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Determination of Fish Consumption Habits of Students in Maritime High Schools: The Case of Turkey

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ABSTRACT
In this study, it has been aimed to determine the fish consumption habits of the students studying at high schools in the field of Maritime. This research is cross-sectional in nature. It has been found that the participants give importance to fish consumption, they prefer to eat fish because it is healthy, and it is the recommendation of family and friends that make them willing to consume a new fish species. In the consumption of fish, they prefer to consume fresh, fried fish, which are hunted and purchased from the fishermen's stall. It is thought that the necessity of health education for the development of fish consumption habits and increasing the fish consumption rate and the carrying out of these training with family and peer support can increase fish consumption.

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Denizcilik Alanındaki Liselerde Öğrenim Gören Öğrencilerin Balık Tüketim Alışkanlıklarının Belirlenmesi: Türkiye Örneği

ÖZET
Bu çalışmada, Denizcilik alanındaki liseler bünyesinde öğrenim görmekte olan öğrencilerin balık tüketim alışkanlıklarının belirlenmesi amaçlanmıştır. Bu araştırma kesitsel niteliktedir. Katılımcıların balık tüketimine önem verdikleri, balık yemeyi sağlıklı olduğu için tercih ettikleri, yeni bir balık türünü tüketmeye istekli hale getiren durumun aile ve arkadaş tavsiyesinin olduğu bulunmuştur. Balık tüketiminde avlanmış, balıkçı tezgahından satın alınan, taze, kızartılmış balık tüketmeyi tercih etmektedirler. Balık tüketim alışkanlıklarının geliştirilmesi ve balık tüketim oranının artırılmasına yönelik sağlık eğitiminin gerekliliğini ve bu eğitimlerin aile ve akran desteği ile yapılmasının balık tüketimini arttırabileceği düşünülmektedir.

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INTRODUCTION
In many countries of the world, the leading cause of death in humans as a result of disease are, cardiovascular diseases, high blood pressure, sugar, and cholesterol. In addition to hereditary factors, nutrition regimen also has a very important place in the basis of these diseases. The therapeutic role of fish meat in these diseases has been studied for a long time and positive results have been obtained in this regard. In addition, seafood is the only source of polyunsaturated long-chain fatty acids in the n-3 series, which has proven beneficial to health (Erci, 2020).

The fact that some members of the profession require continuity of health status in order to be able to work in the profession is also important for shipmen (captain, officers, crew members, and other people working on the ship) to work at sea. Candidates for shipmen and shipmen who are currently working can obtain work permits by evaluating their health status, subject to the Shipmen Health Directive, which covers the requirements for health status and health

examinations. According to this directive, shipmen are not allowed to work at sea in case of diseases such as endocrine and metabolic diseases, cardiovascular system diseases, which are closely related to nutritional status (Anonymous, 2021). In order to prevent these diseases, changes in lifestyle and eating habits are needed. Considering that healthy lifestyle behaviors that are effective in improving health are acquired during the adolescence period, which is accepted as the 10-19 age group according to the World Health Organization (Erci, 2020) and considering that this period determines what kind of adult the individual will be in the future, it is also important to acquire these behaviors in secondary and high school ages (Erci, 2020). Therefore, determining the habit of consumption of fish will be a guide for the studies to be carried out.

When the studies conducted around the world on fish consumption are examined, various studies have been found examining; the effects of demographic and socioeconomic characteristics of consumers on seafood consumption at home (Bashimov, 2017; Sen and Sahin, 2017; Islam et al., 2018; Terin, 2019; Cantillo et al., 2021; Dasgupta et al., 2021), the most preferred cooking methods (Gundogdu and Buyruk, 2021), awareness of quality and safety of fish products, purchasing behaviors and willingness to pay (Terin et al., 2016; Bao et al., 2018; Terin, 2019), fresh and frozen (Yigit et al., 2020; Ferfolja et al., 2022; Selvi et al., 2022) convenience and weight control (Thong and Solgaard, 2017), being delicious and having high nutritional value (Kirici et al., 2018; Sari et al., 2019). It is seen that studies conducted both in the world and in Türkiye are generally conducted on adults. It is a study in which fish consumption habits and preferences of high school students (Yigit et al., 2020). However, we could not find any study that questioned the fish consumption habits of shipmen and shipmen candidates.

Evaluating the nutritional habits of our young people, who are the guarantee of our future, is an important indicator in terms of determining health risks. The importance of fish consumption for chronic diseases that are considered to be related to nutrition is emphasized and the consumption among young people should be determined. According to TURKSTAT 2020 data, annual fish consumption per capita in our country is 6.7 kg was lower than the global consumption value of 20.5 kg (Anonymous, 2020).

It is necessary to increase the effectiveness of the studies to be done and the programs to be developed in secondary education institutions, considering that this value can be raised higher and while doing this, health behaviors that can be sustained in adulthood can be gained in adolescence. In this study, it was aimed to determine the fish consumption habits of the students studying at high schools in the field of Maritime throughout Türkiye.

MATERIAL AND METHOD

Study Design

This cross-sectional study was carried out in secondary education institutions providing education in the field of Maritime under the Ministry of National Education between 15 march-15 June 2018 in Türkiye. It is divided into seven regions that show similar characteristics in terms of climate and cultural characteristics in Türkiye. Only five of these regions have high schools providing maritime education. The schools to be included in the study were determined by lottery method to take one school from each region using cluster sampling method from schools in five regions throughout Türkiye (Group 1: Black Sea, Group 2: Aegean, Group 3: Marmara, Group 4: Mediterranean and Group 5: Eastern Anatolia regions). 1050 students in the maritime field in five regions formed the study universe of the research. Sample size; was determined as at least 823 with a misconception level of 0.01, a 95% confidence interval, and an 80% ability to represent the universe by using OpenEpi, version 3, publicly available statistical software (http://www.openepi.com). The study was completed with 832 participants (Group 1 n:148; Group 2 n:202; Group 3 n:143; Group 4 n:270; Group 5 n:69) who agreed to participate in the study selected by the nonprobability random sampling method. Reporting of the study was structured according to the STROBE checklist.

Data Collection and Tools

The data of the study were collected by the researchers through a questionnaire form in 15-20 minutes by making school visits to the students and using face-to-face interview method. In the research, a questionnaire consisting of 21 questions prepared in the light of the relevant literature was used as a data collection tool. The questionnaire consists of a descriptive features form and a form that questions fish consumption habits.

Descriptive features form: Form; consists of questions that question the age, gender, class, monthly income, height, and weight of the students.

Fish consumption habit form: Consists of questions like; what kind of meat groups and how often the students consume, the importance of fish consumption in the family, preferred meat group, why fish consumption is preferred, fish type, things to consider when buying fish, fish preparation methods, consumption frequency, consumption time, situations that make new fish consumption desirable, any training status about the fish on health and where it is taken from, to think that it is important for health, the duration of taking/using fish oil support and by whom

it is recommended to use it for what purpose (Bashimov, 2017; Sen and Sahin, 2017; Anonymous 2019; Sari et al., 2019; Terin et al., 2019; Yigit et al., 2020; Cantillo et al., 2021).

Analysis of Data

The data of the study were evaluated with SPSS 23.0 Windows software (SPSS Inc., Chicago, IL, USA). In the study, descriptive statistics (frequency, percentage, mean and median) and chi-square analysis were used to determine the descriptive characteristics of the participants and their relationship with their fish consumption habits. Statistically, $p<0.05$ was accepted as the significance level.

Ethical Principles of Research

Before starting the research, written permission and ethics committee approval were obtained from the institutions where the research was conducted (dated 16.06.2017, numbered 40465587-98). In addition, written and verbal consent was obtained from the students and their parents.

Limitations of the Research

The study is limited with students actively studying in high school of maritime in five regions included in the study. As the study is cross-sectional and depends on self-reported assessment, under-reporting is more likely to occur. This cross-sectional study cannot infer about causality.

RESULTS

It was determined that the mean age of participants is 16.88 ±0.88, they are 85.7% male, 40.0% of them are in the 11th grade in maritime field, 29.1% of them had a monthly income status of 324-405 €, 24.6% were trained in the importance of fish in terms of health and received this training by 58.0% through audio and visual media, and the participants' BMI average was 21.60 ±2.99 (Table 1).

Table 1 Distribution of participants by groups according to their introductory characteristi
Çizelge 1. Katılımcıların gruplara göre tanıtıcı özelliklerine göre dağılımı

	Total	Group 1	Group 2	Group 3	Group 4	Group 5
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
Gender						
Female	119(14.3)	9(6.1)	20(9.9)	17(11.9)	58(21.5)	15(21.7)
Male	713(85.7)	139(93.9)	182(90.1)	126(88.1)	212(78.5)	54(78.3)
Maritime field						
10th Grade	282(33.9)	48(32.4)	69(34.5)	65(45.5)	78(28.9)	22(31.9)
11th Grade	333(40.0)	46(31.1)	79(39.1)	61(42.7)	122(45.2)	25(36.2)
12th Grade	217(26.1)	54(36.5)	54(26.7)	17(11.9)	70(25.9)	22(31.9)
Monthly ıncome status						
324€ and less	144(17.3)	32()21.6)	43(21.3)	7(4.9)	36(13.3)	26(37.7)
325-405€	242(29.1)	49(33.1)	61(30.2)	38(26.6)	72(26.7)	22(31.9)
406-608€	211(25.4)	29(19.6)	46(22.8)	44(30.8)	82(30.4)	10(14.5)
≥609 €	235(28.2)	38(25.7)	52(25.7)	54(37.8)	80(29.6)	11(15.9)
Status of receiving education on the importance of fish in terms of health						
Educated	205(24.6)	48(32.4)	44(21.8)	23(16.1)	68(25.2)	22(31.9)
Uneducated	627(75.4)	100(67.6)	158(78.2)	120(83.9)	202(74.8)	47(68.1)
Education institution or persons**						
Health workers	86(42.0)	25 (52.1)	16(36.4)	11 (47.8)	24 (35.3)	10 (45.5)
Visual-audio media***	119(58.0)	23 (47.9)	28(63.6)	12(52.2)	44(64.7)	12(54.5)
		M±SD	M±SD	M±SD	M±SD	M±SD
Age	16.88±0.88	17.01±0.89	17.01±0.89	16.51±0.84	16.87±0.85	17.03±0.86
BMI	21.60±2.99	23.07±3.50	22.10±2.80	21.80±2.72	21.86±2.82	20.64±2.86

Group1: Blacksea Region, Group 2: Aegean Region, Group 3: Marmara Region, Group 4: Mediterranean Region, Group 5: East Anatolia Region
* Column percentage is taken
** From health workers/teachers within the scope of the lesson
*** Visual-audio media: television-radio, computer-internet, school's fishing club

When looking at the comparison of the consumption habits of the participants' meat group foods by groups, it was found; participants preferred the mostly red meat varieties (49.3%, Group 4) and preferred fish meat the least (5.6% Group 5) (Table 2).

When the distribution of the participants' opinions about fish consumption by group is examined; it was determined that fish consumption was emphasized in the family (71.6% Group 1), that they preferred to eat fish because it was healthy (71.4% Group 5), that they

became willing to consume a new type of fish with the advice of family and friends (60.9% Group 2), and that opinions about fish consumption differed statistically by group ($p<0.05$) (Table 3).

Table 2 Comparison of the meat group food consumption habits of the participants according to the groups
Çizelge 2. Katılımcıların et grubu besinleri tüketim alışkanlıklarının gruplara göre karşılaştırılması

	Total	Group 1	Group 2	Group 3	Group 4	Group 5	Test and p value
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	
Preferred meat type*							
Red meat	414(46.5)	82(48.8)	108(48.2)	58(39.5)	138(49.3)	28(38.9)	X^2=27.524
White meat	365(41.0)	66(39.3)	80(35.7)	69(46.9)	110(39.3)	40(55.6)	p=0.006
Fish	11(12.6)	20(11.9)	36(16.1)	20(13.6)	32(11.4)	4(5.6)	
Frequency of red meat consumption							
Once a week	347(41.7)	42(28.4)	91(45.0)	58(40.6)	126(46.7)	30(43.5)	X^2=29.958
2-3 times a week	194(23.3)	40(27.0)	36(17.8)	41(28.7)	60(22.2)	17(24.6)	p=0.003
More than 3 times a week	48(5.8)	11(7.4)	8(4.0)	3(2.1)	22(8.1)	4(5.8)	
Non-opinionated	243(29.2)	55(37.2)	67(33.2)	41(28.7)	62(23.0)	18(26.1)	
Frequency of white meat consumption							
Once a week	295(35.5)	36(24.3)	78(38.6)	57(39.9)	106(39.3)	18(26.1)	X^2=41.335
2-3 times a week	268(32.2)	44(29.7)	63(31.2)	48(33.6)	84(31.1)	29(42.0)	p=0.000
More than 3 times a week	90(10.8)	24(16.2)	8(4.0)	13(9.1)	32(11.99	13(18.8)	
Non-opinionated	179(21.5)	44(29.7)	53(26.2)	25(17.5)	48(17.8)	9(13.0)	
Frequency of fish consumption							
Once a week	426(51.2)	54(36.5)	109(54.0)	83(58.0)	146(54.1)	34(49.3)	X^2=34.720
2-3 times a week	109(13.1)	33(22.3)	29(14.4)	12(8.4)	26(9.6)	9(13.0)	p=0.001
More than 3 times a week	28(3.4)	11(7.4)	3(1.5)	3(2.1)	10(3.79	1(1.4)	
Non-opinionated	269(32.3)	50(33.8)	61(30.2)	45(31.5)	88(32.6)	25(36.2)	

Group1: Black sea Region, Group 2: Aegean Region, Group 3: Marmara Region, Group 4: Mediterranean Region, Group 5: East Anatolia Region * Calculated over multiple responses

Table 3 Distribution of participants' views on fish consumption by groups
Çizelge 3. Katılımcıların balık tüketimi ile ilgili görüşlerinin gruplara göre dağılımı

	Total	Group 1	Group 2	Group 3	Group 4	Group 5	Test and p value
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	
Thinking that fish consumption is important in the family							
Yes	510(61.3)	106(71.6)	127(62.9)	66(46.2)	166(61.5)	45(65.2)	X^2=21.135
No	322(38.7)	42(28.4)	75(37.1)	77(53.8)	104(38.5)	24(34.8)	p=0.000
Reasons for preferring to eat fish**							
Economic	37(4.3)	2(1.4)	12(6.4)	7(4.9)	10(3.7)	6(8.6)	X^2=24.138
Healthy	430(52.6)	75(50.7)	94(50.0)	67(46.9)	144(53.7)	50(71.4)	p=0.002
Tasty	352(43.1)	71(48.0)	82(43.6)	69(48.3)	114(42.5)	14(20.0)	
The condition that makes it desirable to consume a new fish type**							
Television-radio	168(22.3)	43(32.3)[2,4]	24(13.0)	34(26.2)[2]	42(17.2)	25(40.3)[2,4]	X^2=37.875
Computer-internet, newspaper-magazine	204(27.1)	40(30.1)	48(26.1)	33(25.4)	66(27.0)	17(27.4)	p=0.000
Recommendation of family and friends	381(50.6)	50(37.6)	112(60.9)[1,5]	63(48.5)	136(55.7)[5]	20(32.3)	

Group1: Blacksea Region, Group 2: Aegean Region, Group 3: Marmara Region, Group 4: Mediterranean Region, Group 5: East Anatolia Region
[1-5] It shows which group in the column related to fish consumption habits originates from the difference
* Column percentage is taken ** Calculated over multiple responses

When looking at the comparison of fish consumption habits of the participants; it was determined that they prefer the type of fish caught at the weight (52.9% Group 3), that the fishing stall is preferred when purchasing fish (85.5% Group 1), that the freshness aspect is taken into consideration when buying fish (52.9% Group 2), that frying method was preferred for fish preparation (38.8% Group 1), that the frequency of fish consumption is once a week (51.5% Group 2), that the winter season is preferred for fish consumption (55.8% Group 3) and that the use of fish oil support is at a low (29.7% Group 1), that this period is 2 months and below (67.6% Group 4) and that the recommendation to use fish oil was received from a health professional (79.5% Group 1) and that there was a statistical difference between the groups ($p<0.05$) (Table 4).

Table 4 Comparison of fish consumption habits of the participants according to the groups
Çizelge 4. Katılımcıların gruplara göre balık tüketim alışkanlıklarının karşılaştırılması

	Total	Group 1	Group 2	Group 3	Group 4	Group 5	Test and p
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	value
Preferred fish kind*							
Culture (Farm breeding)	371(25.9)	66(26.1)	87(25.7)	62(24.3)	130(27.0)	26(24.8	X^2=1.486
Caught	728(50.8)	125(49.4)	174(51.5)	135(52.9)[5]	242(50.2)	52(49.5	p=0.993
Frozen	334(23.3)	62(24.5)	77(22.8)	58(22.7)	110(22.8)	27(25.7)	
Preferred places to buy fish*							
Fishermen's stalls	561(70.9)	118(85.5)[2,4]	116(63.7)	113(85.6)[2,4]	168(65.6)	46(73.0)	X^2=66.925
Market	48(6.1)	3(2.2)	8(4.4)	3(2.3)	28(10.9)[1,3]	6(9.5)	p=0.000
Fish market	112(14.2)	4(2.9)	47(25.8)[1,3]	8(6.1)	46(18.0)[1,3]	7(11.1)	
Other/fish farm , fishing	70(8.8)	13(9.4)	19(10.4)	13(9.8)	20(7.8)	5(7.9)	
Considerations when buying fish*							
Freshness	616(48.2)	109(38.8)	137(52.9)	102(51.3)	214(49.5)	54(50.9)	X^2=12.585
Cheapness	158(12.4)	47(16.7)[2,3]	26(10.0)	18(9.0)	52(12.0)	15(14.2)	p=0.127
Season	442(34.69	79(28.1)	90(34.7)	75(37.7)	162(37.5)	36(34.0)	
Preferred methods of fish preparation							
Grilled	448(32.0)	88(37.9)	105(33.7)	69(27.3)	146(30.2)	40(34.2)	X^2=22.036
Oven baked	304(21.7)	36(15.5)	66(21.2)	50(19.8)	120(24.8)[1]	32(27.4)[1]	p=037
Fried	503(36.0)	90(38.8)	111(35.6)	98(38.7)	168(34.7)	36(30.8)	
Steamed	143(10.2)	18(7.8)	30(9.6)	36(14.2)[1]	50(10.3)	9(7.7)	
Fish consumption frequency							
Never	80(9.6)	8(5.5)	29(14.4)	9(6.3)	26(9.6)	8(11.6)	X^2=40.570
Once a week	376(45.2)	53(35.8)	104(51.5)	71(49.7)	120(44.4)	28(40.6)	p=0.000
More than once a week	113(13.6)	36(24.3)	26(12.9)	15(10.5)	30(11.1)	6(8.7)	
Once a month	263(31.6)	51(34.5)	43(21.3)	48(33.6)	94(34.8)	27(39.1)	
Preferred season for fish consumption*							
Winter	606(40.8)	115(41.4)[5]	141(35.6)	121(55.8)[4,5]	190(38.8)	39(36.8)	X^2=41.740
Spring	265(17.8)	48(17.3)[3]	83(21.0)[3]	20(9.2)	88(18.0)[3]	26(24.5)[3]	p=0.000
Summer	317(21.3)	55(19.8)[3]	93(23.5)[3]	29(13.4)	114(23.3)[3]	26(24.5)[3]	
Fall	299(20.1)	60(21.6)	79(19.9)	47(21.7)	98(20.0)	15(14.2)	
The status of using fish oil supplements							
User	206(24.8)	44(29.7)	45(22.3)	38(26.6)	74(27.4)	5(7.2)	X^2=15.260
Non-user	626(75.8)	104(70.3)	157(77.7)	105(73.4)	196(72.6)	64(92.8)	p=0.004
Fish oil use time (n=206)							
2 months and less	110(53.4)	15(34.1)	20(44.4)	20(52.6)	50(67.6)	5(100.0)	X^2=18.384
More than 2 months	96(46.6)	29(65.9)	25(55.6)	18(47.4)	24(32.4)	-	p=0.001
Person(s) from whom the recommendation to use fish oil was taken (n=206)**							
Health professional	115(55.8)	35(79.5)	24(53.3)	24(63.2)	30(40.5)	2(40.0)	X^2=18.499
Non-health-professional sources	91(44.2)	9(20.5)	21(46.7)	14(36.8)	44(59.5)	3(60.0)	p=0.001

Group1:Blacksea Region, Group 2:Aegean Region, Group 3: Marmara Region, Group 4: Mediterranean Region, Group 5: East Anatolia Region

[1-5] It shows which group in the column related to fish consumption habits originates from the difference.

[*] Health professionals: Doctor, dietitian, nurse-midwife, pharmacist
Non-health-professional sources: Friends, relatives, media

DISCUSSION

In this section, the findings of the research conducted to determine the fish consumption habits of future sailors (shipmen), the training status of the participants on the importance of fish in terms of health, their meat consumption habits, their opinions on fish consumption, and their fish consumption habits were discussed.

When the education status of the participants on the importance of fish in terms of health was examined, it was determined that one out of four people received education and more than half of them received this education through visual and audio media. According to the Turkish Nutrition and Health Survey, individuals between the ages of 15-18 are affected by food and beverage advertisements at a rate of 37.9%, with the group most affected by advertisements compared to other age groups (Anonymous, 2014). This suggests that advertisements can be an effective way to raise awareness about the importance of fish for health.

In the study, when the meat group food consumption habits were examined; it was found that the participants preferred red meat in the first place and fish meat in the third place, that red meat was consumed mostly in the Black Sea Region and fish

meat was consumed in the Aegean Region. When the studies are examined, it is stated that fish consumption preference comes after chicken and red meat and fish meat is preferred in the third place (Kirici et al., 2018; Sarı et al., 2019; Yigit et al., 2020; Selvi et al., 2022). Local studies show that fish meat is preferred the least. It is stated that the reasons for the less consumption of fish meat may be due to the "difficult to eat fish and cleaning, difficulty of accessing to fresh fish, price, taste and smell of fish meat, not availability of wanted fish type" (Kirici etal., 2019; Yigit et al., 2020; Selvi et al., 2022). These situations can also be explained by the low rate of fish consumption in this study.

In the study, when the consumption habits of meat and meat products were examined, it was found that the rate of consumption of fish meat two or three times a week was 13.1%. It is stated that the frequency of fish consumption 1-2 times a week in individuals over the age of 20 in Türkiye is 17.2% (Anonymous, 2014). In local studies, it is also seen that it is consumed every fifteen days and one times a month (Terin et al., 2016; Selvi et al., 2022). According to the nutrition guide specific to Türkiye, it is stated that it is very important for children between the ages of 15-18 to consume 2 servings of fish per week in terms of growth and development (Anonymous, 2015). In addition, according to TURKSTAT 2020 data, it is stated that the average fish consumption per capita is 6.7 kg, and this rate is quite low in this group. It is accepted that the energy content of fish, especially rich in protein, is lower than red and white meat, and that "omega-3 (n-3), eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA)" contents are high (Anonymous, 2015). Due to the beneficial effects of omega-3 fatty acids in the prevention and treatment of diseases such as heart disease, cancer, diabetes, and high blood pressure that affect human health, the low consumption rate requires more emphasis on awareness studies in this regard.

When the opinions of the participants about fish consumption were examined, it was seen that the Black Sea Region gave the highest importance to fish consumption in the family, and the Marmara Region thought that fish was important for health. It is seen that the Black Sea Region takes the first place in the production made with seafood fishing in Türkiye, followed by the Aegean and Marmara regions (Anonymous, 2020). The fact that individuals are available regionally suggests that it increases the level of awareness about fish consumption.

Looking at the participants in general, it was seen that one out of every two participants preferred to eat fish because it is healthy and they became willing to consume a new type of fish with the advice of family and friends. Studies have found that fish meat is considered important because it is healthy, because of nutritional value and taste (Bashimov, 2017; Sen and Sahin, 2017; Kirici et al., 2018; Sari et al., 2019) and one out of four people think that advertisements affect fish consumption (Bashimov, 2017). This brings to mind that commercials can be an effective way for studies of awareness about the significance of fish in terms of health. Also it is stated that study carried out in order to reveal the habits and preferences of seafood consumption of high school students, reported that they consume fish meat for healthy and balanced diet (Yigit et al., 2020). It is an indication that families, which have positive or negative effects on the shaping of children's behaviors, have important effects on the acquisition of nutritional behaviors and peer interaction also has an undeniable effect.

When the fish consumption habits of the participants were examined, it was found that they preferred to buy the fish caught, fresh, and from the fishermen's stalls.

According to the literature, it is stated that consumers prefer caughted and freshness or frozen, price, tasty, local fish market, fishbone(Terin et al., 2016; Bashimov, 2017; Sen and Sahin, 2017; Kirici et al., 2018; Sari et al., 2019; Rahman and Islam, 2020; Yigit et al., 2020). It is seen that while buying fish abroad, consumers were willing to pay more for domestic to imported production and fresh to frozen fish (Alam and Alfnes, 2020).

It was found that almost four out of ten people preferred the frying method in fish preparation in all groups, the most preferred method of grilling and frying was in the Black Sea region, the method of cooking in the oven was preferred in Eastern Anatolia, and the method of steaming was preferred in the Marmara region. In a study conducted with high school students, similar results were obtained with this study. As a method of cooking fish, it has been determined; that the first choice was fried (86.41%) and the second choice was grill (31.84%) (Yigit et al., 2020). In the literature, it is recommended to use fat-free and low-fat cooking methods such as "boiling, steaming, oven and grilling" as cooking techniques in order to be able to eat healthily and prevent health problems that may arise due to eating habits.

Regional studies also show that frying is the most prefered cooking method (Bashimov, 2017; Gundogdu and Buyruk, 2021; Selvi et al., 2022) It is stated that throughout Türkiye, 51.8% of the fish is consumed by frying and 38% by baking, grilling, cooking in a teflon pan (Anonymous, 2014; Anonymous, 2019). For this reason, it is clear that awareness studies should be focused on fish cooking methods and their effects on health.

When the preferred season for fish consumption was examined, it was found that the winter season (40.8%) was preferred the most. In the local studies, it is known that the rate of fish consumption in the winter season

varies between 51.3% and 84.1% (Terin et al., 2016; Bashimov, 2017; Kirici et al., 2018; Dasgupta et al., 2021; Selvi et al., 2022). According to the results of the local study on fish consumption habits, the high rate of consumption in the winter season is similar throughout Türkiye. The fact that processed products are not very common in Türkiye leads to consumption in the winter season, when hunting is the highest, which offers the opportunity to consume fresh.

It was found that the use of fish oil supplementation of the participants was 24.8% in all groups, and the recommendation to use fish oil supplement was 55.8% recommended by health professionals. In addition, in the study, it was determined that the rate of use in the Mediterranean region was high. In the study conducted to determine the nutritional support usage status of individuals aged 12 and over throughout Türkiye, it is stated that omega-3 fatty acids are used at the rate of 0.3% in the last 7 days, 0.4% in urban areas, and 0.1% in rural areas, and it is mostly in the Mediterranean region (1.0%) (Anonymous, 2014). The fact that the production made by seafood fishing in Türkiye is lower in the Mediterranean region suggests that fish oil supplement usage rate increases due to the lack of access to fresh fish.

CONCLUSION

It was determined that future sailors (shipmen) are aware of the importance of fish in their fish consumption habits in terms of health, they care about the advice of family and friends in the consumption of a new fish species, and the number of fish consumed is not in the amount, shape and frequency recommended for adequate and balanced nutrition. This study presents beginning, generalizable data about maritime students' knowledge about fish consumption in Türkiye. The results of the study show that maritime students in Türkiye are not adequately educated with appropriate knowledge for fish consumption. School health nursing, which is one of the fields of Public Health Nursing, reveals the necessity of health education for the importance of fish in terms of health. With the support of family and peers in these training, fish consumption can be increased among students in secondary education institutions. Particularly in primary and secondary schools, it is recommended to conduct lectures, information seminars, campaigns and awareness studies of relevant public institutions on the importance of fish meat for health. In addition, in order to increase the rate of fish consumption in every season, processed fish consumption culture should be expanded. Future studies are recommended to consider conducting longitudinal and experimental methods to address these limitations. Although the study results are limited to the Turkish adolescent of interest, they could be used as a starting point for a future study in other countries' school health education curricula. This study provides baseline data that encourages researchers to conduct intervention studies.

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The authors declare that they have contributed equally to the article.

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