

The Health and Wellbeing of Seafarers Working on Cargo Ships in 2023-2024.

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Background

The global COVID-19 pandemic revealed to the general public how dependent we all are on a range of key services. These included cargo shipping and many countries designated seafarers as key workers such was the recognition of their significance. Seafarers are important and they were, of course, just as important prior to the pandemic, but they are often given little consideration by the public at large. This means that there are issues relating to the employment conditions of seafarers that receive little public scrutiny. As a result, many outdated policies and practices have the opportunity to persist in the shipping industry where they may be taken-for-granted by all stakeholders (including seafarers) to a degree that allows them to fall out of line with contemporary, shore-based, corporate and social, norms and values. Employer concern for employee health and safety is now an expectation for most workers employed in the formal economies of OECD nations. At sea, the institutional and remote nature of work, places seafarers in a very dependent position in relation to their health and welfare.

Operating away from land for long periods of time, seafarers are generally isolated from shoreside communities and services. Such services include routine medical checkups and dental care which seafarers can only access when they are at home on vacation or on completion of a contract. The Maritime Labour Convention specifies that the maximum length of time a seafarer can be employed on board is 12 months (on a contract of 11 months plus or minus 1). In this context, and notwithstanding stringent pre-employment medical examinations, we should expect seafarers to require periodic medical and dental treatment whilst on board (Sobotta et al 2007, Mahdi et al 2016). In the event of an accident at sea, or a sudden emergency (e.g. a cardiac event), their need for treatment might be urgent. However, they are also likely to have less urgent, but nevertheless important needs, which may not be so transparently evident and may not currently be being met.

Research Context

Generally speaking, the very valuable information that has, hitherto, been collected about seafarers' health is of a snapshot nature (representing a single point in time), is confined to a single area of health (e.g. Melbye and Carter 2017, Lefkowitz and Slade 2019, Hoeyer and Hansen 2005, Oldenburg and Jensen 2019, Oldenburg 2014) and/or is confined to a single nationality (e.g. Poulsen et al 2014, Slišković and Penezić 2017, Song et al 2021, Kinali et al 2022, Tu and Jepsen 2016, Nas and Fiskin 2014). Indeed, it is fair to say that despite the small number of very important studies in the public domain, there remains a general lack of such data overall.

There is a similar lack of data about seafarers' access to medical care whilst at sea and many of the studies which do exist are focussed on data collected in relation to telemedicine (Chintalapudi et al 2022) and repatriation (Abaya et al 2015). These studies focus on cases where treatment has been received, or repatriation has taken place. As such, they exclude both chronic and (relatively) minor conditions and, by definition, they overlook cases where access to care has not been facilitated. In the course of the pandemic many seafarers were reported to be unable to access urgent medical care even when their vessels were berthed in a port (<https://www.marineinsight.com/shipping-news/seafarers-access-to-medical-care-a-matter-of-life-and-death/> accessed 30/1/23). More generally however (regardless of the pandemic) there are tentative indications that seafarers may, routinely, have their access to healthcare curtailed by companies or senior officers (Thomas 2003), that they may limit their own access to healthcare for fear of being sent home (Guillot-Wright 2021) or damaging vessel key performance indicators (on lost time injuries for example), and that when they attempt to access healthcare the quality of care may be impaired by language and cultural barriers (Sampson 2024), treatment availability, and time limitations vis a vis investigations/procedures/diagnosis. These indications require investigation so that evidence can be made available to stakeholders to inform the changes in practice that should be pursued to safeguard seafarers' health and wellbeing and to demonstrate the urgency with which such changes should be made. In this context, and in support of seafarers' health and healthcare access, this study has set out to explore seafarers' experiences of accessing medical care on board as well as their health-related behaviours, practices, and needs

The research approach and methods

The research that is reported on here, is part of a study which took place in the period 2023-2025. The study was funded by the Stiftelsen Sveriges Sjömanshus. It made use of questionnaires and interviews and considered the cargo and the cruise sector. Four reports covering different aspects of the research have been published simultaneously (see Sampson et al 2025a, Sampson et al 2025b, Sampson et al 2025c). As one of the four publications from the study, this report focuses solely on the data collected from seafarers working on board cargo ships. As such, it is based upon the results from 1139 questionnaires and 101 interviews with active cargo sector seafarers. At the time of the data collection, 763 seafarers who completed a questionnaire were at sea and 360 were on vacation (16 seafarers did not indicate their onboard status). Throughout this report, where appropriate, comparisons will be made to data collected in earlier research which we carried out in 2011 and 2016. These earlier studies were solely questionnaire-based and were all completed as interviewer administered, face-to-face (i.e., in person) questionnaires¹.

¹ In 2011 and 2016 we did not use an online version of the questionnaire at all

In conducting the 2024 research, we made use of both face-to-face and internet-based approaches. Researchers visited seafarers' centres in the UK, Germany, Spain and Sweden, to administer questionnaires on a face-to-face basis. The seafarers who took part in such interviewer-administered questionnaires were generally taking shore-leave from a vessel that had called into the associated port. In total 525 questionnaires were completed face-to-face in this manner and a further 614 were completed by seafarers via an online version of the same questionnaire. This was made available in English, Mandarin and Tagalog. Before we began the analysis of the whole questionnaire-generated dataset, we checked for any indications that the onboard/vacation status of respondents might be significantly impacting on the findings. We also compared the online vs face-to-face responses to see whether there were any indications that the response method (face-to-face or online) was strongly influencing responses. In each case, we found minor, statistically significant, variations in a small number of the responses but no indication of an overall pattern of concern. We therefore analysed the data as a single dataset with reasonable confidence that neither the method of response nor the onboard/vacation status of participants was notably skewing the results. Quantitative data were analysed using SPSS software and statistically significant differences are reported at the 0.05 level² with effect measured using Cramer's V for Chi-squared tests and Cohen's d for t-tests. In this report we detail the significance level and indicate the category of effect. In reporting percentages, we round up or down to whole numbers, such that 6.4% and downwards is rounded down to 6% and 6.5% and upwards is rounded up to 7%. However, to aid readers in interpreting the data there are some occasions (and in our tables) where we elect to round percentages up or down to one decimal place in order to properly convey subtle differences in results.

The majority of the one-to-one interviews with participants were conducted online using a platform such as Zoom or Teams. This allowed us to reach seafarers across the globe, ashore on vacation (more usually) and at sea (sometimes). Face-to-face interviews were occasionally conducted at seafarers' centres and in total 98 interviews were recorded online and three were recorded face-to-face.

In addition to interviews with seafarers we also undertook interviews with a small number of employers, medical professionals and industry stakeholders. These were all internet-facilitated, semi structured, recorded, interviews. In total we conducted 4

² Where we state that significance cannot be assessed, or where we do not report statistically significant findings, this is generally due to the percentage of cells having an expected count of less than five. Where the percentage of cells with counts of less than five exceeds 20%, statistical significance is not reported.

interviews with cargo sector employer representatives and 6 with medical professionals and other stakeholders.³

The research took place with oversight from the Cardiff University, School of Social Sciences, Ethics Committee. Having obtained informed consent, all interviews were recorded and transcribed. Transcripts were subsequently thematically coded using NVivo software. The results are presented anonymously, and individual companies and ships are not identified in our reporting.

In relation to our choice of questions, we have taken a holistic approach to health and wellbeing incorporating questions about diet, smoking, alcohol consumption, fatigue, and stress. We have additionally asked about common minor medical conditions and ailments, as well as self-medication practices. In selecting which conditions to enquire about we have taken into account the academic literature relating to seafarers' health as well as the requirement for seafarers to have pre-employment medical examinations (PEME) which generally exclude seafarers with serious ongoing health conditions/risks, and also those who are morbidly obese⁴, from the labour market. As a result, we have omitted specific questions or pre-coded responses pertaining to serious medical conditions and high Body Mass Index (BMI)⁵. However, the questionnaire did incorporate a number of opportunities for free text and 'other' answers, and we are confident that seafarers had ample opportunity to offer responses that were not predetermined by the questionnaire design.

Participant profile

The 2024 questionnaire sample

Most questionnaire respondents were men (97% of the total). The small proportion of women in the sample (3%) is a reflection of the low numbers of women seafarers employed in the global cargo shipping fleet which BIMCO/ICS (2021) estimates to stand at 1% overall. In total, seafarers represented 47 different nationalities (see Appendix One). This reflects the diverse recruitment practices of ship operators (Sampson 2013). The three largest nationality groups (Filipino, Chinese, Indian), nevertheless, constituted almost three quarters of the sample (74%). This group was predominantly Filipino (57% of total sample). Nine percent of the sample were Chinese, and 8% were Indian. The mean age of respondents was 37 with the two youngest participants aged 18 and the

³ We also carried out 4 interviews with cruise sector employer representatives which are not drawn upon in this report

⁴ https://www.american-club.com/files/files/PEME_Guidance_on_Standards_2017.pdf (accessed 12/3/25) <https://www.ukpandi.com/news-and-resources/news/article/crew-health-advice-obesity/#:~:text=An%20accurate%20clinical%20assessment%20is,unable%20to%20go%20to%20sea.> (accessed 12/3/25)

⁵ For example, we have not specifically asked about cancer or cardiovascular disease.

two oldest aged 74⁶. Just under a third of respondents (31%) worked on board a bulk carrier or stated that their last ship was a bulk carrier (for those who were on vacation when completing the questionnaire). Twenty six percent gave their last or current ship as a tanker and 26% said they were working on, or last worked on, a container vessel. The remainder worked on a variety of ship types including gas carriers, car carriers, refrigerated cargo ships (reefers), passenger/cargo vessels, ro-ro vessels and a diverse range of ships such as nuclear waste carriers, cable layers, pipe layers, survey vessels and so forth.

Seafarers are employed on cargo vessels in different ranks and are based in different departments. In this research we have divided ranks into senior officers, junior officers and ratings (see Appendix Two for details of our groupings) and we have categorised departments as deck, engine and galley (see Appendix Three for details of our groupings). The 2024 sample was composed of 24% senior officers, 29% junior officers and 47% ratings. Just over half (54% of respondents in 2024 worked in the deck department, 35% worked in the engine department and 11% worked in the galley.

2016 sample characteristics

The age profile of respondents in 2024 was slightly older than in 2016. In 2016, 63% of the sample were under 36 years old, whereas in 2024, only 48% fell into the same category. In relation to sex, the proportion of respondents in each sample who were women was very small. However, in 2024, 3% of the sample was female compared with just 1% in 2016. The 2024 sample included fewer Indian seafarers than in 2016 (8% in 2024 and 12% in 2016) and more Chinese seafarers (9% in 2024 and 6% in 2016). Other differences between the characteristics of respondents in 2016 and 2024 were more subtle and constituted a 2% variation or less. However, the differences in ship type were more pronounced. In 2016, fewer seafarers worked on bulk carriers, tankers, and gas carriers with more working on container ships, car carriers and passenger/cargo vessels. Broadly similar proportions of seafarers in each sample worked on refrigerated cargo ships and 'other' ship types. In 2016, there were fewer senior officers in our sample (13%) and more ratings (59%) but the proportion of junior officers was broadly the same (29%). The 2016 sample was very similar to that of 2024 in terms of the proportions of respondents working in each department. Just over half of our 2016 respondents worked in the deck department (56%), almost one third worked in the engine department (32%) and 12% of respondents worked in the galley.

⁶ One 18-year-old was a male engine cadet, and the other was an Indian male messman. At the other end of the age scale, one 74-year-old was a Korean male captain working on a bulk carrier and the other was a male chief engineer from Montenegro who was working on a container ship.

Interviewee demographics

As was the case with the questionnaire respondents our **interviewees** were overwhelmingly male. Ninety-five participants were male and six were female. There was a relatively even split between senior officers (27), junior officers (34) and ratings (39)⁷. However, seafarers working in the deck department predominated (65) with 26 engineers and 10 galley crew taking part. Interviewees were mostly working on bulk carriers (45), tankers (33) and container ships (13). However, some also worked on car carriers (3), general cargo vessels (3) and assorted 'others' (4). Our interviewees were predominantly Filipino (84) but they also came from India (3) UK (3) Singapore (2) UAE (2) Bangladesh (1), Georgia (1), Jamaica(1), Pakistan (1), Poland (1), Spain(1), and Ukraine (1).

Findings

Healthy and unhealthy behaviours at sea and at home

Our data demonstrated that some healthier behaviours are being adopted by seafarers at sea with fewer seafarers in 2024 drinking alcohol, smoking or regularly eating fried food than in 2016. However, a smaller proportion of our sample in 2024, reported following a plant-based (vegetarian or vegan) diet than in previous years (2011 and 2016). Furthermore, one fifth of seafarers reported that they were not able to eat as much fresh fruit or vegetables as they wanted to at sea.

Alcohol consumption

The majority (60%) of seafarers responding to our questionnaire in 2024, said that they never drank alcohol while they were at sea⁸. Just under a third of seafarers (30%) reported drinking alcohol just once a week at sea, leaving approximately 10% drinking alcohol more frequently than this (6% twice a week, 2% three times a week, 0.4% four times a week, less than 0.4% five times a week, 1% six times a week, and 1% every day). The proportion of seafarers who never drink alcohol at sea has risen sharply in the period 2011-2024. In the period 2011 to 2016 the change was relatively modest but there was a sharp decline in alcohol consumption in the period 2016 to 2024. In 2016 the number of respondents who reported never drinking at sea climbed from 43% to 60% ($p < 0.001$, small/medium effect) and there was a very similar change in relation to

⁷ One rank of 'observer' could not be classified

⁸ Our question specified that this meant in a typical week while the vessel was at sea between port calls. We chose this wording because vessels generally spend more time at sea than in port and because some seafarers are never able to enjoy shore-leave or have an alcoholic drink when in port but they may do so when their vessel is in transit and schedules are less hectic. Ports are also locations where surveillance takes place in the form of visits from superintendents, port-state inspectors etc and this can impact seafarers' behaviour (Sampson2024).

⁹ 72% of women stated that they never drank alcohol at sea but the overall numbers of women respondents was too small to assess the statistical significance of the differences in the proportions of women reporting never drinking alcohol on board and men reporting never drinking alcohol on board

seafarers who said they never drank at home. In 2016 this was 22% and in 2024 the proportion had risen to 34% ($p < 0.001$, medium effect)

Table 1: Alcohol consumption at sea and at home 2024

Alcohol consumption	2011*		2016*		2024	
	At Sea	At home	At Sea	At home	At Sea	At home
Never	37.1%	20.0%	42.6%	22.1%	60.1%	33.8%
Once a week	13.0%	15.0%	13.4%	17.5%	29.5%	40.1%
Twice a week	-	-	-	-	5.6%	13.0%
Three times a week	-	-	-	-	2.3%	7.3%
Four times a week	-	-	-	-	0.4%	2.7%
Five times a week	-	-	-	-	0.4%	1.1%
Six times a week	-	-	-	-	0.5%	0.4%
Every day	-	-	-	-	1.1%	1.6%

*The only comparable responses in the 2011 and 2016 survey were 'never' and 'once a week'.

This demonstrates that not only did the majority of seafarers remain tee-total on board but among the 40% of seafarers who did report consuming alcohol such consumption was typically in very modest quantities. Ninety-eight percent of respondents in 2024 stated that they drank 7 alcohol units or less in a typical week working on board. Our interviews revealed that in many cases seafarers did not drink alcohol on board because companies have strictly enforced 'dry ship' (i.e., no alcohol) policies which extend to shore-leave. One interviewee summarised the situation as follows:

We had BBQ parties but we could not drink alcohol. We had zero alcohol policy. There was a regular surprise alcohol test and if you were tested positive you will be sent home. (Filipino AB)

However, some interviewees also revealed that they avoided alcohol for health reasons and previous research has indicated that some serving seafarers are tee-total for religious/cultural reasons (Sampson et al 2024).

Alcohol abstinence also extended to vacation time for many seafarers with 34% reporting that they did not drink at all at home on vacation. A further 40% of respondents reported drinking less than once a week at home and 13% said that they drank alcohol twice a week in a typical week at home on vacation. While they were at home, the majority of respondents who reported drinking alcohol on vacation also reported modest consumption with 93% reporting that they drank 7 units of alcohol or less in a typical week.

Smoking

Our research indicates that there has been a steady decline in the numbers of seafarers who smoke.

In 2011, just over a third of respondents stated that they smoked (35%). This fell in 2016 to 31% and by 2024 it had fallen to just over a quarter of respondents at 27%. The 2016 to 2024 fall in the proportion of seafarers saying they smoked was weakly statistically significant ($p = 0.049$, no effect). A comparison of the smoking habits of respondents between 2011 and 2024 showed the decrease overall to be statistically significant ($p < 0.001$, no effect).

Among those who smoked, the average number of manufactured (ready to smoke) cigarettes used per day showed little change between 2016 (mean daily consumption = 8.77) and 2024 (mean daily consumption = 8.19)¹⁰. In terms of hand-rolled cigarette consumption, however, there was a drop in both the percentages of seafarers using hand-rolled cigarettes **and** the average number of hand-rolled cigarettes that they used per day. The percentage of seafarers who smoked hand-rolled cigarettes dropped from 4% in 2016 to 3% in 2024 and the average daily consumption among these smokers fell from 8.21 to 4.25. This fall is statistically significant ($p = 0.003$, medium effect).

Smoking was more prevalent among senior officers than other ranks. Ratings were the next most likely group to smoke and junior officers were the least likely to smoke ($p < 0.001$ small/medium effect).

Around 13% of seafarers said that they used E cigarettes (also known as 'vapes'). The health impact of vapes is yet to be determined but we noted that younger people¹¹ and junior officers¹² were more likely to vape than older people and senior officers or ratings.

Dietary habits and preferences.

In line with a paradigm shift in thinking about vegetarian diets and health (Sabaté 2003) and a move towards an understanding of the health benefits of plant-based diets (Leitzmann 2005) we asked seafarers whether they were vegetarian or vegan in 2011, 2016 and 2024. The results were inconsistent, inasmuch as an increase in vegetarianism in the period 2011 to 2016 was reported but this was reversed in 2024. Fewer seafarers reported being vegetarian in 2024 than in either 2016 or 2011. In 2016, 24% of seafarers said that they were vegetarian or vegan and in 2024 this dropped to just 11%. The fall was statistically significant ($p < 0.001$, medium effect). In our 2024 data, we noted that 24% of Indian seafarers stated that they were vegetarian (and there were fewer Indian seafarers in our 2024 sample than in our 2016 sample), but we were

¹⁰ Independent samples test showed that this difference was not statistically significant

¹¹ ($p < 0.001$) and Cramer's V shows medium effect

¹² ($p < 0.001$) and Cramer's V shows small effect

unable to assess whether nationality had a statistically significant impact on responses in our 2024 sample.

A reduction in the consumption of fried food is also widely considered to benefit overall health (Djousse, et al., 2015; Cahill, et al., 2014; Qi, et al., 2014). In 2024 fewer seafarers reported eating fried food every day at sea than they did in 2016 or 2011. The decrease in the proportion of seafarers eating fried food every day at sea is steady and appears to represent a consistent downward trend (see Table Two). In 2024, 12% of seafarers said they ate fried food every day at sea, in 2016 this was higher at 22% and in 2011 the proportion of the sample eating fried food every day on board ship was 25%. A similar pattern across the years can be seen in the proportion of seafarers stating that they eat fried food on most days (but not every day) at sea (defined as 3-6 days per week). This proportion fell from 42% in 2011 to 38% in 2016, and 35% in 2024. In 2024, the most common response (by a half percentage point please refer to footnote) to our question about fried food consumption at sea was to state that ‘I eat fried food once or twice a week’ at sea and in 2024 35% of seafarers ticked this response¹³. The fall in fried food consumption at sea between 2016 and 2024 was statistically significant ($p < 0.001$, medium effect).

Table 2: Fried food consumption at home and at sea 2011, 2016, 2024

Consumption of fried food	2011		2016		2024	
	At Sea	At home	At Sea	At home	At Sea	At home
Never	1.0%	3.1%	1.8%	3.7%	2.3%	7.6%
Less than once a week	8.3%	10.4%	8.8%	15.8%	16.2%	24.9%
Once or twice a week	24.3%	30.5%	29.9%	33.5%	35.1%	44.7%
Most days (3-6 times a week)	41.7%	35.7%	37.8%	33.7%	34.6%	20%
Every day	24.8%	20.3%	21.8%	13.4%	11.7%	2.9%

At home seafarers reported eating fried food far less frequently than they did at sea. At home, in 2024, very few seafarers reported eating fried food every day (just 3%) and only 20% of our sample said they ate fried food on most days (3-6 days per week) when they were at home. When comparing the data for 2011, 2016 and 2024 we noted the same downward trend in fried food consumption as had been apparent at sea and in all the years when we collected data (2011, 2016 and 2024) fewer seafarers reported eating

¹³ The difference between this response (given by 35.1% of respondents) and the response ‘I eat fried food most days’ (given by 34.6% of respondents) was marginal and disappeared when percentage were rounded up or down.

fried food every day or most days at home than they did at sea¹⁴. The fall in fried food consumption at home between 2016 and 2024 was statistically significant ($p < 0.001$, large effect).

The majority of seafarers in 2024 considered that their diet was healthier at home than at sea. This proportion was greater than in 2011 and 2016 when only 45% and 47% of seafarers, respectively, believed that their diet at home was healthier than their diet at sea. In 2024, the proportion of respondents suggesting that their diet at home was healthier than their diet at sea jumped to 60%. When compared with the results for 2016, this increase was statistically significant ($p < 0.001$, small/medium effect). Older seafarers were more likely than younger seafarers to say that their diet was healthier at home. This age-related difference was statistically significant ($p < 0.001$, medium effect). Nationality also had a statistically significant impact on this response ($p < 0.001$, medium effect) and Chinese seafarers were the most likely to report that their diet was healthier at home than at sea.

In many respects the fact that more seafarers felt that their diet was unhealthier at sea than at home in 2024 than in 2011 and 2016 is as surprising as it is disappointing. Food is a very important part of daily life on board a ship and it makes a psychological as well as a physical impact on seafarers. Many **interviewees** described the importance of food to us. One engine cadet explained that:

Well because it keeps you going, if they don't feed you, you're just going to drop dead eventually. But also it is mealtime, it's sort of nice, even if it's in the middle of the day like lunchtime and you've got to go back to work afterwards, it's a nice time to just sit, enjoy some food, maybe have some conversation, you know it's a nice way to unwind, because everybody likes eating, especially after you've been working hard, it's good for morale to have a nice meal at the end of the day.
(British engine cadet)

A motorman put it to us in similar terms saying:

Food matters to seafarers because it is fundamental to our health. You know, if the food is not good it affects your physical and also your mental health. You know what I mean? [...] after a long day of work, it is just food that makes us smile. (Filipino motorman)

Across nationality, gender and age divides it appeared that our interviewees shared very similar outlooks on the importance of food as the following accounts show. A Polish female officer explained her point of view as follows:

¹⁴ Positive responses to 'I eat fried food **every day**' at home were given by 20% of respondents in 2011, 14% of respondents in 2016 and 3% of respondents in 2024. In 2011 36% of seafarers indicated that they ate fried food '**most days** at home', falling to 34% in 2016 and 20% in 2024.

If the food is bad, everybody will be grumpy, everybody will be unhappy, will be complaining, also it can affect our health, we may not have good energy levels, there may be stomach problems happening, so it will effect daily work, if the food is bad you will not get a happy crew. On the other hand if you have a great chief cook that caters to the preferences of the crew, you can see much more enjoyment over meals for example, you can see people actually staying in the mess room and talking together, enjoying the meal, rather than just shoving it in their mouths in five minutes. So it always seems like a very simple thing but I think it is actually one of the most important things influencing the life on board, simply because we have to eat, at least three times per day, and each one will affect us on so many different levels. (Polish third officer)

A British, male chief officer told us that:

I think culturally it's very important. Obviously, people have different opinions on how food should be cooked. But very often it can be the one thing that, you know, reminds you, you are a human, not a machine, you do need to stop and eat. And it can be a source of enjoyment. It's the one time where we'll actually sit around a table and hopefully not talk about work and kind of have that human moment. So, I think that's a big part of it. There's a mental part of it. But I also think that, you know, it is ultimately fuel. And as I say, we are pushing sometimes our bodies and our brains to the limit so we should at least be fuelling it correctly and very often that isn't the case I think at sea. Yeah, it's a battle. (British chief officer)

While a Jamaican male second officer explained that to him food was important in lifting his spirits on board. He told us that:

Honestly speaking, at times when you are working very hard, away from family, the only thing to look forward to is something nice to eat, so, yes, the only thing to lift your spirit. [...] After a hard day's work you have no-one to talk to, no family, no nothing, especially sometimes we are on high seas and the internet is not good, only thing you can really do, is say 'at least I ate something nice'. (Jamaican second officer)

At interview many seafarers reflected on the reasons for poor food on board their vessels. Some considered that it was due to their trades and the poor practices of their colleagues on board in terms of ordering provisions and food storage, but many indicated that it was due to unrealistic food budgets imposed by cost-cutting companies. One seafarer explained how:

I think it is about the budgeting of the company. In our company, [...] the budget is 8 USD per seafarer per day. Other companies spend double the amount. [...] There are cases where fruits are rationed because there is a certain budget that needs to be worked out so you can't blame your chief cook. They only have a

budget of 8 USD per day. That's what keeps them from providing good food to seafarers. So I think it will be good if there is an increase in the budget so that the food served to seafarers are good for everyone. (Filipino AB)

Another told us:

Food budgets do not increase in line with food inflation. So food prices in the UK have gone up what, 15-20%, food budgets have not gone up that much. (British chief engineer)

One described the unrealistic expectations of companies in relation to ships on very tight food budgets provisioning in expensive regions. She explained:

The company will always look at the budget and usually the budget for provisions are very strict and very small, and especially when the vessel is visiting ports which are quite expensive for supplies, the company will be very strict with the budget. We had this situation in Italy where [...] the prices were very high, we were always over budget, the company was always complaining about it and it was a constant fight with captain, between captain and the office to let's say, explain, why we are always over budget with the food, that we simply could not fit our budget within the allocated funds because of the price of the provisions. (Polish third officer)

And in some cases, seafarers reflected on the ways in which companies had reduced the budgets for food. One Indian AB explained how:

It was... in 2012... it was \$12 per person per day, and now 2022-23 \$8, \$8.5, \$9 maximum per person. So, over the period of time food prices have gone up, but the operation per person cost has come down, right? So in 2007 with [company name] with my seniors who I have spoken to, it was a three course meal, now you hardly have two maybe. (Indian AB)

In 2024, we posed a new question that asked seafarers whether they agreed or disagreed with the statement 'I am able to eat as much fresh fruit and vegetables as I want to at sea'. The majority of seafarers indicated agreement with the statement (67%) but a significant proportion of our sample disagreed (20%) with the remainder neither agreeing or disagreeing. Fresh fruit and vegetables are frequently reported by seafarers to run out on board. Interview participants described how this impacted on the quality of their diet with some describing being reduced to mundane fare lacking nutritional variation. One described how:

My most recent ship was branded as "lugaw" ship (congee, or rice gruel) because they ran out of food. They were only serving congee to the crew. The ship was drifting for a long time [...] in Japan. The ship could not come alongside

and the weather was rough. So, the crew had to be fed with a diet of congee.
(Filipino 2nd officer)

Another told of how:

It is all frozen, then it is always meat. The ships always run out of fish, and the fish is usually not fresh, if there is any. The trip from Brazil to China, that's when food becomes a problem because the trip takes 47 days when there's weather disturbance. Then the charterer wants economical speed, that's another way of prolonging the navigation. [...] Yes, that's when fruits run out. You see, supply of fruits usually runs out after two weeks. They already mostly frozen, and the colours change, and even the supply of vegetables is running low. The supply of vegetables is usually only good for one month. So what we have is meat most of the time, pork, chicken. However, it is most difficult amongst Filipinos if rice runs out. [...] For two weeks, we did not have rice on board. It was very difficult. The captain was not able to anticipate the amount of rice the crew consumed. It happened on my second ship. So the crew looked like they were losing their minds when it happened. (Filipino AB)

In another example, our interviewee described not only the poor shipboard vegetable and fruit supply in relation to the healthy 'food pyramid'¹⁵ but also the overuse of frying and fat in the preparation process:

First of all not enough vegetables, and too much meat. [...] always plenty of meat and not enough vegetables, and if you look at the pyramid of food requirements what you should be eating most often and less often, the meat is not so high on the list, there is no need for us to eat it twice per day in such amounts, and vegetables are always limited, especially during longer voyages, it's hard to get fresh vegetables. So, this is one thing. Second thing, the majority of cooks do not prepare the food in the healthiest way possible, there is a lot of fried happening, a lot of fat being used, not a lot of boiling or steaming or baking without fat. (Polish 3rd Officer)

Overall, it appeared from our data that there had been an improvement (from a health perspective) in seafarers' eating, drinking and smoking habits when compared with 2016. However, seafarers were not able to control the availability or preparation of food and felt that as a result of insufficient provisions in terms of fruit and vegetables and of poor food preparation on board their diets were healthier at home than at sea.

¹⁵ For further details see <https://nutritionsource.hsph.harvard.edu/healthy-eating-pyramid/> (accessed 12/3/25)

Sleep quality, sleep quantity and fatigue at sea

Our findings on sleep and fatigue need to be considered in the context of the length of time that seafarers are contracted to spend on board. Prolonged periods of fatigue have the potential to take a heavy toll on seafarers' health (Lock et al 2018). In this research we asked seafarers how many months they had spent on board for their last complete contract and whether this was more or less than their contract stated plus/minus one month. In 2024, the mean length of time for all seafarers to have served on their last complete contract was 7.2674 months. The most frequent response given by seafarers, in 2024, was that their last contract was between 8 and 9 months long (in 19% of cases) and 38% of respondents stated that for their last complete contract they had been on board for 8 months or more. The majority of seafarers stated that the length of time that they had been on board was in line with their expectations, being their specified contracted period plus/minus one month (this is the standard contractual provision given that seafarers can only be relieved when a vessel is in port). However, 18% of seafarers (almost one in five) stated that they had been required to stay on board for more than their contracted period, plus/minus one month.

The cumulative toll of long working hours during long contracts was described to us by some of our interview participants. One captain explained it thus:

For a shore person the usual amount of work is eight hours, ashore, and in the ship contracts people are working at least 10, 12 hours, [...] I mean if you are a month or two months or three months, it is getting worse, but if you were to be working just eight hours a day, three months and it will be ok, but if from the first moment you are spending 10 or 12 hours a day ... (Spanish captain)

And a Filipino bosun echoed his efforts to explain the cumulative nature of shipboard fatigue given the hours that seafarers are required to work and the lengths of their contracts. He told us that in some circumstances:

We start from 5am then stop at 12midnight and that is every day. So, we only have five- or six-hours rest, so you would really be tired from it because you do that for 20 days sometimes a month. Okay, the first five days you can do that but in the next few days it would be hard to do that. You cannot do anything about it! (Filipino bosun)

In trying to deal with cumulative and extreme fatigue some seafarers described how they engaged in unhealthy practices such as eating too much and smoking. One Filipino captain was asked at interview if he had experience '...of no sleep for 24 hours or more because of too much work on board?'. He replied that:

Yes, a lot! And I make up for lack of sleep by binge eating and smoking. Then eventually when I have time, I take a good rest. (Filipino captain)

This emphasises the ways in which lack of sleep may produce both direct impacts on health and wellbeing and indirect effects, as seafarers try to find ways to stave off fatigue and/or to cope with it.

In 2024, we asked seafarers who were on board a vessel at the time of questionnaire completion how many hours they had slept and how many hours they had worked in the last 48 hours, which we explained was the last two full days and nights (see Table Three). Almost three quarters of our respondents (72%) stated that they had slept for 15 hours or less. This leaves just 28% enjoying an average of 8 hours sleep per 24-hours in the previous 48 hours. Forty-two percent of seafarers, in 2024, said they had slept for between eleven and fifteen hours in the previous 48 hours. However, it was very disappointing to find that in our sample, 27% of respondents stated that they had only slept for 6-10 hours in the last 48 hours (a maximum daily average of 5 hours) and 3% had just had 5 hours sleep or less in the previous 48 hours (a maximum daily average of 2.5 hours).

Table 3: Hours slept and worked in the previous two days (48 hours)

Hours worked	Cargo seafarers	
	Hours slept	Hours worked
0 to 5 hours	3.1%	0.9%
6 to 10 hours	26.9%	12.2%
11 to 15 hours	41.5%	15.0%
16 to 20 hours	22.3%	54.3%
21 to 25 hours	5.1%	15.9%
More than 25 hours	1.0%	1.7%

We also asked respondents who were at sea when they completed a questionnaire in 2024, how many hours they had worked in the previous 48 hours (two full days and nights). The majority (54%) had worked 16-20 hours (a maximum daily average of 10 hours) and 18% had worked for 21 hours or more in the previous 48 hours (a daily average of 10.5 hours work or more). Nationality had an impact on responses ($p < 0.001$, medium effect). European/ Russian seafarers were most likely to have worked 21+ hours in the previous 48 hours (23%) with Filipinos (18%) taking second place. They were followed by 'others' (17%), Indians (12%) and Chinese (7%).

A further question relating to the previous 48 hours, asked seafarers if they felt they had experienced enough sleep. In 2024, 36% of our respondents said that they had not had enough sleep in the last 48 hours. Department ($p = 0.037$, small effect), rank ($p = 0.040$, small effect) and ship type ($p = 0.012$, medium effect) impacted on responses, with very similar proportions of deck and engine staff (39% and 38% respectively) stating that they had not had enough sleep but far fewer galley staff (25%) feeling that this was the case. Senior officers were most likely to state that they had not had enough sleep in the

previous 48 hours (44%), followed by junior officers (37%) and ratings (33%). Finally seafarers working on refrigerated cargo ships (reefers) were the most likely to feel that they had not had enough sleep in the previous 48 hours (50%), seafarers on container ships were the next most likely to feel they hadn't had enough sleep (45%) and they were followed in descending order by seafarers working on bulk carriers (36%), gas carrier (36%), tankers (34%), car carriers (33%) other ship types (23%) and passenger/cargo vessels (21%).

The main reason for not getting enough sleep in the last 48 hours was described by respondents as being 'because I had to work' (chosen in 59% of cases). Almost a quarter of respondents (24%) stated that they had gone to bed but they had been unable to sleep, 11% said they had been communicating with their family and 3% had been either playing games or socialising with shipmates (the split was 50/50). Some seafarers elaborated in completing a questionnaire that use of internet was because they were in port where the signal was better, others mentioned bad weather as a reason for not sleeping, and night and split shifts were also mentioned.

Not all respondents stated that they did not get enough sleep while on board. In 2011 31% of seafarers did feel that they got enough sleep. This proportion fell in 2016 to 29% and fell again in 2024 to 28%. The difference was statistically significant ($p < 0.001$, small effect). These results indicate that an increasing proportion of seafarers on cargo ships feel that they do not get enough sleep on board at least for some of the time. This implies that current efforts to improve rest and sleep on board whether through regulation, training, or the implementation of local fatigue management strategies are failing. In this context it is important to know why it is that seafarers are not getting sufficient sleep on board.

In addition to asking seafarers to specifically identify the reason they had not had enough sleep in the previous 48 hours, we therefore asked those who felt that they **generally** didn't get enough sleep on board, to state why this was (see Table Four). They were invited to tick as many reasons as they believed applied, or indeed to add their own reasons if they felt that these had not been represented among the pre-coded responses. We compared our findings in 2024 to those for 2016 and found that working hours (the amount of time worked) were mentioned more frequently by seafarers in 2024 as a reason for insufficient sleep than in 2016. In 2016, 32% of respondents said they didn't get enough sleep because of their working hours and this rose to 44% in 2024. The difference was statistically significant ($p < 0.001$, small effect). Deck officers (51%) were more likely to state this than engineers (38%) or galley crew (27%). This difference was also statistically significant ($p < 0.001$, small/medium effect). Finally, more than half of all Indian (56%) and half of European/Russian respondents said that they got inadequate sleep because of the number of hours that they worked. Forty-three percent of Filipino and 26% of Chinese respondents also said this was the case. The

differences in response between different nationalities were statistically significant ($p=0.028$, medium effect).

Table 4: Reasons seafarers don't generally get enough sleep on board: Comparisons by survey year

Reason for not generally getting enough sleep	2011	2016	2024
Working hours (number worked)	28.0%	32.2%	43.8%
Work patterns (shift)	22.8%	25.3%	31.8%
Port duties	26.4%	26.8%	36.6%
Ship's movement	18.2%	23.1%	37.6%
Noise	18.8%	20.5%	23.6%
Disturbed by roommates	-	-	3.0%
Cabin is too light	4.2%	4.5%	2.4%
Cabin is too hot or cold	7.7%	9.3%	9.3%
Mattress uncomfortable	-	-	10.2%
Day bed uncomfortable	-	-	3.5%
General worry and anxiety	7.5%	6.9%	9.9%
Work-related worry and anxiety	10.6%	12.2%	23.9%
Homesickness	14.0%	13.9%	21.7%

Working (shift) patterns also featured more regularly in seafarers' responses to this question in 2024 (32%) than in 2016 (25%). This was a weakly statistically significant result ($p<0.002$, no effect). In 2024, rank affected responses, and junior officers were the most likely to say that they **generally** did not get enough sleep because of the shift patterns they worked. Thirty-nine percent of junior officers felt this was the case compared with 33% of ratings and just 21% of senior officers. The difference in the responses were statistically significant ($P=0.002$, small/medium effect). Nationality also had an impact on responses ($p=0.002$, medium effect) with Filipino seafarers (38%) followed by Chinese seafarers (33%) then other nationality groups (27%), Indians (23%) and Europeans/Russians (20%) stating that insufficient sleep was generally caused by work shift patterns.

Port duties were also more regularly regarded as a reason for insufficient sleep in 2024 (37%) than in 2016 (27%). This was statistically significant ($p<0.001$, small effect). This may reflect faster vessel turnaround times (requiring tasks to be squeezed into smaller windows of port-time) or increased numbers of visits from port and company personnel (Sampson 2024). We found that there were significant differences in responses between seafarers working in different departments ($p<0.001$, large effect). Fifty-one percent of deck department personnel stated that they generally didn't get sufficient sleep because of port duties followed by fewer seafarers working in the engine room (21%) and even fewer, still, in the galley (16%).

In relation to the shipboard environment more seafarers said that they didn't get enough sleep because of the ship's movement in 2024 than in 2016. In 2024, 38% of respondents said the ship's movement was a reason for inadequate sleep but in 2016 only 23% of seafarers said this was the case. The difference was statistically significant ($p < 0.001$, small effect).

Over a fifth of seafarers in 2016 and in 2024 said that noise generally disturbed their sleep (21% in 2016 and 24% in 2024) and the results for the different time periods were not significantly different. In 2024, however, we found significant differences in the results between seafarers working in different departments ($p = 0.016$, small effect). Galley crew (33%) were most likely to be disturbed by noise when trying to sleep, followed by seafarers in the engine department (28%) and lastly seafarers working in the deck department (19%). This likely reflects the timing of the rest hours for galley crew who work split shifts to accommodate seafarers' scheduled mealtimes. Deck officers also work split shifts and need to sleep for periods during daylight hours, but it is possible that there are sustained efforts made on board to protect the sleep of navigation officers, during rest hours, due to fears of fatigue-related navigation errors. This is speculation and it is an area where further investigation could be useful.

There was no significant change, between 2016 and 2024, in the proportion of seafarers who reported being unable to sleep because of the temperature being too hot or too cold. In both years, the percentage of seafarers ticking this option was identical (9.3%).

Very small proportions of seafarers stated that they were disturbed by their cabin being too light. This is an area where there was an improvement in seafarers' experiences and in 2024 only 2% stated that their sleep was disturbed by their cabin being too light compared with 5% in 2016. The improvement was weakly significant ($p = 0.024$) and Cramer's V showed no effect.

In 2024, **more** seafarers (10%) stated that they couldn't get enough sleep because of **general** worry and anxiety than in 2016 (7%). This increase was only of weak statistical significance ($p = 0.020$) and Cramer's V showed no effect. There were significant differences identified in the responses of different nationality respondents ($p = 0.021$, medium effect). Chinese seafarers were most likely to state that they did not get sufficient sleep because they were generally worried and anxious. Almost a quarter of Chinese seafarers felt this (24%) compared with 14% of seafarers in the 'other' nationality group, 9% of Europeans/Russians, and 8% of both Filipino (8.2%) and Indian (7.7%) seafarers.

However, the proportion of seafarers saying that **work-related anxiety and worry** kept them from getting enough sleep **increased** more dramatically from 12% in 2016, to 24% in 2024. This increase was statistically significant ($p < 0.001$, small effect). The result was impacted by department ($p = 0.029$ small effect). Those respondents working in the

engine department were most likely to feel that they generally didn't get enough sleep because of work-related anxiety or worry. Twenty-eight percent of seafarers in the engine department felt this was the case followed by 25% of personnel in the deck department and only 11% of those working in the galley. Rank had a strong impact on the results for this question ($p < 0.001$ large effect). Senior officers were much more likely to state that they generally didn't get enough sleep because of work-related worry and anxiety. Forty-five percent of senior officers said that they generally didn't get enough sleep because of work-related worry and anxiety compared to 26% of junior officers and just 12% of ratings. Nationality also significantly impacted on responses ($p < 0.001$, large effect). Chinese seafarers (57%) were, by far, the most likely respondents to state that they generally didn't get enough sleep because of work-related anxiety and worry. They were followed in descending order by 'other' nationalities (31%), European/Russian respondents (29%), Indians (25%) and Filipinos (17%). At interview one captain summed up some of the kinds of work-related anxieties that could disturb the sleep of senior officers. He told us that:

I don't do any physical work, but I need to supervise and think of ways of preparing the ship for inspection. I need to make sure that the ship passes the port state inspection. Whenever the ship arrives in port, it should be ready for any possible inspection of port authorities. That really makes the arrival of ship in port really stressful. I can't get any good sleep. Coming into the port, it is hard work because you need to be on the bridge all the time, it is even made more stressful if there are many fishing boats, especially in China. Once that is over and the ship is alongside, the work continues because you prepare and wait for the arrival of port state inspectors. You are always on edge because you never know the eventual outcome of the inspection. You know that you did your best to prepare, and you prepared the ship well, but inspectors will always find something. You see, they should be able to find something, some deficiencies because if they could not find anything, their superiors will say that they are not doing their job. Because of that they will always seek to find something. That's what gives me so much stress. (Filipino captain).

Alongside work-related stress and anxiety, some seafarers also found that their sleep was disturbed because they missed their families. One captain was keen to talk about homesickness and isolation from home communities and he related these to mental strain and potential ill-health. He explained that:

I think that we've already talked a lot about the illness or major injuries, but about mental healthcare, [...] The people on board experience a lot of loneliness, a lot of ...I don't know ...What they are really doing apart from working? Because they miss their people, they miss their family, but we assume that this is part of our work, but maybe it's not. But if the mental issues they are having to deal with

ashore [are difficult] in ships they are like ...maybe...If it's difficult ashore, on ships it's like rocket science! (Spanish captain)

In 2024, a larger proportion of respondents said they lacked sleep due to missing their family (22%) than in 2016 (14%). This was statistically significant ($p < 0.001$, small effect). There were differences in response relating to department ($p < 0.001$, small/medium effect). Galley crew were particularly likely to report being kept awake because they missed their family. More than a third of respondents working in the galley (36%) felt that they could not sleep due to homesickness compared to 26% in the engine room and 16% in the deck department. This might reflect the size of the galley department on most cargo ships. The galley crew usually comprises just two people on contemporary cargo vessels and the need for galley crew to sleep at different times to others on board likely presents an additional barrier when it comes to socialising thereby increasing feelings of isolation among galley crew. In such circumstances the significance of home-based relationships is likely to be pronounced. There were also significant differences in response according to nationality ($p < 0.001$, medium/large effect). Chinese seafarers were most likely to state that they were kept awake because they missed their families and 41% of Chinese seafarers stated this compared with 29% of seafarers in the 'other' nationality group, 23% of Filipinos, 21% of Indians and 9% of Europeans/Russians.

There are many reasons why homesickness might keep seafarers awake at night but worry over the welfare and health of family members was particularly acute during Covid-19. This highlighted the degree to which seafarers find the ill-health of family members disturbing at any time. One told us that:

I did not want to leave my family alone. I am a weakling when it comes to my family. When I am on board, I always think about the safety of my family. It is very difficult if you've heard that your family is in trouble and yet you can't do anything. So, during COVID, I was paranoid about the wellbeing of my family. When I thought that things were a bit safer than before, then I decided, okay time to go back to the ship. (Filipino 2nd engineer)

In 2024, we offered further options as pre-coded responses to the question about why seafarers felt that they did not generally get enough sleep. These included being disturbed by roommates, uncomfortable mattresses and uncomfortable daybeds. Ten percent of seafarers reported that they generally did not get enough sleep because their mattress was uncomfortable, 4% because their daybed was uncomfortable and 3% because they were disturbed by roommates. Galley crew (9%) reported that they were more likely to be disturbed by roommates than seafarers working in other departments (2% engine, 3% deck) but overall, the number was very small ($n=5$). The difference was, nevertheless, statistically significant ($p=0.030$, small effect).

The issue of uncomfortable mattresses causing loss of sleep ought to be relatively easily resolved on board given how important it is, from a safety point of view, to prevent shipboard fatigue. However, at interview seafarers described how difficult it could be to get officers and companies to address the issue. Summing up some of the concerns one captain explained that:

In our orders, we include what we need, say, new mattresses, and we say, we need new ones because the ones we are using are causing us problems. We will take photos of the mattresses to show their poor condition. There are companies which respond favourably. However, they will say, okay, we will send you what you need, but we can only send this number of new mattresses. In that case, we are thankful that at least, we are given [some] new ones, regardless of their limited number. There are those, however, which refuse to give us what we need. Principals [i.e., owners] differ. There are those which care for their crew, and there are those that as long as the ship is running, and delivers the goods, they don't care whether the mattresses used by the crew are already unusable. As long as the ship earns money, they are fine, that is their only concern. I should add that there are officers who only look after their own needs, neglecting the needs of others, like the ratings. [...] I am not that type of officer. (Filipino Captain)

In 2011, 2016 and 2024 we calculated a fatigue score (Smith et al 2001) based on seafarers' responses to questions about sleep quality. The proportion of seafarers indicating that they were **not** suffering from fatigue at all fell from 18% in 2011, to 14% in 2016 and again to 8% in 2024 (see Table Five). The proportion of seafarers who were scored with moderate fatigue fell between 2011 and 2016 from 57% to 51% it then jumped, in the period 2016 to 2024, from 51% to 64%. The proportion of seafarers scored as suffering from severe fatigue on cargo ships rose between 2011 and 2016 from 24% to 36% and it then fell back to 28% which remains **above** the level for 2011 ($p < 0.001$, small/medium effect). For 28% of seafarers to be scored as suffering from '**severe**' fatigue in 2024, is worrying in an industry where safety is critical to life and to the protection of the environment.

Table 5: Fatigue levels for 2011, 2016 and 2024 respondents

Fatigue level	2011	2016	2024
None	18.3%	13.5%	8.3%
Moderate	57.4%	50.7%	63.7%
Severe	24.3%	35.8%	27.9%

Fatigue scores indicated that there were differences in levels of fatigue between different ranks ($p = 0.016$, small effect). Junior officers in 2024 were the most likely group

to indicate severe fatigue (36%) followed by senior officers (26%) and finally ratings (25%).

At interview, seafarers reminded us that they were required to work long hours day in and day out without any day off for the duration of their contract. Respondents described how they frequently had to work at nighttime and/or in split shifts which are known to disturb circadian rhythms and frequently produce fatigue alongside increased health problems such as peptic ulcers, diabetes, and coronary heart disease (Akerstedt and Wright 2009, Chellappa et al 2021, Knutsson 2003, Morris et al 2016). Seafarers took some care to explain that lack of sleep and fatigue were problems that they regularly faced on board, notwithstanding work/rest hour regulations which they reported to be poorly observed¹⁶. One explained that:

Here are no precautions, or anything, and the authorities know that, the port state, even if it is in the MLC. For instance in my case I had times when I had no sleep for two straight days. For instance, we arrived in Singapore, provision, bunkering, supply, everything. So for all that, it took a day, then there is an inspection which takes another full day. So how can you get enough sleep then? According to MLC, you are allowed to work a maximum of 14 hours per day. And then in the remaining 10 hours, you should have a continuous rest of six hours. So for instance you are able to rest at 12:00 noon, your next work should be at 6 pm. That means you have a straight 6 hours of rest. That does not happen on board. You will never get that uninterrupted 6-hour rest. But that will never appear in the record because your hours will turn red, and the ship will incur violations. The authorities will find out that the crew are working more than what is required by regulations. What we do is we make adjustments in our records. And that is normal, everyone does it. (Filipino 3rd officer)

This kind of account was frequently confirmed. A British chief officer stated the facts, as he saw them, baldly when he said:

People lie about their hours because it's just self-reported. [...] Yeah, again, going back to the uncertainty of some people's employment contracts, they won't fight [about] doing over the legal limit. So, they will work over the 14 hours, not get the necessary six-hour rest. And they'll just do it silently because they're afraid for their own employment. And it's a really concerning thing to me that there are ships going around the world right now with just fatigued crew. (British chief officer)

¹⁶ A finding that corroborates the existing literature and evidence demonstrating that falsifying work-rest hours records is endemic in shipping and an 'open secret' (see Bhatia et al 2024 and Devereaux et al 2020)

Some interviewees gave examples of the kinds of situations they face that cause lack of sleep on board. One told us that:

I have an experience wherein I was on duty from 12 midnight to 4 am. Then the ship left at 6 am. I only had one hour of sleep, the most. Then we continued working, cleaning the cargo hold until 12 midnight. Then I woke up at 5 am. The sea passage was very short. So, I think **no** company is able to follow the mandated number of working hours. (Filipino AB)

A Filipino AB described how he felt that fatigue and stress were part of the everyday, different, experience of being a seafarer. He illustrated his point describing night watches and work schedules in the lead up to port arrivals, as follows:

You see if you are on board, fatigue and stress are part of life at sea. For example, during duty, say 6 to 12 midnight, at 12 midnight after your duty, you can't fall asleep at once. You will eat, maybe for 30 minutes, then make a call back home. Now, let's say the ship is nearing its port of destination. [...] there is an anchorage. Then if you are deck crew [...] [you are called [three hours before anchorage, say midnight, and you do the anchorage at 3:00 am, then the port gives it clearance, you [the ship] can proceed [into port]. At 4 am, the anchor is lifted, it is around 5:00 am when the ship is underway. Then the mooring is done at 5:30 am. So, you are already up at midnight, and the work finishes at 5:30 am. Then you take a rest, and you have only 30 minutes to rest because your duty starts at 6:00 am.[...] And how do you recuperate from hectic work if you are three days in the port, and then you also need to clean the cargo hold. That's it. There is so much work during cargo hold cleaning, the work goes on even at night. Then work starts at 6 am instead of 8 am. (Filipino AB)

A different seafarer confirmed the extent to which fatigue is seen as an unavoidable part of a seafarer's daily life when he told us that:

Over fatigue is not exception, it's like normal, especially for us because I have to, OK I have to be 24-hours awake [...] several nights be awake the whole times, because sometimes in difficult operations like ship to ship [cargo transfer] or some other operations where it is required to have additional people. Basically, we are not too many on board, especially officers, difficult, and [...] I never get enough sleep, during cargo operations or whatever, and yes, it's normal. So, it's very common and often. (Georgian 2nd officer)

The research confirms that fatigue is a serious and ongoing problem on board, notwithstanding poorly observed rest-hours regulations. Not only do split shifts, long working hours, long contracts and port calls contribute to significant fatigue but seafarers also reported that opportunities for sleep could be disrupted by work-related anxiety, homesickness, poor quality mattresses, general anxiety, cabin temperatures

and noise. There was also an appreciation that ‘off-work’ hours did not equate with ‘sleep hours’ and that lack of sleep, fatigue and overwork had a negative impact on board. One seafarer summed it up well for us, when he said:

This line of work isn't necessarily conducive to the best health I think. Obviously the irregular hours, the most we ever get ‘off’ is eight hours. So, it's impossible to actually get the eight hours recommended sleep because even if you've got that eight-hour break, you still have to shower, eat, call home, etc. For your own mental health, you want to touch base with your family, etc. So that is something that concerns me, just the job itself isn't necessarily conducive to physical or mental health. (British chief officer)

This appears to be an area where a great more could be done by ship operators to mitigate fatigue and the risks associated with it.

Health and wellbeing

In this section of the report, we consider seafarers’ mental health using the General Health Questionnaire to assess the prevalence of short-term anxiety and depression. We analyse responses to questions about seafarers’ physical health and diagnosed health problems, about medication prescribed by a doctor and about ‘over the counter’ (not prescribed) supplements/medications used at sea and at home. We also discuss seafarers’ experiences of sexual harassment and sexual and physical assault, which have the potential to impact strongly on seafarers’ wellbeing.

In the period 2011 to 2016 seafarers’ responses to the General Health Questionnaire (GHQ) questions incorporated in our study, indicated an increase in the level of short-term anxiety and depression experienced by seafarers on board. Subsequently the issue of mental health and wellbeing has gained considerable exposure and a number of initiatives to improve support for seafarers’ mental wellbeing at sea have been introduced by a range of stakeholders. It is, therefore, pleasing to report that in 2024 significantly fewer seafarers, who were based on board at the time when they completed the questionnaire, offered responses to the GHQ questions that resulted in scores indicating the presence of short-term anxiety or depression. In 2024, 24% of seafarers had scores indicating that they were suffering from these minor psychiatric disorders compared with 37% in 2016. This result was statistically significant ($p < 0.001$, small effect).

Despite the encouraging, overall, picture, in 2024 we found very significant differences in the short-term anxiety and depression scores of seafarers working in different departments ($p < 0.001$, medium effect). The responses of almost a third of seafarers working in the engine room (31%) indicated the presence of short-term anxiety and/or depression. This contrasted with 24% of personnel in the deck department and only 8% of respondents working in the galley.

We also found significant differences between nationalities with regard to the presence of short-term anxiety and depression ($p < 0.001$, large effect). Almost half of Chinese respondents (47%) demonstrated evidence of these minor psychiatric disorders compared with 39% of Europeans/Russians, 30% of 'other' nationalities, 24% of Indian seafarers and just 15% of Filipino seafarers. When we compared Filipino seafarers (who constitute the largest nationality group in our sample), with all non-Filipino nationals combined we found that the difference was statistically significant ($p < 0.001$, small/medium effect). It is worth noting that rank was not evenly distributed across nationality groups and rank was also found to have a significant impact on short-term anxiety and depression. Seventy percent of our Chinese respondents, and 48% of European/Russian respondents, were senior officers (senior officers scored highest for minor psychiatric disorders) while the majority of Filipinos (66%) were ratings (ratings scored lowest for short-term anxiety and depression)¹⁷.

Another potential explanation for the low anxiety and depression scores among Filipino seafarers, as scored by the GHQ, is that they are in the habit of 'passing' pre-employment medical examinations (PEME) in the Philippines before every contract. The exams generally involve psychometric tests of different kinds. Our interviewees were not all convinced that psychometric testing was necessary prior to boarding a vessel but many described the importance of 'passing' and explained that they prepare themselves for their PEME by dieting, using supplements, drinking water, reducing sugar and fat consumption and so forth. It is conceivable that they also learn, over time, how to 'pass' psychometric screening tests impacting on their responses to our questionnaire. Alternatively, such screening may have successfully removed those Filipino seafarers who are indicated as 'prone' to short term anxiety and depression from the labour market. One seafarer's account demonstrated the time that is allocated to psychometric testing. He told us that:

I have reservations with the psych exams, I think we don't need that. You know, seafarers are also professional workers, and it feels odd that we are asked to do that exam. It is as if we come from a particular background that we need to be psych assessed all the time. That what eats up the majority of time we spend doing PEME because it takes two hours to do the psych test. We really need to read all items, all these psych questions. You really need to understand the questions, you can't guess. (Filipino 2nd engineer)

Another seafarer's account indicated how important passing a PEME is to seafarers and how they engage in extensive preparations to pass. In his case preparations included:

¹⁷ Binary logistic regression showed seafarers from China, Europe/Russia and 'other' nationalities were approximately twice as likely to score as suffering from minor psychiatric disorders (short-term anxiety and depression) than those from the Philippines and junior officers and ratings were half as likely to demonstrate minor psychiatric disorders as senior officers

[...] Eating lots of fruits because I am living in the province and we have loads of fruits here. I also do water therapy, drinking lots of water when I am about to do my medical exam. I stop drinking alcohol. We seafarers always think about PEME, how to pass it. It is very stressful for us, how to pass the PEME. (Filipino 3rd officer)

Psychological screening was reported by interviewees from the Philippines to be a central feature of contemporary PEMEs. It appears, however, that it is not used as regularly during PEMEs in other parts of the world. One maritime medical professional in Europe told us that:

Mental health is practically not checked, the doctor who is doing the examination he has an impression on the seafarers' mental health, how mentally he is fit to go on board, no serious psychological screening is ever done on the pre-employment examinations. (Maritime medical professional Europe).

The increased use of psychiatric screening tools in the course of PEMEs in the Philippines may, then, explain the fact that far fewer Filipino seafarers presented with short-term anxiety and depression in this research than did other nationalities. This is an area that warrants further investigation.

Hierarchy had a clear impact on our results in relation to the presence of a minor psychiatric disorder ($p < 0.001$, medium effect). Very significant numbers of senior officers (41%) were scored as suffering from short-term anxiety and depression compared with 27% of junior officers and just 14% of ratings. This finding supports the hierarchical differences we found in respondents' reports of diagnosed medical conditions – higher ranking seafarers were more likely than lower ranking respondents to report medical diagnosis of anxiety.

Before asking seafarers some specific questions about their medical diagnoses and medications/self-medications we asked a general question to assess their view of their own overall health. In this question we asked seafarers to say how strongly they felt that a series of four statements about health reflected their own situation. This revealed significant differences in levels of agreement to all four statements between respondents in 2016, and respondents in 2024, and indicated that respondents in 2024 had a more positive outlook in relation to their personal health status than seafarers in 2016. There were significant differences between the responses of seafarers in 2016 and 2024 ($p < 0.001$, medium/large effect) to the statement 'I seem to get more ill than most people'. Respondents in 2024 were much more likely (74%) to disagree with the statement, stating that it was false or mostly false, than seafarers in 2016 (55%). In 2024 there was a difference in the responses of males and females with regard to this statement. Ninety-two percent of women seafarers disagreed with the statement that they seemed to get ill more than other people compared to 73% of male seafarers.

Overall, the very small number of women seafarers in the sample make this result difficult to interpret. However, it was statistically significant ($p = 0.045$, small effect). The responses to the statement 'I am as healthy as anybody I know' demonstrated a more consistent attitude between respondents in 2024 and 2016 but there was still a statistically significant difference ($p < 0.001$, small/medium effect). Seventy-six percent of seafarers in 2016 considered that they were as healthy as anyone they knew compared to 81% of seafarers in 2024. The pattern continued when we asked seafarers to agree/disagree with the statement 'I expect my health to get worse'. Seafarers in 2024 once again showed a more positive and statistically significant outlook ($p < 0.001$, small/medium effect). In 2016, 59% of respondents did not agree that they expected their health to get worse compared with 65% in 2024. The pattern was confirmed with responses to the final statement 'My health is excellent' ($p < 0.001$, small/medium effect). In 2016, 83% of respondents agreed or strongly agreed with the statement that their health was excellent but seafarers in 2024 were even more positive with 89% suggesting this was the case.

We asked seafarers whether they had been diagnosed with a small range of specific medical conditions by a doctor (see Table Six). In 2024, seafarers reported more diagnoses of high blood pressure (11%), and high cholesterol (12%) than in 2011 (blood pressure 9%, cholesterol 9%) or 2016 (blood pressure 8%, cholesterol 11%). Very small percentages of seafarers had been diagnosed with diabetes and the level in 2024 (2%) was the same as in 2011 (2%). In 2016 the proportion of seafarers with diabetes was marginally higher (4%). The rise in diagnoses of high blood pressure between 2016 (8%) and 2024 (11%) was statistically significant ($p = 0.009$, no effect). In 2024, we asked about medical diagnoses of anxiety and depression separately. Four percent of respondents reported a diagnosis of anxiety and 1% reported a diagnosis of depression. In 2016 and 2011 we asked seafarers a question that combined the two conditions into one pre-coded response. We also used slightly different terminology enquiring about a diagnosis of 'nervous trouble or depression' as opposed to 'anxiety' and 'depression'. By combining the depression and anxiety results for 2024 and comparing them with the results of diagnosed 'nervous trouble or depression' in 2011 and 2016, we can see that medical diagnoses of anxiety, and/or depression, or both, have risen slightly from 2% in 2011 to 3% in 2016 to 4%¹⁸ in 2024.

¹⁸ The 2024 result for anxiety and depression combined is 4% and not 5% (1% + 4%) because where respondents ticked both anxiety and depression this counts as just one case of anxiety/depression combined.

Table 6: Medical conditions diagnosed by a doctor

Medical diagnosis	2011	2016	2024
High blood pressure	9.2%	8.3%	11.4%
High cholesterol	8.8%	10.5%	12.1%
Diabetes	2.2%	3.5%	2.3%
Arthritis	-	-	4.2%
Asthma	-	-	3.0%
Anxiety and/or depression	2.1%	3.1%	4.1%
Post Traumatic Stress Disorder (PTSD)	-	-	0.7%
Dermatitis	-	-	3.5%
Vibration white finger	-	-	0.3%

Age was found to have the expected impact on the incidence of high blood pressure, high cholesterol and diabetes. Older seafarers were much more likely than younger ones to have been diagnosed with high blood pressure ($p < 0.001$, large effect). Seafarers aged 25-years old and less had rarely been diagnosed with high blood pressure (1%), 26-35-year-olds were slightly more likely to have been diagnosed with high blood pressure (4%), followed by 36-45-year-olds (14%) and seafarers aged 46 and over (27%). A similar pattern was found with age and cholesterol ($p < 0.001$, medium effect). Seafarers aged 25-years old and less had rarely been diagnosed with high cholesterol (1%), 26-35-year-olds were more likely to have been diagnosed with high cholesterol (7%), followed by 36-45-year-olds (16%) and seafarers aged 46 plus (21%). This pattern was repeated for diagnoses of diabetes ($p < 0.001$, medium effect), although the proportions of seafarers with diabetes were much lower than for high blood pressure/cholesterol. We did not find any seafarers aged 25 or less with diabetes and only two seafarers (1%) aged 26-36 had been diagnosed with the condition. The level rose slightly in the 36-45 age group (3%) and was highest in the group aged 46 years plus (6%).

Hierarchy was found to have an impact on the results for high blood pressure ($p < 0.001$, small effect) and high cholesterol ($p < 0.001$, small/medium effect) with higher proportions of senior officers reporting high blood pressure (17%) than ratings (11%) and junior officers (7%)¹⁹. Higher proportions of senior officers (19%) also reported high cholesterol than other ranks ($p < 0.001$, small effect), but in this case, they were followed by junior officers (12%) and then ratings (8%). Medical diagnoses of anxiety were also impacted by hierarchy in 2024. In 2024, 4% of respondents reported a medical diagnosis of anxiety. However, senior officers were much more likely than junior officers or ratings to have been diagnosed with anxiety ($p < 0.001$, medium effect). Nine

¹⁹ NB The mean age for senior offices was 43.8619 years, ratings followed at 37.2190 years and junior officers were, on average, the youngest rank group with a mean age of 31.8056

percent of senior officers had been given this diagnosis compared with 3% of junior officers and 1% of ratings. There were no significant differences between ranks of seafarers and diagnoses of depression or diabetes.

Department had an impact on findings relating to high cholesterol ($p = 0.016$, small effect). Seafarers working in the engine room were more likely than others to have been diagnosed with high cholesterol. Sixteen percent of seafarers in the engine room reported high cholesterol diagnoses, followed by 12% of seafarers working in the galley and 10% of seafarers working in the deck department.

Other diagnosed conditions, with which seafarers were working, included osteoarthritis/rheumatoid arthritis (4%), asthma (3%), post-traumatic stress disorder (1%), dermatitis (4%) vibration white finger (less than 1%). Other diagnosed conditions described by seafarers using the free text 'other' option included, in their own words: historic appendectomy, carpal tunnel syndrome, elevated uric acid, fatty liver, gout, hearing problems, high blood sugar, high uric acid/gout, 'kidney disease/atrial flutter/coronary artery disease/angina' (one respondent described a diagnosis of all of these together), nasal perforation, thyroid, vein (assume varicose veins but this was not elaborated).

We cannot provide a perfect comparison between proportions of seafarers in 2024 and 2016 who stated that they had been diagnosed with arthritis because of alterations that were deemed necessary in the design of the 2024 questionnaire. However, in 2016 we did ask seafarers if they had suffered from arthritis in the previous 12 months and it seems reasonable to compare this with the 2024 question asked about diagnoses of arthritis among seafarers. This comparison reveals that in 2016 there was very little difference in the proportion of seafarers working on board cargo vessels with arthritis compared with 2024. In 2016, 4% of seafarers reported arthritis compared with 4.2% in 2024.

Age was found to have a significant impact ($p < 0.001$, medium effect) on diagnoses of arthritis. Seafarers aged 25, and less, rarely reported a diagnosis of arthritis (1%), 2% of seafarers aged 26-35 reported an arthritis diagnosis and they were followed by 36-45-year-olds (5%) and seafarers aged 46 plus (9%). Rank was also found to impact on our results for arthritis ($p < 0.001$, small/medium effect). Senior officers were most likely to report arthritis (9%) followed by ratings (4%) and then junior officers (2%). This result **may** reflect the nature of the work undertaken by these different groups of seafarers. The work of senior officers is likely to be less physically demanding than the work tasks of junior officers and ratings. This might allow senior officers with arthritis to carry on working at sea for longer than other seafarers (e.g. ratings) with arthritis who work in more physically demanding roles and might therefore decide to stop going to sea (or indeed be screened out of the labour market at their annual medical exam).

In 2024, we asked seafarers if they suffered from seasickness on board. This was a new question and there can be no comparison with data from earlier years. Given that seasickness is very unpleasant, and that motion is impossible to avoid at sea, a surprisingly high proportion of seafarers stated that they did suffer from seasickness, with 21% stating that this was the case. Younger seafarers were more likely to report that they suffered from seasickness than older seafarers ($p < 0.001$, small/medium effect). Seafarers aged under 25 were the most likely to indicate that they suffered from seasickness 32%, followed by seafarers aged 26-35 (23%), followed in turn by seafarers aged 36-45 (19%) and lastly 46 years old and over (15%). This suggests that younger seafarers with seasickness decide to leave the industry early and/or that seafarers become less prone to seasickness as they age or become more experienced.

We asked seafarers to disclose whether or not they had taken a small range of commonly prescribed medications in the previous 12 months, further asking them to specify whether this was at sea or at home or both (see Table Seven). We found that **at sea** the use of prescribed painkillers had fallen from 2011 to 2016 and then fell again in 2024. In 2024, 6% of seafarers said that they had taken prescribed pain killers at sea in the previous 12-months. In 2016 the figure was 10% and in 2011 it was 13%. The difference between 2016 and 2024 was statistically significant ($p < 0.001$, no effect).

Table 7: Percentage of respondents using prescribed medicine at sea and at home by year

Type of medication	2011		2016		2024	
	At Sea	At home	At Sea	At home	At Sea	At home
Painkillers	12.9%	9.3%	9.9%	7.5%	6.4%	5.4%
Medicines for indigestion	4.3%	2.6%	3.8%	2.8%	4.4%	4.0%
Tablets to lower blood pressure	6.0%	6.3%	4.6%	4.6%	10.1%	9.8%
Sleeping pills	0.8%	0.6%	1.3%	0.7%	0.9%	0.6%
Antidepressants	0.7%	0.6%	0.9%	0.8%	0.4%	0.5%
Medicines for stress or anxiety	0.8%	1.0%	1.1%	1.3%	1.8%	1.4%
Medication for seasickness	-	-	-	-	2.8%	0.4%

The only prescription medication where there appeared to be a statistically significant increase in use, was related to high blood pressure. Prescription tablets to reduce blood pressure were reported to be being used by 6% of seafarers in 2011, 5% of seafarers in 2016 and 10% of seafarers in 2024. The difference between the proportion of seafarers using prescribed blood pressure medication in 2016 and in 2024 is statistically significant ($p < 0.001$, small effect).

In terms of other prescription medications used at sea in 2024 (where no significant differences were found between 2011, 2016 and 2024), the proportions of seafarers

making use of these medications were low: indigestion remedies 4.4%, sleeping pills 0.9%, antidepressants 0.4%, anxiety medication 1.8%, and seasickness tablets 2.8%.

At home, the pattern of prescribed painkiller use was broadly similar to use at sea. At home seafarers were slightly less likely to have taken prescription painkillers in the last 12 months (5%) than at sea (6%) (of no statistical significance) and the pattern of use at home had fallen in a similar way to the pattern of use at sea i.e., from 9% in 2011 to 8% in 2016 and then 5% in 2024. With regard to all other medications listed in the questionnaire (except seasickness tablets) seafarers' use at home was less than one percentage point different to seafarers use at sea. Although medications were generally used less by seafarers at home than at sea the differences were not significant except in the case of sea sickness tablets. For obvious reasons seasickness tablet use fell by a larger amount when use at sea was compared with use at home - it fell from 2.8% at sea to 0.4% at home ($p < 0.001$, small effect).

To briefly summarise the findings relating to prescription medications, there were **few** significant differences in the use of prescribed medications at sea between the years 2011, 2016 and 2024. The **exceptions** were **prescription painkillers**, where use was **down**, and medication for **high blood pressure**, where use was **up**. Prescription medications were used by slightly fewer respondents at home than at sea. However, these subtle variations in use were not statistically significant except in relation to seasickness medication.

We asked seafarers to disclose whether or not they had taken a small range of common 'over-the-counter' (i.e., not prescribed by a doctor) medications in the previous 12 months, further asking them to specify whether this was at sea or at home or both (see Table Eight). When we compared our results for 2011, 2016 and 2024 we found that the pattern of use of 'over-the-counter' medications was the same for each product (except remedies for seasickness which could not be assessed because the relevant question was only included in 2024). Over-the-counter medication use fell in the period 2011 to 2016 and then increased again in 2024. In all products other than vitamin tablets, the 2024 usage did not return to the high levels seen in 2011 (having dropped in 2016). In relation to vitamins, 2024 levels exceeded levels for 2016 and 2011. In 2011 vitamins were used by 53% of seafarers, in 2016 they were used by 48%, and in 2024 they were used by 63% of seafarers. Vitamin supplements were the over-the-counter medication that was most used by seafarers in 2024. They were followed in second place by painkiller use and 24% of seafarers used painkillers such as paracetamol while they were at sea. This contrasted with just 17% using over-the-counter painkillers at home in 2024. All listed over-the-counter medications (vitamins, painkillers, traditional Chinese medicine, herbal tranquillisers, herbal stimulants, and remedies for seasickness) were used more at sea than at home by 2024 respondents. In relation to vitamins, painkillers and traditional Chinese medicine the differences were weakly statistically significant

($p < 0.050$, no effect in all 3 cases). The difference in over-the-counter seasickness medication was more strongly statistically significant for obvious reasons ($p < 0.001$, small effect).

Table 8: Percentage of respondents using over-the-counter (non-prescription) medicine at sea and at home by year

Type of medication	2011		2016		2024	
	At Sea	At home	At Sea	At home	At Sea	At home
Vitamins	53.3%	49.8%	48.3%	42.7%	63%	55.9%
Painkillers (e.g. paracetamol)	26.3%	20.1%	16.2%	13.5%	24.3%	17.3%
Traditional Chinese medicine	5.2%	4.5%	2.1%	2.5%	4.6%	3%
Herbal tranquillisers	6%	3.8%	2.3%	1.9%	2.5%	1.9%
Herbal stimulants	6.3%	4.4%	1.7%	1.3%	2.2%	2%
Medication for seasickness	-	-	-	-	5%	1.1%

This pattern of at sea/at home use is interesting given that such over-the-counter supplements and medications are easier to access ashore, than at sea. A reasonable expectation might have been, therefore, that seafarers on vacation would be more likely to use over-the-counter medications than seafarers at sea, because of their ready availability. Our questionnaire results revealed that this was not the case. Our interviews with seafarers helped to explain the counterintuitive results. They revealed that seafarers found it helpful to be able to treat their own minor ailments on board without having to request access to the vessel medication store. Sometimes this was because they wanted to keep their condition private and at other times it related to the use of trusted products which they were familiar with, as a result of common use in their home country. One engine cadet told us that he often had problems with the chemicals used in his work despite using appropriate personal protective equipment (PPE). The chemicals tended to cause him skin irritation and he treated his skin, himself, explaining that:

The chemical solutions that we use are really strong. [...] Even if you are wearing your PPE, for some reasons, some would still seep into your gloves, or get into your eyes. [...] especially when using cleaning chemical because they have the strongest chemical reaction. I have my own lotion to treat skin irritation. I have more faith in what I bring on board. (Filipino engine cadet)

Others echoed his faith in familiar products. One AB told us for example that:

Most of the time, we bring our own medicine on board. These are medicine from the Philippines. We are not very sure about the provenance of medicine available on board. We don't know what's the dosage. We are worried that we could have adverse reaction to the medicine. That is the reason why we bring our own

medicine, simple medication for fever, something like that. These are medicine which we have taken for years. (Filipino AB)

However, the desire to keep ailments and injuries private, unless absolutely necessary, was also a common theme in our interviews. With minor injuries, seafarers frequently told us that if they could manage their treatment alone, they generally preferred to do this. One reason for this attitude was so that they would not have to deal with being blamed for their ‘carelessness’ when suffering a minor injury. One described how:

Actually, I have an experience before that there was a valve left open, so I got sludge or waste oil that was super-hot. So even if I was wearing gloves, it is cotton, so it seeped in and then my skin got burned. That was my first time so I didn’t really show it to them. Actually, others saw it but I didn’t let them see it because I got nervous that it will be counted as near miss. The burn was quite big, it was in my right hand. [...] I had to bear it. I was also about to go home in a few weeks but when my superior saw it I really lied. [...] It should really be reported but when it comes to near miss then it will be noted there that third engineer did this and that and the whole fleet will be sent this Near miss report with that note. So, what I just said was this was just minor that I got a minor burn. I lied about getting burned, I didn’t tell them that I got burned from the fuel. I just got burned by the noodles when I was cooking it. (Filipino 3rd engineer)

Another seafarer (also a 3rd engineer) revealed that self-medicating practices were used to avoid having to report conditions to officers which they feared might lead to repatriation. He told us about his friend who had also endured burns, just using self-medication to treat himself to avoid the risk of being sent home. He described how:

I had a crewmate who was a wiper, we did overhauling of some equipment. Unluckily, he burnt his thigh. He did not inform the chief engineer because he said he could be sent back home. He was worried about the idea. So, he just self-medicated until the wounds healed. [...] Yes, they just endured the pain. They do not want their officers to know the pain they are experiencing especially when they need to be in employment. (Filipino third engineer)

Under-reporting emerged as an issue several times in our research. It was described in terms of violations of rest-hour regulations, injuries, and also sexual harassment and assault. In 2024, we asked seafarers some new questions about experiences of sexual harassment, and sexual and physical assault on board. These undesirable behaviours and actions impact significantly on seafarers’ wellbeing and can impact on their ability to optimise their general health on board. Other research has shown, for example, that women seafarers may isolate themselves to protect against sexual assault and harassment, with adverse impacts on mental wellbeing (Sampson and Acejo 2022).

More generally all seafarers are likely to avoid interaction with colleagues who are threatening, and this may also involve practices of self-isolation and social exclusion.

In 2024, 2% of respondents said that they had experienced sexual harassment in the course of their career at sea. More often than not such harassment came from superiors. Sixty-seven percent of respondents who answered this question and had experienced harassment said that it came from more-senior colleagues. However, 50% of respondents also indicated that they had experienced sexual harassment from more-junior colleagues²⁰. A smaller proportion of respondents who had been sexually harassed (21%) reported that other ‘non-vessel’ personnel were involved. Examples included stevedores, loading masters and ‘shore-personnel’. The general response to incidents of sexual harassment was to decide against reporting it. Eighty-eight percent of the 25 respondents who described sexual harassment on board chose not to report it to anyone. Four had reported it to a senior officer and one had additionally reported it to the company.

We asked seafarers who had not reported their experiences of sexual harassment, why this was the case. Almost a quarter of respondents (24%) stated that they were afraid of reprisals on board, 19% were afraid of being sent home, 10% were afraid of being sacked, 5% were afraid that the perpetrator would seek revenge once they returned home, 24% were afraid that they would not be believed and 57% also reported assorted ‘other’ reasons. These included a desire to handle the situation themselves, a perception that the seafarer had intended the harassment to be taken as a joke, and a desire not to create trouble. Some interviewees shed light on the complexity of these situations on board. One described a situation where he said he had heard about a case of sexual harassment happening to a male cadet. His detailed knowledge of the case and his understanding of the viewpoint of the cadet raised the possibility that, in the context of this taboo topic, he might be describing his own experience when he said:

I heard a case of a cadet who was sexually violated by another seafarer who would come to his cabin to sexually harass him. He tried to report this to the officers, but they just laughed at him. So as a result, he just shut his mouth. [...] They were both Filipinos, and the perpetrator was an officer. [...] Some seafarers are afraid to report such abuses in the fear of being sent home. That has the potential of destroying their career, so they are afraid to report about cases of sexual harassment. [...] I think sexual harassment happens, but complaints are not given any serious attention by the authorities. [...] Say if it is the captain, so if file a complaint, most likely you could be sent back home. And amongst men, people would say, well, you have not lost anything, really. Something like that. If

²⁰ This statistic reflects the multiple incidents experienced and the possibility of being sexually harassed by both senior and junior colleagues

they persist, that could ruin their career, so by keeping silent, they are able to finish their contract. (Filipino 3rd engineer)

The account by this third engineer involves behaviour - 'sexual violation' - that goes beyond harassment into the realm of assault. In our 2024 study seven respondents (0.6%) stated that they had experienced sexual assault on board during their career at sea. This was at the hands of senior officers or, in one case, an unspecified person. The sexual assault was not reported at all by one seafarer and was only reported to senior officers by others. Neither the company nor the police received reports of any of the incidents. The reasons given for not reporting the incidents were fear of not being believed and fear of reprisals on board. Both these fears reflect the seniority of perpetrators as described by respondents, as well as the severity of the incidents which can feel 'unbelievable' even to the victims, who may struggle to believe that a person they trusted and respected has assaulted them. At interview one seafarer described some of the pertinent reporting issues in terms of the broader problem of bullying, where very similar constraints pertain. He explained:

The problem is, how can you file a complaint when the one looking into the complaint is the one who does the bullying? And you can't go directly to your company because in most cases they will side with the officers. (Filipino chief cook)

Experience of physical assault, on board, was more common than sexual assault and was reported by 8% of respondents who stated that they had experienced it in the course of their career. Although 54% of the respondents who stated that they had experienced physical assault on board reported that this had happened 'rarely', the remainder described it as happening 'sometimes' (43% of cases) and in 3.5% of cases 'very often'. The majority of physical assaults (67%) were reported to be at the hands of seniors/superiors on board. Just under a third of the seafarers (32%) who had experienced physical assault said this was at the hands of juniors/subordinates and 8% of victims of assault said this was from 'others' who were specified as 'chief cook', 'fellow AB', 'own rank', 'colleague', 'sailor'.²¹ Just under half of the respondents (47%) who had experienced physical assault did not report it at all. Some respondents (43% of the victims of assault) reported an incident to senior officers with 17% of respondents reporting incidents to their company. There were no reports made to the police. The reasons that seafarers gave for not reporting physical assault on board were fear of onboard reprisals (51%), fear of being sent home (39%), fear of being sacked (31%), fear of revenge once back home on vacation (21%), fear of not being believed (41%) and

²¹ NB all questions relating to sexual harassment/assault and physical assault were multiple response questions (where respondents can select more than one response to reflect multiple experiences) so as with other multiple response questions used in this research, percentages may add up to more than 100%.

other reasons in 18% of cases. Other reasons that were described included ‘issue settled down on board’, ‘it will pass move on’, ‘we patched things up and decided not to report it to the captain because both of us could be sent back home’, ‘dealt with it’, ‘just got on with life’ ‘temporary’.

Where seafarers decide not to report bullying, harassment and violence on board serious consequences may eventually result. Not only are perpetrators able to continue with unacceptable behaviour but victims themselves may be so distressed that at a future time they retaliate and escalate the problems on board. One seafarer reflected on a very serious incident, that he was aware of, where a victim of bullying became the perpetrator of extreme violence. He told us:

One night, there was a drinking session on board. This seafarer was there and as usual he was very quiet. Many of those present were the ones bullying the seafarer. What happened was, maybe, this seafarer had had enough, he stabbed the seafarers drinking with him. Two seafarers were killed. The culprit rode the elevator with the chief cook, but nothing happened with the chief cook. Clearly the seafarer had lost his mind already. He even went to the bridge where one of his friends was on watchkeeping duties. They were able to disarm and subdue the seafarer. [...] Our company has an anti-bullying campaign, but I think bullying still happens because no reporting is done to the company. I think the problem is, first if you report a case of bullying, the case is first taken up on board. They don't report it at once to the office. (Filipino AB)

Such cases are extreme, but all cases of sexual harassment, and sexual/physical assault are intimidating and potentially traumatic to seafarers, impacting negatively on wellbeing and having potential consequences for seafarers' health both directly (when an incident involves injury) or indirectly when longer term consequences may subsequently arise.

Conclusion

In relation to reducing unhealthy behaviours, we found some positive changes in seafarers' 2024 responses to our questionnaire. Seafarers were less likely to drink alcohol, smoke and eat fried food than they were in 2016. They appeared quite conscious of the social and physical benefits of good food at sea and at home and the need for them to stay healthy in order to keep their jobs. The majority of seafarers considered that their diet at home was healthier than their diet at sea and some felt that they did not have sufficient access to fresh fruit and vegetables on board, with menus at sea rather meat-based, mundane, and reliant on frozen supplies. Seafarers blamed cost-cutting and poor skills among catering staff for poor food experiences on board many vessels.

New questions in 2024, indicated that notwithstanding work-rest regulations (which were reported to be universally broken) seafarers are working very long hours and getting insufficient sleep. The reasons were varied but most frequently related to long working hours, shift patterns, port duties, general levels of anxiety, work-related anxiety, homesickness, uncomfortable mattresses and the movement of the ship when at sea. The proportions of seafarers being disturbed in their cabins by noise and temperature remained broadly unchanged when compared with 2011 and 2016 indicating that no improvements have been made in this area. This is of concern, especially as noise, in particular, has recently been linked to adverse health outcomes. The European Environment Agency has been working to draw attention to the risks associated with working and living in noisy environments. On its website it states that:

Long-term exposure to noise can cause a variety of health effects including annoyance, sleep disturbance, negative effects on the cardiovascular and metabolic system, as well as cognitive impairment in children. Looking at the current data, we estimate that environmental noise contributes to 48,000 new cases of ischaemic heart disease a year as well as 12,000 premature deaths. (<https://www.eea.europa.eu/articles/noise-pollution-is-a-major#:~:text=Long%2Dterm%20exposure%20to%20noise%20can%20cause%20a,year%20as%20well%20as%2012%2C000%20premature%20deaths.>

Accessed 22/3/24)

Despite lack of sleep and concerns about shipboard food and diet, seafarers in 2024 appeared to have a very positive outlook on their current and future health status and this was an area where they outscored seafarers in previous years. Paradoxically when we asked about medical diagnoses, we found some areas where seafarers overall health appeared to have declined, however. High blood pressure, high cholesterol and the associated use of blood pressure reducing tablets were significantly higher, in 2024 than in comparator years. Furthermore, senior officers were particularly likely to suffer from elevated blood pressure and high levels of short-term anxiety and depression.

Finally, seafarers indicated that whilst by no-means widespread, sexual harassment, and physical and sexual assault are challenges that have yet to be overcome on board.

This report has presented the findings from a study of cargo sector seafarers' health and wellbeing undertaken in 2024. It has described how these findings compare with the findings of earlier research undertaken in 2016 and 2011 and has considered where findings vary according to individual and/or vessel characteristics. The report does not discuss all of the elements of the 2024 study and comparisons between the health and wellbeing of cargo and cruise sector workers are discussed in a separate publication (Sampson et al 2025a) as are issues relating to access to healthcare for seafarers working on cruise and cargo ships (see Sampson et al 2025b). A discussion and synthesis of the findings for the whole study considering the health and wellbeing of

cruise and cargo sector workers alongside their access to healthcare is presented in a final document (Sampson et al 2025c).

Appendix One

Nationality Groupings

Grouped Nationality	Raw Nationality
Filipino	Filipino
Indian	Indian
Chinese	Chinese
European and Russian	British British/Dutch UK
	Scottish
	Bulgarian
	Canadian
	Croatian
	Estonian
	Georgian
	German
	Greek/Hellenic
	Hungarian
	Irish
	Italian
	Latvian
	Lithuanian
	Montenegro
	Netherlands
	Norwegian
	Polish
	Romanian
	Russian
	Spanish
	Swedish
	Turkish
	Ukrainian
Other Nationality	Algerian
	Bangladeshi
	Brazilian
	Cape Verde
	Egyptian
	Ghanaian
	Indonesian
	Jamaican
	Japanese
	Kiribati

Grouped Nationality (cont)	Raw Nationality (cont)
	Korean
	Malaysian
	Mauritian
	Mexican
	Myanmar
	Singaporean
	Sri Lankan
	Taiwanese
	United States
	Vietnamese

Appendix Two

Rank Groupings

Grouped Rank	Raw Rank
Senior officers	Captain
	Chief officer
	Chief engineer
	2nd engineer
Junior officers	2nd officer
	3rd officer
	Deck cadet
	3rd engineer
	4th engineer
	Electrician/electrical officer
	Engine cadet
Ratings	Carpenter
	Bosun
	Pumpman
	AB
	OS
	Fitter
	Motorman
	Wiper
	Chief cook
	Second cook
	Messman/ steward

Appendix Three

Department Groupings

Department	Job
	Chief engineer
	2nd engineer
	3rd engineer
	4th engineer
	Electrician/electrical officer
	Engine cadet
	Motorman
	Wiper
Deck	Captain
	Chief officer
	2nd officer
	3rd officer
	Deck cadet
	Carpenter
	Bosun
	Pumpman
	AB
	OS
Galley	Chief cook
	Second cook
	Messman/steward
Other	Fitter

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