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Musculoskeletal Health Problems Among Kuwaiti Fishermen: What Do Statistics Say?

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Fishing is a physically and mentally demanding profession, often characterized by challenging working conditions. This study aims to assess the prevalence of musculoskeletal pain among Kuwaiti fishermen and identify the contributing factors, focusing on spine injuries. Using a cross-sectional survey approach and the Whole-Body Vibration Questionnaire, we collected data from a random sample of Kuwaiti fishermen. The statistical analysis examined various aspects of musculoskeletal pain, including lower back, neck, and shoulder pain. The study yields valuable insights and recommendations to address Kuwaiti fishermen's health problems.

keywords: Statistical Analysis, Musculoskeletal Pain, Health Problems, Kuwaiti Fishermen, Whole-Body Vibration.

1 Introduction

High-speed crafts (HSCs) are widely used for transportation by coastguards and racing athletes, but they often lead to detrimental health effects among seafarers. These effects

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range from motion sickness to severe musculoskeletal disorders, fatigue, and stress Ensign et al. (2000); Raby and McCallum (1997); Stevens and Parsons (2002); Wadsworth et al. (2008). Such conditions result from various factors, including vessel type, speed, and duration. HSCs, known for their speeds exceeding 40 knots, present unique challenges to occupants (ABCD Group, 2008). Recent comprehensive research by Nørgaard et al. (2021) highlights work-related musculoskeletal disorders among occupational fishermen.

The high-speed nature of these vessels can cause the hull to separate from the water, subjecting occupants to significant impact forces from sea waves (Imaekhai, 2018; Kambaru et al., 2021). Working conditions on high-performance marine craft, characterized by stochastic wave patterns, challenge the safety of boat occupants. Whole-body vibration (WBV) exposure emerges as a distinct risk factor for adverse health effects (Bovenzi and Hulshof, 1998; Morrison et al., 1999; Olausson, 2012). Types of occupant complaints related to WBV include acute injuries from severe isolated shocks, chronic injuries from severe shocks or repeated moderate shocks, and performance degradation due to shock-related fatigue and discomfort (Poulsen et al., 2014). Epidemiological studies highlight the health effects of prolonged exposure to vibration and repeated shocks Bovenzi and Hulshof (1998); Olausson and Garme (2015); Wadsworth et al. (2008). Numerous studies link exposure to repeated impacts on HSCs with increased cases of low back pain (LBP) and degenerative disorders of the spine (DDS) (Morrison et al., 1999), with vertical accelerations posing the most significant risk to the lumbar spine (Olausson, 2012). WBV and repeated impacts contribute to acute and chronic spinal injuries among HSC occupants, with potential vibrations reaching up to 20g.

In the short term, relatively brief exposure to vibration aboard HSCs can result in immediate discomfort, fatigue, or motion sickness, leading to decreased work performance (Raby and McCallum, 1997). In contrast, long-term exposure can cause severe disability and chronic back injuries, often necessitating premature retirement (Raby and McCallum, 1997; Stevens and Parsons, 2002).

2 Background

While the physical strain associated with commercial fishing in countries like Kuwait has decreased compared to older methods, it remains significant, influenced by factors like weather and waves. The fishing industry is considered hazardous, with fishermen more prone to musculoskeletal discomfort than the general population. Safety measures and equipment improvements have enhanced the physical work environment in Kuwaiti fisheries, making loading more ergonomic on new vessels.

However, historical data indicates persistent issues. In a study from 1642, nearly half of the participants reported low back pain in the previous year (Törner et al., 1988). A cohort study in North Carolina found that low back pain occurred 52 percent of the time among 215 fishermen (Lipscomb et al., 2004). A UK cross-sectional study in 2007 revealed that 7 percent of 210 fishermen had consulted a doctor for lower back pain (ABCD Group, 2008). A study conducted in the Aegean Sea in 2009-2010 reported that 84 percent of respondents suffered musculoskeletal issues, leading to numerous doc-

tor visits. Similarly, a 2011 study in Sri Lanka found that 61 percent of participants reported musculoskeletal issues, with 36.6 percent experiencing lower back pain. However, population-based methods for reducing selection bias related to job-associated pain remain underexplored.

Few studies have examined the variables contributing to musculoskeletal pain in fishermen. The North Carolina cohort study (Stevens and Parsons, 2002; Lipscomb et al., 2004) identified factors such as age, years of smoking, length of time worked, occupation, type of fishing and gear, job title, and part-time employment as potential contributors to low back pain. It suggested that low back pain risks might be higher for individuals aged 18 to 29 and those with previous low back pain but lacked information on job characteristics for those suffering from low back pain.

To address these gaps, this research explores the prevalence of musculoskeletal discomfort among Kuwaiti fishermen and identifies contributing factors. We anticipate our findings will provide valuable insights due to structural changes in the fishing industry and reduced effort in modern fishing practices.

3 Subject and Method

3.1 Setting and Design

This study adopted a cross-sectional survey design and targeted a random sample of Kuwaiti fishermen. The survey focused on musculoskeletal pain, explicitly addressing lower back, neck, and shoulder pain, as well as pain in other body areas such as the hands, neck, knees, upper back, elbow, hips, and feet. The questionnaire used in this study was based on a prototype health surveillance scheme for Whole-Body Vibration (WBV) that was previously developed (Pope et al., 2002).

3.2 Study Population

The study population consisted of Kuwaiti fishermen.

3.3 Study Sample

A simple random sample of 128 Kuwaiti fishermen was selected for the study. 124 fishermen received the study questionnaire, with 115 providing valid responses. Nine questionnaires were excluded due to lack of validity, resulting in a high response rate of 92.7%.

3.4 Procedure

The questionnaire used in this study was divided into four parts:

- General questions about fishing and sailing practices, including duration, methods, machines, position, and preferences.

- Questions related to lower back problems.
- Questions related to neck problems.
- Questions related to shoulder problems.

3.5 Reliability and Validity

Five specialist physicians from Kuwait University were consulted to ensure the validity of the questionnaire. They provided feedback on the questionnaire's suitability for the study sample, language appropriateness, and relevance of the study questions. The questionnaire was then refined based on their feedback. The reliability coefficient (Cronbach's Alpha) was calculated, resulting in a high stability coefficient of approximately 0.91, indicating strong internal consistency among the questions.

4 Statistical Analysis

Statistical analysis was performed using the SPSS software package. Descriptive statistics, such as percentages and ratios, were calculated using frequency tables. Correlation coefficients were used to assess relationships between study questions and back, neck, and shoulder pain questions for the past week and year. The Wilcoxon Signed Rank Test was employed to evaluate differences in back, neck, and shoulder pain between the past year and the past week.

5 Study Results

Firstly: Descriptive Analysis The relative frequency distributions were used to find the percentages of the sample responses for the study questions and the lower back, lower neck, shoulder pains, and the type of jobs. Also, the summary statistical measures are used to study the behavior of age, length, and weight. These results are shown below in Tables 1 to 6.

Table 1: The Percentage of the Study Questions

No.	Subject	Frequency	Percentage (%)
1	How long have you been fishing?		
	1-3 years	9	7.8
	4-7 years	12	10.4
	8-12 years	22	19.1
	13-18 years	20	17.4
	18-25 years	14	12.2
	More than 25 years	38	33.0

Table 1: *continued*

No.	Subject	Frequency	Percentage (%)
2	Do you still practice fishing?		
	Yes	109	94.8
	No	2	1.7
	I quit fishing	4	3.5
3	How often do you go sailing?		
	Once a week	37	32.5
	Twice a week	28	24.6
	3 days a week	16	14.0
	4 days a week	8	7.0
	5 days a week	6	5.3
	1-2 in a month	19	16.7
4	Which month(s) do you prefer for sailing?		
	February	1	0.9
	June	1	0.9
	August	2	1.8
	November	1	0.9
	All the year	49	43.0
	More than 1 month	60	52.6
5	How big is the boat you sail in?		
	14' feet	6	5.3
	16' feet	3	2.6
	18' feet	10	8.8
	20' feet	6	5.3
	21' feet	13	11.4
	24' feet	15	13.2
	27' feet	8	7.0
	30' feet	9	7.9
	More than 30' feet	31	27.2
	More than one size	13	11.4
6	What is the power of the boat's engine you sail in? (Horsepower)		
	40-55	10	8.7
	60-95	5	4.3

Table 1: *continued*

No.	Subject	Frequency	Percentage (%)
	100-160	24	20.9
	165-200	39	33.9
	205-300	28	24.3
	More than one size	9	7.8
7	How many machines do you use?		
	1	36	34.6
	2	67	64.4
	4	1	1.0
8	What is the position of your body while sailing?		
	Seated area	52	45.2
	Sitting on the deck	30	26.1
	Sitting on a pillow	14	12.2
	Standing	11	9.6
	More than 1 position	8	7.0
9	Which zone do you choose while sailing?		
	Front	11	9.9
	Middle	55	49.5
	Rear	44	39.6
	More than one position	1	0.9
10	Which method do you use for fishing?		
	Fishing line	91	79.8
	Fishing kit	2	1.8
	Fishing net	1	0.9
	Fishing rod	1	0.9
	More than one way	19	16.7
11	Which method do you use to remove the fishing net from the water?		
	I do not use fishnet	61	63.5
	Fishing net machine	25	26.0
	Manually	9	9.4
	More than one way	1	1.0
12	Do you smoke?		
	Yes	51	44.3

Table 1: *continued*

No.	Subject	Frequency	Percentage (%)
	No	50	43.5
	I quit smoking	14	12.2
13	Do you regularly do other sports activities?		
	Yes	60	54.5
	No	50	45.5
13a	Mention the type of activity		
	Running	6	10.7
	Swimming	13	23.2
	Walking	18	32.1
	Roll skate	1	1.8
	Football	10	17.9
	Diving	1	1.8
	Shooting	3	5.4
	Agriculture	1	1.8
	Bodybuilder	2	3.6
	Squash Game	1	1.8

Table 1 shows that the sample study shows that 33.0% have been fishing for more than 25 years, 94.8% are still fishing, of which 32.5% sail once a week for more than one month, with a percentage of 52.6%. They use more than 30 feet of boats in their sailing, with 27.2% and 33.9% using 165-200 kinds of boat machines, where 64.4% used two machines. Also, the results show that 45.2% of the body sitting on the boat seat while sailing was positioned in the middle of the boat, followed by the back with percentages of 49.5% and 39.6%, respectively. In addition, 79.8% use the Thread–Medar means to catch fish, whereas the majority, 63.5%, are not applying any means to raise the Gargoors, whereas 26.0% are raising the Gargoors by machines. Finally, the results show that they are smoking or not smoking almost the same, with percentages of 44.3% and 43.5%, respectively, whereas 12.2% give up smoking as well, and 54.5% of them are regularly doing other sports activities where their sports activities are walking with 32.1% followed by swimming with 23.2%.

Table 2: The Percentage of the Job Type of the Study Sample

Job Type	Frequency	Percentage (%)
Department Head	2	1.8
Teacher	6	5.5

Job Type	Frequency	Percentage (%)
Eng. Assistance	2	1.8
Student	13	11.8
Employee	39	35.5
Driver	2	1.8
Professor	1	0.9
Retired	18	16.4
Technical	5	4.5
Engineer	4	3.6
Lawyer	1	0.9
Educational	1	0.9
Soldier	2	1.8
Trader	2	1.8
Military	8	7.3
Dean	1	0.9
Manager	2	1.8
Captain	1	0.9
Total	110	100.0

Table 2 shows that the type of job of the study sample was that the majority are employees, with 35.3%, followed by the retired, which forms 16.4%. The most negligible percentage is all the professors, lawyers, educators, deans, and captains, with equal percentages of 0.9%.

Table 3: The Summary Statistics of Age, Length, and Weight of the Study Sample

	N	Min	Max	Mean	Std. Dev.
Age	113	16	70	40.18	12.341
Length	110	120	196	172.90	8.769
Weight	112	40	130	82.21	14.148

Table 3 above shows that the mean age is 40.18 years with a standard deviation of 12.341 years, while the ages range between 16 and 70 years old. Also, the mean length is 172.90 cm with a standard deviation of 8.769 years, while the length varies between 120 to 196 cm. The mean weight is 82.21 kgs with a standard deviation of 14.148 kgs, while the weight ranges between 40 to 130 kgs.

Table 4: The Percentage of the Lower Back Pain of the Study Sample

No.	Subject	Percentage of Last Week (%)	Percentage of Last Year (%)
1	Do you suffer from lower back pain		
	Never	39.2	23.1
	Sometimes	31.1	40.0
	Regularly	29.7	36.9
2	What kind of pain/issue do you suffer from? (Choose as many as applicable)		
	N/A	27.3	15.6
	Back pain only	27.3	34.4
	Leg pain/ temporary symptoms	12.1	15.6
	Back and leg pain/ temporary symptoms	33.3	34.4
3	How many times have you experienced these pains?		
	never	25.4	14.3
	once	29.9	4.8
	2-5 times	17.9	23.8
	6-10	0.0	20.6
	More than 10 times	26.9	36.5
4	For how long does the pain usually last?		
	N/A	20.6	11.3
	Sometimes in a day	42.9	41.9
	1-2 days	30.2	24.2
	3-6 days	0.0	6.5
	1-3 week	0.0	4.8
	1-3 month	0.0	1.6
	3-6 month	0.0	1.6
	always	6.3	8.1
5	How long have you usually been unable to cope with your routine tasks due to back and leg pain?		
	I don't stop	80.3	84.5
	3-5 days	4.9	0.0
	1-2 days	13.1	0.0

Table 4: *continued*

No.	Subject	Percentage of Last Week (%)	Percentage of Last Year (%)
	1-4 weeks	0.0	13.8
	1-3 months	0.0	1.7
	More than 5 days	1.6	0.0
6	Has your doctor ever informed you about your back pain? For example through a diagnosis		
	Yes	27.9	28.6
	No	72.1	71.4
7	Have you ever had a back injury that required a medical visit?		
	Yes	18.8	0.0
	No	81.2	0.0
8	What treatment did your doctor prescribe you? (Anti-inflammatory drugs painkillers physical therapy surgery etc.)		
	Yes	39.6	42.5
	No	60.4	57.5
9	Is there any movement or activity that causes this pain?		
	Yes	45.2	43.8
	No	54.8	56.3
10	Does a type of activity increase/worsen the pain?		
	Yes	35.2	36.7
	No	64.8	63.3
11	Do you usually have back pain while or immediately after driving?		
	Yes	34.8	34.5
	No	65.2	65.5
12	Do you usually have back pain while riding a boat or immediately after getting off the boat?		
	Yes	44.4	48.1
	No	55.6	51.9

Table 4 shows the following:

1. Lower back pain never happened last week, with a percentage of 39.2%, whereas it sometimes happened last year with 40.0%.

2. Last week's problems were back and leg pain, with a percentage of 33.3%, whereas both the back pain only and back and leg pain last year had equal percentages of 34.4%.

3. The number of times they were through this pain was 29.9% last week, whereas more than ten times with a percentage of 36.5% last year.

4. The pain continued in a day for last week with a percentage of 42.9% and last year with 41.9%.

5. The results show that they don't stop working because of back pain, with a percentage of 80.3% for last week and 84.5% for last year.

6. They have never been diagnosed by a doctor, with 72.1% for last week and with a percentage of 71.4% for last year.

7. They have never had a back injury that required a medical visit, with a percentage of 81.2% for last week and no percentage for last year.

8. They have never been prescribed any treatment by their doctors, with a percentage of 60.4% for last week and 57.5% for last year.

9. The results show that the majority have no movement or activity that causes this pain, with 54.8% for last week and 56.3% for last year.

10. The results show that the majority have no movement or activity that exacerbates these pains, with a percentage of 64.8% for last week and 63.3% for last year.

11. Also, most usually have no back pain while or immediately after driving, with a percentage of 65.2% for last week and 65.5% for last year.

12. Finally, they usually have no back pain while riding a boat or immediately after getting off the boat, with a percentage of 55.6% for last week and 51.9% for last year.

Table 5: The Percentage of the Lower Neck Pain of the Study Sample

No.	Subject	Percentage of Last Week (%)	Percentage of Last Year (%)
1	Do you suffer from neck pain?		
	Never	44.0	35.4
	Sometimes	34.0	41.7

Table 5: *continued*

No.	Subject	Percentage of Last Week (%)	Percentage of Last Year (%)
	Regularly	22.0	22.9
2	What kind of pain/issue do you suffer from? (Choose as many as applicable)		
	None	38.1	38.5
	Neck pain only	31.0	33.3
	Arms pain/ temporary symptoms	7.1	5.1
	Neck and arm pain/ temporary symptoms	23.8	23.1
3	How many times have you experienced these pains?		
	Never	38.6	29.3
	Once	13.6	12.2
	2-5 times	25.0	24.4
	6-10 times	0.0	7.3
	More than 10 times	22.7	26.8
4	For how long does the pain usually last?		
	N/A	30.0	28.9
	A few hours a day	32.5	26.3
	1-2 days	30.0	23.7
	1-3 weeks	0.0	5.3
	1-3 months	0.0	5.3
	3-6 months	0.0	2.6
	Always	7.5	5.3
5	How long have you usually been unable to cope with your routine tasks due to neck and arm pain?		
	I don't stop	82.9	78.9
	1-2 days	14.6	0.0
	3-5 days	2.4	0.0
	1-4 week	0.0	21.1
6	Has your doctor ever informed you about your neck pain? For example through a diagnosis		
	Yes	22.0	21.6
	No	78.0	78.4

Table 5: *continued*

No.	Subject	Percentage of Last Week (%)	Percentage of Last Year (%)
7	Have you ever had a neck injury that required a medical visit?		
	Yes	15.6	0.0
	No	84.4	0.0
8	What treatment did your doctor prescribe you? (Anti-inflammatory drugs painkillers physical therapy surgery etc.)		
	Yes	35.9	60.9
	No	64.1	39.1
9	Is there any movement or activity that causes this pain?		
	Yes	30.8	37.5
	No	69.2	62.5
10	Does a type of activity increase/worsen the pain?		
	Yes	24.3	20.0
	No	75.7	80.0
11	Do you usually have neck pain while or immediately after driving?		
	Yes	29.5	21.6
	No	70.5	78.4
12	Do you usually have neck pain while riding a boat or immediately after getting off the boat?		
	Yes	34.1	38.5
	No	65.9	61.5

Table 5 shows the following:

1. Lower neck pain never happened last week with 44.0% whereas it sometimes happened the previous year with a percentage of 41.7%.
2. The problems we had last week are not applied with a percentage of 38.1% followed by neck pain only with a percentage of 31.0% whereas not with a percentage of 38.5% followed by neck pain only with a percentage of 33.3% last year.
3. The number of times they have been through this pain was never with 38.6% last week whereas never with 29.3% followed by more than ten times with 26.3% last year.

4. The pain continued in a day for last week with a percentage of 32.5% and 1-2 times with a percentage of 30.0% whereas not applied with a percentage of 28.9% followed by some times in a day with 26.3% for last year.

5. The results show that they don't stop working because of neck pain 82.9% for last week and 78.9% for last year.

6. They have never been diagnosed by a doctor with a percentage of 78.0% for last week and 78.4% for last year.

7. They have never had a neck injury requiring a medical visit with a percentage of 84.4% for last week and no percentage for last year.

8. They have never been prescribed any treatment by their doctors with a percentage of 64.1% for last week whereas they were prescribed treatment by their doctors with 60.9% for last year.

9. The results show that the majority have no movement or activity that causes this pain with a percentage of 69.2% for last week and 62.5% for last year.

10. The results show that the majority have no movement or activity that exacerbates these pains with 75.7% for last week and with a percentage of 80.0% for last year.

11. Also most usually have no neck pain while or immediately after driving with a percentage of 70.5% for last week and 78.4% for last year.

12. Finally they usually have no neck pain while riding a boat or immediately after getting off the boat with a percentage of 65.9% for last week and 61.5% for last year.

Table 6: The Percentage of the Shoulders Pain of the Study Sample

No.	Subject	Percentage of Last Week (%)	Percentage of Last Year (%)
1	Do you suffer from shoulder pain?		
	Never	42.6	45.5
	Sometimes	38.3	31.8
	Regularly	19.1	22.7
2	What kind of pain/issue do you suffer from? (Choose as many as applicable)		
	None	30.6	31.4
	Shoulders pain only	30.6	34.3

Table 6: *continued*

No.	Subject	Percentage of Last Week (%)	Percentage of Last Year (%)
	Arms/hands pain/temporary symptoms	8.3	5.7
	Shoulders and arms pain/temporary symptoms	30.6	28.6
3	How many times have you experienced these pains?		
	Never	35.0	31.7
	Once	25.0	12.2
	2-5 times	15.0	17.1
	6-10 times	0.0	9.8
	More than 10 times	25.0	29.3
4	For how long does the pain usually last?		
	N/A	35.0	31.7
	A few hours a day	35.0	29.3
	1-2 times	20.0	19.5
	3-6 days	0.0	7.3
	1-3 months	0.0	4.9
	Always	10.0	7.3
5	How long have you usually been unable to cope with your routine tasks due to shoulder and arm pain?		
	I don't stop	76.9	77.8
	1-2 days	20.5	0.0
	3-5 days	2.6	0.0
	1-4 weeks	0.0	16.7
	1-3 months	0.0	5.6
6	Has your doctor ever informed you about your shoulder pain? For example through a diagnosis		
	Yes	15.4	9.1
	No	84.6	90.9
7	Have you ever had a shoulder injury that required a medical visit?		
	Yes	12.2	0.0
	No	87.8	0.0

Table 6: *continued*

No.	Subject	Percentage of Last Week (%)	Percentage of Last Year (%)
8	What treatment did your doctor prescribe you? (Anti-inflammatory drugs painkillers physical therapy surgery etc.)		
	Yes	22.2	69.2
	No	77.8	30.8
9	Is there any movement or activity that causes this pain?		
	Yes	40.0	30.0
	No	60.0	70.0
10	Does a type of activity increase/worsen the pain?		
	Yes	26.3	17.9
	No	73.7	82.1
11	Do you usually have neck pain while or immediately after driving?		
	Yes	13.2	18.8
	No	86.8	81.3
12	Do you usually have neck pain while riding a boat or immediately after getting off the boat?		
	Yes	22.5	31.3
	No	77.5	68.8

Table 6 shows the following:

1. The shoulder pain never and sometimes happened last week with percentages of 42.6% and 38.3% respectively whereas never and sometimes happened last year with 45.5% and 31.8% respectively.

2. The problems I had last week were not applied, shoulders pain only, and shoulders and arms pain with equal percentages of 30.6% whereas shoulders pain only with 34.3% followed by not applied with a percentage of 31.4% last year.

3. They have been through this pain never with 35.0% followed by once and more than ten times with equal percentages of 25.0% last week whereas never with 31.7% followed by more than ten times with 29.3% last year.

4. The pain continued as not applied and sometimes in a day for last week with equal percentages of 35.0% and followed by 1-2 times with a percentage of 20.0%

whereas not applied with a percentage of 31.7% followed by some times in a day with percentage 29.3% and followed by 1-2 times with percentage 19.5% for last year.

5. The results show that they don't stop working because of shoulder pain with 76.9% for last week and 77.8% for last year.
6. They have never been diagnosed by a doctor with a percentage of 84.6% for last week and 90.9% for last year.
7. They have never had a shoulder injury requiring a medical visit with a percentage of 87.8% for last week and no percentage for last year.
8. They have never been prescribed any treatment by their doctors with a percentage of 77.8% for last week whereas they have been prescribed treatment by their doctors 69.2% for last year.
9. The results show that the majority have no movement or activity that causes this pain with a percentage of 60.0% for last week and 70.0% for last year.
10. The results show that the majority have no movement or activity exacerbating these pains with 73.7% for last week and 82.1% for last year.
11. Also the majority usually have no shoulder pain while or immediately after driving with a percentage of 86.8% for last week and 81.3% for last year.
12. Finally they usually have no shoulder pain while riding a boat or immediately after getting off the boat with a percentage of 77.5% for last week and 68.8% for last year.

Secondly: The Correlation Coefficient This section uses the correlation coefficient to check for the relationships between the Study Questions and the Questions Related to Back, Neck, and Shoulders Pains for last week and last year. The following Tab.7 shows these relations.

Table 7 shows no relationships between the Study Questions and the Questions Related to Back, Neck, and shoulder pains for both last week and year at a significant level of 0.05.

Thirdly: Statistical Differences Tests

The Wilcoxon Signed Rank Test is used to test for the Differences in Back, Neck, and shoulder pains between last year and last week, as shown in Tab.8 below.

Table 8 shows no significant difference between the average responses of the sample study concerning shoulder pain between last year and last week at a significant level of 0.05. At the same time, there are substantial differences between the average responses of the sample study concerning lower back pain and lower neck pain between last year and last week at a significant level of 0.05. According to their mean ranks, the differences are positive, meaning they have practiced these pains since last year.

Table 7: The Correlation Coefficient Between the Study Questions and the Questions Related to Back, Neck, and Shoulders Pains for both last week and last year

Factor	Pearson Correlation	p-value
Lower Back Pain Last Week	0.081	0.482
Lower Back Pain Last Year	−0.146	0.284
Lower Neck Pain Last Week	0.066	0.582
Lower Neck Pain Last Year	−0.028	0.843
Shoulder Pain Last Week	−0.134	0.343
Shoulders Pain Last Year	0.123	0.403

∗ Correlation is significant at the 0.05 level (2-tailed).

Discussion

The findings of the study showed the following things:

First: Most participants were fishing for more than 25 years, accounting for 33.0%, and 94.8% are still fishing, of which 32.5% sail once a week for more than one month 52.6%. Also, 27.2% use more than 30 feet of boats in their sailing, 33.9% use 165-200 as a boat machine, and 64.4% use two machines.

Second: Regarding body position, sitting on the boat seat while sailing accounted for 45.2%, with 49.5% of them sitting in the middle of the boat, and 39.6% were sitting in the back. In addition, 79.8% use the Thread–Medar means to catch fish, whereas the majority, 63.5%, are not applying any means to raise the Gargoors, whereas 26.0% are raising the Gargoors by machines.

Third: Concerning the type of job, the majority of the participants were employees (35.3%), followed by the retired (16.4%). At the same time, the other jobs of the professor, lawyer, educator, dean, and captain form the lowest equal percentages with 0.9%.

Fourth: Regarding the age, length, and weight of the participants, the results showed that the mean age is 40.18 years with a standard deviation of 12.341 years, while the ages range between 16 and 70 years old. Also, the mean length is 172.90 cm with a standard deviation of 8.769 years, while the length varies between 120 to 196 cm. The mean weight is 82.21 kgs with a standard deviation of 14.148 kgs, while the weight ranges between 40 to 130 kgs.

Fifth: Regarding the lower back pain and problems with back and leg pain, the results show that it never happened with a percentage of 39.2% and problems on both with a

Table 8: The Wilcoxon Signed Ranks Test for the Differences of Back, Neck, and Shoulders Pains between last year and last week.

Description	N	Mean Rank	Sum of Ranks	p-value
Lower Back Pain (Last Year − Last Week):				
Negative Ranks	23	22.76	523.50	0.000*
Positive Ranks	45	40.50	1822.50	
Ties	1			
Total	69			
Lower Neck Pain (Last Year − Last Week):				
Negative Ranks	20	14.08	281.50	0.013*
Positive Ranks	24	29.52	708.50	
Ties	7			
Total	51			
Shoulders Pain (Last Year − Last Week):				
Negative Ranks	18	14.86	267.50	0.087
Positive Ranks	21	24.40	512.50	
Ties	7			
Total	46			

percentage of 33.3%. The number of times they were through this pain was once with 29.9% and sometimes continued in a day with a percentage of 42.9%, and they don't stop working because of back pain with a percentage of 80.3% for last week. Whereas back pain sometimes happened with 40.0%, and for both the back pain only and back and leg pain with equal percentages of 34.4%, the number of times they were through this pain more than ten times with a percentage of 36.5% and sometimes continued in a day with a percentage of 41.9%. They don't stop working because of back pain with a percentage of 84.5% for last year.

The results also showed that a doctor had never diagnosed the majority of the participants 72.1%, never had a back injury that required a medical visit, and 81.2% had never been prescribed any treatment by their doctors with a percentage of 60.4% for last week. Whereas never been diagnosed by a doctor 71.4%, never had a back injury that required a medical visit with zero percentage, and never been prescribed any treatment by their doctors with a percentage of 57.5% last year.

Also, the results showed that the majority have no movement or activity that causes this pain and exacerbates this pain with percentages of 54.8% and 64.8% respectively

for last week. In contrast, last year's percentages were 56.3% and 63.3% respectively. Furthermore, most usually have no back pain while or immediately after driving. While riding a boat or immediately after getting off the boat, they accounted for 65.2% and 55.6% for last week with percentages of 65.5% and 51.9% for last year respectively.

Sixth: Regarding neck pain, the results show that it never happened with a percentage of 44.0% and problems not applied with a percentage of 38.1%, followed by neck pain only with a percentage of 31.0%. The number of times they were through this pain never with 38.6% and sometimes continued in a day with a percentage of 42.9%, and they don't stop working because of neck pain with a percentage of 32.5% and 1-2 times with a percentage of 30.0% and don't stop working because of neck pain 82.9% for last week. Whereas the neck pain sometimes happened with 41.7% and not applied with a percentage of 38.5%, followed by neck pain only with a percentage of 33.3%. The number of times they were through this pain never with a percentage of 29.3%, followed by more than ten times with 26.3% and continued not applied with a percentage of 28.9%, followed by some times in a day with a percentage of 26.3%. They don't stop working because of neck pain with a percentage of 78.9% for last year.

The results showed that a doctor had never diagnosed most of the participants; 78.0%, never had a neck injury that required a medical visit, and 84.4% had never been prescribed any treatment by their doctors with a percentage of 64.1% for last week. In comparison, a doctor was never diagnosed with 78.4%, never had a neck injury that required a medical visit with zero percentage, and never been prescribed any treatment by their doctors with a percentage of 60.9% for last year.

Furthermore, the study shows that the majority have no movement or activity that causes this pain and exacerbates this pain with percentages of 69.2% and 75.7% respectively for last week. At the same time, the percentages were 56.3% and 63.3% respectively for last year. Furthermore, most usually have no neck pain while or immediately after driving. While riding a boat or immediately after getting off the boat, they accounted for 70.5% and 65.9% for last week with percentages of 78.4% and 61.5% for last year respectively.

Seventh: Regarding the shoulder pain, the results show that it never and sometimes happened with a percentage of 42.6% and 38.3% respectively, and problems not applied shoulders pain only and shoulders and arms pain with equal percentages of 30.6%. The number of times they were through this pain never with 35.0%, followed by once and more than ten times with equal percentages of 25.0% and continued as not applied and sometimes in a day with equal percentages of 35.0% and followed by 1-2 times with a percentage of 20.0%, and they don't stop working because of shoulder pain with a percentage of 76.9% for last week. Whereas shoulder pain sometimes happened with 31.8% and not applied with a percentage of 45.5%, and problems of shoulder pain only with a percentage of 34.3%, followed by not applied with a percentage of 31.4%. The number of times they were through this pain never with a percentage of 31.7%, followed by more than ten times with 29.3% and continued not applied with a percentage of

31.7%, followed by some times in a day with a percentage of 29.3%, followed by 1-2 times with a percentage of 19.5%. They don't stop working because of shoulder pain with a percentage of 77.8% for last year.

The results also showed that a doctor had never diagnosed the majority of the participants, 84.6%, never had a shoulder injury that required a medical visit, percentage of 87.8%, and never been prescribed any treatment by their doctors with a percentage of 77.8% for last week. Whereas a doctor has never diagnosed them, 90.9%, 78.4%, never had a neck injury that required a medical visit, and have never been prescribed any treatment by their doctors with a percentage of 69.2% for last year.

The study shows that the majority have no movement or activity that causes this pain and exacerbates this pain with percentages of 60.0% and 73.7% respectively for last week. In contrast, last year's percentages were 70.0% and 82.1% respectively

Eighth: As in the case of the average points of the results of the participant's responses, the results showed the following:

1. The study revealed no statistically significant relationships between the average points of the participant responses for the general study questions and each of the questions related to lower back, neck, and shoulder pains for both last week and last year at a significant level of 0.05.

2. The study showed no statistically significant differences between the average points of the participant responses concerning shoulder pain between last year and last week at a significant level of 0.05. At the same time, there are significant differences between the average lower back and lower neck pain responses between last year and last week at a significant level of 0.05. According to their mean ranks, the differences are positive, meaning they have practiced these pains since last year.

5.1 Limitation

As a study limitation, the incapability to analyze the self-reported cases of LBP creates disbelief as to the legitimacy of the participants' claims. However, this study examines the related factors and the prevalence of LBP in fishermen in Kuwait state. It is impossible to generalize the results to fishermen in private companies and the government sector because the sample study is randomly chosen from Kuwaiti fishermen. So, particular research may be conducted for these specific sectors. Despite these limitations, the sampling technique adopted in this study allowed the representatives of all the fishermen to participate.

6 Conclusion

Lower back, neck, and shoulder pain are prevalent musculoskeletal health issues among Kuwaiti fishermen in Kuwait State. This corresponds to the result found in the review article that summarizes all the relevant research (Nrgaard Remmen et al., 2021). Among

the identified contributing elements is body position. Simultaneously, sailing kind of occupation, method of capturing fish, and type of boat used were seated on the boat seat and in the middle of the boat (often a flat wooden board) in addition to utilizing the Thread-Medar method and employees and retirees recorded the majority. Among problem-focused coping with lower back, neck, and shoulder pain, the highest proportions reported that these problems never occurred or occurred once daily. They sometimes continued throughout the day and never stopped working because of pain in the past week or year apart from the number of times this pain prevented them from working more than ten times in the past year.

In addition, the study showed that the highest percentage was found for lower back, neck, and shoulder pains that a doctor had never diagnosed the participants, never had a back injury that required a medical visit, and had never been prescribed any treatment by their doctors for both last week and last year. In addition, most have no movement or activity that causes or aggravates this discomfort except for having no pain when or soon after driving while on a boat or immediately after getting off the boat throughout the past week and year. Therefore, it is advised that the government pay greater attention to fishermen and remote areas by constructing and equipping high-quality specialized health centers to assist fishermen in avoiding these issues. This will address their issues and prevent them from becoming crippling. Future research should identify the risk factors for lower back, neck, and shoulder discomfort among Kuwaiti fishermen in Kuwait State to establish appropriate preventative measures.

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