

Psychological Stress And Occupational Performance Among Seafarers: A Systematic Review Of Verified Empirical Evidence

Rashmi Sharma¹, Dr. Anurag Shakya²

¹Research Scholar, IBMC, Mangalayatan University, Aligarh.

²Professor, IBMC, Mangalayatan University, Aligarh.

Abstract

Background: Seafaring brings together several demanding features of work within a single occupation - long absences from family, cramped and shared living conditions, irregular sleep, mixed-nationality crews, and heavy workloads carried out with little outside support. A substantial body of research has examined how these conditions give rise to psychological stress, and how that stress in turn shapes seafarers' mental health, wellbeing, and ability to carry out their duties.

Objectives: This review has two aims: first, to bring together what verified empirical research says about the main sources of psychological stress facing seafarers; and second, to examine what this research shows about the relationship between that stress and seafarers' occupational performance, safety, and mental health.

Hypotheses: Two propositions guide the review. H1 holds that psychological stress arising from seafaring work is meaningfully linked to poorer occupational performance and safety outcomes. H2 holds that social and organisational support - including support from peers, contact with family, and personal resilience - helps to soften this negative relationship.

Methods: The review draws on twenty-nine peer-reviewed studies, published between 2008 and 2026, each of which could be traced back to and confirmed against its original publication. Sources whose claims could not be verified against an accessible original text were left out, even where they appeared elsewhere in the wider literature.

Results: The verified literature lends support to both propositions. Workload, long hours, and separation from family are repeatedly connected to fatigue, burnout, and weaker job performance, with at least one study demonstrating this relationship directly among Chinese seafarers. Depression, anxiety, and thoughts of self-harm appear more common among seafarers than is generally reported for the wider working population, and are most strongly tied to poor company culture, low job satisfaction, and how seafarers rate their own health. By contrast, resilience, psychological capital, peer support, and higher rank are consistently linked to better outcomes across a number of independent studies conducted in different countries.

Conclusion: Taken together, the verified evidence points toward a fairly consistent picture: the psychological demands of seafaring work measurably affect wellbeing and performance, while supportive relationships and personal resilience act as a buffer against this harm. Two studies conducted specifically among Indian merchant navy officers and seafarers point in the same direction, though research on this particular population remains thin relative to its size within the global seafaring workforce.

Keywords: seafarers; psychological stress; occupational performance; mental health; resilience; fatigue; burnout

1. Introduction

Seafaring is widely recognised as an occupation that concentrates several distinct sources of psychological strain within a single role: extended separation from family, confined shared living space, irregular working hours, multicultural crewing, and heavy workload under conditions of limited external support. Oldenburg, Baur and Schlaich (2010), interviewing 134 German-flagged seafarers, found that the most significant reported stressors were being away from home, a hectic schedule, long daily working hours, and working with inadequately trained subordinate crew, with extended contracts beyond twelve months found to be particularly difficult due to isolation from family and limited leisure activity.

A substantial body of subsequent research has examined how this stress translates into measurable consequences for seafarers' mental health and their ability to perform their duties safely and effectively. Allen, Wadsworth and Smith (2008), surveying 6,461 seafarers across 11 countries, found that non-officers, younger seafarers, and those on shorter periods of duty reported significantly more injuries, although longer working weeks were not independently linked to higher injury risk. Oldenburg, Jensen and Wegner (2013) subsequently linked long working days directly to emotional exhaustion in a cross-sectional study of 251 seafarers, while Lefkowitz and Slade (2019), in the largest verified survey in this review (n=1,572), found depression, anxiety, and suicidal ideation prevalent at levels that appeared to exceed general working-population norms, with job satisfaction and company culture emerging as the strongest predictors.

This review addresses two specific objectives. First, it identifies and synthesises the principal sources of occupational psychological stress documented in verified empirical studies of seafarers. Second, it examines the empirically documented relationship

between that stress and seafarers' occupational performance, safety behaviour, and mental health outcomes. In pursuing these objectives, the review evaluates two guiding hypotheses: that occupational stress is significantly associated with reduced performance and safety outcomes (H1), and that social and organisational support significantly mitigates this negative relationship (H2).

2. Methodology

This review applies a strict verification standard: a candidate source was included only if its actual reported findings, sample size, and statistics could be independently located and confirmed against an accessible original publication (open-access journal pages, PubMed/PMC records, publisher abstract pages, or repository records), rather than accepted based on title, citation, or a secondary description alone. Sources for which no independently verifiable findings could be located - including several conference proceedings, older institutional reports without accessible full text, doctoral theses in non-searchable repositories, and grey-literature industry bulletins whose specific statistics could not be traced to an original document - were excluded from the evidence synthesis.

Twenty-nine sources met this verification standard. These span 2008 to 2026 and include cross-sectional surveys ranging from $n=105$ to $n=1,612$, systematic and scoping reviews (one covering 63 primary studies, another 109, another 18), one quasi-experimental intervention study ($n=50$), and mixed-methods pandemic-era studies. All findings reported in Section 3 are paraphrased from the verified sources in the reviewer's own words; no statistic, percentage, or effect size in this review has been estimated, extrapolated, or reproduced verbatim from a secondary account that could not itself be independently confirmed.

This verification-first approach necessarily narrows topical and geographic coverage relative to a review that treats every candidate citation as equally reliable. In particular, several studies concerning Indian seafarers specifically, and several industry welfare reports containing striking but unverifiable statistics, were excluded on this basis; this is a deliberate methodological trade-off in favour of accuracy, discussed further as a limitation in Section 6.

Table 1. Summary of included studies (n = 29)

Study	Population/Country	Scope	Design
Allen, Wadsworth & Smith (2008)	International (11 countries)	$n = 6,461$	Cross-sectional survey
Oldenburg, Baur & Schlaich (2010)	Germany	$n = 134$	Interview-based survey
Carotenuto et al. (2012)	International	Narrative review	Literature review
Oldenburg, Jensen & Wegner (2013)	Germany	$n = 251$	Cross-sectional survey
Oldenburg, Hogan & Jensen (2013)	International	109 studies reviewed	Systematic review
Hjarnoe & Leppin (2013)	Denmark	$n = 606$	Pre-post intervention study
Hystad & Eid (2016)	Norway	$n = 742$ (two samples)	Cross-sectional survey
Jensen & Oldenburg (2020)	Germany / Southeast Asia	$n = 323$	Interview-based survey
McVeigh et al. (2019)	International	Large company survey	Structural equation modelling
Lefkowitz & Slade (2019)	International	$n = 1,572$	Cross-sectional survey
Ismail et al. (2021)	Malaysia	$n = 95$	Cross-sectional survey
Jonglertmontree et al. (2022)	International	24 studies reviewed	Scoping review
Tang et al. (2022)	International	$n = 817 + 26$ interviews	Mixed-methods study
Nittari et al. (2022)	International	Literature 2006-2021	Systematic review

Pauksztat, Grech & Kitada (2022)	International	n = 622	Cross-sectional survey
Brooks & Greenberg (2022)	International	63 studies reviewed	Systematic review
Doyle et al. (2015)	International	51 ships	Cross-sectional survey
An, Liu, Sun & Liu (2020)	China	n = 337	Cross-sectional survey
Vlachos, Pantouvakis & Karakasnakis (2022)	International	n = 1,612	Cross-sectional survey
Svetina et al. (2024)	International (12 countries)	Multi-country survey	Cross-sectional survey
Strukcinskiene et al. (2025)	Lithuania	n = 385	Cross-sectional survey
Ma & Liao (2025)	International	18 studies reviewed	Scoping review
Carrera-Arce, Baumler & Hollander (2023)	International	27 studies reviewed	Systematic review
Paranthatta et al. (2024)	India	n = 50	Quasi-experimental study
Janssen et al. (2026)	Germany	n = 902	Cross-sectional survey
Krishnan, Sumit & Chandra Sekaran (2025)	India (Mumbai)	n = 105	Cross-sectional survey
Sivri et al. (2025)	Black Sea-bordering countries	Multi-country survey	Cross-sectional survey
Sharma (2024)	India	n = 109	Cross-sectional survey
Vij & Goyal (2024)	India	n = 395	Cross-sectional survey

3. Objective 1: Principal Sources of Occupational Psychological Stress

3.1 Workload, Family Separation, and Environmental Stressors

Oldenburg, Baur and Schlaich (2010) identified being away from home, hectic schedules, long working hours, and working with inadequately trained crew as the most heavily weighted stressors among German-flagged seafarers, with contracts exceeding twelve months associated with particular difficulty. Carotenuto et al. (2012), reviewing PubMed and OvidSP literature alongside an Australian Maritime Safety Authority survey, identified separation from family, onboard loneliness, fatigue, crew multi-nationality, limited recreational opportunity, and sleep deprivation as the principal psychosocial stressors reported across the literature. Jensen and Oldenburg (2020), interviewing 323 seafarers (156 European, 167 Southeast Asian), found that European officers most frequently attributed mental stress to high responsibility (82.0%), extensive administrative workload (81.1%), and perceived lack of crew qualification (64.8%), while Southeast Asian crew more frequently reported physical stress and loneliness (43.1% versus 26.2% for Europeans).

3.2 Fatigue and Sleep Disruption

Oldenburg, Jensen and Wegner (2013), in a cross-sectional study of 251 seafarers using the Maslach Burnout Inventory and Epworth Sleepiness Scale, found 10.8% of the sample had elevated emotional exhaustion scores, rising to 25.0% among galley personnel; emotional exhaustion was significantly linked to perceived insufficient onboard sleep, lack of attention from superiors, high leadership responsibility, and social difficulties from extended family separation. Hystad and Eid (2016), surveying 402 offshore re-supply seafarers and 340 passenger/cargo-ship seafarers, found psychological capital to be a robust predictor of both lower fatigue and better sleep quality in both groups, with passenger/cargo-ship seafarers reporting significantly higher fatigue overall. Ma and Liao (2025), in a scoping review of 18 studies, categorised fatigue determinants into the seafarer's own physiological, psychological, and sociological characteristics; working-environment factors (safety climate, external support, work demands, ship conditions); and management factors, concluding that psychological capital and greater work autonomy were the most promising individual-level levers for reducing fatigue.

3.3 Job Design, Rank, and Organisational Culture

Vlachos, Pantouvakis and Karakasnaki (2022), surveying 1,612 seafarers, found that a job determinants-stress-satisfaction model explained 39% of overall job satisfaction, 18.1% of payment satisfaction, and 16.3% of burnout, with company-supportive culture and social fit emerging as stronger predictors of satisfaction than the physical workplace environment itself. Svetina et al. (2024), surveying seafarers across 12 countries using the SCL-90 symptom checklist, found that environmental, social (bullying, homesickness, isolation), and health-related stressors each significantly predicted mental health problems, with social stressors specifically identified as the strongest predictors of seafarers' intention to leave the industry, outweighing weather, shift patterns, and contract length. Strukcinskiene et al. (2025), surveying 385 Lithuanian seafarers using the HSE Management Standards Indicator Tool, found that changes at work, interpersonal relationships, and insufficient peer and managerial support were the strongest stressors, with seafarers of 0-11 years' service reporting significantly greater stress on multiple subscales than those with 12 or more years of experience.

3.4 Evidence Specific to Indian Seafarers

Given India's position as one of the world's largest suppliers of seafaring labour, two verified studies focusing specifically on Indian seafarers are of particular relevance. Vij and Goyal (2024), using a descriptive, cross-sectional design and structural equation modelling on data from 395 Indian merchant navy officers, found a significant relationship between physical factors - specifically fatigue and physical work environment - and stress levels among Indian officers, consistent with findings from international samples reviewed above. Sharma (2024), surveying 109 Indian seafarers via an online questionnaire using the DASS scale and a Maslach-style burnout measure, found average scores indicating mild depression, moderate anxiety, and normal-range general stress, alongside moderate burnout on both the disengagement and exhaustion subscales; combined depression, anxiety, and stress scores were significantly and positively correlated with burnout ($r=0.392$, $p<0.01$). While based on modest sample sizes, both studies confirm that the stress-performance and stress-mental-health relationships identified internationally also hold, at a descriptive level, within the Indian seafaring population specifically.

This population-specific relevance is reinforced by contextual evidence from the International Transport Workers' Federation, whose most recent abandonment report (published January 2026) found that 6,223 seafarers were abandoned across 410 vessels globally in 2025 - the worst year on record - with Indian seafarers the single worst-affected nationality, accounting for over 1,000 of those abandoned. Abandoned seafarers globally were owed a combined USD 25.8 million in unpaid wages in 2025, of which the ITF had recovered USD 16.5 million as of its report. While this industry data does not measure psychological stress directly, it corroborates the structural vulnerability of Indian seafarers documented in the academic literature above, and underscores the practical relevance of research into their occupational stress and performance specifically.

4. Objective 2: Stress, Mental Health, and Occupational Performance

4.1 Direct Evidence Linking Stress to Performance

The clearest direct evidence for a stress-performance relationship in the verified corpus comes from An, Liu, Sun and Liu (2020), who surveyed 337 merchant ship seafarers at Yangshan Port, China. Using hierarchical regression analysis, they found that both work-family conflict and job stress significantly reduced seafarers' self-reported job performance, while job satisfaction significantly improved performance and moderated (reduced) the negative effects of work-family conflict and job stress on performance. This provides direct, verified support for Hypothesis 1, that occupational stress is significantly associated with reduced performance, and simultaneously provides initial support for Hypothesis 2, in that a positive organisational factor (job satisfaction) measurably buffered the negative relationship.

4.2 Depression, Anxiety, and Suicide Risk

Lefkowitz and Slade (2019) surveyed 1,572 seafarers on behalf of the ITF Seafarers' Trust and found 25% screened positive for depression and 17% for anxiety using standardised instruments, with approximately 20% reporting suicidal or self-harm ideation in the preceding two weeks. Depression and anxiety were associated with a greater likelihood of on-board injury and illness; the strongest predictors in multivariate analysis were a non-caring company culture, workplace violence, low job satisfaction, and poorer self-rated health. Krishnan, Sumit and Chandra Sekaran (2025), studying 105 seafarers at a Mumbai-based shipping company using the Beck Depression Inventory, found 90.5% reported mild mood disturbance and 8.6% reported clinically significant depression, with depression significantly associated with isolation ($p=0.031$) and work-related quality of life ($p=0.012$); daily working hours, isolation, and quality of life were the significant independent predictors in logistic regression. Sivri et al. (2025), studying seafarers from Black Sea-bordering countries post-COVID-19 using the BDI-II and GAD-7, found depression and anxiety levels remained elevated relative to pre-pandemic baselines, with 38.8% showing signs of depression.

4.3 Social Support as a Protective, Moderating Factor

Several independent studies provide direct support for Hypothesis 2. Pauksztat, Grech and Kitada (2022), surveying 622 seafarers, found using structural equation modelling that onboard peer support and external support directly reduced mental health problems and fatigue, and that reliable internet access indirectly reduced both by facilitating access to that support - even as the pandemic itself directly worsened both outcomes. Doyle et al. (2015), studying crew across 51 ships, found that higher resilience, greater seafaring experience, and stronger instrumental work support were each independently associated with lower self-reported stress, regardless of deployment duration. Janssen et al. (2026), studying 902 German seafarers, found officers had significantly higher odds of high resilience than ratings (OR 1.74, 95% CI 1.27-2.39), indicating that occupational rank itself functions as a structural correlate of this protective factor. Tang et al. (2022), combining interviews with a survey of 817 seafarers, identified family communication, timely crew changes, vaccination access, and a positive onboard atmosphere as the most effective of 22 distinct pandemic-era support measures, reinforcing that both organisational and interpersonal support channels contribute to better outcomes.

4.4 A Feasibility Intervention: Cyclic Meditation

Paranthatta et al. (2024) conducted one of the few genuine intervention studies identified in this review. Fifty sailors, matched by age, gender, and rank, were assigned to an experimental group receiving 45 minutes of Cyclic Meditation daily for three weeks, or a control group continuing routine activities. The study concluded that Cyclic Meditation could feasibly be incorporated as a routine onboard practice to manage anxiety and improve sleep quality, offering rare intervention-level evidence that a specific, low-cost practice can measurably improve psychological outcomes relevant to performance and safety.

4.5 Systematic Reviews Consolidating the Risk Profile

Two systematic reviews in the verified corpus consolidate these individual findings. Oldenburg, Hogan and Jensen (2013), reviewing 109 studies on maritime stress and strain published between 1990 and 2012, found that only 13 were genuine field studies, most narrowly focused on watch-system fatigue, and called for broader multivariate field research. Brooks and Greenberg (2022), applying standardised risk-of-bias appraisal to 63 primary studies published between 2012 and 2021, identified younger age, being single, poor physical health, noise and vibration exposure, feeling unsafe, high job demands, long working hours, irregular shifts, poor sleep, poor team cohesion, poor perceived management, poor social support, lack of autonomy, scheduling uncertainty, long duration at sea, and over-commitment as risk factors for poor mental health, recommending closer monitoring, larger crew complements, and structured education and support as management-level responses. Jonglertmontree et al. (2022) and Nittari et al. (2022), in separate scoping and systematic reviews, similarly concluded that seafarer mental health has historically received less research attention than physical health, and that social isolation, distance from family, fatigue, and long shifts are the principal drivers of mood disorders in this population. Carrera-Arce, Baumler and Hollander (2023) took a methodological view, finding that mental health assessment tools used during the pandemic remained predominantly land-based and inadequately adapted to maritime-specific conditions, a gap that likely affects the precision of prevalence estimates across this literature.

4.6 Stress Perception During Acute Crisis Conditions

Ismail et al. (2021), surveying 95 Asian seafarers during Malaysia's COVID-19 Movement Control Order using a 5-point Likert stress scale, found a notably high average stress score (mean 75.13, SD 16.19), with 77% experiencing significant stress; regression analysis showed the pandemic and seafarer age together accounted for 20.1% of variance in stress scores. McVeigh et al. (2019), using structural equation modelling on a large shipping company's internal workforce survey, found dispositional resilience to be a significant predictor of lower perceived stress, and instrumental work support a significant predictor of job satisfaction, situating both stress and its buffers within a single psychosocial model of seafarer wellbeing.

5. Discussion

The verified evidence provides consistent support for both guiding hypotheses. In direct support of Hypothesis 1, An, Liu, Sun and Liu (2020) demonstrate a statistically significant negative relationship between occupational stress and self-reported performance, while multiple studies (Lefkowitz and Slade, 2019; Oldenburg, Jensen and Wegner, 2013; Ismail et al., 2021) show that elevated stress and reduced sleep are strongly associated with depression, anxiety, and burnout - conditions with well-established downstream effects on decision-making, alertness, and safety behaviour, even where a study did not directly measure performance itself. In support of Hypothesis 2, resilience, psychological capital, peer support, family contact, and organisational culture each emerge repeatedly and independently across different study designs and national contexts (Doyle et al., 2015; Janssen et al., 2026; Pauksztat, Grech and Kitada, 2022; Vlachos, Pantouvakis and Karakasnaki, 2022; McVeigh et al., 2019) as factors that measurably reduce stress or buffer its negative effects.

A further pattern worth highlighting is that occupational rank consistently stratifies these relationships. Officers report distinct stressors centred on responsibility and administrative burden (Jensen and Oldenburg, 2020) while simultaneously showing higher resilience than ratings (Janssen et al., 2026); by contrast, junior and shorter-tenure seafarers consistently report higher stress across multiple independent samples (Strukcinskiene et al., 2025; Doyle et al., 2015). This suggests that interventions and support structures may need to be rank- and tenure-specific rather than uniform across a ship's crew.

Notably, verified evidence specific to Indian seafarers within this stricter standard, while limited to three studies (Vij and Goyal, 2024, n=395; Sharma, 2024, n=109; Krishnan, Sumit and Chandra Sekaran, 2025, n=105), consistently confirms the same stress-performance and stress-mental-health patterns identified internationally. This is a meaningful, if modest, evidence base given India's position as one of the largest global suppliers of seafaring labour, and is reinforced by ITF abandonment data showing Indian seafarers as the single worst-affected nationality globally in 2025. This combination of academic and industry evidence points to Indian seafarers as both a population of clear research priority and one where verified primary studies remain comparatively under-represented relative to other national seafaring populations covered in this review, such as German, Lithuanian, and Chinese samples.

6. Limitations

This review's central limitation is also its central strength: by including only sources whose findings could be independently verified, it necessarily excludes several candidate studies - including several addressing Indian seafarers specifically, and several industry welfare reports with striking headline statistics - because their reported figures could not be traced to an accessible original publication within the scope of this review. This improves the accuracy and traceability of every claim made in Sections 3 and 4, at the cost of narrower coverage than a review with full institutional database access and grey-literature verification capacity would achieve. This review is also a narrative rather than a fully protocol-driven systematic review; a formal PRISMA 2020 flow diagram, pre-registered protocol, and complete risk-of-bias appraisal across all 27 included studies were beyond its scope and are recommended as next steps. Finally, because H1 and H2 are evaluated narratively against existing studies rather than tested on a single unified dataset, they should be understood as literature-supported propositions rather than statistically confirmed hypotheses; a dedicated primary study, particularly one focused on Indian merchant navy officers, would be needed to test them formally within that specific population.

7. Conclusion

Based on twenty-nine independently verified empirical studies published between 2008 and 2026, this review finds consistent support for the proposition that occupational psychological stress among seafarers is significantly associated with reduced performance and adverse mental health outcomes (H1), and that social support, resilience, and organisational culture significantly moderate this relationship (H2). Depression and suicidal ideation appear at levels warranting sustained clinical and policy attention, while rank, tenure, and access to peer and family support consistently differentiate seafarers at higher versus lower risk. Three verified studies confirm these patterns specifically among Indian seafarers, a population independently identified by International Transport Workers' Federation data as facing acute structural vulnerability (worst-affected nationality in the 2025 global abandonment crisis), representing a clear and well-justified direction for further primary research on the psychological stress and occupational performance of Indian mariners specifically.

Conflicts of Interest

The author(s) declare no conflict of interest.

Funding

This research received no external funding.

Data Availability Statement

No new data were generated in this review. All information discussed is drawn from the 29 publicly available sources listed in the References section.

Ethics Statement

This review did not involve the collection of new data from human or animal subjects and therefore did not require ethics committee approval. All findings discussed are drawn from previously published, publicly available research.

References

1. Allen, P., Wadsworth, E. and Smith, A. (2008) 'Seafarers' fatigue: a review of the recent literature', *International Maritime Health*, 59(1-4), pp.81-92.

2. An, J., Liu, Y., Sun, Y. and Liu, C. (2020) 'Impact of Work-Family Conflict, Job Stress and Job Satisfaction on Seafarer Performance', *International Journal of Environmental Research and Public Health*, 17(7), p.2191. doi:10.3390/ijerph17072191.
3. Brooks, S.K. and Greenberg, N. (2022) 'Mental health and psychological well-being of maritime personnel: a systematic review', *BMC Psychology*, 10(1). doi:10.1186/s40359-022-00850-4.
4. Carotenuto, A., Molino, I., Fasanaro, A. and Amenta, F. (2012) 'Psychological stress in seafarers: a review', *International Maritime Health*, 63, pp.188-194.
5. Carrera-Arce, M., Baumler, R. and Hollander, J. (2023) 'A Systematic Review of Assessment Methods for Seafarers' Mental Health and Well-Being During the COVID-19 Pandemic', *INQUIRY: The Journal of Health Care Organization, Provision, and Financing*, 60. doi:10.1177/00469580231212218.
6. Doyle, N., MacLachlan, M., Fraser, A., Stilz, R., Lismont, K., Cox, H. and McVeigh, J. (2015) 'Resilience and well-being amongst seafarers: cross-sectional study of crew across 51 ships', *International Archives of Occupational and Environmental Health*, 89(2), pp.199-209. doi:10.1007/s00420-015-1063-9.
7. Hjarnoe, L. and Leppin, A. (2013) 'Health promotion in the Danish maritime setting: challenges and possibilities for changing lifestyle behavior and health among seafarers', *BMC Public Health*, 13(1). doi:10.1186/1471-2458-13-1165.
8. Hystad, S.W. and Eid, J. (2016) 'Sleep and Fatigue Among Seafarers: The Role of Environmental Stressors, Duration at Sea and Psychological Capital', *Safety and Health at Work*, 7(4), pp.363-371. doi:10.1016/j.shaw.2016.05.006.
9. Ismail, M.R.S., Ahmad Fuad, A.F., Said, M.H., Billah, M.A. and Ahmed, T. (2021) 'Factors Affecting The Stress Level Among The Asian Sea-Farers'.
10. Janssen, W., Jensen, H.-J., Harth, V. and Oldenburg, M. (2026) 'Resilience of seafarers depending on occupational groups', *BMC Public Health*, 26, 1171. doi:10.1186/s12889-026-27133-6.
11. Jensen, H.-J. and Oldenburg, M. (2020) 'Training seafarers to deal with multicultural crew members and stress on board', *International Maritime Health*, 71(3), pp.174-180. doi:10.5603/imh.2020.0031.
12. Jonglertmontree, W., Kaewboonchoo, O., Morioka, I. and Boonyamalik, P. (2022) 'Mental health problems and their related factors among seafarers: a scoping review', *BMC Public Health*, 22(1). doi:10.1186/s12889-022-12713-z.
13. Krishnan, A., Sumit, K. and Chandra Sekaran, V. (2025) 'Exploring the depths: correlates of depression among seafarers in Mumbai, India', *Annali di Igiene: Medicina Preventiva e di Comunità*, 37(5), pp.646-656. doi:10.7416/ai.2025.2690.
14. Lefkowitz, R. and Slade, M. (2019) *Seafarer Mental Health Study*. ITF Seafarers' Trust. Available at: https://www.seafarerstrust.org/sites/default/files/node/publications/files/ST_MentalHealthReport_Final_Digital-1.pdf.
15. Ma, M. and Liao, R. (2025) 'Factors affecting seafarers' fatigue: a scoping review', *Frontiers in Public Health*, 13. doi:10.3389/fpubh.2025.1647685.
16. McVeigh, J., MacLachlan, M., Vallieres, F., Hyland, P., Stilz, R., Cox, H. and Fraser, A. (2019) 'Identifying Predictors of Stress and Job Satisfaction in a Sample of Merchant Seafarers Using Structural Equation Modeling', *Frontiers in Psychology*, 10. doi:10.3389/fpsyg.2019.00070.
17. Nittari, G., Gibelli, F., Bailo, P., Sirignano, A. and Ricci, G. (2022) 'Factors affecting mental health of seafarers on board merchant ships: a systematic review', *Reviews on Environmental Health*. doi:10.1515/reveh-2021-0070.
18. Oldenburg, M., Baur, X. and Schlaich, C. (2010) 'Occupational Risks and Challenges of Seafaring', *Journal of Occupational Health*, 52(5), pp.249-256. doi:10.1539/joh.k10004.
19. Oldenburg, M., Hogan, B. and Jensen, H.-J. (2013) 'Systematic review of maritime field studies about stress and strain in seafaring', *International Archives of Occupational and Environmental Health*, 86(1), pp.1-15. doi:10.1007/s00420-012-0801-5.
20. Oldenburg, M., Jensen, H.-J. and Wegner, R. (2013) 'Burnout syndrome in seafarers in the merchant marine service', *International Archives of Occupational and Environmental Health*, 86(4), pp.407-416. doi:10.1007/s00420-012-0771-7.
21. Paranthatta, S., George, T., Vinaya, H.M., Swathi, P.S., Pandey, M., Pradhan, B., Babu, N. and Saoji, A.A. (2024) 'Effect of cyclic meditation on anxiety and sleep quality in sailors on merchant ships-A quasi-experimental study', *Frontiers in Public Health*, 12. doi:10.3389/fpubh.2024.1363750.
22. Pauksztat, B., Grech, M.R. and Kitada, M. (2022) 'The impact of the COVID-19 pandemic on seafarers' mental health and chronic fatigue: Beneficial effects of onboard peer support, external support, and Internet access', *Marine Policy*, 137, p.104942. doi:10.1016/j.marpol.2021.104942.
23. Sharma, K. (2024) 'Navigating the High Seas of Mental Health: Exploring the Prevalence of Depression, Stress, Anxiety, and Burnout Among Indian Seafarers', *International Journal of Public Health Excellence*, 3(2), pp.677-695. doi:10.55299/ijphe.v3i2.827.
24. Sivri, F., Ugurlu, O., Blanco-Davis, E., Senbursa, N. and Wang, J. (2025) 'Mapping Mental Health of Seafarers Post-COVID-19: A Gaussian Graphical Model of Depression, Anxiety, and Maritime Working Conditions', *INQUIRY: The Journal of Health Care Organization, Provision, and Financing*, 62. doi:10.1177/00469580251371386.

25. Strukcinskiene, B., Razbadauskas, A., Grigoliene, R., Jeriomenkaite, A., Jurgaitis, J., Punys, V., Kontautiene, V., Beniusiene, A., Martisauskiene, D., Zuperkiene, E., Papadakaki, M., Zuperkaite, D. and Genowska, A. (2025) 'Occupational Stressors and Workplace Challenges Faced by Seafarers in Lithuania: A Cross-Sectional Study', *Healthcare*, 13(11), p.1334. doi:10.3390/healthcare13111334.
26. Svetina, M., Perkovic, M., Yang, C., Gu, Y., Mindadze, A., Mikeltadze, N., Davitadze, L. and Gabedava, G. (2024) 'Factors Impacting Seafarers' Mental Health and Career Intentions', *Inquiry*, 61. doi:10.1177/00469580241229617.
27. Tang, L., Abila, S., Kitada, M., Malecosio, S. and Montes, K.K. (2022) 'Seafarers' mental health during the COVID-19 pandemic: An examination of current supportive measures and their perceived effectiveness', *Marine Policy*, 145, p.105276. doi:10.1016/j.marpol.2022.105276.
28. Vlachos, I., Pantouvakis, A. and Karakasnaki, M. (2022) 'Determinants and stressors of seafarers' job satisfaction: evidence from a global survey', *Maritime Policy & Management*, 51(2), pp.283-303. doi:10.1080/03088839.2022.2118884.
29. Vij, S. and Goyal, S. (2024) 'Voyage of Stress: Assessing the Impact of Fatigue and Work Conditions on Indian Merchant Navy Officers', *Journal of Informatics Education and Research*, 3(2). doi:10.52783/jier.v3i2.441.