

Abstract

Occupational Diseases and Injuries on Board Ships: A Preliminary Analysis for an Epidemiological Observatory of Seafarers[†]

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† Presented at the Public Health Congress on Maritime Transport and Ports 2022: Sailing to the post-COVID-19 era, Athens, Greece, 21–22 October 2022.

Keywords: expert systems; seafarers health; ICT; marine doctor; desktop applications



Citation: Sagaro, G.G.; Angeloni, U.; Di Canio, M.; Marotta, C.; Rezza, G.; Silenzi, A.; Amenta, F. Occupational Diseases and Injuries on Board Ships: A Preliminary Analysis for an Epidemiological Observatory of Seafarers. *Med. Sci. Forum* **2022**, *13*, 7. <https://doi.org/10.3390/msf2022013007>

Academic Editors:
Christos Hadjichristodoulou and
Varvara Mouchtouri

Published: 28 November 2022

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1. Introduction

Workers on board ships have a higher rate of mortality, injuries, and illnesses than their counterparts ashore due to their particularly risky working conditions. Occupational diseases including musculoskeletal disorders (MSD), cardiovascular diseases (CVD), diseases of respiratory systems, skin and subcutaneous disorders, and injuries are the most common causes of morbidity on board ships among seafarers. These health issues represent the main reasons for medical consultation, repatriation, and death of seafarers at sea. Different studies conducted on board ships have revealed a variety of problems in accessing data and health information of seafarers at sea, which can be used to recommend prevention strategies and provide evidence-based information to maritime health policymakers. To effectively address these challenges, we have been establishing an epidemiological observatory of occupational diseases and injuries for seafarers. This initiative has been realized in collaboration with the Italian Ministry of Health, the University of Camerino and the International Radiomedical Centre (C.I.R.M.), the Italian Telemedical Maritime Assistance Service (TMAS).

2. Materials and Methods

A descriptive epidemiological study approach was used, and the analysis was based on the telemedical assistance data of C.I.R.M. from 2010 to 2021. C.I.R.M. is the Italian TMAS that has provided medical assistance to seafarers and passengers on board ships since 1935. Each diagnosis was recorded in the C.I.R.M. database according to the 10th revised version of the International Classification of Diseases (ICD) of the World Health Organization (WHO). For this preliminary analysis, we focused on contacts of medical requests to C.I.R.M. related to occupational diseases and injuries of seafarers from Italian shipping companies. In this study, we considered occupational diseases, including diseases of the musculoskeletal system and connective tissue (ICD: M00 to M99), cardiovascular diseases (I00 to I99), diseases of the respiratory system (J00 to J99), disorders of the skin and subcutaneous tissues (L00 to L99), and injuries (S00 to S99 and T00 to T98). From the database, we retrieved diagnoses as well as parameters such as age, rank, gender, workplace, and other variables relevant to our analysis. A descriptive analysis was performed to evaluate the distribution of both diseases and injuries among occupational groups. Rank was stratified by officers (deck and engine officers) and non-officers (deck and engine

ratings, as well as galley staff). The age of the seafarer with medical cases was calculated by subtracting their date of birth from the date of medical advice provision and was grouped into five categories: under 25 years, between 26 and 35 years, between 36 and 45 years, between 46 and 55 years, and above 55 years. We excluded from the analysis seafarers whose date of birth was not available.

3. Results

It is estimated that 4298 seafarers aged 19 to 73 years (mean age: 39.74 ± 11.44) with 1843 (43%) officers and 2455 (57%) non-officers having requested medical advice from Italian flag ships during the study period. Most reported cases were injuries (16%), cardiovascular diseases (8%), dermatological disorders (7.9%), musculoskeletal disorders (6.9%), and respiratory disorders (5%). Out of 342 seafarers with CVD, 40% were officers [deck officers (18.7%) and engine officers (21.3%)], while 60% were non-officers [deck ratings (21%), engine ratings (25%), and galley staff (14%)]. The mean age of seafarers with CVD was 42.51 ± 12.39 years, and the mean age of seafarers with musculoskeletal disorders was 39.52 ± 11.18 years. Based on nationality, 36.5%, 35%, 21.1%, 3.4%, and 3.2% of seafarers who contacted for medical advice were Italian, Indian, Filipino, Chinese, and Romanian, respectively.

4. Discussion and Conclusions

Preliminary results indicate that injuries are the leading reason for medical advice requests from Italian shipping companies, followed by cardiovascular disease and dermatological disorders. In the present study, it was found that non-officers (engine and deck crew) were more frequently diagnosed with CVD and dermatological disorders than officers. The findings could help the industry, maritime doctors, and seafarers make informed decisions for the establishment of onboard prevention strategies.

Author Contributions: G.G.S.: Conceptualized and designed the study, analyzed and interpreted the results, and drafted the abstract; U.A., C.M., G.R. and A.S.: have contributed to plan the research and has reviewed the framework of the observatory; M.D.C.: worked on data collection; G.R. and F.A. have supervised the study and checked the final manuscript. All authors have read and agreed to the published version of the manuscript.

Funding: This study was supported by the grant of the Ministry of Health No. J59J21011210001.

Institutional Review Board Statement: The study was conducted in accordance with the Declaration of Helsinki, and approved by the Institutional Review Board of C.I.R.M. Foundation's Scientific/Ethics Committee.

Informed Consent Statement: Not applicable.

Data Availability Statement: The data presented in this study are available upon request from the corresponding author.

Conflicts of Interest: The authors declare no conflict of interest.