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# Aggression, psychological violence and sexual harassment in seafarers in France

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## ABSTRACT

**Background:** In a working environment that is predominantly male, very tough physically, with a difficult working environment, occupational exposures and working, verbal and physical aggression can be more frequent than in other sectors. Fishing, merchant shipping and yachting are all sectors where fitness to sail is reassessed every year by doctors in the Seafarers' Health Service. Seafarers are increasingly reporting insulting, violent or sexist behaviour. The main types of abuse seen on board can be verbal and/or physical aggression, humiliation, whether in private or in front of others. Sexual harassment of women is a very worrying subject.

**Materials and methods:** It was a retrospective observational study which is part of the professional monitoring of seafarers. The target population was adult seafarers coming for a fitness to sail visit. The group was recruited from seafarers aged over 18 who were being monitored by one of the seafarers' health services (or local centres). The inclusion period was 4 months between January and April 2023. All the information was collected using a self-questionnaire developed from the questionnaires of the Surveillance Médicale des Expositions des Salariés au Risques Professionnels (SUMER) for health status, job satisfaction and the European mini-module, verbal and physical aggression and psychological violence at work (based on the Leymann questionnaire), sexual violence and aggression based on the sexual harassment questionnaire and the PCLS-5 scale validated and translated into French to assess post-traumatic stress. The population studied was therefore 788 sailors.

**Results:** The study population was predominantly male (82.3%). The average age was 41.4 years (standard deviation = 11.7). 46.7% of seafarers estimate being in very good health. During the past 12 months, overall, 24.5% of seafarers disclaimed having been victim in work-related context of a verbal aggression, with a significant difference according to the gender (21.1% for men and 41.0% for women). During the last 12 months, overall, 3.2% of seafarers have been victim in work-related context of a physical aggression (2.6% for men and 5.8% for women, NS), whereas 10.9% of seafarers reported hostile behaviour at present. Twenty per cent of seafarers reported sexual harassment in the last 12 months. During the entire working life of seafarers, 65.5% of women and 38.2% of men reported sexual harassment, and 38.8% of seafarers stated that they had experienced at least one traumatic event in the last 12 months.

**Discussion:** A quarter of seafarers say they have been the victim of verbal or physical aggression at work in the last twelve months. These figures are high, and higher than those of the global survey on violence

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*and harassment at work carried out by the International Labour Organization. One of the most alarming results of our study is the overexposure of women working in the maritime industry to the risk of physical, verbal or sexual assault of any kind. Indeed, in all the questions concerning the experience of verbal and physical aggression, the number of women victims is twice as high as that of their male colleagues, and this difference is statistically significant. As far as prevention is concerned, it seems that an effort is needed in terms of information, since only one seafarer in two knows the procedure to follow in the event of aggression within their shipyard. Communication between shipowners and seafarers needs to be stepped up to ensure that everyone is familiar with the procedures.*

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**Keywords: seafarer; sexual harassment; violence; verbal aggression; physical aggression; bullying**

## INTRODUCTION

The seafarer is subject to four types of constraints: remoteness, isolation, hierarchical environment and constraints related to his specialty (deck, engine, general service).

Any ship's crew has a hierarchical structure. The most official and visible is the so-called "horizontal" hierarchy: this is made up of a staff (officers) and subordinate staff (control and operational staff). There is nevertheless a hidden hierarchy, called vertical, between the deck and engine crew members.

A recent article takes stock of the various conflicts that can affect a ship: conflicts between crew members and vessel owners/management companies, conflict between superiors and subordinates, conflict between crew members [1]. We will add a fourth conflict, which is the Work-Family Conflict, a bad relationship between the constraints of work and those of the family. Liu et al recently showed that this conflict increased the stress of seafarers on board, but was regulated by good job satisfaction [2]. The workload varies according to the specialty of the sailors, their hierarchical level, the type of ship on which they are embarked (container ship, freighter, tanker, liner, etc.), the navigation area (long-distance or international-national cabotage), the importance of traffic (Channel for example), the fact of being at sea or on a stopover, and the vagaries of the weather (mist, storm, etc.).

In a working environment that is predominantly male, very tough physically, with a difficult working environment, occupational exposures [3] and working conditions [4–6], verbal and physical aggression can be more frequent than in other sectors. A certain fragility in the mental health of seafarers has already been observed [7], one cause being the mistreatment of seafarers [8]. Fishing, merchant shipping and yachting are all sectors in which fitness to sail is reassessed every year by doctors in the Seafarers' Health Service. Seafarers are increasingly reporting insulting, violent or sexist behaviour. The main types of abuse seen on

board can be verbal and/or physical aggression, humiliation, whether in private or in front of others. Sexual harassment of women is a very worrying subject [9, 10], with too little recent research [11]. We can also note a gender evolution in the seafarers population. In France, in 2014, 21% of maritime workers were women. The number of women in maritime sector increased continuously in recent period. Today, women represent only 1.2% percent of the global seafarer workforce as per the BIMCO/ICS 2021 Seafarer Workforce Report. This represents a positive trend in gender balance, with the report estimating 24,059 women serving as seafarers, which is a 45.8% increase compared with the 2015 report.

In 2017, Grovel and Stevanovic published a study on physical, psychological violence and sexual harassment in a population of French seafarers [12]. With data from questionnaire and face to face interviews, they are able to include 686 men and 55 women. Respectively, at same rate, 30.2% of women and 35.7% of men declared being exposed to verbal aggression onboard. But, for sexual harassment 35.5% of women and 10% of men declared experienced sexual assaults. Psychological violence was declared by 11.5% of men and 21.6% of women. This study of merchant seamen also revealed that 2.2% of women and 7.5% of men had been involved in fights and 5% in blows. Differences in prevalence were observed according to staff category. More than a third of women reported having been subjected to inappropriate gestures (hand on buttocks", "attempted rubbing", "theft of women's underwear from the laundry", "exhibitionism"). Among the men, 10% also said that they had been subjected to inappropriate behaviour, but in a different context ("attempts at intimidation", "jostling" or "attempts at strangulation").

A number of cross-sectional and prospective studies have shown that workplace bullying has detrimental effects on the targets' health and well-being [13–15].

Exposure to bullying behaviour in the workplace increases depression, anxiety and burnout among sailors [16].

In France, fishing, merchant navy and yachting are all sectors where seafarers' fitness to sail inspections is re-evaluated every year or every two years by doctors in the Seafarers' Health Service. More and more frequently, these doctors are receiving reports of insulting, violent or sexist behaviour on the part of sailors. With the past results of the study in the merchant navy, these facts have prompted the Seafarers' health service (SSGM) to carry out a survey of all sailors (fishing, merchant and yachting), as part of their fitness to sail inspections, in order to better quantify these verbal and physical assaults, psychological violence at work and sexual assaults. A better assessment of these phenomena and a better characterization of the sailors who are victims will enable us to put in place more appropriate responses and more targeted prevention actions.

## MATERIALS AND METHODS

It was a retrospective observational study which is part of the professional monitoring of seafarers.

The target population was adult seafarers coming for a fitness to sail visit. The group was recruited from seafarers aged over 18 who were being monitored by one of the seafarers' health services (or local centres).

The criteria for non-inclusion were a reason for consultation other than the annual fitness visit, poor understanding of the French language or refusal to take part in the study. The inclusion period was 4 months between January and April 2023. The duration of participation for each subject was estimated at between 20 and 30 minutes.

## QUESTIONNAIRE

All the information was collected using a self-questionnaire developed from the questionnaires of the Surveillance Médicale des Expositions des Salariés au Risques Professionnels (SUMER) for health status, job satisfaction and the European mini-module, verbal and physical aggression and psychological violence at work (based on the Leymann questionnaire) [17, 18], sexual violence and aggression based on the sexual harassment questionnaire [19] and the PCLS-5 scale validated and translated into French to assess post-traumatic stress [20, 21].

## SURVEY

Overall, 1137 seafarers responded to the survey. 349 questionnaires were incomplete and were not included in the analyses. The population studied was therefore 788 sailors. The people excluded were not different in terms of sex, level of education or age group. They were more likely to be seafarers.

## STATISTICAL ANALYSIS

Statistical analyses were descriptive with frequency and percentage for qualitative variables and mean and stan-

dard deviation for quantitative variables. Comparisons of qualitative variables were made using the chi-square test and comparisons of quantitative variables were made using the Student or Wilcoxon tests. All analyses were performed using SAS 9.4 software.

## RESULTS

### SOCIO DEMOGRAPHIC AND PROFESSIONAL DATA (TABLE 1)

The study population was predominantly male (82.3%). The average age was 41.4 years (standard deviation = 11.7). The majority of seafarers are married or cohabiting (58.1%) and about a third are single. More than a quarter of seafarers have no qualifications or only the National Diploma, 18.4% have the baccalaureate and half have a level of education higher than the baccalaureate.

The main categories of personnel represented were sailors (27.9%) and deck officers (27.8%), ahead of general officers (18.5%), non-seafarers (12.2%) and engine officers (10.2%); students (3.4%) were clearly in the minority. 61% of seafarers were from the merchant navy, 19.8% from pleasure boating, 14.7% from fishing and 4.4% from French Maritime Academy (students or instructors).

### HEALTH STATUS

Of all respondents, 46.7% rated their health as very good and 47.3% as good, whereas 6% considered that their health status was medium, poor or very poor. Seven per cent had at least one chronic disease, and 5.6% felt they had been limited for at least 6 months by a health problem in the activities they usually do. A third felt that their work had a negative impact on their health. But over 92% were satisfied with their work.

### VERBAL AND PHYSICAL AGGRESSIONS (TABLE 2)

During the past 12 months, 12.4% of seafarers disclaimed having been victim, from public in work-related context, of a verbal aggression, with a significant difference according to the gender (10.8% for men and 20.1% for women).

During the past 12 months, 1.3% of seafarers have been victim, from public in work related context, of a physical aggression.

During the past 12 months, 12.4% of seafarers disclaimed having been victim, from colleagues in work-related context, of a verbal aggression, with a significant difference according to the gender (10.3% for men and 22.3% for women).

During the past 12 months, 2.2% of seafarers have been victim, from colleagues in work related context, of a physical aggression (1.8% for men and 3.6% for women, not significant NS).

**Table 1.** Socio demographic and professional characteristics of the seafarers

	<b>All (n = 788)</b>		<b>Men (n = 649)</b>		<b>Women (n = 139)</b>		<b>p-value</b>
	<b>n</b>	<b>%</b>	<b>n</b>	<b>%</b>	<b>n</b>	<b>%</b>	
<b>Category of age</b>							<b>0.006</b>
≤ 29 year	143	18.2	110	17.0	33	23.7	
30–39 year	217	27.5	168	25.9	49	35.3	
40–49 year	202	25.6	174	26.8	28	20.1	
50–59 year	174	22.1	148	22.8	26	18.7	
≥ 60 year	52	6.6	49	7.5	3	2.2	
<b>Marital status</b>							<b>0.001</b>
Single	272	34.5	205	31.6	67	48.2	
Divorced/separated	54	6.9	43	6.6	11	7.9	
Married/cohabiting	458	58.1	398	61.3	60	43.2	
Widowed	4	0.5	3	0.5	1	0.7	
<b>Academic degree</b>							<b>0.006</b>
No diploma or primary school certificate (CEP)	17	2.2	15	2.3	2	1.4	
National Diploma (Le Diplôme National du Brevet des Collèges)	205	26.0	173	26.7	32	23.0	
Professional qualifications (certificate of professional competence)	24	3.0	20	3.1	4	2.9	
Baccalaureate	145	18.4	126	19.4	19	13.7	
Until 2 years after Baccalaureate	119	15.1	91	14.0	28	20.1	
More than 2 years after Baccalaureate	278	35.3	224	34.5	54	38.9	
<b>Type of navigation</b>							<b>0.03</b>
French Maritime Academy	35	4.4	27	4.2	8	5.8	
Fishing	116	14.7	104	16.0	12	8.6	
Merchant	481	61.0	399	61.5	82	59.0	
Boating	156	19.8	119	18.3	37	26.6	
<b>Position</b>							<b>&lt; 0.0001</b>
Student	27	3.4	21	3.2	6	4.3	
Deck Officer	219	27.8	62	31.6	14	10.1	
Machine officer	80	10.2	164	11.4	6	4.3	
Multi-skilled officer	146	18.5	205	19.0	23	16.5	
Sailor	220	27.9	74	25.3	56	40.3	
Non-seafarers	96	12.2	123	9.5	34	24.5	
<b>Length of service</b>							<b>&lt; 0.0001</b>
Less than 5 years	214	27.1	151	23.3	63	45.3	
More than 6 years and less than 10 years	140	17.8	104	16.0	36	25.9	
More than 11 years and less than 20 years	155	19.7	134	20.6	21	15.1	

	All (n = 788)		Men (n = 649)		Women (n = 139)		p-value
	n	%	n	%	n	%	
More than 21 years	279	35.4	260	40.1	19	13.7	0.0005
<b>Length of boarding</b>							
Less than 24 hours	205	26.0	183	28.2	22	15.8	
More than 1 day and less than 7 days	125	15.9	109	16.8	16	11.5	0.005
More than 7 days et less than 30 days	310	18.8	109	16.8	39	28.1	
More than 1 month	148	39.3	248	38.2	62	44.6	
<b>During the last 12 months, how many days spent at sea</b>							0.005
0	70	8.9	54	8.3	16	11.5	
1-60 days	126	16.0	95	14.6	31	22.3	
61-120 days	159	20.2	133	20.5	26	18.7	
121-180 days	204	25.9	162	25.0	42	30.2	
More than 181 days	229	29.0	205	31.6	24	17.3	0.1
<b>Number of crew usually on board</b>							
Less than 5 people	323	43.0	272	44.0	51	38.3	
Less than 10 people	120	16.0	101	16.3	19	14.3	
10-50 people	183	24.4	151	24.4	32	24.1	
More than 51 people	125	16.6	94	15.2	31	23.3	

Table 2. Prevalence of verbal and physical aggressions according to gender

	All (n = 788)		Men (n = 649)		Women (n = 139)		p-value
	n	%	n	%	n	%	
<b>During the last 12 months, have you been the victim of verbal aggression by members of the public in the course of your work?</b>							0.002
No	690	87.6	579	89.2	111	79.9	
Yes	98	12.4	70	10.8	28	20.1	0.3
<b>During the last 12 months, have you been the victim of a physical aggression from the public in the course of your work?</b>							
No	778	98.7	640	98.6	138	99.3	0.0001
Yes	10	1.3	9	1.4	1	0.7	
<b>During the last 12 months, have you been the victim of verbal aggression by your colleagues in the course of your work?</b>							0.2
No	690	87.6	582	89.7	108	77.7	
Yes	98	12.4	67	10.3	31	22.3	0.2
<b>During the last 12 months, have you been the victim of a physical aggression by your colleagues in the course of your work?</b>							
No	771	97.8	637	98.2	134	96.4	0.2
Yes	17	2.2	12	1.8	5	3.6	

	All (n = 788)		Men (n = 649)		Women (n = 139)		p-value
	n	%	n	%	n	%	
<b>During the last 12 months, have you been the victim of verbal aggression by your superiors in the course of your work?</b>							<b>0.004</b>
No	706	89.6	591	91.1	115	82.7	
Yes	82	10.4	58	8.9	24	17.3	
<b>During the last 12 months, have you been the victim of physical aggression by your superiors in the course of your work?</b>							<b>0.02</b>
No	781	99.1	646	99.5	135	97.1	
Yes	7	0.9	3	0.5	4	2.9	
<b>Globally, during the last 12 months, have you been the victim of verbal aggression in the course of your work?</b>							<b>&lt; 0.0001</b>
No	594	75.4	512	78.9	82	59.0	
Yes	194	24.6	137	21.1	57	41.0	
<b>Globally, during the last 12 months, have you been the victim of physical aggression in the course of your work?</b>							<b>0.06</b>
No	763	96.8	632	97.4	131	94.2	
Yes	25	3.2	17	2.6	8	5.8	

During the past 12 months, 10.4% of seafarers disclaimed having been victim, from hierarchical superiors in work-related context, of a verbal aggression, with a significant difference according to the gender (8.9% for men and 17.3% for women).

During the past 12 months, 0.9% of seafarers have been victim, from hierarchical superiors in work related context, of a physical aggression (0.5% for men and 2.9% for women, NS).

During the past 12 months, overall, 24.5% of seafarers disclaimed having been victim in work-related context of a verbal aggression, with a significant difference according to the gender (21.1% for men and 41.0% for women).

During the past 12 months, overall, 3.2% of seafarers have been victim in work related context of a physical aggression (2.6% for men and 5.8% for women, NS).

### PSYCHOLOGICAL VIOLENCE (TABLE 3)

Hostile behaviour at present was reported by 10.9% of seafarers. The behaviours they said they were most often confronted with were contemptuous behaviour (8.0%) and denial of recognition for work (7.1%).

Overall, women reported more hostile behaviour than men (16.5% vs 9.7%), particularly more degrading attacks (9.3% vs 1.8%).

The vast majority of such behaviour came from men (79.1%), two-thirds from superiors and half from colleagues. Women were more frequently targeted by colleagues.

### SEXUAL HARASSMENT (TABLE 4)

Twenty per cent of seafarers reported sexual harassment in the last 12 months. The most common type of behaviour was sexist behaviour (19.7%).

Overall, women reported more sexual harassment than men (32.4% vs 17.4%), in particular more sexist harassment (30.9% vs 17.3%) and sexual harassment (15.1% vs 1.2%). 5.8% of women reported sexual assault (compared with 0.8% of men) and 2 women said that someone had managed to have sex with them against their will.

During the entire working life of seafarers, 65.5% of women and 38.2% of men reported harassment, in a third of cases sexist harassment. 5 women and 1 man reported that someone had managed to have sex with them against their will.

### TRAUMATIC EVENT (TABLE 5)

As much as 38.8% of seafarers stated that they had experienced at least one traumatic event in the last 12 months. The most frequently reported traumatic event was related to weather conditions (24.5%), damage (13.7%) or the handling of the vessel (9.9%).

### PREVENTION

Less than 7% of seafarers had ever sought professional care following traumatic situations and/or aggression, women more frequently than men (14.4% versus 5.1%). Most of these professionals were psychologists (60.4%) and general practitioners (50.9%).

**Table 3.** Prevalence of psychological violence during the last 12 months according to gender

Do you sometimes experience the difficult situations described below at work?	All (n = 788)		Men (n = 649)		Women (n = 139)		p-value
	n	%	n	%	n	%	
<b>At least one hostile behaviour at present</b>	86	10.9	63	9.7	23	16.5	0.02
<b>At least one contemptuous behaviour</b>	63	8.0	48	7.4	15	10.8	0.2
Ignores you, pretends you're not there	45	5.7	33	5.1	12	8.3	0.1
Prevents you from expressing yourself	25	3.2	16	2.5	9	6.5	0.03
Mocks you in public	22	2.8	14	2.2	8	5.8	0.04
<b>At least one denial of recognition at work</b>	56	7.1	42	6.5	14	10.1	0.1
Unfairly criticizes your work	40	5.1	30	4.6	10	7.2	0.2
Assigns you unnecessary or degrading tasks	25	3.2	17	2.6	8	5.8	0.06
Sabotages your work, preventing you from working properly	22	2.8	16	2.5	6	4.3	0.3
<b>At least one degrading behaviour</b>	25	3.2	12	1.8	13	9.3	< 0.0001
Suggests that you are mentally disturbed	11	1.4	5	0.8	6	4.3	0.006
Says obscene or degrading things to you	17	2.2	9	1.4	8	5.8	0.005
Insistently makes sexual propositions to you	5	0.6	0	0	5	3.6	0.0002

**Table 4.** Prevalence of sexual harassment during the last 12 months according to gender

	All (n = 788)		Men (n = 649)		Women (n = 139)		p-value
	n	%	n	%	n	%	
<b>At least one sexual harassment</b>	158	20.0	113	17.4	45	32.4	< 0.0001
<b>At least one sexist harassment</b>	155	19.7	112	17.3	43	30.9	0.0002
Do you regularly hear sexist or sexual jokes?	125	15.9	84	12.9	41	29.5	< 0.0001
Has anyone insulted or abused you?	40	5.1	27	4.2	13	9.3	0.01
Is pornography present in your workplace?	42	5.3	32	4.9	10	7.2	0.3
<b>At least one sexual harassment</b>	29	3.7	8	1.2	21	15.1	< 0.0001
Has anyone made verbal sexual advances or forced anything on you that you didn't want to hear?	21	2.7	7	1.1	14	10.1	< 0.0001
Has anyone made insistent or embarrassing gestures (e.g. insistent glances) or unwanted gestures (e.g. touching your hair, neck, etc.)?	16	2.0	3	0.5	13	9.3	< 0.0001
Has anyone made unwanted sexual advances towards you?	12	1.5	2	0.3	10	7.2	< 0.0001
<b>At least one sexual assault</b>	13	1.6	5	0.8	8	5.8	0.0005
Have you been observed while unclothed, for example in a toilet or changing room?	2	0.2	1	0.1	1	0.7	-
Has anyone displayed their sexual organs in front of you?	7	0.9	4	0.6	3	2.2	0.1
Has anyone in the course of your work touched your breasts, buttocks or thighs against your will, or «groped» you?	7	0.9	1	0.1	6	4.3	0.0002



**Table 5.** Prevalence of traumatic events during the last 12 months according to gender

	All (n = 788)		Men (n = 649)		Women (n = 139)		p-value
	n	%	n	%	n	%	
<b>During the last 12 months, have you experienced any traumatic situations related to:</b>							
ship navigation	78	9.9	64	9.9	14	10.1	0.9
damage	108	13.7	87	13.4	21	15.1	0.6
death on board	28	3.5	23	3.5	5	3.6	0.9
an accident or serious illness to yourself or a colleague on board	106	13.4	86	13.2	20	14.4	0.7
the presence or rescue of migrants	51	6.5	44	6.8	7	5.0	0.4
weather conditions	193	24.5	157	24.2	36	25.9	0.7
Have you ever sought professional care following traumatic situations and/or aggression?	53	6.7	33	5.1	20	14.4	<0.0001
Seafarers' health service (SSGM)	6	11.3	2	6.1	4	20.0	
Resource centre for psychological assistance at sea and to Seafarers (CRAPEM)	6	11.3	2	6.1	4	20.0	
Medical and Maritime Consultation Centre (CCMM)	1	1.9	1	3.0	0	0	
General practitioner	27	50.9	15	45.4	12	60.0	
Psychologist	32	60.4	16	48.5	16	80.0	
Psychiatrist	11	20.8	7	21.2	4	20.0	
Hospital emergency	6	11.3	3	9.1	3	15.0	

Only 2.5% of seafarers had ever sought help from a professional outside the healthcare environment following traumatic situations and/or aggression, mainly a trade union (50%). A third had consulted the labour inspectorate or the shipowner's human resources department.

### BIVARIATE ANALYSIS (TABLE 6)

Although verbal aggression was higher in the retail and leisure sectors, there was no significant difference according to workplace or age group.

Currently experiencing at least one hostile behaviour at work was significantly higher among 30–39 years and 40–49 years. Commercial seafarers were the most likely to report experiencing hostile behaviour.

Being subjected to at least one form of sexual harassment at work was also associated with age. The under 29 years, 30–39 years and 40–49 years reported experiencing this violence more frequently. Of the 4 workplaces identified, commerce was by far the most affected.

Having experienced at least one traumatic event in the last 12 months was also associated with age, with 30–39, 40–49 and 50–59 years old significantly more affected.

Commercial seafarers were also significantly more likely to report having experienced a traumatic event.

## DISCUSSION

### MAIN RESULTS

The results show a response rate from women (18%) that is higher than the number of women registered as active seafarers at national level (8.9% in 2022), which may indicate a greater feeling among women of being concerned by the subject of the study.

While seafaring shares many characteristics with contemporary working life ashore, one major difference is that seafarers spend several months on board (up to 12 months for some foreign seafarers), so the ship is as much a working environment as a living and leisure one. This professional activity, potentially far from the public eye, especially from the employer who is supposed to protect his employees, can facilitate intimidation and harassment [1].

### HEALTH AND WELL-BEING

More than 9 out of 10 respondents consider themselves to be in good or very good health; the DREES opinion survey of the French population in 2021 found that 73% of French people considered themselves to be in good or very good health [22]. However, this rate decreases with age, particularly among the over-65s. It is logical that a survey of a working population, i.e. a younger population (the mean age of seafarers surveyed is 41), should produce better

**Table 6.** Prevalence of aggressions, psychological violence and sexual harassment according to type of work and categories of age

	Type of work		Age in categories												p-value	p-value						
			French Maritime Academy (n = 35)		Fishing (n = 116)		Merchant (n = 481)		Boating (n = 156)		≤ 29 year		30-39 year				40-49 year		50-59 year		≥ 60 year	
			n	%	n	%	n	%	n	%	n	%	n	%			n	%	n	%	n	%
During the last 12 months, have you been the victim of verbal aggression at work (public, colleague, superior)?	5	14.3	21	18.1	157	26.4	41	26.3	0.1	23	16.1	60	27.6	53	26.2	46	26.4	12	23.1	0.1		
During the last 12 months, have you been the victim of physical aggression at work (public, colleague, superior)?	0	0	6	5.2	11	2.3	8	5.1	NA	6	4.2	10	4.6	5	2.5	2	1.1	2	3.8	0.3		
At least one current hostile behaviour	4	4.6	11	12.8	62	72.1	9	10.5	0.09	13	15.1	28	32.6	29	33.7	16	18.6	0	0	0.03		
At least one sexually harassing behaviour	10	6.3	5	3.1	117	74.1	26	16.5	<0.0001	44	27.8	55	34.8	43	27.2	14	8.9	2	1.3	<0.0001		
At least one traumatic event	7	2.3	38	12.4	200	65.4	61	19.9	0.04	39	12.7	79	25.8	97	31.7	73	23.9	18	5.9	0.002		

results. Added to this is the fact that most of the seafarers who come for a medical check-up are fit to sail, which is equivalent to a satisfactory state of health, at least compatible with the tasks carried out on board and a potential health distance.

The job satisfaction rate is over 90%, which is in line with the data from the Sumer 2017 study [18]: in its 4th edition, dated 2017, this study of medical surveillance of French employees' exposure to occupational risks found a job satisfaction rate ranging from 86% to 93%, depending on the sector.

### CONCERNING VIOLENCE IN THE WORKPLACE

A quarter of seafarers say they have been the victim of verbal or physical aggression at work in the last twelve months. These figures are high, and higher than those of the global survey on violence and harassment at work carried out by the International Labour Organization (ILO), Lloyd's Register Foundation (LRF) and Gallup: 22.8% of respondents have experienced some form of violence or harassment at work in their lifetime [23].

We can estimate that this rate decreases if we add the item "during the last twelve months". Seafarers aged 30–39 and 40–49 are significantly more concerned. Significant differences were observed according to work environment. In most of the indicators assessed, commercial seafarers had a significantly higher prevalence.

Verbal aggression is more frequent, and originates as much from colleagues as from the public, and slightly less from superiors. On the other hand, 10% of seafarers report hostile behaviour at present, most often from men and superiors. These figures are lower than those found in the Sumer study, where 15 to 18% of workers reported hostile behaviour, depending on the sector of activity.

### CONCERNING VERBAL OR PHYSICAL AGGRESSION ON BOARD

As in other sectors, women are more affected by verbal aggression than men. This has been shown in particular in the healthcare sector [24].

The aggressors are mainly men and hierarchical superiors in the case of men, and colleagues in the case of women.

### CONCERNING HOSTILE BEHAVIOUR

Paradoxically, they are lower than in the Sumer study. This may be due to the culture of the trade, which includes a certain solidarity between sailors. For all the reasons mentioned above, we can imagine violent behaviour in an "explosive" mode, whether verbal or physical, not necessarily affecting the perception of relations between seafarers, or experienced as a factor of integration, or even as a certain normality. This phenomenon of minimising violence exists

in other male-dominated professions, such as the military, where numerous cases of "hazing" involving physical or psychological violence have been publicized.

### FOCUS ON WOMEN

One of the most alarming results of our study is the over-exposure of women working in the maritime industry to the risk of physical, verbal or sexual assault of any kind.

Indeed, in all the questions concerning the experience of verbal and physical aggression, the number of women victims is twice as high as that of their male colleagues, and this difference is statistically significant. This gender difference in prevalence has been observed in other sectors of activity, notably healthcare, where numerous studies of nurses show an abnormally high rate of reports of violence against them (almost three quarters of them have experienced it) [24]. In 2023 nearly 8 out of 10 female doctors say they have been victims of sexist behaviour (78%). 30% say they have been subjected to inappropriate gestures with sexual connotations or touching without their consent, and less than a third of women who have experienced this type of behaviour say they have spoken about it within the hospital (28%). This barometer [25] provides that the facts are clear: inequalities between men and women are still sadly with us today. Discrimination, sexist and sexual violence, inappropriate and commonplace behaviour, all encourage women to take a back seat. A very recent Latin American study published in November 2023, looking at violence suffered in the workplace in hospitals, showed a higher rate of violence suffered by women (65%) than men (50%) [26].

As far as hostile behaviour is concerned, women again report more hostile behaviour, in particular more degrading attacks (9.3% of respondents compared to 1.8% of men). In the case of women, this behaviour is more likely to come from male colleagues.

The figures for sexual violence are even more alarming. While twice as many women as men report violent behaviour of a sexual nature, including sexist behaviour, 15% report sexual harassment, compared with 1.2% of men, and 5.8% report sexual assault, compared with 0.8% of men.

This overexposure of women to the risk of sexual harassment is in line with data already known in the maritime sector (previous studies) but also in the general population. In 2019, as part of her doctoral thesis in medicine, Audrey Duba surveyed medical students and young doctors: 15% of medical students and young doctors (19.8% among women vs. 5.2% among men) expressed having been exposed to professional sexual harassment during their studies [27]. Our study therefore shows that sexist harassment is very common among seafarers, and that sexual harassment is also prevalent, in a professional environment with very few women.

## COMPARISON WITH INTERNATIONAL RESULTS

The difference in the prevalence of verbal aggression between men and women is a result observed in the healthcare sector, studies have also shown an excess risk of verbal aggression for women [24]. A recent review of the literature [28] found that 97% of healthcare workers in intensive care units experienced verbal violence, and up to 82% were victims of physical violence. Results of the meta-analysis of frequency found an average frequency of 31% for physical violence, 57% for verbal violence, and 12% for sexual violence. These results indicate that difficult working conditions could induce violence in workplace, and whatever the gender ratio of the activity sector. In other words, high prevalence of violence found in seafarers cannot be explained only because the workplace is predominantly male. However even if the vast majority of psychological violence came from men, the main result is that two-thirds of psychological violence came from superiors and half from colleagues and that women were more frequently targeted by colleagues, in comparison with the healthcare sector where violence is mainly brought in by patient and public exposure.

In France, the prevalence of verbal aggression by members of the public was 14% among all employees in 2017, according to the Sumer survey [18]. In contrast, numerous studies suggest a higher prevalence of physical aggression among men. In this study, it is higher for women than for men among seafarers, regardless of the type of aggressor.

In a Swedish study, around a quarter of merchant seafarers surveyed responded that they had felt exposed to offensive acts or harassment at their workplace at least once in the past 12 months [3]. In Norway, in a study concerning the health and well-being of female seafarers, 18% said sexual harassment was a problem [29]. The study noted that 37% of women did not have access to sanitary garbage cans in the toilets, which is also a form of discrimination.

Exposure to harassment is a risk factor associated with vulnerability, as well as job satisfaction and the desire to leave the job [30]. Job satisfaction was very important in this study, as 93% of seafarers were satisfied. A third, however, considered their work harmful to their health. This shows that psychological violence and sexual harassment are not possible reasons for seafarers to give up their profession. This is no doubt due to the fact that seafaring is not a job for which education is an important criterion, and that it may well be the only job open to them. Seafarers therefore disregard the violence they have suffered, believing it to be part and parcel of the maritime world. Nielsen [31] showed that strong leadership was a protective factor against harassment, while laissez-faire leadership was a risk factor for both victim and perpetrator. Raising officer awareness would be essential to reduce harassment on board.

Globally, exposure to harassment is a risk factor associated with vulnerability, job dissatisfaction and the desire to leave the job [30]. As mentioned above, job satisfaction among the seafarers surveyed was very high. A third, however, considered their work harmful to their health. The psychological violence and sexual harassment suffered by seafarers are therefore not possible causes of abandonment of the seafaring profession. One of the hypotheses behind this attachment to the profession and its advantages is that the level of education is not necessarily decisive for access to the profession, and that a poor educational background in particular is not prohibitive. In this way, seafarers are said to disregard the violence they have suffered, believing it to be part and parcel of the maritime world.

Alcohol consumption is associated with verbal and physical aggression in the workplace [32]. Several studies suggest that seafarers consume more alcohol and psychoactive substances than the general population [33, 34]. One possible cause of such consumption is physical and psychological isolation (including emotional isolation), which is difficult to manage, especially for young seafarers.

## PREVENTION

As far as prevention is concerned, it seems that an effort is needed in terms of information, since only one seafarer in two knows the procedure to follow in the event of aggression within their shipyard. Communication between shipowners and seafarers needs to be stepped up to ensure that everyone is familiar with the procedures. According to Magnus Boström [11], the health, safety and well-being of seafarers at work are largely determined by interdependent factors at the micro, meso and macro levels, where the various stakeholders play different roles. Strategies and measures are proposed by the author, starting with the individual and gradually extending to the entire maritime sector. It is important that a victim of bullying or harassment receives adequate support. Encouraging the courage of the crew enables employees to recognize worrying situations and to know how to act and respond to a situation. So, to bridge the gap between policy and practice, the legislative framework needs to be translated into practical procedures, easily accessible to the exhausted middle manager with limited knowledge, time, resources and low decision latitude.

Primary prevention requires training. According to Nielsen [31], good leadership is a protective factor against harassment, while conversely, weak leadership is a risk factor for harassment, on both the victim's and the aggressor's side. Raising awareness among officers in particular could be an interesting lever.

Finally, few seafarers felt the need to consult a health professional after experiencing an aggression or traumatic situation, and women consulted more readily than men

(14% vs. 5%), a gender difference similarly observed in other studies on harassment in the workplace. Here again, information and education work are needed, both for seafarers and for professionals, particularly health professionals, encountered in the course of their careers, with a view to de-dramatizing and screening.

## STRENGTHS AND LIMITS

This is the first descriptive study of this population in France.

This study was carried out during the first 4 months of the year. It is therefore possible that people coming for a fitness visit between January and April may not be fully representative of the total number of people who come for a whole year.

Women were twice as likely to participate according to Esculape 2022 data (17.6% vs. 10.8%). Under-29s were under-represented (18.2% vs. 27.2%). Commercial and pleasure sailors were over-represented (61% vs. 43.1% and 19.8% vs. 2.7%), while fishing sailors (14.7% vs. 36%) and people from ENSM (4.4% vs. 18.1%) participated less.

The method of recruitment was linked to the willingness and availability of the doctor in the health department to take part in this study and to present it to the sailors coming for a fitness visit. As a result, some geographical areas are under-represented, without us being able to determine whether this is an effect of the local study population or the health service.

With this first descriptive study about violence in seafarers, it is necessary to plan future analyses or researches in order to explore the factors associated with these types of violence in seafarers.

## CONCLUSIONS

This original study of French seafarers quantifies the high prevalence of assault, psychological abuse and sexual harassment to which seafarers are subjected. Women are significantly more affected, whatever the type of violence. Prevention and support policies, and a real commitment from public authorities and stakeholders, will be needed to curb this phenomenon, which is not new, but on the contrary, is deeply rooted in this very virile sector of activity.

The findings on sexual violence among women are very worrying. The study shows that sexist harassment is very common among seafarers, and that sexual harassment is also prevalent.

Assessing the risks of sexual harassment and gender-based harassment is part of a global and concerted approach (each of the parameters taken in isolation does not allow us to evaluate the level of risk). Relevant risk assessment requires the input of contextual elements and a cross-section of viewpoints. Thus, employee repre-

sentatives, occupational physicians, occupational nurses, ergonomists or occupational psychologists, and occupational risk prevention specialists from the occupational health department can all contribute to a better assessment of the risk. In addition, setting up a group made up of a representative panel of employees can be an effective way of questioning current practices within the company.

The level of risk identified then determines the type of action to be taken. For example, if a number of “aggravating” factors lead us to believe that the risk of sexual harassment or gender-based harassment is high, it may be appropriate to step up preventive measures, or to deploy more substantial resources to reduce such behaviour. In addition to the information provided under article L. 1153-5 of the French Labour Code, a more general awareness-raising campaign aimed at all employees may be considered. To effectively combat sexual harassment and gender-based harassment, all employees must be able to identify the situations that characterize them, and of which they may be the victim, witness or perpetrator.

## ARTICLE INFORMATION AND DECLARATIONS

**Data availability statement:** Data are not available.

**Ethics statement:** A declaration to the National Commission on Informatics and Liberty (CNIL) was made with registration of the processing operation in the dedicated register (number 22330004). An information notice was given to the seafarer at the beginning of the survey. Participation in the survey was anonymous and voluntary. No identifying data was collected.

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