

Prevalence of consumption of psychoactive substances amongst dockers

Omar Laraqui¹, Nadia Manar^{2, 3}, Salwa Laraqui³, Tarik Ghailan^{2, 4}, Souad Charoui², Frédéric Deschamps¹, Chakib El Houssine Laraqui^{2, 3}

¹Department of Occupational Health Medicine Faculty, Reims, France

²Moroccan Society of Occupational Health Research, Casablanca, Morocco

³Graduate School of Health Engineering, Casablanca, Morocco

⁴Moroccan Society of Maritime Health, Tangier, Morocco

ABSTRACT

Background: Dockers in the port facilities are exposed to significant psychosocial risks (stress, suffering at work, etc.) related to heavy organisational, environmental, physical, chemical constraints, etc. These workers are particularly affected by the consumption of psychoactive substances because of the dangerousness and complexity of their work. To what extent can these numerous occupational risks be at the origin of behaviour favouring the consumption of psychoactive substances? However, in our country no study has investigated toxic habits in this population. The aim of this study was to determine the prevalence of the use and misuse of psychoactive substances amongst dockers, and to appreciate the poly-consumption according to socio-demographic and occupational characteristics.

Materials and methods: This cross-sectional study was conducted amongst 665 dockers. The interview took place at the occupational health service and lasted between 15 and 20 minutes for each person respecting the confidentiality. The questionnaire covered socio-demographic characteristics, socio-professional characteristics, and toxic habits (tobacco, alcohol, cannabis and others psychotropic substances). The misuse was assessed by specific tests: Fagerström test for tobacco smoking, Cannabis Abuse Screening Test (CAST) and Alcohol Use Disorders Identification Test (AUDIT).

Results: The prevalence of use was 30.5% for tobacco smoking, 9.1% for cannabis smoking, and 16.5% for alcohol consumption. The prevalence of toxic habits was significantly higher in handlers than in machinery operators: tobacco smoking (39.7% vs. 27%; $p = 0.002$), snuff tobacco (12.5% vs. 4.6%; $p = 0.001$), hookah (7.6% vs. 2%; $p = 0.001$), cannabis smoking (20.6% vs. 4.5%; $p = 0.001$) and alcohol consumption (22.3% vs. 14.3%; $p = 0.019$). Amongst consumers, the prevalence of dependence or misuse was 45.3% for tobacco smoking, 56.7% for cannabis smoking and 44.5% for alcohol consumption. Fifty-two point five per cent had no toxic habit, 36.7% had one toxic habit, 9.9% two toxic habits, and 0.9% three toxic habits. The most frequent associations were tobacco-alcohol (6.5%), and tobacco-cannabis (3%).

Conclusions: Occupational health professionals have to play a key role in raising awareness and fighting against consumption of psychoactive substances amongst dockers.

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Key words: psychoactive substances, dockers, addictions, poly-consumption

INTRODUCTION

The docking activity consists of loading and unloading container ships for import, export and transshipment and providing the sea/land connection of goods. These

workers in the port facilities are exposed to significant psychosocial risks (stress, suffering at work, etc.) related to heavy organisational, environmental, physical, chemical constraints, etc. The work organisation requires dexterity

✉ Dr. Chakib El Houssine Laraqui, Graduate School of Health Engineering, 24 rue Lafontaine, Quartier Racine, 20100 Casablanca, Morocco, e-mail: chlaraqui51@gmail.com

and speed with vigilance and attention to avoid accidents of people and property. Working conditions outdoors (weather exposure) and/or at night amplify the frequency and severity of the risks to which dockers are exposed. Dockers exercise a profession with marked physical constraints, even if they resort to many devices for lifting and moving loads (gantry, self-propelled forklift truck, etc.). Operations carried out with these machines may entail different risks: vertebral stresses, vibrations, bruising trauma, crushing, falls, etc. In addition, some handling activities cannot be mechanised, exposing them to musculoskeletal disorders. The mechanical handling means can reduce some difficult handling activities but the operations are not without risk and represent serious dangers for dockers and workers nearby. The numerous chemical substances (fungicides, pesticides, fumigations, cement dust, hydrocarbon vapours, etc.) constitute a permanent and additional danger [1]. To what extent can these numerous occupational risks be at the origin of behaviour favouring the consumption of psychoactive substances? Amongst dockers, this collective consumption is part of the sociability of the group, is a support for the discussion and debate about their work and an element of distance from danger. The meaning given to the work “the real work for men”, the mission, and the strength, and the professional culture (resistance to the effects of the consumption of psychoactive substances, etc.) characterise the job of the dockers. For them, the fear of the accident is averted by a very macho behaviour and a big denial of the risk [1].

The prevalence of toxic habits is constantly increasing in developing countries and all occupational sectors are affected [2–10]. All psychoactive substances cause a disorder of alertness, a change in the perception of risk and/or an increased risk-taking with consequences in terms of public health, occupational medicine, and safety at workplace [11]. Dockers are a particular target because the dangerousness and complexity of their work but no study has investigated the toxic habits amongst dockers in Morocco. The aim of this study was to determine the prevalence of the use and misuse of psychoactive substances amongst dockers, and to appreciate the poly-consumption according to socio-demographic and occupational characteristics.

MATERIALS AND METHODS

SUBJECTS

This epidemiological, observational and cross-sectional study was conducted in a great port of Morocco in 2015 and concerned 665 employees of a port company. All participants were male dockers and older than 20 years with length of employment above 1 year. The professional categories included 184 handlers and 481 machinery operators.

QUESTIONNAIRE

We used an individual questionnaire including sociodemographic characteristics (age, family status, educational level) and socioprofessional characteristics (professional categories, length of employment, working rhythm) and toxic habits (tobacco, cannabis, alcohol and others psychoactive substances: medicine and illegal drugs).

For tobacco smoking, we have individualised current smokers, former smokers and non-smokers. Subjects were categorised as current smokers if they smoked at the time of the survey or if they had stopped less than 3 months before the study and had smoked more than 100 cigarettes throughout their life. Former smokers were those who had stopped more than 3 months before the study and smoked more than 100 cigarettes throughout their life. Non-smokers are those who have never smoked or smoked less than 100 cigarettes throughout their life [12]. We quantified the consumption of tobacco in pack-years (number of packs smoked per day multiplied by the number of years of smoking).

The Fagerström test was used for the dependence assessment of tobacco smoking [13, 14]. The items were summed to yield a total score of 0 to 10. The ordering of dependence was very low (0 to 2), low (3 to 4), moderate (5 to 6), high (7 to 8), and very high (9 to 10).

For cannabis smoking, in the same way, we have categorised our population to current consumers, former consumers and non-consumers. We quantified the consumption in calumets-years. Among cannabis smokers, we used the Cannabis Abuse Screening Test (CAST) [15, 16]. This test includes six items. To calculate a score, the responses were coded on a scale from 0 to 4. The total score obtained could range from 0 to 24, and indicated whether or not the questioned users were at risk. A score less than 3 indicated no addiction risk, a score of 3 or less than 7 indicated low addiction risk, and a score of 7 or above indicated high addiction risk.

Alcohol consumption was quantified in number of standard drinks per day. A standard drink contains a fixed amount of pure alcohol, i.e. 10 g. A standard drink is equivalent to 10 cl of table wine at 12°, 25 cl of beer at 5°, 3 cl of whisky at 40°, and 7 cl of aperitif at 18°. Among drinkers, we have appreciated the risky consumption by the Alcohol Use Disorders Identification Test (AUDIT). This test is a 10-item screening tool developed by the World Health Organisation (WHO) to assess alcohol consumption, drinking behaviours, and alcohol-related problems. A score of 8 or more is considered to indicate hazardous or harmful alcohol use [17, 18]. According to the WHO, risky consumption may cause serious harms in the medium to long term. For men it is more than 3 standard drinks per day or more than 21 standard drinks per week or more than 4 standard drinks per opportunity to drink.

Table 1. Prevalence of toxic habits

Toxic habits (n = 665)	No use	Former use	Current use
Tobacco smoking	325 (48.9%)	137 (20.6%)	203 (30.5%)
Snuff tobacco	596 (89.6%)	24 (3.6%)	45 (6.8%)
Hookah	622 (93.5%)	19 (2.8%)	24 (3.7%)
Cannabis smoking	517 (77.7%)	88 (13.2%)	60 (9.1%)
Alcohol consumption	348 (52.4%)	207 (31.1%)	110 (16.5%)
Others psychotropic substances	601 (90.3%)	43 (6.5%)	21 (3.2%)

We defined the use as a moderate or occasional consumption with a low risk to health, and the misuse is a consumption that may cause physical, social and/or psychological troubles. The misuse includes hazardous or spot abuse, harmful or repeated abuse and addiction. We considered misuses as:

- dependent cigarette smokers with a Fagerström test score greater than or equal to 5;
- addiction cannabis smokers with a CAST score greater than 7;
- hazardous or harmful alcohol consumption with AUDIT test score greater than or equal to 8 or meeting the WHO criteria's (more than 21 glasses per week or more than 4 glasses per opportunity to drink).

PROCEDURE OF THE STUDY

We previously contacted the occupational physician to explain the purpose of the study and obtain his support. The interviews, with full respect of the confidentiality, took place at the occupational health service and lasted between 15 and 20 minutes for each person. The dockers answered to the questionnaire without difficulty and with enthusiasm.

STATISTICAL ANALYSIS

The statistical analyses were performed using the SPSS version 11.5 software package. The differences between groups were compared using t tests for continuous variables and χ^2 tests for categorical ones. The statistical level of significance was established at 5%. For a proportion, we calculate the lower and upper limits of the 95% confidence intervals (CI).

RESULTS

DEMOGRAPHIC AND OCCUPATIONAL CHARACTERISTICS OF DOCKERS

The average age of total population was 43.1 ± 7.8 years (range 20–60 years). Ninety one point seven per cent were living in couple. Three point four per cent were illiterate, 19.4% had attended primary school, 42.2% secondary school, and 34.3% college or university. The average length of employment was 18.2 ± 5.1 years.

PREVALENCE OF TOXIC HABITS

The prevalence of harmful habits was 30.5% (95% CI 27–34) for tobacco smoking, 6.8% (95% CI 4.9–8.7) for the snuff tobacco, 3.7% (95% CI 2.3–5.1) for hookah, 9.1% (95% CI 6.9–11.2) for cannabis smoking, 16.5% (95% CI 13.7–19.3) for alcohol consumption, and 3.2% (95% CI 1.9–4.5) for others psychotropic substances.

The average age of onset of tobacco smoking was 14.3 ± 2.1 years (95% CI 14.1–14.5), cannabis smoking 18.3 ± 4.5 years (95% CI 17.9–18.6), alcohol consumption 18.8 ± 3.1 years (95% CI 18.5–19), tobacco sniffing 24.5 ± 4.9 years (95% CI 24.1–24.9), hookah 22.5 ± 3.9 years (95% CI 22.2–22.8), and others consummated psychotropic substances 26.2 ± 4.1 years (95% CI 25.9–26.5).

The average daily of tobacco smoking was 15.8 ± 5.7 cigarettes, of hookah 2.1 ± 0.7 , of snuff tobacco 12 ± 3.9 snuffs, of cannabis smoking 8.1 ± 2.9 calumets, and of alcohol consumption 4.3 ± 1.8 drinks.

The harmfulness of tobacco smoking to health was known by 97.4% of dockers, alcohol consumption by 94%, and cannabis smoking by 86%, snuff tobacco by 57% and hookah by only 56.8%. Seventy three point one per cent of tobacco sniffers were former cigarettes smokers. The hookah was considered safer for health than cigarettes by 49.5% of consumers who consider that dangerous substances smoked are filtered by water.

Attempts at weaning longer than 2 days of abstinence were made by 59.1% of tobacco smokers, 72.6% of alcohol drinkers, 74% of cannabis smokers, 68% of hookah smokers and 44.1% of tobacco sniffers (Table 1).

THE ASSOCIATION BETWEEN SOCIODEMOGRAPHIC CHARACTERISTICS AND TOXIC HABITS

The prevalence of tobacco smoking (31.3% vs. 30.4%; $p = 0.947$) and other psychotropic substances (4% vs. 3%; $p = 0.816$) was not significantly higher among people under 40 years old. The frequency of cannabis smoking (26.3% vs. 6%; $p = 0.001$), hookah (17.2% vs. 1.2%; $p = 0.0001$) and alcohol consumption (35.4% vs. 13.3%; $p = 0.0001$) was significantly higher among subjects under

Table 2. Association between sociodemographic characteristics and toxic habits

SDC	N = 665	TS 203 (30.5%)	ST 45 (6.8%)	H 24 (3.7%)	CS 60 (9.1%)	AC 110 (16.5%)	OPS 21 (3.2%)
Age [years]:							
≤ 30	21 (3.2%)	6 (28.5%)	1 (4.8%)	8 (38.1%)	10 (47.6%)	9 (42.8%)	1 (4.8%)
31–40	78 (11.7%)	25 (32.1%)	3 (3.8%)	9 (11.5%)	16 (20.5%)	26 (33.3%)	3 (3.8%)
41–50	332 (49.9%)	89 (26.8%)	22 (6.6%)	4 (1.2%)	20 (6%)	43 (13%)	10 (3%)
> 50	234 (35.2%)	83 (35.4%)	19 (8.1%)	3 (1.3%)	14 (6%)	32 (16.7%)	7 (3%)
< 40	99 (14.9%)	31 (31.3%)	4 (4%)	17 (17.2%)	26 (26.3%)	35 (35.4%)	4 (4%)
≥ 40	566 (85.1%)	172 (30.4%)	41 (7.2%)	7 (1.2%)	34 (6%)	75 (13.3%)	17 (3%)
p	< 0.001	0.947	0.340	< 0.001	< 0.001	< 0.001	0.816
Family status:							
Living alone	55 (8.3%)	25 (45.4%)	9 (16.3%)	10 (18.2%)	21 (38.2%)	42 (76.3%)	4 (7.2%)
Living in a couple	610 (91.7%)	178 (29.2%)	36 (5.9%)	14 (2.3%)	39 (6.4%)	68 (11.1%)	17 (2.8%)
p	< 0.001	0.018	0.007	< 0.001	< 0.001	< 0.001	0.156
Educational level:							
Illiterate	23 (3.4%)	12 (52.2%)	8 (34.8%)	4 (17.4)	11 (47.8%)	12 (52.5%)	0 (0%)
Primary	129 (19.4%)	62 (48.1%)	19 (14.7%)	10 (7.7%)	25 (19.4%)	23 (17.8%)	4 (3.1%)
Secondary	285 (42.9%)	84 (29.5%)	14 (4.9%)	10 (3.5%)	20 (7%)	40 (14%)	5 (1.8%)
Superior	228 (34.3%)	45 (19.7%)	4 (1.8%)	0 (0%)	4 (1.7%)	35 (15.3%)	12 (5.3%)
p	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.154

AC – alcohol consumption; CS – cannabis smoking; H – hookah; OPS – other psychotropic substances; SPC – socioprofessional characteristics; ST – snuff tobacco; TS – tobacco smoking

Table 3. Association between socioprofessional characteristics and toxic habits

SPC	N = 665	TS 203 (30.5%)	ST 45 (6.8%)	H 24 (3.7%)	CS 60 (9.1%)	AC 110 (16.5%)	OPS 21 (3.2%)
Professional categories:							
Machinery operators	481 (72.3%)	130 (27%)	22 (4.6%)	10 (2)	22 (4.5)	69 (14.3)	17 (3.5)
Handlers	184 (27.7%)	73 (39.7%)	23 (12.5%)	14 (7.6%)	38 (20.6%)	41 (22.3%)	4 (2.2%)
p	< 0.001	0.002	< 0.001	0.001	< 0.001	0.019	0.516
Length of employment [years]:							
≤ 5	20 (3%)	6 (30%)	1 (5%)	5 (25%)	10 (50%)	15 (75%)	0 (0%)
6–15	88 (13.2%)	47 (53.4%)	3 (3.4%)	6 (6.8%)	13 (14.8%)	24 (27.2%)	4 (4.5%)
> 15	557 (83.8%)	150 (26.9%)	41 (7.4%)	13 (2.3%)	37 (6.6%)	71 (12.7%)	17 (3%)
p	< 0.001	< 0.001	0.371	< 0.001	< 0.001	< 0.001	0.542
Working rhythm:							
Typical	161 (24.2%)	35 (21.7%)	10 (6.2%)	5 (3.1%)	9 (5.6%)	28 (17.4%)	8 (5%)
Atypical	504 (75.8%)	168 (33.3%)	35 (6.9%)	19 (3.8%)	51 (10.1%)	82 (16.3%)	13 (2.6%)
p	< 0.001	0.007	0.887	0.88	0.112	0.832	0.211

AC – alcohol consumption; CS – cannabis smoking; H – hookah; OPS – other psychotropic substances; SPC – socioprofessional characteristics; ST – snuff tobacco; TS – tobacco smoking

40 years old. The prevalence of snuff tobacco (7.2% vs. 4%; $p = 0.340$) was higher, but not significantly, among people over 40 years old.

The prevalence of toxic habits was significantly higher among people living alone except for other psychotropic substances. The prevalence of consumption of psychoactive substance is significantly and inversely proportional to educational level except for other psychotropic substances.

The average age of tobacco smokers was 47.3 ± 6.9 years, hookah smokers 35.8 ± 6.6 years, tobacco sniffers 48.1 ± 7.5 years, cannabis smokers 42.2 ± 9 years, alcohol consumers 43.9 ± 8.6 years and others psychotropic substances users 45.9 ± 7.7 years (Table 2).

ASSOCIATION BETWEEN SOCIO-PROFESSIONAL CHARACTERISTICS AND TOXIC HABITS

The average length of employment for the total population was 18.1 ± 4.1 years, for cigarette smokers was 17.1 ± 3.9 years, hookah smokers 13.8 ± 2.7 years, tobacco sniffers 18.9 ± 3.8 years, cannabis smokers 14.9 ± 4.2 years, alcohol consumers of 15.4 ± 3.1 years and others psychotropic substances consumers 18.1 ± 4.4 years. The prevalence of toxic habits was significantly higher in handlers than among machinery operators: tobacco smoking (39.7% vs. 27%; $p = 0.002$), snuff tobacco (12.5% vs. 4.6%; $p = 0.001$), hookah (7.6% vs. 2%; $p = 0.001$), cannabis smoking (20.6% vs. 4.5%; $p = 0.001$) and alcohol consumption (22.3% vs. 14.3%; $p = 0.019$) (Table 3).

Table 4. Association between sociodemographic characteristics and misuse (dependence)

Sociodemographic characteristics	Tobacco smoking 92/203 (45.3%)	Cannabis smoking 34/60 (56.7%)	Alcohol consumption 49/110 (44.5%)
Age [years]:			
≤ 30	3/6 (50%)	3/10 (30%)	3/9 (33.3%)
31–40	7/15 (46.7%)	6/16 (37.5%)	15/26 (57.7%)
41–50	43/89 (48.3%)	15/20 (75%)	20/43 (46.5%)
> 50	39/83 (47%)	10/14 (71.4%)	11/32 (34.4%)
< 40	10/31 (32.3%)	9/26 (34.6%)	18/35 (51.4%)
≥ 40	82/172 (47.7%)	25/34 (73.5%)	32/75 (42.7%)
p	0.164	0.006	0.513
Family status:			
Living alone	14/25 (56%)	14/21 (66.6%)	19/42 (45.2%)
Living in a couple	78/178 (43.8%)	20/39 (51.2%)	30/68 (44.1%)
p	0.352	0.382	0.934
Educational level:			
Illiterate	8/12 (66.7%)	7/11 (63.3%)	9/12 (75%)
Primary	25/62 (40.3%)	18/25 (72%)	14/23 (61%)
Secondary	39/84 (46.4%)	9/20 (45%)	22/40 (55%)
Superior	20/45 (44.4%)	0/4 (0%)	4/35 (11.4%)
p	0.021	0.146	0.011

Table 5. Association between socio-professional characteristics and misuse or dependence

Socio-professional characteristics	Tobacco smoking 92/203 (45.3%)	Cannabis smoking 34/60 (56.7%)	Alcohol consumption 49/110 (44.5%)
Professional categories:			
Machinery operators	50/130 (40%)	9/22 (40.9%)	20/69 (28.9%)
Handlers	42/73 (61.8%)	25/38 (65.8%)	21/41 (70.7%)
p	0.013	0.109	0.033
Length of employment [years]:			
≤ 5	2/6 (33.3%)	5/10 (50%)	7/15 (46.7%)
6–15	22/47 (46.8%)	8/13 (61.5%)	13/24 (54.2%)
> 15	68/150 (45.3%)	21/37 (56.7%)	29/71 (40.8%)
p	0.823	0.858	0.517
Working rhythm			
Typical	13/35 (37.1%)	4/9 (44.4%)	11/28 (39.3%)
Atypical	80/168 (47.6%)	30/51 (58.8%)	38/82 (46.3%)
p	0.345	0.662	0.668

ASSOCIATION BETWEEN SOCIODEMOGRAPHIC CHARACTERISTICS AND MISUSE

The average age, of people who misuse, was 47.7 ± 6.9 years for tobacco smokers, 44 ± 6.5 years among cannabis smokers and 42.6 ± 7.7 years at alcohol consumers.

The misuse was more frequent in people over 40 years old for tobacco smoking (47.7% vs. 32.3%; $p = 0.164$) but not significantly. The misuse was significantly more frequent in people above 40 years old for cannabis smoking (73.5% vs. 34.6%; $p = 0.006$). The misuse of alcohol was more frequent, but not significantly, among those under 40 years old (51.4% vs. 42.7%; $p = 0.513$).

For the all toxic habits, the misuse was more frequent, but not significantly, in people living alone: tobacco smoking (56% vs. 43.8%; $p = 0.352$), cannabis smoking (66.6% vs. 51.2%; $p = 0.382$), and alcohol consumption (45.2% vs. 44.1%; $p = 0.934$).

The misuse was significantly more frequent among illiterate people for tobacco smoking (66.7% vs. 44%; $p = 0.021$) and alcohol consumption (75% vs. 40.8%; $p = 0.011$). For cannabis smoking (63.3% vs. 55.1%; $p = 0.146$), the difference was not significant (Table 4).

ASSOCIATION BETWEEN SOCIO-PROFESSIONAL CHARACTERISTICS AND MISUSE

The average length of employment of people with misuse was 15.3 ± 3.8 years for cigarette smokers, 14.4 ± 3.9 years for cannabis smokers and 14.1 ± 4.1 for alcohol consumers.

For tobacco smokers, misuse was significantly more important among handlers than machinery operators (61.8% vs. 40%; $p = 0.013$), and alcohol consumers (70.7% vs. 28.9%; $p = 0.033$). The difference was not significant for the cannabis smokers (65.8% vs. 40.9%; $p = 0.109$). The difference was not significant for length of employment and rhythm at work (Table 5).

Table 6. Prevalence of toxic habits and their associations

Toxic habits	Toxic substances	665 (100%)
0 toxic habit	–	349 (52.5%)
1 toxic habit – 244 (36.7%)	TS	131 (19.7%)
	CS	34 (5.1%)
	AC	61 (9.2%)
	OPS	18 (2.7%)
2 toxic habits – 66 (9.9%)	TS + CS	20 (3%)
	TS + AC	43 (6.5%)
	TS + OPS	3 (0.4%)
3 toxic habits – 6 (0.9%)	TS + CS + AC	6 (0.9%)

AC – alcohol consumption; CS – cannabis smoking; OPS – other psychotropic substances; TS – tobacco smoking

PREVALENCE OF TOXIC HABITS ASSOCIATIONS

Only 349 (52.5%) people did not have any toxic habit, 36.7% had one toxic habit, 9.9% two toxic habits, and 0.9% three toxic habits. The most frequent associations were tobacco-alcohol (6.5%), and tobacco-cannabis (3%) (Table 6).

DISCUSSION

The significant increase in the frequency of consumption of psychoactive substances is a source of apprehension and concern, particularly in developing countries [2]. In 2014, the Moroccan National Observatory for Drugs and Addictions (*observatoire national des drogues et des addictions*) reported that the prevalences of tobacco smoking, cannabis consumption and alcohol consumption among Moroccan male population in general aged over 20 were 34.5%, 9%, and 14%, respectively [3]. In the same population, a study conducted by the Ministry of Health reported that the prevalence of tobacco smokers was 32% and alcohol consumers was 23.4% [4]. In our study, the prevalence of these harmful habits was 30.5% for tobacco smoking, 9.1% for cannabis smoking, and 16.5% for alcohol consumption. Nevertheless, the prevalence was significantly higher among handlers than machinery operators: for tobacco smoking (39.7% vs. 27%; $p = 0.002$), for cannabis smoking (20.6% vs. 4.5%; $p < 0.0001$), and for alcohol consumption (22.3% vs. 14.3%; $p = 0.019$). The prevalence among handlers was as high as in administrative staff on land working in the maritime sector: 39.5% for tobacco smoking, 15.5% for cannabis, and 28.6% for alcohol. They were significantly lower than among Moroccan fishermen [10]. Three studies conducted in this population in 2014, 2016 and 2017 showed 58.8%, 52.3% and 46.6% for tobacco smoking respectively, 36.2%, 31.7% and 37.4% for cannabis smoking and 36.5%, 38.9% and 42.5% for alcohol consumption. According to the National Institute of Prevention and Education for Health (*Institut National de Prévention et d'Education pour la Santé*,

France), the fishery sector was ranked at the first place of consumption of toxic substances: there were 63.1% tobacco smokers, 14.5% hazardous drinkers and 3.4% had smoked cannabis in the previous month. Seafarers would smoke higher than the general population for several reasons related to hard, rough and very stressful working conditions [19].

In our study, 36.7% of dockers had one toxic habit, 9.9% two, and 0.9% three. The most frequent associations were tobacco-alcohol (6.5%), and tobacco-cannabis (3%). Among fishermen, 56.4% had one toxic habit, 20.4% two, and 11.9% three. The most frequent associations were tobacco-cannabis (10.5%) and tobacco-alcohol (6.1%). According to the National Institute of Prevention and Education for Health (*Institut National de Prévention et d'Education pour la Santé, France*), regular poly-consumption concerned 8.3% of the adult population. The most common combinations were alcohol-tobacco (5.9%), tobacco-cannabis (1.6%) and alcohol-tobacco-cannabis (0.7%) [19–22]. In our study, 45.3% of tobacco smokers, 56.7% of cannabis smokers and 44.5% of alcohol consumers had an addiction. Among fishermen, the prevalence was 49.5% for tobacco smoking, 61.2% for cannabis smoking and 52.1% for alcohol consumption [5]. These frequencies were higher than in the Moroccan general population, with 2% of alcohol abuse, 3.3% of toxic substances abuse and 2.8% of misuse of toxic substances [3]. In our survey, the harmfulness to the health of tobacco smoking was known by 97.4%, of alcohol consumption by 94%, and of cannabis smoking by 86%, of snuff tobacco by 57% and of hookah by 56.8%. Seventy three point one per cent of tobacco sniffers were former cigarettes smokers. The harmfulness of alcohol consumption was known by 92% of fishermen [5]. Only 7% of Scottish harbourmen considered their level of consumption as harmful to their health [23]. Cannabis is the illicit drug most used in the world [11, 16]. Socio-geographical, economic and cultural factors play an important role in its consumption. Cannabis is highly consumed in Morocco because it is cheaper than manufactured cigarettes [24]. The hookah was considered safer to the health than cigarettes by 49.5% of consumers. Water pipe is known under different names in parts of the world: hookah, narghile, shisha or goza. It is now the object of a renewed interest because its use has been spreading very fast among young people in Western countries and in Morocco. The number of bars and establishments where the water pipe can be smoked is increasing and almost are attended by mostly young people. The arguments they use for justifying water pipe smoking are the “natural” nature, health and safety aspect of the product, its fruity flavours (apple, strawberry, etc.), the sharing of the dose enhancing a sense of community belonging, the novelty of the product, and a distinction from the smoking habits of adults. The conviction that, water acting as a filter, this way of smoking

tobacco is less dangerous than cigarette smoking. The recent craze for hookah is due to the mental representation of the mode of use as being healthier and friendlier than cigarettes [25, 26]. In Morocco, the prevalence of its use in the general population in 2010 was 4.9% lower than in Tunisia (5.8%) and in Syria (19.7%) [5, 25, 26]. In our study, the prevalence of toxic habits was higher in people with a low educational level except for other psychotropic substances. A survey in the Moroccan population [12] showed that the prevalence of tobacco smoking was inversely associated with the level of education among men; thus, the risk was higher among illiterate men than those whose level of education was academic. Some working constraints increase alcohol consumption: outdoor work (more than half of working time), work in painful or tiring posture, exposure to shaking or vibration, carrying heavy loads, long trips or exhausting or fast [27]. Work stress appears as a possible risk factor exposing to toxic habits. At the seaside, the stress is caused by high psychological demands, low decision latitude and inadequate professional support, and compounded by difficult and dangerous working conditions [28]. According to the National Institute of Prevention and Education for Health (*Institut National de Prévention et d'Éducation pour la Santé, France*) [19–22], 36.2% of regular tobacco smokers, 9.3% of alcohol users and 13.2% of cannabis users said they had increased their consumption due to problems related to their work over the past 12 months. However, these results should not obscure the fact that the professional activity globally remains a protection factor of addictive behaviour, compared to an unemployment situation [29, 30].

The consumption of psychoactive substances is an alarming problem of public health and occupational safety. It has an impact on professional and social life and in case of accident, the machinery operators and their companies held responsible. Several legal texts about the fight against the consumption of addictive substances exist in Morocco. The physical and mental fitness of the professional drivers has a twofold appreciation in Law 65-99 of the Labour Code, in Law 52-05 of the Traffic Code and in their application texts [31, 32]. Like all workers, dockers are subject to occupational health Laws (Articles 304-341 of the Labour Code) and must undergo a medical examination for fitness for work by an occupational physician. In addition, every 2 years, they must consult a doctor approved by the Ministry of Health (Article 14 of the Traffic Code) to obtain a medical certificate of driving fitness for the renewal of the driving license. The prevention of addictive behaviour and its penalties are detailed in the Law related to the Traffic Code, the Penal Code and the Law related to the Commerce, Detention and Use of Poisonous Substances [33]. This latter Law combines the medical care of the consumers and

the judicial repression of the dealers. Articles 39-42 of the Traffic Code compel professional drivers to receive ongoing formation from approved establishments. Article 177 deals with screening and criminal sanctions for driving under the influence of alcohol, narcotics or some medications that are contraindicated while driving.

LIMITATIONS OF THE STUDY

Our study presents two main limitations. Our survey was cross-sectional, the healthy worker effect could create a selection bias. The weak points of self-reporting must be underlined especially for the consumption of psychoactive substances mainly for alcohol. The prevalence of alcohol use was probably underestimated because the Muslim religion of our subjects prohibits its consumption and the related issues remain taboo. There was no solution to avoid or limit individual variation in self-reporting. The target was a global quantification and approach. However, this study can be considered a faithful representation of the situation in this sector in Morocco.

CONCLUSIONS

Among the dockers, the handlers are a population at high risk of consumption of psychoactive substances. Collective and individual communications and actions must be conducted amongst this group. The occupational health physicians have to play a key role in the development and implementation of the preventive approach. The support and specialised care facilities must be available to ensure individual attention and early treatment when necessary.

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