



## SEA LIFE; EFFECTS ON HEALTH OF PAKISTANI SEAFARERS

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### INTRODUCTION

Man has been going to sea before recorded history.<sup>1</sup> He has been using maritime transport for carrying people (passengers) or goods (cargo). It has also been used for recreation or for military purposes.<sup>2</sup> A seafarer is a person employed or engaged in any capacity on board a seagoing ship on the business of the ship and employed either directly by a shipping company or through a manning agency, whose usual place of work is on board a seagoing ship, and includes master, crew member, resident entertainer, hairdresser and franchise employee on passenger ships. It also includes self-employed persons who work on board the ship on the business of the ship.<sup>3</sup>

The ship for a seafarer is a place of working as well as home to live there for the duration of voyage. Seafaring has always been considered a dangerous occupation<sup>4</sup> owing to various health problems of seafaring: disease, injuries and

**ABSTRACT... Objectives:** To have a look on the effect of sea life by checking blood pressure and testing blood fasting sugar, total cholesterol, HDL and triglycerides of the sea farers deployed on different positions at ship. **Study design:** This was a cross sectional descriptive and clinical study. **Setting:** Port Health Department, Kemari, Karachi. **Period:** 1<sup>st</sup> October 2016 to 22 April 2017. **Methods:** Random sampling was done and a total 62 personnel from different branches of ships were selected. The study subjects aged  $\geq 25$  belonging to different shipping companies were called at Port health dispensary for collection of blood sample and checking of blood pressure. Height and weight measurement was done and also smoking history was revealed. Blood Tests, fasting sugar, HDL, Cholesterol, and Triglycerides were performed. **Results:** Overall the age range was 25 – 55 years and a mean of  $\pm$  SD of 38.95  $\pm$  8.57. Maximum population was of the age group 36 – 45 years. Hypertension both systolic and diastolic in all seafarer (100%) was the main findings. HDL and Triglycerides were also found grossly raised. Age, height, weight, and smoking history data showed non-significant ( $P > 0.05$ ) results. Also, Professional categories and laboratory findings results were not found significant  $P > 0.05$ . **Conclusion:** Seafaring is one of the hard profession which terribly affect the health of sea farers. Preventive measures at primary and secondary level to be organized and implemented.

**Key words:** Seafarer, Sea Social Stress, Physical Stress, Psychosocial Stress.

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transmission of infections.<sup>1</sup>

When a seafarer leaves his home at land he encounters two types of stresses.<sup>5</sup> One is social stress related to his family at land and others are, physical and psychosocial stresses related to his place of duty onboard. After separation from the family and friends a seafarer remained exposed to confined spaces of ship with almost negligible, negative effects such as frustration, loneliness and home sickness start taking a toll on them. It is therefore they remain physically on ship but mentally back at home.

While on board during the voyage a seafarer faces the physical stressors such as heat in workplaces, noise, ship movement, sea sickness, hard physical work, lifting, carrying, lack of exercise and climatic changes. The psychosocial stressors are irregular shift, long working times per day, irregular working times & the lack of

sleep which may even lead to accidents.

Sea voyage starts once the ship crosses the break water point. This depends upon the roughness of sea and the weather. Due to constant unbalanced movement of ship the brain estimates motion based on the combined input from vestibular, visual, and proprioceptive receptors. Motion sickness most likely occurs when the stimuli applied to these receptors appear to be in conflict. This apparent conflict causes more severe symptoms when the patient is passively moved at certain frequencies. The other factors like nomadic kind of life style, hectic, laborious and monotonous work, and monotonous in diet keep seafarer in stress. All kind of these factors predispose persons at ship to have health related issues.

The aim and objectives of the study was to have a look on the effect of sea life by checking blood pressure and testing blood fasting sugar, total cholesterol, HDL and triglycerides of the sea farers deployed on different positions at ship.

## PERSONS AND METHODS

### Design

This was a cross sectional descriptive and clinical study carried out from 1<sup>st</sup>October 2016 to 22 April 2017.

### Setting

Port Health Department, Kemari, Karachi.

Random sampling method was adopted and a total 62 personnel from different branches of ships were selected. The study subjects belonging to shipping companies were called at Port health dispensary for collection of blood sample and checking of blood pressure. Height and weight measurement was done and also smoking history was revealed. Blood Tests, fasting sugar, HDL, Cholesterol, and Triglycerides were performed at laboratory of Port Health Dispensary. Blood pressure of all personnel was taken by mercury sphygmomanometer. The result findings were compared with Standard Normal Laboratory Values. Blood pressure normal value was set as 120/80 as per WHO standard.

### Selection Criteria

- Inclusion Criteria: All the seafarers of age  $\geq$  25 years of different Pakistan Ships.
- Exclusion Criteria: Seafarer  $<$  25 years of age and belonging to non-Pakistani Shipping companies.

All study personnel were aware of the purpose of the study and they participated willingly.

The personnel working in different departments of the Ships were selected as per Table-I.

Categories	Number
Ship Captain	05
Deck Crew	12
Medical Staff	10
Cruise Staff	11
Engineering Staff	06
Engine room crew	10
Stewards	08
TOTAL	62

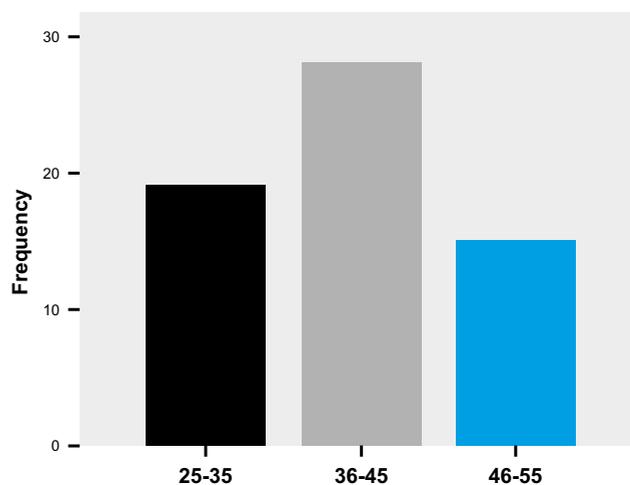
**Table-I. Categories of study personnel**

### Ethical consideration

Approval for the access of study personnel was obtained from Director Central Health establishment Karachi.

## RESULTS

Overall the age range was 25 – 55 years and a mean of  $\pm$  SD of 38.95  $\pm$  8.57. Maximum population was of the age group 36 – 45 years (Figure-1).



**Figure-1. Age groups frequency and percentage**

Blood Tests and Hypertension measurement results are given in Table-II.

	Normal	Abnormal
Fasting Blood Sugar	54 (87.1 %)	08 (12.9 %)
HDL	25 (40.3 %)	37 (59.7 %)
Cholesterol	41 (66.1 %)	21 (33.9 %)
Triglyceride	33 (53.2 %)	29 (46.8 %)
Blood Pressure		
Systolic	0.00	62 (100 %)
Diastolic	0.00	62 (100 %)

**Table-II. Results of different blood tests and measurement of hypertension.**

## DISCUSSION

HDL was found grossly raised in about 60% people while triglyceride values was 46.8% higher in study personnel. A study<sup>6</sup> carried out in Iran found raised values of HDL and Triglycerides. A study which was conducted among German seafarers revealed 41.6 % prevalence of high triglyceride.<sup>7</sup> In our study 100 % study personnel showed hypertension both systolic and diastolic. This can be attributed to small sample size of the study but referring to international research studies on seafarer<sup>6,7,8,9,10,11</sup> it was found that raised blood pressure was a common observation in these studies.

Age, height, weight, and smoking history data showed non-significant results. Also, Professional categories and laboratory findings results were not found significant (At 06 degree of freedom the values of Blood sugar fasting, Cholesterol, HDL and Triglyceride were 7.27,4.50,3.07 and 3.40 respectively  $P > 0.05$ ).

## CONCLUSION

Sea life exposure on ship poses various occupational risks to seafarer whether he be on duty or off duty. Observation of hypertension in all sample population is a sign of concern on the part of health. Modern ships are now well equipped with latest technology. Occupational safety standard on board are now improved. However, despite of this, primary and secondary prevention

of sea life hazards need to be addressed. Anti-smoking campaign, life style changes methods, stress management techniques to be introduced. Fatigue noise and isolation factors to be minimized.

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*There's something wrong with your character if “opportunity” controls your loyalty.*  
 – Sean Simmons –”

**AUTHORSHIP AND CONTRIBUTION DECLARATION**

Sr. #	Author-s Full Name	Contribution to the paper	Author=s Signature
1	Muhammad Zakaria	Original research work conception and design.	
2	M. Khalid Siddiqui	Data arraying and supervision / Checking lab results.	
3	Meraj rahim	Statistical analysis of data, Cross check of complete work.	
4	M. Saeed Siddiqui	Critical revision of article especially of results and discussion	