Perceived Stigma, Substance Use and Self-Medication in Night Shift Health Care Workers: A Qualitative Study

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Abstract

BACKGROUND: Many risk factors related to alteration of circadian rhythms impact the health of night-shift hospital workers (NSHW), resulting in mental and somatic disorders. NSHW working conditions – including a stressful work environment – and related sleep disorders can foster addictive behaviors in this population. To study how the environment affects night shift health workers (NSHW) and whether psychoactive substances (PS) are a self-medication response.

METHODS: Qualitative study to verify the plausibility of the self-medication theory applied to addictive behaviors. Semi-structured interviews (N=18 NSHW) and thematic analysis, following consolidated criteria for reporting qualitative research recommendations.

RESULTS: Both night shift and the stressing and stigmatizing environment affected NSHW mental and physical health. Alcohol after work and smoking were used as a “social” break but also as a means to reduce stress. Alteration of circadian cycles led NSHW to use of non-prescribed sleeping pills. PS appeared as a self-medication act, modulated by social and professional environments, source of stress, discrimination, isolation and social norms.

CONCLUSION: Anti-stigma interventions in healthcare setting and screening of mental/somatic disorders in NSHW will help reduce harmful self-medication behaviors and improve hospital care in the COVID era.

Background

The ongoing COVID health crisis highlights the indispensable contribution which health professionals provide to society and the importance of their quality of working life (QWL) in ensuring a high standard of care during this prolonged crisis period (1–4).

Night-shift workers are exposed to specific health risks caused by altered circadian rhythms (5, 6). They suffer from sleep disorders, nutritional imbalance, increased cardiovascular risk and metabolic syndrome, and are at greater risk of breast cancer and disorders during pregnancy leading to low birth weight and miscarriage (7, 8). Poor sleep quality in night-shift healthcare workers (NSHW) is strongly correlated to psychological and somatic symptoms such as mood disorders or increased anxiety and irritability. Night-shift work may also lead to disruptions in social and family life (9), poor mental quality of life (8), reduced leisure time, poor psychological well-being (9), and less social support (10). The aforementioned are all risk factors for the emergence of potential addictive behaviors, and are a source of QWL deterioration.

Poor quality of sleep is associated with consumption of psychoactive substances (PS) (11, 12) although this association has not yet been clearly demonstrated in NSHW. Moreover, structural factors related to work organization (e.g., understaffing) constitute additional sources of work-based stress. Similarly, contextual factors (e.g., worsening of pulmonary pathologies observed more frequently during the night) (13) increased stress among NSHW related to their sense of responsibility towards their patients. According to Khantzian's (14) self-medication hypothesis (SMH), substance dependence is a compensatory mean to modulate difficulties affecting stress, self-esteem or relationship (15). We therefore formulate the hypothesis that PS consumption by NSHW may be an attempt to self-manage stress, work rhythms (understood here as working night shifts, shift duration and workload) and sleep disorders, as well as their consequences. This ‘self-medication’ behavior is not without risk for hospital staff or indeed their patients (16), since it can lead to decreased alertness. No study to date in France has ever explored PS use in NSHW despite the fact that this population is at higher risk of consumption (17, 18), frequently for self-medication.

Aim

This qualitative study was conducted before the ongoing ALADDIN quantitative cross-sectional study. We investigated the psychosocial factors linked to the use of psychoactive substances, in a professional context that favors and exposes night workers to PS. The framework of lived experience allow the study of consumption practices, and we seek to highlight their effects on the health and quality of life of NSHW and to what extent these behaviors arise as self-medication response.

Methods

Participants

Eighteen semi-structured interviews were conducted with full-time NSHW working night shifts at least twice a week in 10 Assistance Publique – Hôpitaux de Paris (AP-HP) hospitals. Inclusion criteria were: working at least two night shifts a week, working at night or alternating between day and night shift in one of the AP-HP hospitals and exclusion criterion was being a physician. Physicians were excluded from the study because of their particular characteristics of working on-call during the night and in a different way from other NSHW. To reach large variation sampling, different types of NSHW were included: nurses, nurse assistants, x-ray technicians, lab technicians and midwives. Among the 18 participants, 17 worked only night shifts and one alternated between day and night shifts. Most worked a 10- or 12-hour shift, and one an 8-hour night-shift. This study is based on a purposive, but also theoretical sampling, whereby emerging themes are further explored by deliberately seeking new participants with characteristics that could expand or challenge the theme currently being discussed. New participants were then enrolled using snowball sampling. Participation was spontaneous with workers meeting the investigators during the latter's visits to hospital wards or by e-mail. In accordance with a general inductive approach, the number of participants required was not predefined, but the recruitment was stopped when data saturation was reached. (i.e. when no

new information emerged and when a basic social process had been identified (19)). The diversity of participants' socio-demographic characteristics ensured that a wide range of experiences were covered.

Settings

Semi-structured face-to-face interviews lasted between 35 to 45 minutes using an ad hoc guide (Annex 1) (16 individual interviews and one dyadic interview, i.e. with two participants (20)). Interviews took place in participants' homes or their hospital workplace. All interviews were recorded and transcribed for analysis. The evolutive guide used was constructed by a scientific committee comprising addiction specialists, nurses, researchers, and occupational physicians and was based on the latest scientific literature. The themes investigated were organization of night shift work, relationships with colleagues, relationships with family and friends, health, and substance use (Annex 1). These themes allowed us to establish how and when PS occurred among substances NSHWs, what was used, and how PS was related to the negative effects of work environment.

Regulatory and ethical aspects

This study was approved by the INSERM Ethics Committee (CEEI CD/EB 20-005). Consent was obtained from each participant before being interviewed. All data remain confidential and anonymous.

Analysis:

Data were collected according to general inductive method (21) and thematically analyzed using NVIVO 11 software, in order to highlight the major topics and categories participants use to speak of their experience and express their opinions. This study was conducted in accordance with consolidated criteria for reporting qualitative research recommendations (COREQ) (22). Three experimented researchers in thematic analysis conducted analyses of the collected data, to explore individual experiences of being an NSHW and compare documented experiences between different NSHW. The experience and narrative of the NSHWs allows us to thoroughly describe the phenomena and mechanisms of substance use in this population in a comprehensive approach. Investigators then, systematically identified the themes which emerged in each interview, that is to say, the different units of meaning that had a sense for the interviewees (23). This thematic analysis allowed us to highlight consumption practices and to have a fine-tuned approach to the consumption issues in this vulnerable population. Investigators performed researcher data triangulation in order to confront each other's coding results. The analyses involved data reduction, followed by data display, and ultimately conclusion. Discussions between the investigators led to the construction of a matrix and a thematic tree (Table 1).

Table 1
Addiction thematic tree

Theme title	Sub-Themes	Description
Tobacco	Smoking cessation and motivation to quit	Many methods to quit smoking but no intervention by addiction professional sought
	Decreased consumption	Decreased consumption before quitting
	Context of use	Festive, social use and for pleasure
	Perception	Awareness of one's tobacco addiction
	Electronic cigarettes	Only using electronic cigarettes for tobacco cessation
	Non smoker	Never smoked
	Influence of work	Work as a moderator of tobacco use.
Alcohol	Decreased consumption	Awareness and reduction of alcohol consumption
	Context of use	A social and festive consumption, at a distance from work but which can be impacted by it
	Perception	Occasional and responsible consumers who questioned their own level of consumption
Cannabis	Infrequent use	Opportunity for cannabis consumption: sharing a joint during parties
	No consumption	Keep control of your mind, do not smoke cannabis
	Context and reason to consume	Smoking alone to fall asleep vs. smoking with others for enjoyment
	Past consumption	Tried and stopped
	Cessation	Attention deficit disorder and sluggishness, the negative effects of cannabis that motivate quitting
Medicine and sleeping pills	Self-medication	No medical prescription for sleeping pills use
	Reasons and context of consumption	Used to facilitate falling asleep and to adjust to a daytime rhythm
	Vision of consumption	Although sleeping pills remain an easy and popular solution, they cannot be used over the long term
	'Helping yourself' in pharmacies	No prescription, and NSHW helping themselves to the contents of the ward drugs medicine cabinet
Knowledge, and perceptions of addictions	Hide consumption and addiction	The banning of certain PS in the hospital workplace leads to hidden and difficult-to-identify consumption
	Fake information on consumption	Misconceptions and misinformation about alcohol and tobacco at work
	Negative perceptions	Destruction and loss of control

Table 2
Participants characteristics

Pseudonym	Status	Number of Children	Work	Gender	Age	Department	Number of years of experience (yrs)	Number of years working night shift (yrs)	Shift length (hours)	Shift type
Thierry	Single	0	Nurse	M	27	General ward	5	3	10	Ex-night worker
Paul	Single	0	X-ray technician	M	33	General ward	5	5	12	Night worker
Mohammed	Single	0	X-ray technician	M	31	General ward	8	8	12	Night worker
Sarah	Single	0	Nurse	F	25	General ward	3	2,5	10	Night worker
Franck	In a Relationship	0	Nurse	M	29	A&E*	4	4	12	Night worker
Aïcha	In a Relationship	0	Nurse	F	23	A&E	2,5	2,5	12	Night worker
Téana	Single	0	Child care assistant	F	25	A&E	2	2	12	Night worker
Guillaume	In a Relationship	0	Nurse-assistant	M	56	A&E	28	21	10	Night worker
David	In a Relationship	5	Nurse-assistant	M	50	General ward	15	15	10	Night worker
Max	Married	0	Health manager	M	51	A&E	29	20	12	Night worker
Mireille	In a Relationship	0	Midwife	F	28	General ward	3,5	3, 5	12	Alternate night/days
Sandrine	Single	0	Nurse	F	29	General ward	4	0,1	10	Night worker
Lucile	Single	1	Nurse	F	47	General ward	20	20	10	Night worker
Pierre	In a Relationship	0	Lab technician	M	24	Lab	4	3,5	12	Night worker
Dan	Married	0	Lab technician	M	51	Lab	20	18	12	Night worker
Mathilde	In a Relationship	3	Health manager	F	39	All services		6	10	Night worker
Benoît	In a Relationship	3	Senior health manager	M	45	All services	20	11	8	Night worker
Pierre Yve	Divorced	3	Nurse-assistant	M	45	A&E	22	13	10	Night worker

*A&E = accident and emergency department

Results

Study population

This qualitative study was conducted between October 2019 and February 2020. Among the 18 NSHW interviewed, there were eleven men and seven women. Median age was 32 years and the employment seniority varied between 2 and 29 years. They were six nurses, three nurse assistants, two x-ray technicians, two laboratory technicians, one midwife, one childcare assistant, and three department manager. Seventeen worked only night shifts and one alternated between day and night shifts. Seventeen worked a 10- or 12-hour shift, and one an 8-hour nightshift. Table 2 displays the study sample's characteristics.

The investigators met more young men: for example, only young (below 35 years) X-ray technicians and lab technicians that were men were interviewed. It was observed that the managers interviewed were older than the other professionals. In addition, the interviews were longer with the managers than with the other health professionals (up to more than 45 minutes).

Thematic analysis results

In the global corpus of 1,432 codes, six themes were identified: (1) Work environment, (2) Private and social life, (3) Health, (4) Sleep and fatigue, (5) Addiction, (6) Ways to improve quality of working life.

The interview guide was adapted after five interviews to integrate emerging themes needing deeper investigation. Emerging themes were: relationship with colleagues and its impact on perception of work, health issues related to work and difference between day and night shift-work in terms of addictions. The thematic tree (Table 1) includes five main themes and 22 sub-themes related to PS use. All the example quotations from NSHW below depict their representations of themselves, their tasks, and the associations they identified between their work and PS use.

NSHW PS consumption

The PS NSHW consumed were tobacco/nicotine, alcohol, cannabis, hypnotics, and anxiolytics (Annex 2). The latter two were used as sleeping pills. There was no clear difference between consumption depending on age, sex and profession. No participant mentioned cocaine, amphetamine, opioids or intravenous drug use, although all were asked if they did. In terms of tobacco use (smoking cigarettes), four participants were daily smokers, two were regular smokers, and three were former smokers. Alcohol was the most used PS; only one participant reported not drinking. Cannabis use was infrequent. One participant was an former daily cannabis smoker, while three were occasional users. Six participants reported frequently using sleeping pills (melatonin, hypnotics and anxiolytics).

Work environment ambivalence: between stress, invisibility and autonomy.

We identified NSHW environment themes and sub-themes including night-shift only tasks, calm, a sense of responsibility, health issues, and the importance of private life. NSHW working environment is not conducive to the development of a QWL and can affect consumption practices. Among the factors affecting the quality of life of NSHW, several factors can be mentioned such as negative representations, the ambivalence between autonomy and isolation and the stress inherent in night work.

NSHW working tasks differed from those of their daytime counterparts. For example, in some wards, night-shift nurses had fewer technical tasks (e.g., changing bandages, etc.), while lab technicians had to multi-task as they needed to cover all laboratory posts.

Because of their work rhythms, NSHW were less visible than daytime workers and faced work-related stigmatization. They often saw themselves as being underestimated. Regardless the occupation of night workers, they all reported being the target of unpleasant remarks and demeaning work especially on behalf of their day colleagues. Beyond the unpleasant comments, they also consider the lack of recognition from their superiors who are not interested in neither them nor their work. This lack of recognition, the stigmatization of their job, and the lack visibility has an impact on their self-esteem. Alteration of self-esteem and stigmatization is linked to substance use and may favor use of PS.

"They say: you don't do anything at night. Oh yes, they sometime leave us work 'Anyway you don't have to do anything at night, you'll have time to do it'. That's recurring. They say "you sleep at night, you do nothing..." (Téana – Child care assistant)

The calm night-shift environment was perceived both positively and negatively: although the smaller team could facilitate collaboration, empathy and solidarity, it could also create a feeling of isolation.

A feeling of isolation was a driver for some NSHW to regularly go to parties and social events in order to maintain interpersonal links. This implied binge drinking at least once a week, for the youngest interviewees. Some of the respondents reported that their work was a factor which increased their desire to go out to see a friend. Such social events were always synonymous with drinking.

"Yeah, that's it, an aperitif, a drink at the bar and then that's it [...] Yeah, so the abuse was really going out all the time and seeing people, that's what it was." (Thierry - nurse)

The low number of workers at night could lead to situations of understaffing and consequent stress, two potentially dangerous factors when facing an emergency. These understaffed situations are less mentioned by health managers and senior manager than by other night professionals.

"Eh, and then, what might be more important thing is to be left by yourself, because the slightest problem, you don't have a manager to rely on, it's really, it creates resourcefulness, and it's cool in that way too. [...] And well, it's quite good but at the same time dangerous, I think." (Paul – X-ray technician)

Consequently, NSHW felt doubly responsible for their patients and colleagues because of the need to manage emergencies without supervisors. However, these situations also helped improve their sense of autonomy.

The small team present at night could also increase the risk of accidents when a staff member could not work efficiently because they were under the effect of PS.

"[For example] You and another nurse-assistant are on a ward. The other one is drunk or is sleeping in the corner, you're alone, anything can happen to you, a patient with a problem, anything; you don't have a colleague you can count on; I've always found that to be more than dangerous" (Max - department manager).

These at risk situations cause stress among night workers. Among smokers, the majority reported they smoked cigarettes to cope with this stress during work. For example, unplanned problems and unmanageable workloads prompted them to take a cigarette break to relax. In addition to a means to relieve stress, cigarette breaks enabled NSHW to talk with colleagues about the difficult situations they encountered. Cigarettes were positively perceived by a department manager, as they improved mood.

"I also use cigarettes when I'm faced with a really really contrariety because it's a way I've found to relieve stress." (Max – department manager)

Another characteristic shared by all the NSHW interviewed was the importance of private life: social life and spare time were essential. During their spare time, all participants except one consumed PS. We observed that PS consumption was very different between working hours and non-working hours. NSHW did not consumed the same substances and the consumption reasons were also different. Outside work consumption is more related to relaxation and pleasure whereas during working hour is more related to stress and anxiety management.

The processes involving the working environment of NSHW and its consequences on substance use are explained in Figure 1.

The normative aspect of the consumption of PS: those prohibited, those authorized and in what context

As previously mentioned, consumption habits differed between work and free time contexts. Consuming certain PS at work was forbidden (illegal substances and alcohol), although interviewees mentioned alcohol use during work for special events such as farewell parties or Christmas. Smoking breaks and taking medication at work were not forbidden and socially accepted.

"For us nurses, for Christmas parties and New Year's Eve, we just take half a glass, that's all" (Lucille - Nurse)

Consuming cannabis was considered unacceptable by participants because it is illegal, among other reasons. Tobacco smoking was perceived less negatively as it was not prohibited if consumed outside the hospital premises during work breaks. All the participants declared consuming more PS outside of working hours than during work. Outside of work, some smoked tobacco and cannabis, drank alcohol and took sleeping pills.

The most experienced NSHW reported that in the previous 10 years they had observed a decrease in co-worker acceptability of alcohol and pill consumption in the workplace, as well as a decrease in the number of times they saw their colleagues under the effects of PS while at work.

This evolution corresponds with the strengthening of the normative aspect of consumption in hospitals.

"At that time, the atmosphere in the hospitals wasn't at all the same, and there were a lot of people using alcohol and medicines, [...] at that time, no one hid, I had drunk hospital staff in the workplace, I had staff who actually took medication to keep them going" (Max – department manager).

A declared sense of responsibility and awareness of addictive behaviors were factors associated with non-acceptability of PS consumption in the workplace. Non-acceptability of alcohol consumption (apart from farewells and festive events) and cannabis use at work were mostly explained by a sense of professional responsibility. The ban of PS use in the hospital outside of festive occasions governed PS use at work. NSHW reported that they could not afford to consume PS as they would lose concentration, make mistakes and cause accidents.

"It's more fruit juice and non-alcoholic champagne, because after you've got to keep it together. You can't afford to screw up doses and then say to yourself that it's because you were drinking. No, you can't do that. You can't." (Lucile - nurse)

Interviewees were also aware of the consequences of PS consumption on their health and addictive behaviors., such as a drop in concentration and an increased risk of accidents, dangerous for them and for the patients. Their theoretical and practical professional knowledge meant they were more likely to question their own consumption of PS. NSHWs have both procedural and theoretical knowledge acquired during their training and experiential knowledge acquired with patients suffering from addictions. This knowledge can therefore lead to a personal awareness that has a direct impact on the consumption of PS, for example Mireille, a midwife, stopped drinking beer after she realized that she needed it to relax after work. Similarly, three other nurses questioned and reduced their use of alcohol and cannabis when they noticed that it was becoming more frequent and associated with a need to fall asleep or relax.

"I'm taking a break from alcohol because I realized that when I came home in the evening it felt good to have a beer" (Mireille - midwife).

A central practice: self-medication

The study's NSHW were prone to insomnia and sleep disorders because of the alteration of their circadian rhythms. Some implemented lifestyle improvements to reduce the impact of work on their sleep. Others used cannabis and/or sleeping pills to reduce sleep disorders caused by night-shift work. The use of soporific and relaxing effects of cannabis and sleeping pills had the same purpose: to help NSHW fall asleep when finished with work, and to help readjust to daytime rhythms on days off.

NSHW used various types of sleeping pills. NSHW suffering from insomnia reported that they first used "natural" (such as melatonin and plant) sleeping pills to treat it. If those did not work, they switched to hypnotics and anxiolytics.

"I tried melatonin, it didn't work; then I tried plant-based pills, that worked for a while but doesn't work so much anymore. So now, I'm on zopiclone® and stuff like that" (Aïcha - nurse)

In France, the majority of sleeping pills, except melatonin and plant-based pills, require a medical prescription. However, in our study sample none of those who declared the use of hypnotics or anxiolytics had ever received a prescription for these medications, which confirms the hypothesis of self-medication practices. NSHW stated they took sleeping pills directly from the ward's medicine cabinet. This behavior was not taboo and the respondents mentioned it openly, as they did not see it as something forbidden. They felt that it was tacitly accepted that they could help themselves to these medicines without a prescription.

"stilnox or imovane, but eh same thing, I didn't take much in the end [...] Well, for one thing, it wasn't with a prescription, I lifted some here and there."
(Paul – X-ray technician)

This practice seemed to be so common that one participant - a department manager - regularly observed missing pills in the hospital where he worked without being able to identify the source. He was troubled by this, because beyond the risk associated with self-medication with anxiolytics and hypnotics, these medicines were intended for patients.

Some NSHW who expressed wanting to quit smoking also mentioned self-medication. They had tried many different methods to quit smoking, some more effective than others, and the most common being e-cigarettes. Some tried nicotine patches or chewing gum, others hypnosis. All these methods were self-medicated, in that none were the result of referral by a healthcare or addiction professional. The specific way NSHW dealt with their addiction problems and health issues, in some cases, led to inappropriate use of smoking cessation methods and quit attempt failures.

Discussion

Smoking inside, controlled drinking outside, and self-prescribed sleeping pills

This qualitative study highlighted three main results. First, smoking was very common in the study sample. Tobacco was used to manage night-shift work stress, to improve working life, and to reduce the impact of stress on personal life. Some NSHW attempted to quit smoking without specialist guidance. These attempts were made by self-medicating. Second, PS, including non-prescribed sleeping pills, were frequently used as self-medication to compensate for sleep deprivation, the medicine cabinet in the ward being the primary and most easily accessible source. Third, although alcohol was not consumed at work, for some, it was a means of relaxation after work, in particular during social activities. Indeed, socialization and social interactions were a central theme in the study population interviews.

Working at night therefore had both a direct (tobacco smoking, sleeping pills) and indirect (alcohol) effect on the consumption of PS.

Tobacco and alcohol to relax

In the literature, one risk factor for tobacco use in NSHW is the need to take a break in order to cope with a stressful environment (24, 25). Some studies found a relationship between nicotine dependence scores and levels of job stress in nurses who smoked (26, 27). Moreover, stress is a principal factor in smoking initiation and relapse (28, 29). Other studies found an association between increased use of tobacco and a greater risk of starting to smoke in shift workers (30). However, there is no consensus in the literature about increased consumption of tobacco in NSHW. Here, NSHW perceived tobacco to be an effective solution to combat anxiety, induce sleep more quickly, to stay awake, and increase their performance (2, 31, 32).

In the same way, alcohol consumption is also linked to stress at work and to anxiety (33–35) and literature suggest that shift workers drink more (12). In our study, alcohol was used to self-medicate to relieve sleeping disorders and to cope with stress and psychosocial problems related to shiftwork.

Substance use and stigmatization

Stigma and discrimination of NSHW results in a devaluation of their work and negative representations on night workers and their practices. Stigma has an effect on their self-esteem and their work (36, 37). The combination of low self-esteem, which affects mental health, and marginalization of NSHW are risk factors for addiction development (38–40). The stigmatization of these professionals and their work therefore seems to be a central element that contributes to the consumption of PS and that action must be taken in an effort to reduce these attitude in the health setting, for instance using social contact interventions (41).

Substances use and social moments

Even though alcohol consumption was not permitted in the hospital workplace, it was accepted - albeit in very small quantities - during festive work events. This manner of consuming alcohol promoted controlled drinking, defined by temperance, moderation and self-control. Outside of work, alcohol was consumed as a way to unwind with friends. It was associated with socialization but could lead to dependence, which reflects findings elsewhere (42, 43).

Two other factors that require further investigation are peer pressure or social pressure as they are often involved in tobacco consumption, in particular smoking initiation (44). Accordingly, an association exists between social moments - such as taking a break at work - and smoking. Although social pressure from coworkers and family/friends could be a motivation to stop smoking, it could also lead to relapse.

The need to unwind and connect with friends highlighted in our study and elsewhere, may be stronger in NSHW because of the social isolation they face. It is possible that NSHW feel a greater need to belong to a social group and to share activities such as drinking and/or smoking than their daytime

working counterparts.

Sleeping pills to compensate sleep deprivation

Many studies have demonstrated a strong association between night-shift work and sleep disorders, their prevalence being significantly higher in this population than in daytime workers (16, 45). These disorders are related to the alteration of circadian rhythm (6) which has been identified as a potential cause of certain addictive behaviors and to psychological distress (46). In some cases, consuming PS such as alcohol (47) or cannabis (48) may be perceived by shift workers as one solution to decrease sleeping problems.

However, using PS as a coping strategy to manage sleep disorders may actually worsen the situation. As mentioned by some participants in the present study, alternative strategies exist. For example, the French National Authority for Health (HAS) recommends behavior therapy and psychotherapy as first-line treatments for chronic insomnia (49). Sleep medication (benzodiazepines or hypnotics) should be prescribed only if the latter therapies do not work adequately, and only in accordance with HAS recommendations (50). In our study, some NSHW reported skipping alternative treatments which would have been prescribed by physicians and directly using pills (melatonin and hypnotics) for their sleeping disorders, because the opportunity to self-medicate was easier. One major difficulty with this, as reported by the same NSHW, is that they did not follow recommendations for use.

The heart of the problem: self-medication

The widespread use of self-medication is a key component in problematic PS use in hospital workers (51–53). Self-medication is present in many different countries and in different medical professions. Paramedics, doctors and dentists are known to practice this (47, 48). Self-medication is used to treat a wide range of conditions and for many different reasons (supposed knowledge of medication, mild sickness, and lack of time to consult a professional, etc.). In France, self-medication is amplified by the availability of medications in the workplace that cannot be found outside hospitals without prescriptions.

One type of self-medication found in our study sample was the use of inappropriate smoking cessation methods, without consulting an addiction specialist. Studies have found that a physician's intervention in this context is effective in reducing and stopping smoking (54, 55).

Another form of self-medication by NSHW was the use of sleeping pills without a prescription. We hypothesize that easy access and a tendency to self-medicate in this population reduced their use of illegal substances such as cannabis, in favor of legal substances available in medicine cabinets in wards.

In our study, by not consulting with colleagues or other doctors and health professionals outside their workplace, study participants who self-medicated prevented themselves from finding effective solutions to problems they faced, including tobacco cessation attempts and management of their sleep disorders. Self-medication was a common problem among the NSHW interviewed. Tailored interventions are needed to address this issue and decrease PS use in this population.

Self-medication does not only concern the use of medication without medical advice. In our population, and in accordance with the Khantzian SMH, self-medication means the use of PS to compensate for psychological or social difficulties but also stigmatizing attitudes affecting self-esteem encountered in the context of and because of work. The SMH is thus particularly valid in this population of NSHW who seek solutions for sleep disorders, stress and social difficulties generated by work.

The night work paradox: the desire for autonomy but resulting isolation

A strong paradox

NSHW measured and compared the difficulty of work against that of daytime workers in terms of tasks, work rhythms and ways of working. They reported that they did not have the same working conditions as their daytime counterparts, and that their work was often underestimated and denigrated. In general, daytime workers are the reference category in studies of hospital workers; NSHW are much less studied because of their invisibility (56). This invisibility is related to the much greater difficulty to reach NSHW given that their working hours are completely different from the majority of the general population. Elsewhere, NSHW have highlighted the difficulties they face when trying to contact their hierarchy and to find interlocutors who will help them advocate for change and for improvements in their practice and in their professional lives (57, 58). At night, work is carried out autonomously, most of the time alone or with a very small number of colleagues and without hierarchical supervision. Although the NSHW in our study sought autonomy, night work generated stress, which in turn facilitated PS use. More specifically, NSHW working conditions generate a paradox, because while autonomy is one of the motivations for choosing to work the night shift, this autonomy becomes a burden when inherent, unexpected situations require monitoring and supervision outside the scope of NSHW responsibilities.

A subject which is difficult to discuss

Talking about alcohol and illegal drug consumption was often uncomfortable for the study participants, since this is still a taboo subject, especially in the healthcare setting.

In addition, NSHW believed there was a clear separation between their life during work and outside work. They did not consider that consuming PS outside of working hours could be influenced by their work. Consequently, it was difficult for some of the study participants to talk about their

consumption of PS outside work.

Study strengths and limitations

This study has limitations. The data collected only came from 10 research sites (AP-HP hospitals) in the Parisian area and cannot be considered to be representative of all NSHW in France. Furthermore, this study was focused on paramedics and midwives. Physicians and pharmacists were not included as few work at night, and only in certain services such as the accident and emergency (A&E) department and hospital pharmacies. Moreover, participant recruitment was volunteer based. We can therefore hypothesize that those interviewed were more inclined to talk about their consumption and addictions.

The main strength of this exploratory qualitative study is that it is one of the first of its kind to focus on addictive behaviors and their determinants in NSHW, an understudied, hard-to-reach population due to their isolation. Our results can be used to orient future research on interventions for NSHW and the prevention of PS use for work-related reasons in this population.

Conclusions and perspectives

The results of this study helped us create the self-administered questionnaire subsequently used for the ongoing ALADDIN study (59). The quantitative study was proposed to all NSHW in all AP-HP hospitals. Its results will help us develop new research hypotheses about addiction management in this population.

To conclude, both night shift and the stressful and stigmatized environment affected both NSHW's mental and physical health. PS appeared as a self-medication act, modulated by their social and professional environment, source of stress, discrimination, isolation and social norms.

Anti-stigma interventions in healthcare setting and screening of mental/somatic disorders in NSHW will help reduce harmful self-medication behaviors and improve hospital care which is particularly relevant in the COVID era.

Declarations

Ethics approval and consent

All methods were carried out in accordance with the Declaration of Helsinki and has been approved by an appropriate ethics committee, the INSERM Ethics Committee (CEEI CD/EB 20-005).

Consent to participate: written consent was obtained from each participant before being interviewed. All data remain confidential and anonymous.

The research did not involve the use of biological or human tissue sample.

Consent for publication

Non applicable

Availability of data

The datasets used and analyzed are available from the corresponding author on reasonable request.

Competing interests

The authors have no conflict of interest to declare.

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Figures

Figure 1

Schema of work environment effect on health and psychoactive consumption

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