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Mental Health and Wellbeing Among Seafarers on Long Offshore Assignments

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ABSTRACT

Long offshore assignments place seafarers in work and living environments characterised by separation from family, demanding schedules, restricted social contact and limited access to welfare services. This exploratory study examines self-reported depression, anxiety and stress symptoms among 50 seafarers and identifies practical areas for improving onboard wellbeing. A purposive online survey used the Depression Anxiety Stress Scales–21 (DASS-21), supplemented by reported open-ended feedback on workplace support. Each seven-item subscale was scored on the 0–3 item-response scale and doubled to the conventional DASS scale. The reported group mean scores were $\mathbf{14.52\,(SD = 8.06)}$ for anxiety, $\mathbf{13.16\,(SD = 8.08)}$ for stress and $\mathbf{9.92\,(SD = 9.05)}$ for depression. Recalculation from the reported item means reproduces all three group means. Anxiety had the highest mean symptom score, with particularly elevated scores for items concerning physical arousal and fear of panic, while difficulty winding down was prominent in the stress domain. The practical priorities described in open-ended findings were reliable onboard internet access, improved work–rest balance and timely crew changes. The design does not establish clinical prevalence, causality or an association between deployment duration and symptom scores; those questions require respondent-level records and further analysis. The study offers descriptive evidence to support more structured seafarer welfare monitoring and targeted organisational follow-up.

Keywords: seafarer wellbeing; offshore assignments; anxiety symptoms; occupational stress; DASS-21

1. Introduction

1.1 Research Background

Seafarers maintain the movement of goods and provide technical support to maritime industries in settings that differ substantially from conventional land-based workplaces (Chowdhury et al., 2024; Suhrab & Kaliappan, 2022). Cargo vessels and offshore service ships may keep crews away from shore for extended periods, with professional duties occurring within the same confined environment in which personnel eat, rest and socialise (Brooks & Greenberg, 2022; Jonglertmontree et al., 2022). Opportunities for separation between work and private life are limited, and the quality of communication with people ashore depends on onboard infrastructure, schedules and operational conditions (Oldenburg & Jensen, 2019). These characteristics make physical health, psychological wellbeing and social support interconnected matters of maritime occupational welfare (Helen et al., 2025; Sampson & Ellis, 2019).

Extended separation from home may coincide with watchkeeping, shift work, fatigue, restricted recreation and uncertainty about relief arrangements (Brooks & Greenberg, 2022; Carotenuto et al., 2012). In addition to individual discomfort, psychological strain can affect work satisfaction, relationships onboard and safety-related functioning (Brooks & Greenberg, 2022; McVeigh et al., 2019). A review of seafarer fatigue identifies work organisation, sleep

disruption and shipboard conditions as potentially interacting contributors to health and operational consequences (Jepsen et al., 2015). These concerns warrant careful investigation without presuming that every seafarer on a lengthy assignment experiences a diagnosable mental disorder.

Evidence syntheses identify social isolation, long working hours and adverse physical environments as important psychosocial concerns, but the reported studies vary considerably in instruments, designs and populations (Brooks & Greenberg, 2022). Accordingly, a survey-based assessment of emotional symptoms can provide useful descriptive information while remaining distinct from clinical diagnosis and longitudinal analysis.

1.2 Problem Statement

Although maritime welfare has gained attention, access to dependable communication, mental-health services and opportunities for recuperation may remain uneven (Carrera-Arce et al., 2023; Sampson et al., 2022). Shipboard hierarchies, perceptions of stigma and uncertainty about confidentiality can complicate help-seeking (Ajayi & Udeh, 2024). Previous evidence supports the relevance of these issues but cannot by itself determine their prevalence in a particular sample of offshore seafarers (Sampson & Ellis, 2019). A structured examination of depressive symptoms, anxiety and stress can help identify domains warranting further assessment while the views of maritime workers can inform priorities for practical support.

A further evidence gap concerns the relationship between assignment length and emotional wellbeing (Baygi et al., 2022). Duration, rank, age, vessel type, nationality and the availability of shore leave may plausibly contribute to differences in symptom burden. Establishing those relationships, however, requires measured exposure variables, sufficient subgroup sizes and an appropriate statistical design (Brooks & Greenberg, 2022; Dell et al., 2022). This study therefore presents the data currently available as a descriptive assessment and highlights the additional evidence required to address these broader questions.

1.3 Research Questions

1. Which emotional symptom domains are reported by seafarers working on extended offshore assignments?

2. Which DASS-21 domain has the highest average self-reported symptom score in the study sample?

3. What workplace and organisational measures are identified as priorities for improving psychological wellbeing during long assignments?

1.4 Research Objectives

1. To describe depression-, anxiety- and stress-related symptoms reported by seafarers during offshore assignments.

2. To compare the descriptive mean scores of the DASS-21 symptom domains in the surveyed group.

3. To present practical welfare priorities concerning work–rest schedules, family communication, crew changes and access to support.

1.5 Scope and Contribution

The empirical component concerns a purposively recruited group of 50 seafarers and an item-level summary of DASS-21 responses. The topic is relevant to offshore and commercial shipping contexts, but the available tables do not provide a verified vessel-type breakdown, nationality profile, distribution of contract lengths or observations before and after deployment. The contribution is consequently bounded: it offers a transparent descriptive account of reported symptoms and priorities rather than a causal comparison between deployment categories or a clinical epidemiological estimate.

2. Literature Review

2.1 Occupational Demands, Fatigue and Shipboard Conditions

The physical environment at sea combines operational workloads with motion, noise, vibration, variable weather and working-time arrangements. Fatigue may arise from fragmented sleep, demanding watches, rotating schedules and insufficient recovery opportunities. Jepsen et al. (2015) reviewed fatigue-related risk factors, consequences and mitigation, describing the need to consider staffing, sleep and the wider working environment together. Oldenburg and Jensen (2019) found that occupational stress and strain differ across phases of a voyage, indicating that workload and environmental exposure cannot be reduced to an undifferentiated idea of time at sea.

For long offshore assignments, the potential cumulative effects of duty patterns and limited shore leave may be particularly relevant. Nevertheless, duration itself is not synonymous with exposure intensity: two seafarers with the same contract length may experience very different workloads, living conditions, interpersonal support and rest periods. A meaningful future analysis would therefore need individual duration records alongside working-hour and vessel-level variables.

2.2 Social Isolation and Communication With Family

Separation from loved ones and barriers to routine personal communication are recurring themes in maritime welfare research. Cardiff University's investigation of seafarers' mental health and wellbeing identified onboard communication, living conditions and extended periods away from family as salient concerns, while also calling for more proactive employer support (Sampson & Ellis, 2019). Reliable connectivity may help maintain social support during long voyages, although its actual effects depend on affordability, privacy, available rest time and the interpersonal context.

Social isolation should also be distinguished from the number of people onboard. Crews may be surrounded by colleagues while experiencing loneliness, particularly when language differences, working shifts or limited social spaces make meaningful interaction difficult. Thus, welfare initiatives need to consider interpersonal trust and shipboard culture as well as physical communication infrastructure (Brooks & Greenberg, 2022).

2.3 Mental Health Symptoms and Occupational Wellbeing

Depression, anxiety and stress are overlapping but distinguishable dimensions of emotional experience. Anxiety-related responses may involve heightened arousal and anticipation of threat; depressive symptoms may include reduced positive affect and low motivation; stress responses may involve tension, irritability and difficulty relaxing. The DASS-21 provides a practical structured measure of these negative emotional states and has been examined psychometrically in a large non-clinical population (Henry & Crawford, 2005). It is not a tool for establishing psychiatric diagnoses.

In maritime research, differences among operational environments, available support and population characteristics limit simple generalisation. Brooks and Greenberg (2022) identified social isolation, poor working conditions and extended hours as recurrent exposures, while emphasising the variability of study approaches. The finding of a relatively high mean on one symptom domain within an individual sample should therefore be interpreted as a prompt for closer assessment, not a clinical conclusion about all seafarers.

2.4 Onboard Support Systems and Help-Seeking

Support systems can include welfare officers, leadership training, confidential advice, access to shore-based services, peer relationships and recreational opportunities. Their usefulness depends on accessibility, trust and the practical ability of workers to use them without interference with essential rest or duty periods. Organisational measures also interact: even a well-publicised helpline may be difficult to use when connectivity is unavailable or confidentiality cannot be assured. Evidence from Cardiff University's maritime studies supports attention to employer practices, accommodation and accessible healthcare provision (Sampson & Ellis, 2019; Sampson et al., 2025). Seafarer education also forms part of a proactive strategy for improving recognition of mental-health needs (Abila & Acejo, 2021).

2.5 Digital Support, Contract Management and Research Gaps

Digital consultation and wellbeing resources potentially extend support beyond port visits, but their effectiveness depends on infrastructure and service design. Shorter rotations and timely crew changes could reduce prolonged separation or excessive work demands for some workers. Such proposals should be evaluated for actual outcomes, trade-offs, operational feasibility and the risks of assuming that a single contract-length threshold is appropriate for all vessel types. Data protection and confidential access are essential where support is related to personal mental-health information.

Several methodological gaps remain especially important: sample representativeness, longitudinal measurement, diagnostic assessment where indicated, reliable exposure measurements, and comparable subgroup reporting. The difference between a self-report symptom measure and clinical prevalence is particularly consequential. This study addresses only part of that evidence chain through descriptive symptom scoring and presentation of participant-reported priorities. A review focused on Filipino seafarers also emphasised the shortage of population-specific evidence and the relevance of mental-health education (Abila & Acejo, 2021).

3. Methodology

3.1 Research Design and Framework

An exploratory descriptive design was used to examine emotional symptoms and welfare priorities among seafarers familiar with offshore assignments. The quantitative element was a 21-item self-report survey summarised through item means, item standard deviations, and overall DASS-21 domain scores. An open-ended feedback component was described as informing recommendations. Although broader mixed-methods activities and additional screening tools were discussed during research planning, the numerically reported outcomes relate to the DASS-21; no separate WHO-5 or General Health Questionnaire results are available for analysis.

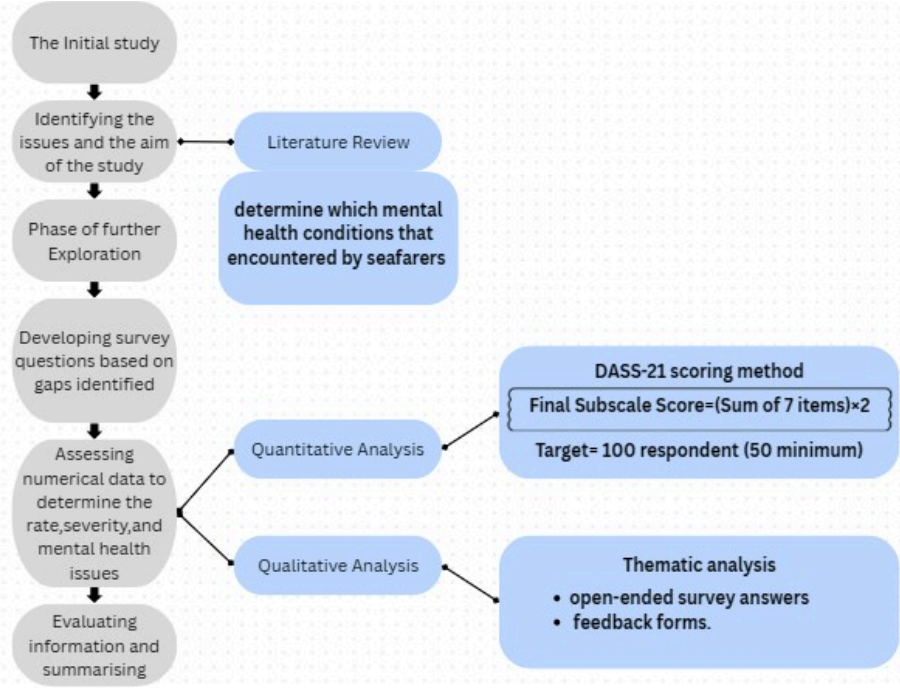


Figure 1. Research framework linking the study objectives, DASS-21 assessment and qualitative interpretation.

The framework follows a sequence of identifying the problem, reviewing scholarly evidence, developing the survey, describing emotional symptoms and synthesising recommendations. Its planning components are distinguished from the outcomes numerically documented in this article.

3.2 Participants, Recruitment and Scope of Data

Purposive online recruitment targeted seafarers with experience of long offshore assignments. The achieved quantitative sample was $N = 50$, corresponding to the minimum recruitment target described during project planning; an additional aspirational target of 100 was not reached in the presented results. Participation was sought among seafarers across working roles and maritime settings. However, the reporting tables do not include respondent-level ages, ranks, nationalities, types of vessel, deployment lengths or shore-leave histories. The sample must therefore be treated as non-probability and descriptive rather than as a probability sample suitable for generalisation to an international seafaring population.

3.3 DASS-21 Measure and Scoring

The Depression Anxiety Stress Scales–21 (DASS-21) comprises 21 items, each assessed on a four-point response scale from 0 to 3, with seven items assigned to each of the depression, anxiety and stress domains. Each respondent's item scores are summed within a domain and multiplied by two to place the result on the conventional DASS-42-equivalent scale. The group mean of a doubled domain score equals two times the sum of the seven corresponding item means. The domains reflect self-reported symptoms rather than clinical diagnoses, and severity categories are intended for interpreting individual scores with appropriate clinical context (Lovibond & Lovibond, 1995; Henry & Crawford, 2005).

For a subscale j with seven constituent items, the score is $S_j = 2 \times \sum_{i=1}^{7} x_{ij}$. At the sample level, the mean of S_j is $2 \times \sum_{i=1}^{7} M_{ij}$. This identity permits verification of overall domain means when all item means are known. It does not permit independent reconstruction of an overall domain standard deviation from the item standard deviations alone, because covariance between an individual's item scores is required.

Table 1. Conventional DASS-21 severity bands after doubling scores (interpretation for individual scores).

Domain	Normal	Mild	Moderate	Severe	Extremely severe
Depression	0–9	10–13	14–20	21–27	28+
Anxiety	0–7	8–9	10–14	15–19	20+
Stress	0–14	15–18	19–25	26–33	34+

Note. Classification cutoffs correspond to doubled DASS-21 scores. They should not be used to infer the proportion of respondents in each severity category from a single group mean (Lovibond & Lovibond, 1995).

3.4 Qualitative Feedback

The reported open-ended feedback was organised around work–rest balance, internet availability and crew-change arrangements. These themes are retained because they form a substantive component of the findings. However, the available record does not provide interview transcripts, participant quotations, coding sheets, the number of responses per theme or agreement between coders. Their presentation is therefore a descriptive synthesis of reported feedback rather than a fully reproducible thematic-frequency or qualitative saturation analysis.

3.5 Analysis and Limitations

The quantitative analysis describes item means, item standard deviations and the overall group mean and standard deviation for each symptom domain. Rank ordering uses overall mean symptom scores. Comparisons are descriptive; statistical significance, participant-level severity distributions, correlation with assignment duration, multivariable modelling and subgroup differences were not calculated because the necessary records are not available in the reported outputs. A cross-sectional symptom ranking cannot demonstrate that prolonged offshore employment caused the symptoms.

4. Results

4.1 Mental Health Conditions and Associated Workplace Factors

The evidence considered in the literature review identifies depression-, anxiety- and stress-related symptoms as relevant occupational wellbeing domains for seafarers. Factors discussed include isolation and family separation, sleep disruption, job demands, harsh or confined physical environments, interpersonal support and ease of accessing welfare services. Table 2 relates each domain to the principal explanatory factors considered in the study. These relationships are informed by existing scholarship and are not presented as regression effects estimated in the sample.

Table 2. Occupational factors discussed in relation to self-reported emotional symptom domains.

Symptom domain	Occupational circumstances considered	Interpretive relevance
Depression	Family separation; prolonged social isolation; limited leisure and positive engagement	Possible relationship to lower positive affect and motivation
Anxiety	Communication barriers; operational uncertainty; demanding work; disrupted rest	Possible relationship to arousal and anticipation of adverse events
Stress	Workload; watch schedules; environmental exposures; restricted recovery	Possible relationship to tension, irritability and difficulty relaxing

4.2 DASS-21 Item-Level Outcomes

Table 3 presents the seven depression items, including Q21, whose statistics were described in the results narrative. Across the seven items, the means ranged from 0.50 to 0.88. Q3 had the highest mean ($M = 0.88$, $SD = 0.69$), followed by Q17 ($M = 0.82$, $SD = 0.69$); Q21 had the lowest ($M = 0.50$, $SD = 0.76$). These represent differences in endorsement of particular questionnaire items, not diagnostic findings.

Table 3. Depression-item means and standard deviations (N = 50).

DASS-21 item	Mean (0–3)	SD
Q3	0.88	0.69
Q5	0.78	0.84
Q10	0.68	0.84

DASS-21 item	Mean (0–3)	SD
Q13	0.68	0.87
Q16	0.62	0.83
Q17	0.82	0.69
Q21	0.50	0.76

The Q21 values were stated in the results narrative; inclusion here makes the seven-item domain complete. The overall mean is $(0.88 + 0.78 + 0.68 + 0.68 + 0.62 + 0.82 + 0.50) \times 2 = 9.92$.

Table 4. Anxiety-item means and standard deviations (N = 50).

DASS-21 item	Mean (0–3)	SD
Q2	1.62	0.90
Q4	0.52	0.76
Q7	0.94	0.79
Q9	1.56	0.95
Q15	0.82	0.96
Q19	0.88	0.98
Q20	0.92	0.70

For anxiety, Q2 ($M = 1.62$, $SD = 0.90$) and Q9 ($M = 1.56$, $SD = 0.95$) were the highest-scoring items. Q4 ($M = 0.52$, $SD = 0.76$) was the lowest. The domain mean is $(1.62 + 0.52 + 0.94 + 1.56 + 0.82 + 0.88 + 0.92) \times 2 = 14.52$. High item scores describe symptom endorsement and do not verify panic disorder or other diagnoses.

Table 5. Stress-item means and standard deviations (N = 50).

DASS-21 item	Mean (0–3)	SD
Q1	1.50	0.93
Q6	0.74	0.83
Q8	1.14	0.90
Q11	0.74	0.85
Q12	0.62	0.70
Q14	0.86	0.76
Q18	0.98	0.65

For stress, Q1 ($M = 1.50$, $SD = 0.93$) was highest, followed by Q8 ($M = 1.14$, $SD = 0.90$); Q12 ($M = 0.62$, $SD = 0.70$) was lowest. The stress mean is $(1.50 + 0.74 + 1.14 + 0.74 + 0.62 + 0.86 + 0.98) \times 2 = 13.16$. These item patterns suggest particular value in examining rest, workload and emotional regulation in subsequent studies.

4.3 Overall Domain Scores and Rank Ordering

Table 6. Reported DASS-21 domain scores and verified means (N = 50).

Rank by mean	Domain	Reported mean	Reported SD	Mean reproduced from items
1	Anxiety	14.52	8.06	14.52
2	Stress	13.16	8.08	13.16
3	Depression	9.92	9.05	9.92

Anxiety had the highest average self-reported symptom score $(M = 14.52)$, followed by stress $(M = 13.16)$ and depression $(M = 9.92)$. The reported SD values were 8.06, 8.08 and 9.05, respectively. The domain means follow directly from the seven item means; the domain SDs are retained as reported but cannot be reconstructed without

within-person data. Consequently, no confidence intervals, hypothesis tests or individual severity proportions can reliably be produced from the summarised tables alone.

The numerical comparison establishes a rank order of group means; it does not establish that anxiety was the most frequently diagnosed condition. In particular, a higher anxiety mean does not indicate what share of respondents exceeded any chosen severity threshold. Respondent-level scores would be required to estimate percentages classified in the normal, mild, moderate, severe and extremely severe bands.

4.4 Reported Welfare Priorities

4.4.1 Work–Rest Balance and Workload

Improvement of work–rest arrangements was described as a central priority in the reported feedback. Long workdays, insufficient rest and demanding workloads were regarded as likely sources of fatigue and psychological strain. Respondents advocated enforcement of work–rest requirements, attention to overtime and staffing arrangements that allow genuine opportunities for recovery. The suggestions are operational priorities for consideration, not an experimentally demonstrated reduction in DASS-21 symptoms.

4.4.2 Reliable and Affordable Internet Access

Communication with family and trusted contacts was identified as especially important during extended assignments. Participants described reliable, affordable internet access as a welfare provision that could support regular communication, access to information and connection with personal support networks. Consistent with the maritime welfare literature, this recommendation responds to the practical consequences of separation from home (Sampson & Ellis, 2019).

4.4.3 Contract Length and Timely Crew Changes

The reported feedback also advocated predictable relief arrangements and reduced delays in crew changes. A maximum contract length of about six months was suggested by respondents. This figure is a participant-reported proposal, not a statistically determined wellbeing threshold or a universal operational requirement. Decisions about rotations should additionally consider vessel operations, applicable law, safety, travel arrangements and individual circumstances. Employer-centred research likewise identifies rotation arrangements and provision of communications facilities as priorities for action (Sampson & Ellis, 2021).

4.4.4 Leadership and Access to Support

A further cross-cutting implication is the need for approachable onboard leadership, awareness of psychological distress and access to confidential professional assistance. Such measures should be implemented alongside improvements to working conditions rather than used as substitutes for adequate staffing or rest opportunities. Their effectiveness should be evaluated using follow-up data and appropriate measures of reach and outcomes (Brooks & Greenberg, 2022).

5. Discussion

5.1 Interpreting the Symptom Profile

The highest mean in the anxiety domain is consistent with the relevance of emotional arousal and anticipatory worry to maritime occupational welfare. Q2 and Q9 were prominent, while the stress profile highlighted difficulty winding down (Q1) and nervous energy (Q8). The distinction between the domain means is descriptively useful because it indicates where additional screening or support might be valuable. It should not be interpreted as evidence that any domain has a greater proportion of clinically affected seafarers without respondent-level classification and clinical follow-up. The DASS-21 offers dimensional assessment rather than diagnostic categorisation (Henry & Crawford, 2005).

5.2 Consistency With Maritime Literature

The concerns raised in the study parallel recurring themes in previous maritime scholarship. Sampson and Ellis (2019) highlighted family separation, working and living conditions, and the importance of employer policies for mental wellbeing. Jepsen et al. (2015) placed fatigue within a wider pattern of working-time, sleep and safety issues, while Oldenburg and Jensen (2019) showed that exposure to stressors differs across operational phases. Brooks and Greenberg (2022) similarly characterised mental wellbeing as a multidimensional outcome influenced by social and physical working conditions. These studies support the plausibility of proposed mechanisms but do not validate a causal relation in the present 50-person sample. Employer investment in a supportive onboard environment is independently discussed by Sampson and Ellis (2021).

5.3 Assignment Duration, Causation and Interpretation

The study is motivated by long offshore assignments, yet the reported data do not provide durations for individual seafarers or a cross-tabulation of symptom scores by contract length. Without those records, the descriptive scores cannot determine a dose–response pattern, identify a critical duration threshold, or separate the effects of deployment length from workload, organisational support and personal circumstances. Future research should specify deployment duration in a reproducible unit, document exposure to recent voyages, collect rest-hour and connectivity variables, and consider repeated measures when feasible.

5.4 Limitations and Research Priorities

The findings are constrained by purposive recruitment, $N = 50$, missing demographic breakdowns, the absence of full participant-level item responses and limited documentation of the qualitative analysis. The numerical tables support accurate recovery of the three means but not of subscale variances, correlations, confidence intervals, subgroup results or severity proportions. Likewise, qualitative recommendations are recorded without traceable quotations or coder records.

A strengthened next phase would collect complete anonymised DASS-21 responses together with voyage length, vessel type, rank, age category, work–rest records and quality of communication with shore. Transparent handling of missing data, defined sample-selection procedures and preregistered comparisons would improve interpretability. Interviews or open-ended responses could be systematically coded with an audit trail and illustrative participant quotations, subject to consent and confidentiality protections. More extensive studies could also assess the feasibility and impact of worker-centred welfare interventions over time.

5.5 Practical Implications

The findings point to a reasonable set of issues for organisational assessment rather than a single prescriptive intervention. Operators can review fatigue-risk management and rest-hour practices, evaluate internet accessibility and privacy, monitor avoidable delays in crew changes, provide confidential signposting to professional care, and train supervisors to respond sensitively to welfare concerns. Engagement with seafarers can help prioritise these measures according to vessel type, duty arrangement and existing services. Outcome monitoring is essential before attributing improved wellbeing to any particular policy. These action areas are broadly consistent with employer-focused recommendations in maritime policy research (Sampson & Ellis, 2021).

6. Conclusion

This study examined self-reported depression, anxiety and stress symptoms among 50 seafarers with experience of long offshore assignments. The DASS-21 domain mean scores were highest for anxiety (14.52), followed by stress (13.16) and depression (9.92); each mean is reproduced by doubling the sum of its seven reported item means. The item patterns highlight anxiety-related arousal and aspects of occupational tension as areas meriting additional attention. The results concern dimensional symptom scores, not medical diagnoses or clinical prevalence estimates.

Reported welfare priorities were more balanced work–rest schedules, reliable family communication, timely crew changes and supportive access to help. These recommendations are relevant to maritime workplace policy, but their effectiveness was not experimentally evaluated. The study supports the value of descriptive screening and responsive welfare planning while underscoring the need for larger, transparent, longitudinal investigations of seafarer mental health.

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