 25 (4.35%), and 46-55 (2.3%). The majority of respondents were able to complete College (55.94%) and High School (30.72%); however, only a small percentage earned units in a Master's (2.03 %) or a Master's Degree. In addition, the distribution includes some K-12 Graduates (8.70%).

Table 2 shows Non-Commissioned Officers made up 95.65 % of the respondents, while Officers made up only 4.35%. Based on their length of military service, it is noted that there is a slight difference between the percentages of those who had served for 3-5 years (22.61%), 6-10 years (29.86%), and 10-15 years (29.86%). Only 2.32% are service rookies, whereas 17.39 % have served for 16 years. As can be observed from the percentages, those respondents are in rotation in their region of assignment.

Table 2. *Work Profile of Marine and Navy Participants*

<i>Work Profile</i>	<i>Category</i>	<i>Frequency</i>	<i>Proportion (%)</i>
Category/ Grade	Non-Commissioned Officer	330	95.65
	Officer	15	4.35
Tenure in Military Service	less than 3 years	8	2.32
	3-5 years	78	22.61
	6-10 years	103	29.86
	10-15 years	96	27.83
	16 years and more	60	17.39
Years Assign Ship/ Unit	less than 1 year	73	21.16
	1-2 years	59	17.10
	3-4 years	49	14.20
Daily Working Hours	5-6 years	69	20.00
	More than 7 years	95	27.54
	5-8 hours	127	36.81
	9-12 hours	99	28.70
Daily Sleep Duration	13 hours and beyond	119	34.49
	3 hours or less	16	4.64
	4-6 hours	213	61.74
Sleep Quality	7-9 hours	112	32.46
	10 hours or more	4	1.16
	Just normal feeling	131	37.97
Sleep Quality	Good	146	42.32
	Better	42	12.17
	Best	26	7.54

In terms of Daily Working Hours, respondents worked 5-8 hours (36.81%), 9-12 hours (28.70%), and 13 hours or more (34.49%), consistent with the nature of their profession. Despite their regular work hours, most of them are still able to sleep between 4 to 6 hours (61.74 %) and 7 to 9 hours (38.22 %). The quality of their sleep is also said to be good by 42.32 % of them, and they just felt normal (37.97). Some respondents have better (12.17%) and best (7.54%) sleep quality.

Table 3 displays the average scores and prevalence rates for Distress, Depression, Generalized Anxiety, and Somatic Symptoms, as measured by the SGHQ-12, PHQ-9, GADS-7, and PHQSS-15. The average SGHQ-12, PHQ-9, GADS-7, and PHQSS-15 scores were  $9.87 \pm 5.89$ ,  $5.41 \pm 4.56$ ,  $2.59 \pm 3.45$ , and  $4.11 \pm 5.51$ . Distress, Depression, Generalized Anxiety, and Somatic Symptoms has prevalence rates of 20.87 %, 47.83 %, 22.32 %, and 33.33 %. The participants with severe distress, severe depression, severe generalized anxiety, and severe somatic symptoms were 0.58 %, 1.16 %, 0.58 %, and 12.17 %, respectively.

Table 3. *Average Scores, Prevalence, and severe symptoms of Distress, Depression, Generalized Anxiety, and Somatic Symptoms*

<i>Scale</i>	<i>Average Score (x ± s)</i>	<i>Prevalence (%)</i>	<i>Severe Symptoms (%)</i>
SGHQ-12	$9.87 \pm 5.89$	20.87%	0.58%
PHQ-9	$5.41 \pm 4.56$	47.83%	1.16%
GADS-7	$2.59 \pm 3.45$	22.32%	0.58%
PHQSS-15	$4.11 \pm 5.51$	33.33%	12.17%

In Table 4, it was revealed that age, sex, level of education, years assigned in ship/ unit, and daily working hours do not cause differences in the SGHQ-12, PHQ-9, GADS-7, and PHQSS-15 scores. The p-values obtained in One-way ANOVA were all greater than the 0.05 level of significance. Other profiles and assessments not mentioned presented with no significant results based on their p-value. The participants' SGHQ-12 (P=0.019) and PHQ-9 (P=0.0032) scores were significantly different based on their Category/ Grade. Compared



to Commissioned Officers, Non-Commissioned Officers appear to be more distressed and depressed, as seen by their scores. Participants' SGHQ-12 (P=0.006), PHQ-9 (P=0.015), and GADS-7 (P=0.015) scores were also affected by their military service tenure. Workplace stress is at an all-time high since the participants were in the military for five years. It decreases as they stay longer in the military service. This pattern is similar to the participant's depression and generalized anxiety levels. Daily Sleep Duration impacted the PHQ-9 (P=0.002), GADS-7 (P=0.023), and PHQSS-15 (P=0.001) scores implicated in significant category differences. Table 4. *Distress, Depression, Generalized Anxiety, Somatic Symptom Scores in Different Subgroups*

Profile	Category	SGHQ-12			PHQ-9			GAD-7			PHQSS-15		
		M	Sd	P	M	Sd	P	M	Sd	P	M	Sd	P
Daily Sleep Duration	3 hours or less	12.13	6.76	.095	8.81	6.66	.002*	4.81	4.09	.023*	9.19	6.67	<.001*
	4-6 hours	10.21	6.04		5.66	4.61		2.67	3.67		4.27	5.56	
	7-9 hours	8.88	5.35		4.53	3.85		2.18	2.83		3.11	4.88	
	10 hours or more	10.75	5.74		2.75	2.06		0.75	0.96		3.25	5.25	
Sleep Quality	Just normal feeling	10.15	6.21	.242	6.11	4.64	.126	3.29	3.97	.003*	4.80	5.58	.013*
	Good	10.00	5.63		5.02	4.85		2.23	3.08		4.37	6.02	
	Better	8.17	5.46		4.52	3.37		1.26	2.25		1.95	2.64	
	Best	10.50	6.19		5.46	3.77		3.19	3.49		2.65	4.72	

Note: SGHQ-12 (Short General Health Questionnaire -12), PHQ-9 (Patient Health Questionnaire - 9), GADS-7 (Generalized Anxiety Disorder Scale - 7), PHQSS-15 (Patient Health Questionnaire-Somatic Symptoms -15)  
\*Significant

Table 4 shows that when individuals could sleep for more extended periods, their levels of depression, generalized anxiety, and somatic symptoms decreased. Furthermore, sleep quality impacts the respondents' GADS-7 (P=0.003) and PHQSS-15 (P=0.013) scores. When compared to participants with other sleep quality, those with "Just normal" sleep quality showed a higher level of generalized anxiety and somatic symptoms.

Table 5. *Multiple Linear Regression Analysis of SGHQ-12, PHQ-9, GADS-7, and PHQSS-15 as the dependent variables with the Participants' Profile*

Scale	Variable	B	β	T	P-Value
SGHQ12	Grade	-3.943	-0.137	-2.581	0.010*
	Tenure	-1.334	-0.113	-2.075	0.039*
	Working Hours	1.391	0.114	2.155	0.032*
	Sleep Duration	-1.062	-0.137	-1.576	0.116
PHQ9	Age	0.262	0.026	0.351	0.726
	Grade	-2.894	-0.130	-2.451	0.015*
	Tenure	-1.604	-0.175	-2.365	0.019*
GADS7	Sleep Duration	-1.109	-0.115	-2.124	0.034*
	Tenure	-00.934	-0.135	-2.518	0.012*
PHQSS15	Sleep Duration	-1.125	-0.096	-1.775	0.077
	Sleep Quality	-2.062	-0.149	-2.740	0.006*

Note: SGHQ-12 (Short General Health Questionnaire -12), PHQ-9 (Patient Health Questionnaire - 9), GADS-7 (Generalized Anxiety Disorder Scale - 7), PHQSS-15 (Patient Health Questionnaire-Somatic Symptoms -15)  
\*Significant

Table 5 examined the individuals' profiles and their results on the SGHQ-12, PHQ-9, GADS-7, and PHQSS-15 questionnaires by employing Multiple Linear Regression Analysis. The profiles involved in the regression analysis were subjected to a Pearson Product Moment Correlation study. The profile underwent a series of significant correlation tests using the following assessments, which used Multiple Linear Regression Analysis to analyze the data. This is done to discover which of the profiles are indications that impact the amount of distress, depression, generalized anxiety, and somatic symptoms experienced by the participants. When the researchers used multiple linear regression analysis using the SGHQ-12 and PHQ-9 scores against the profile found correlated to them, the variables grade/category (P = 0.010; P = 0.015) and tenure in military service (P = 0.039; P = 0.019) tested significantly. This data suggests that the participants' grade or category and tenure all influence their scores on the SGHQ-12. The researchers also observed that the average scores of the respondents in each category indicated a drop from Non-Commissioned Officers to Commissioned Officers. It showed a negative trend between the interplay of the variables. A decrease in the amount of distress and depression among service members is expected, just as there is with the length of service in the military. Working hours influenced the participants' SGHQ-12 scores (P=0.032), whereas Sleep Duration (P=0.034) had a distinct impact on the participants' PHQ-9 scores. The current findings follow the same pattern as those obtained earlier. The length of time that the individuals had served in the military (P=0.012) significantly impacted the GADS-7 scores that they attained. When individuals remain in the military for a more extended period, their GADS-7 scores significantly decline. Finally, the PHQSS-15 was strongly influenced by the subjects' sleep quality (P=0.006). Based on the findings of this study, it should anticipate a significant drop in PHQSS-15 scores to occur if the participants' sleep quality improves.

### Conclusions

The findings of this study highlight the significant mental health challenges faced by Philippine Navy personnel, particularly the high

prevalence of depression (47.83%), somatic symptoms (33.33%), generalized anxiety (22.32%), and distress (20.87%). These issues are influenced by factors such as rank, tenure in service, and sleep quality. Non-commissioned officers and newly enlisted personnel experience higher distress and depression levels due to the demanding nature of their roles and limited support systems. The severity of somatic symptoms further impacts operational readiness, potentially leading to absenteeism and long-term health complications. Given the physically and psychologically hazardous environment in which sailors and marines operate, addressing their mental health concerns should be a priority to ensure both their well-being and mission effectiveness.

To mitigate these challenges, routine mental health assessments should be institutionalized to monitor distress, depression, anxiety, and somatic symptoms among naval personnel. Mental health services must be made accessible in military healthcare facilities, with trained professionals available for psychological support. Proactive interventions such as stress management training, mindfulness programs, and structured peer-support systems should be implemented to build resilience and enhance coping mechanisms. Additionally, leadership training should emphasize the importance of emotional and appraisal support to create a more supportive work environment, particularly for non-commissioned officers and newly enlisted personnel.

As a long-term solution, a Mental Health Resilience Program for the Philippine Navy should be developed and formally integrated into military policies. This program should mandate regular psychological evaluations, establish a peer-support system within units, and require leadership to undergo mental health training. Furthermore, policies should be put in place to ensure adequate rest periods, improve work-life balance, and implement evidence-based interventions tailored to the unique stressors of naval operations. By embedding mental health as a core component of operational readiness, the Philippine Navy can enhance both personnel well-being and overall mission effectiveness. Future researchers may explore alternative sampling methods and research designs to gain deeper insights into the prevalence of mental health issues and their associated risk factors among Philippine Navy personnel.

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