

Stereotypes and health literacy in seafarers: views of the students of medicine and maritime science on contraception

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ABSTRACT

Background: There are a number of stereotypes of seafarers in today's society. In Croatia, the prevailing stereotype assumes that they are a specific population having an ideal life and a great time both at sea and at home and have a liberal worldview. In the reality, seafaring is a hardly, demanding, stressful and high-risk occupation. The goal of this research was to gain comparative insights into the standpoints of the students of the University of Split Faculty of Maritime Studies and School of Medicine on the issues regarding reproductive health and contraception.

Materials and methods: We used the views on contraception questionnaire created by Kelly J. Black from the University of Washington. The respondents participating in the research are the students of the two constituent faculties at the University of Split: School of Medicine and the Faculty of Maritime Studies. A total of 274 students took part in the research, out of which 116 were female students.

Results: There is a significant difference in the attitude to the use of contraception, which is more positive in female student population. The students of medical science have a more positive attitude to contraception than their peers at the Faculty of Maritime Studies.

Conclusions: Considering the results obtained through the survey and the information from relevant sources, it can be concluded that it is necessary to enhance health literacy in the seafaring population, given the challenges in their working and living environment.

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Key words: views, contraception, health literacy, seafarers

INTRODUCTION

Seafaring is characterised by specific psycho-social, mental and physical stressors such as long periods away from home, isolation, long working hours, fatigue, lack of shore leave, high levels of work related stress, exposure to toxic and hazardous substances, communicable diseases, impaired treatment options for cardiovascular diseases, and dangers of piracy [1–3].

Stereotypical images of mariners and their life are common but, across this specific social population, there are numerous mariners who themselves share certain positive or negative misconceptions of their colleagues coming from

other nations and cultures, or of the women working on board ships.

Viewpoints make important an aspect of human personality as no other psychical feature affects the social events to such an extent – or is so affected by the society. Views are transferred, acquired, formed and altered in the process of an individual's social growth, through a variety of education and experience. They affect memory, perception, thinking and acting, and can encourage love, hatred, social conflict or reconciliation [4]. People tend to perceive and interpret events in line with their standpoints.

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Sociology dictionaries define the stereotype as an “arbitrary, immoderate opinion on a group, tribe or class, usually based on prejudice” [5]. Stereotypes are relatively long-lasting cognitive schemes about common, negative rather than positive, characteristics of a group, nation or race. For instance, the Japanese are diligent and punctual; the Blacks are musical and easy-going, etc. [6]. Although stereotypes are arbitrary and not entirely true, they facilitate processing of information about other people by simplifying the complex social environment and thus making it easier to navigate in that environment. In this way, lack of information on a person’s characteristics is compensated by the characteristics of the group the person belongs to [7].

Dealing with stereotypes in the areas of human life and safety is of utmost importance. Social action and commitment, constant information and education, as well as guaranteed health measures at primary, secondary and tertiary levels, are required for health planning and preserving health, especially reproductive health, for future procreation and creation of the future with new and healthy human resources [7].

Reproductive health is not just the absence of illness, but “a state of complete physical, psychological and social well-being, with regard to everything relating to the reproduction system and its functioning in the reproduction processes” [8]. Reproductive health includes free and conscious decision-making about the best timing for parenthood, for giving birth to a desired number of children and birth intervals. Furthermore, it implies the availability of information and birth control options, and the right of having the highest standards of sexual and reproductive health protection [9]. The latter implies the sex and reproduction education, family planning counselling, reproduction health care, prevention, diagnostics and treatment of various diseases and disorders, and unwanted pregnancy termination. Reproductive health is affected by the surrounding socio-economic conditions, genetics, natural environment and personal behaviour. To date, it has been impossible to affect genetic heritage, but much can be done regarding environment preservation and reproduction health education. This is the only way to achieve the social progress in terms of achieving social and individual goals, and to pass on the world where healthy life is possible to future generations.

Sexually transmitted infections represent one of the most important public health challenges in the modern world. They are a huge burden for the morbidity and mortality in the countries with limited economic resources and in the developing European countries. The long-term effects of the sexually transmitted infections, such as infertility, chronic pelvic pain and extra-uterine pregnancy, are major issues in reproduction medicine. Increased efforts have been made in examining the ways and dynamics of sexual infection

transmission, partly owing to HIV epidemics, but also due to the recognised importance of other sexually transmitted infections and measures taken in the area of prevention and control [10].

The dynamics of infection transfer and expansion depends not only on the sexual behaviour of individuals belonging to certain groups, and the rate of change of sexual partners and the use of contraception, but also depends on the features of the causative agents, virulence and infection duration [11]. Every year, more than 440 million adults contract sexually transmitted diseases, while 60% of the infections occur in the population under 25 years of age [12]. Chlamydial infection is reported to be the most widespread sexually transmitted infection in Europe.

Contraception comprises all means and methods used to terminate natural reproduction processes at a point of time, prior to implantation of the blastocyst.

Contraceptive methods can be grouped in: natural methods of contraception, mechanical and chemical contraception, intra-uterus contraception, emergency contraception, and permanent contraceptive methods.

People decide to use contraception for several reasons:

- all contraceptive methods provide pregnancy control and unwanted pregnancy prevention;
- condoms provide protection against sexually transmitted infections.

Hormonal contraception, in addition to contraceptive effects, provides regulation of the menstrual cycle, reduces the risk of endometrium and ovary cancer, reduces the rate of iron deficiency anaemia, and so on [13].

GOAL

The goal of this research was to gain comparative insights into the standpoints of the students of the University of Split School of Medicine and Faculty of Maritime Studies on the issues regarding reproductive health and contraception. A special attention was given to the attitudes diverging by sex and familiarisation with the subject of research.

HYPOTHESES

1. Female students have a more positive view on contraception than male students.
2. Male students at the Faculty of Maritime studies have positive attitudes towards contraception.
3. Health literacy affects the formation of views on contraception.

MATERIALS AND METHODS

While researching the students’ views on contraception we used the Views on contraception questionnaire created by Kelly J. Black from the University of Washington, which was featured in the book “Sexuality – Related Measures”

written by Terri D. Fisher, Clive M. Davis, William L. Yarber and Sandra L. Davis, 3rd edition, 2011, Routledge, New York, USA.

CONTRACEPTIVE ATTITUDE SCALE (CAS)

The Contraceptive Attitude Scale (CAS) measures the views on using contraception in general, while other methods focus on particular contraceptive methods (Brown, 1984) or, for instance, on using contraception before marriage (Parcele, 1975). The CAS can assist in finding out differing attitude towards a particular means of contraception (e.g. condom) in relation to any other way of contraception.

Contraceptive Attitude Scale consists of 17 positive statements that the respondents agree or disagree with. The respondents provide feedback on every statement by indicating their level of agreement or disagreement. The available answers range from 1 (I fully disagree) to 5 (I fully agree). It takes about 10 minutes to complete the questionnaire.

All statements are added up together with the help of the 5-point scale. For positive statements, the answer "I disagree" makes 1 point, while the answer "I fully agree" produces 5 points. The statements having a negative structure are scored in the reverse order: the answer "I disagree" gets 5 points, while the answer "I fully agree" produces 1 point. The overall grade is the sum of answers to each item. Lower grades indicate more negative views on contraception. The maximum grade, i.e. the most positive attitude towards contraception, yields 160 points, whereas the minimum is 32.

The CAS evaluation significantly corresponds to the results obtained by the Scale for testing pre-matrimonial contraception attitude (Parcele, 1975), $r = 0.72$. Likewise, it is in correlation with the frequency of contraception use in sexually active male and female students, $r = 0.60$.

RESPONDENTS

The respondents participating in the research are the students of the two constituent faculties at the University of Split: School of Medicine and the Faculty of Maritime Studies. Desired general information included the student's sex, year of study, and the education programme at their faculty.

Total number of students, on both faculties, is 938. We did not include students of medicine on English language at the School of Medicine Split University, which are not autochthonous inhabitants.

A total of 274 students took part in the research, out of which 116 female students. The surveyed population included 102 students at the Faculty of Maritime Studies and 172 at the School of Medicine. The latter were additionally surveyed with regard to the year of study, i.e. the beginning and ending of their education programme.

THE STATISTICS PROCEDURES

The statistical data processing used the T-test for comparing independent variables. After the numerical value analysis of CAS, the objective was to find out differences across individual groups. The statistics package Medical filter version 15 was used for data processing. The results have been interpreted at the level of relevance $p < 0.0001$.

RESULTS

Table 1 shows quantitative results for all respondents with the achieved arithmetic mean and standard deviation. 274 students were surveyed. The presented questions provided the lowest value of 41 and the highest value of 150. The arithmetic mean was 115.1934 and the standard deviation amounted to 17.6117. The median for overall values was 114.

Figure 1 presents the distribution of the numerical data for the individual answers gathered through the CAS questionnaire. The lowest produced sum amounts to 41, referring to the most negative attitude to contraception. The highest

Table 1. Results obtained from all respondents with the arithmetic mean and standard deviation

Variable	Total
Sample size	274
Lowest value	41
Highest value	150
Arithmetic mean	115.1934
Median	114
Standard deviation	17.6117

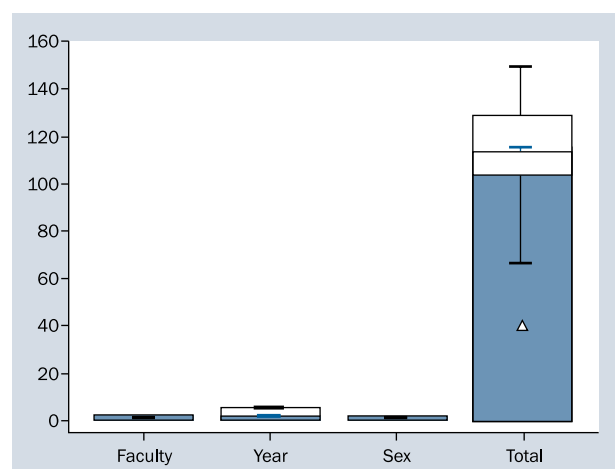


Figure 1. The four columns refer to faculty, year of study, sex and total

Table 2. Arithmetic mean of the students' responses by the year of study

Year	1	2	3	5	6
Number	82	80	22	25	65
Mean	119.646	107.037	110.364	124.52	117.662
95% CI	115.678 to 123.615	103.526 to 110.549	101.592 to 119.135	117.282 to 131.758	114.136 to 121.187
SD	18.0598	15.7805	19.7835	17.5336	14.2284

CI – confidence interval; SD – standard deviation

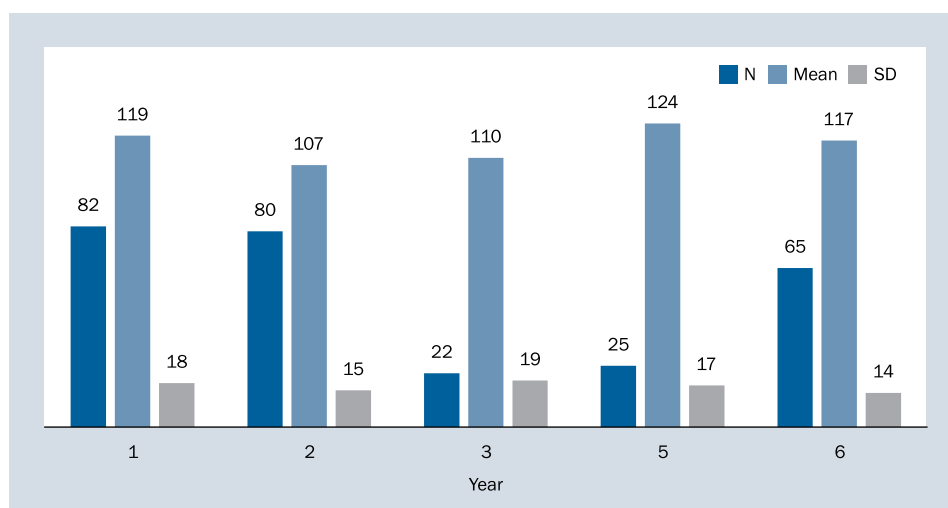


Figure 2. Arithmetic mean and standard deviation (SD) of the students' responses by the year of study

Table 3. Arithmetic mean of the students' responses grouped by the faculty

Faculty	1	2
Number	102	172
95% confidence interval	104.480 to 111.030	117.093 to 122.116
Standard deviation	16.6748	16.6847

T-test (assuming equal variances)
 Standard error = 2.0847
 Two-tailed probability – $p < 0.0001$

produced sum, referring to the most positive attitude to contraception, amounts to 150. Most of the answers are grouped within the interval between 102 and 127. The arithmetic mean amounts to 115.1934 and the median, as the score found at the exact middle of the obtained values of the sample, amounts to 114.

Table 2 presents the arithmetic mean and standard deviation with regard to the year of study of the respondents. There are no significant differences among the numerical values obtained from the students at the 1st, 5th and 6th year of study.

Figure 2 presents the distribution of the numerical data arithmetic mean and standard deviation of the students' responses by the year of study. There are no significant

differences among the numerical values obtained from the students at the 1st, 5th and 6th year of study.

Table 3 shows the arithmetic mean of the numerical values obtained by individual responses of the students with regard to their faculty. The application of the T-test produced a notable difference in the views of the surveyed population at the Faculty of Maritime Studies and the School of Medicine, with the probability of $p < 0.0001$.

Figure 3 reveals a distinct difference of numerical values produced by the views on contraception. The students of medical science have a more positive attitude to contraception than their peers at the Faculty of Maritime Studies.

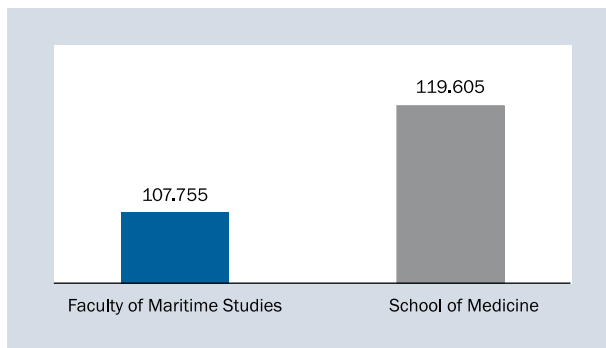


Figure 3. Comparison of the arithmetic means between the total student samples at the Faculty of Maritime Studies and the School of Medicine

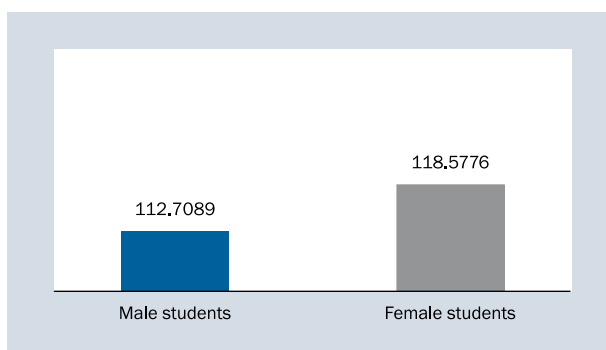


Figure 4. Arithmetic means of male students and female students

Table 4 shows the arithmetic means of the numerical values obtained by individual responses of the students with regard to their sex. The application of the T-test produced a considerable difference in the views, given the sex of the surveyed population.

Taking into account the respondents at both faculties, Figure 4 presents the comparison of the arithmetic means between the male and female students. There is a significant difference in the attitude to the use of contraception, which is more positive in female student population.

Table 5 shows that number of female students at the Faculty of Maritime Studies was relatively low, but they showed a more positive attitude toward contraception compared to male students. The male students of the Faculty of Medicine expressed a more positive attitude towards the female students from the same faculty.

The female students at the Faculty of Maritime Studies expressed a more positive attitude toward contraception compared to male students from the same faculty. The male students at the School of Medicine expressed a more positive attitude towards the female students from the same faculty. The male students at the Faculty of Maritime Studies had the lowest negative attitude about

Table 4. Arithmetic means of the students' responses grouped by the sex

	Male students	Female students
Arithmetic mean	112.7089	118.5776
Standard deviation	17.6903	17.0014

Table 5. Arithmetic mean of the students' responses grouped by the sex at the Faculty of Maritime Studies and School of Medicine

	Male students	Female students
Faculty of Maritime Studies	93	12
Mean	103.9131	118.2511
School of Medicine	63	106
Mean	119.8731	116.5181

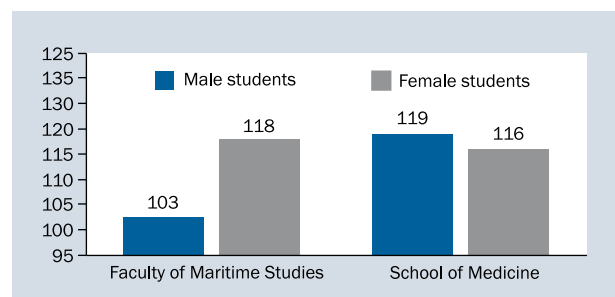


Figure 5. Arithmetic means of male students and female students at the Faculty of Maritime Studies and School of Medicine

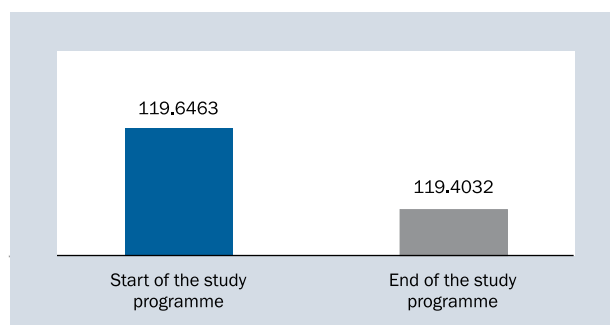
contraception in relation to all groups. The more negative attitude of male students in total at both faculties relative to female students in total at both faculties was influenced by the greater number of male students at the Faculty of Maritime Studies.

Table 6 shows the arithmetic means of the students' responses at the School of Medicine, with regard to the start and the end of the study programme. The students fell into two groups, those who just started studying and those who are about to complete their study programme. Although the knowledge of medical students varies at the start and at the end of the studies, the application of the T-test did not produce a major difference in their views.

Figure 6 presents the arithmetic means of the responses produced by the students at the School of Medicine at the beginning and at the end of their education. Just a slight difference can be noticed between their mean values so that their views on contraception almost do not vary over the study years, despite the knowledge, familiarisation,

Table 6. Arithmetic means of the students' responses at the School of Medicine, with regard to the start and the end of the study programme

Variable	Total	
Sample 1		
Filter	Year = 1	
Sample 2		
Filter	Year = 7	
	Sample 1	Sample 2
Sample size	82	62
Arithmetic mean	119.6463	119.4032
Standard deviation	18.0598	15.3018
Standard error of the mean	1.9944	1.9433
F-test for equal variances	P = 0.176	

**Figure 6.** Arithmetic means of the students' responses at the School of Medicine, with regard to the start and the end of the study programme

training and experience they gain over the course of the education process.

DISCUSSION

The goal of this research was to gain insights into the attitude of young people towards the use of contraception, as an important factor contributing to the sex health and reproductive health protection. The produced results confirmed two hypotheses that were set at the start of the research:

- female students have a more positive view on contraception than male students;
- male students at the Faculty of Maritime studies have positive attitudes towards contraception;
- health literacy affects the formation of views on contraception.

The more positive results obtained by female student population may result from higher level of familiarisation and knowledge about contraception and related health issues, as most of them attend study programmes at the School of Medicine. Although the number of surveyed fe-

male students at the Faculty of Maritime Studies was relatively low, they showed a more positive attitude toward contraception compared to female students at the School of Medicine. The male students at the School of Medicine expressed a more positive attitude towards the female students from the same faculty, which points to the fact that the positive attitude toward contraception among the students at the School of Medicine was not influenced by the higher number of female students. The more negative attitude of male students at both faculties relative to female students was influenced by the greater number of male students at the Faculty of Maritime Studies, who had the lowest negative attitude about contraception in relation to all groups. We expected that future seamen, because of their possible liberal worldviews, have a positive attitude toward contraception. Negative attitude of male students of Faculty of Maritime studies towards contraception is caused, the most probably, by low level of health literacy. These findings indicate that knowledge, rather than sex, plays the greatest role in shaping the attitude and that increasing the level of health literacy among students at the Faculty of Maritime Studies can influence at change in attitudes regarding contraception. The regression analysis has confirmed the second assumption and it has been found out that the knowledge about the research subject is a more important variable than the sex affiliation. The students at the Faculty of Maritime Studies in Split were involved in the survey because a part of their curriculum refers to health education, provided in the courses in First aid and Medicine for seafarers, as well as due to the risks associated with living separately from their families [2, 14, 15]. The research results have confirmed the importance of health literacy and continuing education of the young population with the purpose of sex disease prevention, reproductive health care and, consequently, improvement of the demographic image of the nation. It is especially important for seafarers because, in Croatia, they are the “bridges” for HIV infection into the heterosexual population [15]. The results of other surveys also indicate certain deficiencies in the existing prevention materials dedicated to migrant workers and seamen [1]. Unsatisfactory patterns of using condoms and poor familiarisation with the availability of HIV testing imply the need for new intervention strategies and education programmes aimed at changing the existing attitude [15].

One of the most efficient ways to influence the formation of attitude by means of knowledge is the promotion of health with an active approach to the familiarisation of children and adolescents with these issues, but the approach has to be carefully tailored to suit their age and reception abilities. Health promotion in school environment is the groundwork for improving health care, preventing diseases and ensuring the desired quality of life. Health

promotion is “enabling people to take control over their health and to improve it” [16].

Health promotion is based on the following principles:

1. Comprehensiveness (involving the community into adequate health promotion measures).
2. Continuity (achieved through inter-sector connections, harmonisation and organisation of health promotion in places where people actually live, work and spend their free time).
3. Integrity (refers to activities coping with various health aspects and to inter-sector approach to investments in health care).
4. The concept of health promotion in the community comprises a holistic approach to health, strengthening the individual and collective awareness and health responsibility in all policies [16].

The school represent the most important institution outside home socialisation and, at the same time, the secondary point of disease prevention and health promotion. Teachers carry out changes in the education processes and they should be aware of their relationship with students, changing its scope and direction according to their students' needs. Teachers should be systematically enabled to acquire knowledge in relevant life-related areas [17, 18]. It is important to maintain the communication process in order to make young people feel safer, and this communication has to be provided primarily at home and at school. The school is an integral part and active stakeholder in health promotion in a community. It is necessary to encourage cooperation among students, parents and all education and community personnel.

The goal of the global initiative is to increase the number of the so-called “Health promotion schools” or “Healthy schools”, with the purpose of reinforcing school capacities so that they might become a healthy place for learning, living and working. When promoting health in school environment it is important to maintain all activities intended for the implementation of health preservation and disease prevention in line with the cognitive abilities of children and adolescents. A health promoting school may have a positive impact on the outcomes relevant for health and education. There is a strong relation between good health and learning achievements, i.e. degrees acquired.

Croatia's national programme for HIV/AIDS prevention 2017–2021 assumes prevention activities during the education of adult seafarers, i.e. crew members on board ships. The programme anticipates the following activities:

- promotion of voluntary, anonymous and free counselling and testing across the seafaring population, i.e. ship crew members and their permanent sex partners;
- organising workshops for advisors (specialists in occupational medicine);

- creation, print and dissemination of the education and promotion material;
- training [19].

The providers of the programme include Croatia's Ministry of Health, Croatian Institute of Public Health, Croatian Institute for Health Protection and Safety at Work, Croatian Health Insurance Fund, University of Zagreb – Faculty of Philosophy, Andrija Štampar School of Public Health, private businesses and others. The programme is continuously carried out, and the performance indicators include:

- number of seafarers – ship crew members involved in counselling;
- performed training for counsellors;
- number of trained counsellors.

The programme is funded by the available resources of the Croatian Health Insurance Fund, national budget and donations [19].

CONCLUSIONS

After statistical analysis of the data produced through the questionnaires completed by a number of students at the University of Split School of Medicine and Faculty of Maritime Studies, the survey results lead to the following conclusions:

- students of medical science have a more positive attitude to contraception than their peers at the Faculty of Maritime Studies;
- there is a significant difference in the attitude to the use of contraception, which is more positive in female student population;
- male students at the Faculty of Maritime Studies had the most negative attitudes towards contraception in relation to all groups;
- responses produced by the students at the School of Medicine, at the beginning and at the end of their education, indicate just a negligible difference between their views on contraception, despite the knowledge, familiarisation, training and experience they gain over the course of the education process.

Considering the results obtained through the survey and the information from relevant sources, it can be concluded that it is necessary to enhance health literacy in the seafaring population, given the challenges in their working and living environment. For the same reason, there is a need to adjust the existing syllabi of medical courses and, accordingly, the university curricula, so that the future generations of seamen and seamwomen would become good stewards of personal, family and public health.

CONFLICT OF INTEREST

The authors whose names are listed have no affiliations with or involvement in any organisation or entity with any

financial interest (such as honoraria; educational grants; participation in speakers' bureaus; membership, employment, consultancies, stock ownership, or other equity interest; and expert testimony or patent-licensing arrangements), or non-financial interest (such as personal or professional relationships, affiliations, knowledge or beliefs) in the subject matter or materials discussed in this manuscript.

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