Impact of Coronavirus Disease (COVID-19) on Seafarers’ Life and Well-Being

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Authors’ contributions

This work was carried out in collaboration among all authors. Author ADC designed the study, performed the statistical analysis, wrote the protocol, and wrote the first draft of the manuscript. Authors AAM and EHA managed the analyses of the study. All authors read and approved the final manuscript.

ABSTRACT

This research paper aims to identify the impact of the Covid-19 pandemic and resulting travel restrictions to seafarers, either onboard or whose embarkations have been delayed. Two questionnaires were prepared, specific to the seafaring category. Four hundred onboard seafarers completed the survey, as did 100 waiting to embark. The demographic of the respondents represents the global seafaring community. The findings show that both categories have been and continue to be affected by the prevailing circumstances and have substantial concerns about the physical, mental and economic wellbeing of themselves, their families and colleagues.

Given their views that the pandemic will continue for some time to come, it is concluded that employee welfare and freedom of movement must be addressed in a systemic manner by industry and governments alike.

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1. INTRODUCTION

On March 11th, 2020, The World Health Organisation (WHO) declared Covid-19 a pandemic with 118,000 cases in over 110 countries and a sustained risk of further global spread [1].

Nations responded by closing their borders and enforcing ‘lockdowns’ to mitigate the spread. As a consequence, commercial vessels were generally restricted in their port operations and in most cases crew members were not allowed to disembark. The additional dramatic reduction of international flights and the fact that due to lockdowns most embassies were unable to issue necessary visas, crew changes were greatly affected thus practically ‘imprisoning’ seafarers on board for unknown time periods. Equally, seafarers waiting to join vessels under new employment contracts were adversely affected. Early Inchcape Shipping Services (ISS) [2] reports indicated that out of the 132 countries monitored globally, only 36 allowed crew repatriations under strict and uncommon rules and conditions.

The hypothesis underlining this research is that the impact of the pandemic on seafarers already employed on commercial vessels or awaiting employment was very significant yet underestimated by authorities, employers and the general public. The aim of this paper is to investigate the impact of the pandemic on seafarers currently serving on commercial ships, transporting both dry and wet cargoes and employing crews from different ethnic origins.

Equally this paper aims at investigating the impact of the pandemic on seafarers awaiting employment.

2. LITERATURE REVIEW

The number of ships in the world merchant fleet as of January 1, 2019 was 53,629 [3].

The worldwide population of seafarers certified to service on internationally trading merchant ships is estimated at 1,647,500, of which 774,000 are officers and 873,500 are ratings. China, the Philippines, Indonesia, the Russian Federation, India, and Ukraine are estimated to be the six largest supply countries for all seafarers [4]. According to this report the 2015 supply-demand situation shows a shortage of 16,500 officers and a surplus of 119,000 ratings, with an overall surplus of 102,500 seafarers, suggesting that about 1.53 million seafarers were in employment at any time. The world merchant fleet for the purposes of the 2015 BIMCO / ICS report was defined as 68,723 ships. Using 2015 as the base year, the above figures suggest that an average of 22 seafarers were employed per vessel [200].

On average seafarers’ employment contracts have a duration of about 8 months for ratings and 5 months for officers (Management level 4 and Operational level 5-6). Average vacation time is 3 months. There are variations depending on the country of the seafarers’ origin and rank. In the case of vessels registered in recognised flag states, individual employment contracts are negotiated under national collective agreements with terms and conditions adhering to the ILO Convention, MLC2006 [5]. For the case of vessels registered under Flags of Convenience (FOCs), the International Transport Workers’ Federation (ITF) provides Agreements in the form of Special Agreements and Collective Bargaining Agreements regulating the employment of seafarers working onboard FOC vessels [6,7].

In accordance with the ILO Convention, MLC 2006, on terms and conditions of employment, seafarers are employed on fixed term contracts, following which they are entitled to repatriation and leave. In adopting the convention, Maritime and Coast Guard Agency, [8] MCA’s Note 11 states that the maximum period of service following which a seafarer will be entitled to repatriation is to be not more than 52 weeks minus the period of statutory paid annual leave. There is ‘no statutory obligation on a seafarer to take repatriation at that time’. Shipowners/ employers may not however, require a seafarer to continue to serve on board once the maximum period of service has expired except in an emergency or similar extenuating circumstances.

The crew complement depends on the type and size of vessels. Indicatively for the case of tankers, manning levels are VLCC 24-26, Suezmax 22-24 and Aframax 21-24. In the case of dry cargo ships, Panamax bulker 20-24, Handy bulker/reefer 20-22, General cargo 16-20, Container 18-24 and Feeder 18. Finally, LNG/LPG 15-24 and Product tanker Automated 20-24, thus the average of 22 quoted in the abstract appears a reasonable estimate.
Sensational reports appeared in the international press involving cruise ships such as MSC Magnifica, Ruby Princess (Australia), Diamond Princess (Japan), Grand Princess (California) and MS Westerdam (Cambodia) as, due to the pandemic thousands of tourists became captives on luxury liners around the globe [9].

Much less however, was reported about the thousands of commercial vessels and the seafarers employed on these ships.

Tim Bowler, Business reporter for the BBC News wrote on 16 April 2020 [10]. “Caught in the centre of this have been the world’s 1.6 million seafarers, on 50,000 tankers and cargo carriers. Many of them are unable to leave their ships or find themselves stuck in hotels without pay and unable to get flights home”.

“Every month, 100,000 merchant mariners come to the end of their contracts on their ships and need to be flown home. But the pandemic has halted this.” Furthermore, Mr. Bowler quotes Nick Chubb, a former ship’s navigator: “Working at sea is often described as similar to being in prison, except there is no TV”.

“Though my experience was usually positive, a feeling of deep fatigue sets in towards the end of a contract. I once had a four-month contract on an oil tanker extended by three weeks and found it incredibly difficult to deal with”.

"Some of these seafarers have spent nine months away from their families already. And it’s not looking particularly likely they’ll be able to go home any time soon", *(In fact, on 5th of May 2020 the IMO issued the Circular letter No. 4204/Add14, reporting that 150,000 crew changes take place every month)* [11].

3. METHODOLOGY

The methodology used was the collection and analysis of primary data via direct responses to structured questionnaires.

The first questionnaire was completed by 400 serving respondents during 5 weeks from 11th May to 7th June 2020. The sample included seafarers of diverse nationalities, serving onboard 76 commercial vessels in different global trades.

The second questionnaire was responded to by 100 seafarers awaiting employment during the same period.

The response rate reflects the validity and reliability of data collected.

3.1 The Main Questionnaire: Seafarers in Employment at Sea

The main questionnaire, completed by 400 serving seafarers, comprised of 17 structured and mainly closed ended and scale questions aimed at establishing:

1. When and where the responders had joined the vessels and the original duration of their contract of employment.
2. Normal vacation periods between employments.
3. When the responders expected to return home under the current circumstances.
4. How responders reacted to the de-facto extension of their stay at sea.
5. Reporting on the time ships spent in ports and anchorages, depriving crew members from recreational shore visits.
6. Establishing the responder’s national origins/residence and lock-down situation in their home countries.
7. Establishing the responders’ family commitments.
8. Establishing the responders’ concerns about Covid-19 risks on-board, on the risk of visitors and those associated with their eventual repatriation, following the arrival of substitute crews.
9. Establishing the responders’ concerns about their families and the virus threat effect on normal day-to-day life onboard.
10. Establishing the responders’ concerns about several practical and emotional matters and consequences of the impact of the Covid-19 threat.
11. An open-ended question on any other thoughts.

3.2 The Secondary Questionnaire: Seafarers Awaiting Employment

The secondary questionnaire, completed by 100 seafarers, mainly from the Philippines and waiting to embark on new employment, comprised of 6 structured and mainly closed ended scale questions aimed at establishing:

1. Period of waiting between employments.
2. Whether the pandemic had delayed joining a vessel.
3. Family pressures due to employment delays.
4. The financial necessity of seeking alternative forms of employment.

3.3 Common Issues with Questionnaires

The challenge was to attract a reasonable volume of responses to support meaningful conclusions.

Prior to analysing and presenting results, it is important to note some common issues that might affect the drawing of conclusions [12].

For example, one common problem that arises in questionnaires is the participants’ tendency to agree. That is because they think that their beliefs should be equated with the researcher’s view.

One other problem arises when participants answer the questions using their common sense and that fact does not reflect their point of view in many cases. Respondents tend to answer questions in that way, to avoid differentiation of their view with the public opinion.

Random answers also threaten the results of a research, as they do not reflect the participants’ reality. Random answers may appear when one of the three following exists:

- It is observed that random answers are given by the participants when they are forced to participate in the research, or they have a power relationship with the researcher; in this case the vessel’s managers who requested the seafarers take part.
- Another fact is that generally people are not interested in participating in a research, so the responses are provided but the answers are not valuable.
- Some researchers (which applies in this case) avoid including an alternative answer of ‘Do not Know’ / ‘No Answer’ so the participant answers the questions randomly.

4. FINDINGS AND DISCUSSION

4.1 The Main Questionnaire: Seafarers in Employment at Sea

The sample analysed for the main questionnaire consisted of 400 seafarers mainly from the Philippines and some other nationalities serving on 76 ships of various types (Fig. 1 and Fig. 2).

Given the large number of seafarers from the Philippines, the authors recognise that the sample does mirror the make-up of the global pool of officers and ratings, as outlined in the Literature Review, thus potentially skewing the statistical observations.

The 400 respondents joined their ships during the 12 months between May 2019 and April 2020. The majority joined in November (81) and January (96). It would be useful to explain the customary Christmas and New Year crew change cycle in shipping. Traditionally, a large number of seafarers are replaced in 2 waves. One before Christmas and the 2nd after New Year. This is a general practice thus not in relation to Covid-19. This practice explains why so many crew changes took place at the end of 2019 and the beginning of 2020. Fortunately, many crew changes were performed just before the restrictions were implemented, as otherwise the corona crew change crisis would have been much more severe. It can also be inferred that if the pandemic incident were happening during high density crew change period, the problems would have been much more serious.

![Fig. 1. Graphical representation of vessel type](image-url)
The continents of embarkation were Africa (198), Europe (114), Asia (49) and Oceania (1).

The original contract duration was mainly 5 months (15%) and 8 months (47%), with the duration of the remaining 47% fairly evenly spread between 1 and 12 months. The weighted average contract duration is 6.42 months. Africa and Europe accounted for 78% of crew changes.

Under normal circumstances, the usual average vacation time between contracts varied from 1 to 6 months, with the majority being 3 months (140) and 4 months (109). The weighted average vacation time appears as 3.23 months.

All the countries of origin or permanent residence were in lockdown from March 2020 as a result of the pandemic.

Under the prevailing circumstances, 293 (73%) respondents believe they will be repatriated at the end of their current contract. This is of course subject to the conditions of the development of the pandemic by the end of the contract period.

A total of 55 respondents had already experienced contract extensions, the majority by 2 months (29), with a weighted average actual contract extension of 2.37 months. This is subject to the conditions of the development of the pandemic and therefore not a ‘static’ number.

The weighted average anticipated contract extension is 1.98 months (Fig. 3). Again, this is subject to the conditions of the development of the pandemic and therefore not a ‘static’ number.

When asked if their contracts have already been extended or they believe it will be extended due to the Covid-19 pandemic, the respondents described their position as mainly ‘good’ (72) and ‘Financially good but otherwise bad’ (269). (Fig. 4.)

The respondents were asked how many days since March 1st 2020 (approximately) their ships had spent in ports for loading, discharging, repairs and in waiting at anchorage.

Although this question appeared reasonably straightforward at first, analysis of the responses became challenging given that the sample on board the various vessels spent different time at ports and anchorages and, given the anonymous responses, we were unable to trace back groups of respondents that were serving on the same ship or had joined that vessel at the same time. We further suspect that there was some degree of confusion by the respondents regarding the day counts in ports, as those joining later could have been unaware of events from March 1st to the date of their actual embarkation.
The period included for the port and anchorage calls was between March 1st and June 7th, 2020 i.e. a total of 99 days.

The sampled vessels visited 102 different ports or, on average, 4.25 ports each and spent an average total of 15.04 days in these ports.

The total anchorage stoppages by the same group of ships was 31, or on average 1.63 per vessel and the average time spent waiting at anchorage (to enter ports) was 12.92 days.

Delays of waiting at anchorage before entering port appears excessive [13] and is attributed to delays in free pratique procedures. Under normal circumstance (depending on the time of vessel’s arrival and Notice of Readiness tendering/acceptance etc.) anything above a 12hrs period would be considered excessive. In fact, Port Technology suggests 7 hrs for the most advanced ports such as Singapore.

On the basis that each ship visited on average 4.25 ports and was held at anchorage on average on 1.63 occasions, suggests that delays due to free pratique procedures applied to 44% of the ports. Furthermore, if the 12 hrs average port entry rule was to be applied then the extra time lost is 12.92 days minus 4.25*0.5Day = 10.79 Days.

Fig. 3. Extension of contract expected for (Months)

Fig. 4. Position
Clearly, over a period of 99 days a lost period of 10.79 days translates to 10.89% additional running costs for the vessel.

Building on the previous question, respondents were asked if they considered any of these ports to be high risk, if they were allowed to go ashore for recreational purposes or they decided to stay on-board instead of taking the risk.

Similar difficulties were encountered as per the previous question. However, there are some useful and meaningful conclusions:

Out of the 102 different ports visited by the sampled vessels during the 99-day period, 53 ports (51.96%) were considered as high risk, and the vessels spent in total 172 days in these ports or on average 3.71 Days each per visit.

In other words, 4.25 average visits * 51.96% = 2.21 visits per vessel to high risk ports during the test period.

Most importantly, only 2.9% of the respondents ventured ashore during the visits to these ports. It can safely be argued that those that did venture out were emergency cases, such as medical treatments.

Forty eight percent of the respondents indicated they have partners at home, with 53% having one or more children. Worry about family members back home is widely felt, with 98% expressing some level of concern about a family member falling ill while they are away (Fig. 5.)

60% have some level of concern about family’s mental stress (Strongly Agree 18%, Agree 43%, Somehow Agree 24%).

91% miss their family more than usual (Strongly Agree 26%, Agree 44%, Somehow Agree 21%).

56.74% feel that generally their normal day to day life and behaviour on board has been affected as a direct result of the Covid-19 pandemic and the lockdowns. It is worth noting that a considerable number of respondents appear to feel that life is still ‘normal’. However, comparing the response to this general straight question to a more detailed breakdown of difficulties experienced, appears somehow contradictory.

The difficulties experienced are characterised as;

a. 84% have concerns over future employment (Strongly Agree 17%, Agree 42%, Somehow Agree 25%).

b. 85% are concerned about fellow crew members’ mental stress (Strongly Agree 28%, Agree 35%, Somehow Agree 22%).

c. 90% are concerned about the global economy and trade (Strongly Agree 26%, Agree 49%, Somehow Agree 15%).

d. 80% feel more isolated from the rest of the world (Strongly Agree 16%, Agree 30%, Somehow Agree 34%).

The concerns about the virus being transmitted is evident;

Fig. 5. How worried are you about a member of your family back home falling ill while you are away?
a. 95% are worried that they or another member of the crew will fall ill with COVID-19 while at sea (Extremely worried 42%, Considerably worried 26%, Worried 15%, Somehow worried 12%), with only 19 out of 400 appearing to be not at all concerned.

b. 96% are worried about a person, such as a pilot an agent etc, visiting the ship from outside and bringing the virus on board (Extremely worried 33%, Considerably worried 30%, Worried 25%, Somehow worried 8%)

c. 95% are worried when airports/ports open that on-signers bring the virus onboard (Extremely worried 33%, Considerably worried 25%, Worried 30%, Somehow worried 7%), with only 15 respondents appearing indifferent.

d. 82% feel the COVID-19 problem will last for long (Strongly Agree 23%, Agree 25%, Somehow Agree 16%).

e. 86% have some level of concern about travelling home at the end of their contract or its extension (Extremely worried 21%, Considerably worried 21%, Worried 27%, Somehow worried 17%), with 59 respondents not worried at all.

Some onboard aspects present a more balanced response;

a. Difficulty in communicating with home is expressed at some level by 49%, with 51% in disagreement, 12% of whom are in strong disagreement.

b. 46% have difficulties in receiving mail or parcels from home, 6% in strong disagreement.

c. 46% state there are some level of difficulty with food provisions onboard, 12% in strong disagreement.

4.2 The Secondary Questionnaire: Seafarers Awaiting Employment

As stated earlier, the sample consisted of 100 respondents, mainly from the Philippines and therefore there is, potentially, a cultural bias vs. an international ethnic mix. This said, given the importance of this largest supplier of seafarers, useful conclusions can be drawn, which can be confidently extended as representative of the views of the global merchant marine community.

The survey results were analysed using Microsoft Excel.

Exceptionally, the Government of the Philippines Department of Labour and Employment promised a one-time USD200.00 or Php10,000.00 financial assistance program for land-based and sea-based workers displaced by the COVID-19 pandemic (Seaman Memories) [14]. Shipping Companies, as part of corporate social responsiblity paid cash advances and all extra expenses e.g. many days of hotel accommodation and food for all those who arrived in Manila to join a vessel and for one or other reason could not fly to the vessel or fly back to their place of domicile.

Disembarkations (Fig. 6) were concentrated in the months of November 2019 to February 2020;

- 100% Disembarked between June 2018 and June 2020.
- 89% Disembarked between October 2019 and June 2020.
- 33% Disembarked between February 2020 and June 2020.
- 67% Due back for work after 3 months or more vacation.
- With a significant drop in disembarkations since March 2020 attributed to Covid-19 restrictions.
- A large number awaiting to join new employment after vacation time, due to Covid-19 restrictions.

Note: Reader should be reminded of the ‘end of year / beginning of new’ crew change practice as previously described.

In response to “Is your next employment/embarkation delayed due to the pandemic?”, 55% of respondents answered ‘Yes’.

Given that 67% (Fig. 6) have spent 3 months or more on vacation it would be fair to assume that a large portion are immediately affected, as they have possibly signed new contracts already and are waiting. 33% are officially on vacation time and therefore would respond ‘No’. The remaining ‘No’ could also be attributed to the fact that employers have offered contracts and re-assurances that jobs are secure and embarkation will happen as soon as practicable.

In line with the above explanation, those still on vacation would not have been delayed (33% for 0 months). The remaining 18% would be part of those that have been waiting to embark during the last 2.5 to 3 months (February, March, April, mid-May i.e. out of a total of 26%).
Building on the previous question, the direct question “How worried are you that you would be delayed in joining a vessel for your next employment?”, shows that 82% of the respondents confirm that their concerns vary from worried to extremely worried, including a good portion of those who, for the time being are on official vacation time.

Not surprisingly, 90% agreed that due to the pandemic, they managed to spend quality time with their family.

Only 4% of respondents stated that they were not interested in seeking alternative options whilst waiting for their next employment (Fig. 8), suggesting that the financial pressure is extremely high.

5. OBSERVATIONS

It should be noted that the observations constitute the authors’ opinion also informed by their professional experience.

Covid-19 was a totally unexpected event that took the world by surprise. Although some form of contingency planning for such a risk had been in place by many countries (e.g. UK contingency planning for a possible influenza pandemic Version 2, 10 July 2006 [15], USA National Strategy for Pandemic Flu, 2006) [16], they proved largely ineffective. Regrettably, both the UK and the USA had in recent years downplayed the significance, failing to be adequately prepared and thus their publics suffered the most.
Fig. 8. Have you considered seeking alternative/additional ways to increase your income until your next embarkation day?

At the outbreak, crucial time was lost in protecting populations against this pandemic. ‘Herd immunisation’ concepts (UK, Sweden), lack of Personal Protection Equipment (PPE) and confusing guidance (often driven by poorly informed political decisions) were hardly helpful.

The threat to seafarers and to commercial shipping still does not appear to be on top of any national or supranational analysis (never mind policies) and the industry is largely left unaided today and for the foreseeable future. Ship operators appear as expected to think and contingency plan for the industry’s future [17]. The authors are reminded of the crisis caused by Piracy in Somalia (and elsewhere), where again the industry was left alone to deal with the situation (much later supported by somewhat inadequate Naval support from various countries, provided only over a limited period of time.

Financial Implications of delayed crew changes;

a. As a result of the impact of Covid19 on travelling (no flights, no visa, lockdowns etc.), many crew members have remained onboard vessels although their contracts have expired. Upon the expected easing of Covid19 restrictions and measures and the gradual availability of flights (many will be chartered flights and thus very expensive) crew managers will be forced to find urgent solutions to repatriate the desperate and tired seafarers, some with more than 3 months extended employment contract, in addition to the normal planned crew changes. They should therefore be prepared to manage an unprecedented increased number of 'must do' crew changes within a complicated environment, with new parameters and problems appearing daily and constantly changing.

b. The financial savings from the reduced crew management activity of the previous months (due to limited if any crew changes), will gradually be balanced by the increased costs of flights, additional crew accommodation needs, medical tests and increased vessels’ route deviations. Port agents will have a massive workload and important role to play during this period.

c. It should be noted that the seafarers who have had an extensive wait to embark a vessel and their employment postponed, will certainly be the financial losers, despite the sporadic and very limited government support by main seafaring supplying countries, such as the Philippines.

6. CONCLUSIONS

In summary, these surveys clearly indicate that seafarers have many concerns, and they worry about the present situation as well as their future professional career/development.
Seafarers consider themselves lucky to be in employment, safer to be at sea in a virus free environment, however the extension of the time on board creates emotional fatigue and stress with potential impact on work performance.

It should be noted that the majority foresee that this situation will continue for a long time.

The study revealed that the impact on seafarers was substantial: difficulties in repatriation (contract extensions of 2.37 months), health concerns on board (95.25%), concerns about well-being of families (98%), impact of isolation (56.74%), fear of visitors coming onboard (95.75%), physical and emotional fatigue and isolation (80%), financial concerns, etc. Similar anxieties are experienced by seafarers awaiting new employment, but with greater financial impact (82%).

Developing recommendations should be based on well-established structured processes.

a. The shipping industry should first identify and record all the worries and concerns (with further research needed like the one described in this paper).
b. ‘Solve’ what can be ‘solved’ and separate them from the ‘unsolvable’ (in order to identify them, accept them and thus remove or mitigate related concerns).
c. Develop plans for supporting seafarer's mental health.
d. Promote plans and policies for better management of future pandemics (including port processes, government support etc).
e. Promote the priorities of the industry in national and supranational organisations starting from the World Health Organisation.

Both questionnaires provided a considerable number of free comments.

The concerns of those at sea can be categorised as:

b. Concerns about family and colleagues.
c. Concerns about the future.
d. Comments regarding employers, support received and related employment matters.
e. Comments on extended contracts.
f. Hopes and aspirations.
g. General Comments and suggestions for improving life at sea.

The concerns of those waiting to embark can be categorised as:

a. Financial pressures and related concerns.
b. Health, Mental Health, and General concerns.
c. Temporary or alternative employment / source of income.
d. Expectations from employers.
e. Hopes and Aspirations.
f. Other concerns/comments.

The authors hope to prepare a separate paper to reflect these thoughts.

CONSENT

As per international standard or university standard, participant’s written consent has been collected and preserved by the authors.

ETHICAL APPROVAL

It is not applicable.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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