

# Epidemiological Profile of 60-year-old Drug Addicts at the Center for Integrated Addiction Care at Fann Hospital from 2015 to 2019

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**Abstract:** Studies on the use of psychoactive substances among the elderly are almost non-existent and yet ageing alone could be a determinant of addiction to these substances for this category of population. Our work consists in determining the epidemiological profile of people aged 60 years and over who use psychoactive substances and who are followed up at the integrated addiction management center of the Fann University Hospital in Dakar. This was a retrospective, descriptive, and analytical cross-sectional study of people aged 60 years and older who were followed up at the integrated addiction management center during the period from March 1, 2015 to August 1, 2019. The proportion of elderly people was 6% with a male predominance (91.4%). The majority of users was urban (71.4%), lived with their families (74.3%), and had stayed abroad (65.7%). Only 0.3% of the users started using APS after the age of 60 and the majority of them had been abroad (80.4%). Heroin was the most used drug (50%), with the determinants being a stay abroad and an urban environment, whereas for cannabis it was the absence of a stay abroad and a rural environment. Dependence was severe for 91.3% of the users. Psychiatric comorbidity concerned 15% of the users, dominated by depressive and anxiety disorders, while somatic comorbidity was 42.1%, dominated by viral and metabolic diseases. Withdrawal had concerned only 7.1% of users. The prescribed treatment consisted only of methadone for (32.9%) of the users. Elderly people using psychoactive substances had started this consumption before the age of 60 years and recommendations were formulated for their protection against these substances. Key words: elderly people, psychoactive substances, addiction, integrated addiction care center, Fann Hospital in Dakar.

**Keywords:** Epidemiological Profile, Drug User, Addiction, The Elderly, Diagnostic and Statistical Manual, Fann Hospital, Senegal

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## 1. Introduction

Psychoactive substances ("PAS") are substances that can alter the state of consciousness, mood, and thoughts of those who use them. They include legal substances, such as tobacco and alcohol, as well as illicit products, such as cannabis, cocaine and heroin [1]. Thus, talking about psychoactive substances "PSAs" in Africa systematically

refers to youth, who are the most exposed segment of the population; it is mainly young people who use and consume PSAs [1]. Therefore, doing research among elderly people (over 60 years old) who consume APS in Africa in general and in Senegal in particular may seem absurd. Indeed, the elderly are considered as the holders of wisdom and guardians of socio-cultural values. For this reason, there is little data on the use of APS in this population category, as it is under-identified, under-diagnosed and under-treated [2].

Most screening tools are insufficiently adapted to older adults and estimates of drug abuse in older adults vary widely depending on the methods used. In addition, although older adults report complaints related to APS use, they obtain fewer diagnoses of APS addiction than younger adults [3, 4]. Signs of APS abuse are often confused with those of other diseases or disorders, such as anxiety disorders, depression or dementia, but also with the iatrogenic effects of medication overuse [4]. However, ageing alone could be a determinant of addiction in the elderly since it often leads to changes that can be difficult to live with (sleep disorders, death of relatives, physical, financial, medical difficulties...). Consequently, the use of APS can be considered by some elderly people as a response to loneliness, isolation, depression, stress.... [2, 4]. This is why we are interested in this little-explored theme of "use of psychoactive substances among the elderly", especially since, according to demographic data, Senegal will not be spared by the aging of its population. Our work consists of determining the epidemiological profile of people aged 60 and over who use psychoactive substances and are monitored at CEPIAD.

## 2. Methodology

### 2.1. Patients and Methods

#### 2.1.1. Study Setting

Our study took place at the Centre for Integrated Addiction Management of Dakar (CEPIAD) at the Fann University Hospital in Dakar, which is a psychiatric service unit housed in a two-story building. The objective of the center is to offer outpatient care to people addicted to APS while respecting their human rights. The center is also open to people with other substance addictions and may eventually move into behavioral addiction treatment. The center's staff includes three addictology doctors, including the coordinator, two general practitioners, a psychologist, two social workers, three facilitators, and a field team of 8 to 10 people, including social workers, mediators and educators.

#### 2.1.2. Study Population

The study population consisted of all subjects over 60 years old followed at CEPIAD during the period from March 1, 2015 to August 1, 2019.

#### 2.1.3. Inclusion Criteria

Patients aged 60 years and older with a complete file.

#### 2.1.4. Exclusion Criteria

Patients over 60 years of age with incomplete records.

#### 2.1.5. Type of Study

The type of study performed was a retrospective, descriptive and analytical cross-sectional study.

#### 2.1.6. Recruitment

An exhaustive recruitment of files was carried out in the study period.

### 2.2. Data Collection

#### 2.2.1. Collection Technique

A comprehensive chart review of the records of elderly APS users was conducted during the study period.

#### 2.2.2. Collection Source

Data were collected from archival records.

#### 2.2.3. Tools

A data collection form was made, which allowed us to obtain information on socio-demographic characteristics (age, sex, housing, mode of living, notion of stay abroad with drug use, previous incarcerations...) and clinical characteristics (products used, mode of use, frequency, dependence, age of onset, medical care, regularity of medical follow-up, comorbidities...).

#### 2.2.4. Assessment of Addiction

This was based on the Diagnostic and Statistical Manual (DSM). The evaluation of the addiction was carried out according to the DSM 5 validated substance addiction scale and included 11 items, each rated either 0 or 1: missed professional or personal obligations, use in dangerous situations, interpersonal problems, tolerance, withdrawal, larger amounts, withdrawal fails, time lost, activities abandoned, physical or psychological problems, craving.

#### 2.2.5. Score

Score < 2 (no addiction), score 2 to 3 (mild addiction), score 4 to 5 (moderate addiction), score  $\geq 6$  (severe addiction).

#### 2.2.6. Data Entry and Analysis

The data were entered using Sphinx software version 5.1.0.2. Data analysis was performed with SPSS (Statistical package for Social Sciences) version 18. It consisted of two parts: a descriptive part and an analytical part to search for the determinants of APS use. Chi-square tests were used according to their condition of application, the test was significant when the p was lower than 0.05.

#### 2.2.7. Ethical Considerations

Data were collected anonymously and kept confidential. Before conducting the survey, we had the permission of the Head of the CEPIAD department.

## 3. Results

The total number of patient files was 1154, of which 70 were over 60 years old.

Geriatric proportion: The proportion of subjects aged 60 and over followed at CEPIAD was 6% (70/1154).

Sex: Men were over-represented (91.4%) with a sex ratio of 10.7 (64/6).

Age: The mean age was 64 years with extremes ranging from 60 to 78. The age group between 60 and 65 years was the most represented (70%), while those over 75 years constituted only 1.4%.

*Living environment:* Our study population was mostly urban (71.4%).

*Living arrangements:*  $\frac{3}{4}$  of the SPA users in our study population (74.3%) lived with their families.

*Stay abroad:* Two thirds (65.7%) of the users in our study population had stayed abroad. The countries of stay were mainly France but also Gambia, Mali, Ivory Coast, Morocco....

*Age of drug initiation:* Among the APS users in our study population, 15.7% had started using between the ages of 10 and 19, 42.9% between the ages of 20 and 29, 27.1% between the ages of 30 and 39, 12.4% between the ages of 40 and 49, 2.6% between the ages of 50 and 59 and only 0.3% over the age of 60.

*Place of drug initiation:* The majority of the SPA users in our study population (80.4%) had started using SPAs during their stay abroad.

*Previous incarceration:* Almost  $\frac{1}{3}$  of the APS users in our study population (32.9%) had experienced at least one previous incarceration. The most common reasons for incarceration were drug use (60.9%), followed by drug possession (39.1%), drug trafficking (17.4%), theft (17.4%) and assault and battery (8.7%). The same person can be incriminated for one to several reasons for incarceration.

*Products Used:* The most commonly used drug was heroin for half (50%) of the users followed by alcohol (20%), tobacco (15.7%), crack (10%) and cannabis (4.3%).

Living abroad was statistically correlated with the risk of heroin use ( $p < 0.001$ ), whereas having always lived in the country was correlated with the risk of cannabis use ( $p < 0.001$ ). The urban environment exposes to the use of heroin ( $p = 0.008$ ) whereas the rural environment to the use of cannabis ( $p = 0.021$ ).

In conclusion, the determinants of drug use found were:

- 1) Living abroad ( $p < 0.001$ ) and urban environment ( $p = 0.008$ ) for heroin.
- 2) Having always lived in the country ( $p < 0.001$ ) and rural environment ( $p = 0.021$ ) for cannabis

*Mode of consumption:* The air route was the most frequently used by the users (91.4%), while the digestive route and the blood route represented 20% and 10% respectively. Some used two or three routes at the same time.

*Frequency:* The consumption of psychoactive substances by the users was more likely to be daily (90.0%) than monthly (5.7%) or weekly (4.3%).

*Dependence:* Dependence was severe for 91.3%, moderate for 4.3% and light for 4.3% of the users.

*Psychiatric comorbidity:* It concerned 15% of the users and was essentially dominated by depressive and anxiety disorders.

*Somatic comorbidity:* Somatic comorbidity concerned a little less than half (42.1%) of drug users. The most frequently found pathologies were viral affections (AIDS, hepatitis B, hepatitis C...) 12.9%, metabolic affections (arterial hypertension, diabetes...) 11.4%, pulmonary affections (tuberculosis...) 11.4%, gastric affections (peptic ulcer...) 4.3%, neurological affections (epilepsy...) 2.9%.

*Withdrawal:* Withdrawal concerned only 7.1% of users.

*Prescribed medical treatment (excluding methadone):* The prescribed treatment consisted only of methadone for almost  $\frac{1}{3}$  of the users (32.9%), and for 37.1% of the users the methadone treatment was combined with a medical treatment. This medical treatment consisted of hypotensive drugs (23.0%), antiretroviral (15.4%), analgesics (15.4%), anti-tuberculosis drugs (11.5%), antihistamines (11.5%) and anxiolytics (11.5%).

*Regular medical follow-up:* Regular medical follow-up concerned only 7.1% of users, while 92.9% were lost to follow-up.

## 4. Discussion

*Proportion of elderly people:* The proportion of elderly people over 60 years of age who use APS followed at CEPIAD is only 6%. Studies on the use of APS among the elderly are rare and those that exist are fragmentary. However, with the aging of the population, the question of addiction to APS in this population tends to become a public health problem. Advanced age alone is a potential risk factor for the consumption of APS [5]. Moreover, this population differs from the general population by various particularities: clinical, applicability of diagnostic criteria, screening [5, 6]. Currently, the demand for care in addictology concerning subjects aged 65 and over is increasing [7].

*Gender:* Our SPA users were more men (91.4%) than women (8.6%). This male predominance in terms of APS consumption is partly linked to our socio-cultural context: "drugs are the preserve of men". There is a much greater stigma among women than among men. If a man who smokes Indian hemp is a "ceddo in the local language" (warrior), a woman on the other hand is a "chaga in the local language" (prostitute) and, if she drinks alcohol, she becomes dirt (garbage)" [8]. In addition, women SPA users are in a situation of double fragility in the sphere of drug use and sexuality. This vulnerability is mainly linked to their financial dependence on men to obtain APS. This male predominance has been found in Morocco, a country with a similar socio-cultural context to Senegal. Indeed, a study conducted in the city of Marrakech shows almost similar results (93%) for men and (7%) for women [9]. In France, for example, which has a different culture; Chakroun and al showed that the frequency of SPA use among women was identical to that of men in the Bordeaux user population [10]. *Geographical origin:* In our study, the majority of APS users were urban dwellers (71.4%), while rural dwellers represented only 28.6%. In a study conducted in Marrakech, we found almost the same results, 76% of users were of urban origin against 24% of rural origin [9]. Urban origin seems to favor the use of APS. Today, the privileged terrain for the expansion of hard drugs is that of the urban periphery, that of the belts, where the signs of the crisis of the industrial type city are the clearest. Drugs are ultimately an analyzer of urbanity. Growing up in an urban environment, especially during adolescence, appears to increase the likelihood of

using PAS [11]. In addition, socio-economic characteristics particularly present in the city such as marginalization, isolation or social inequalities could be sources of APS use [12]. In the 1980s, studies showed that alcohol and tobacco consumption was higher in urban than in rural areas [11]. Today, this trend seems to have been reversed. However, if the use of legal drugs (tobacco and alcohol) is decreasing in urban areas, the use of illicit drugs is more important than in rural areas, especially among boys [12]. The more urbanized a young person is, the easier it is to obtain drugs.

In large cities, the proportion of individuals reporting easy access to drugs near their homes is much higher than in rural areas (68% versus 56%) [11]. In urban areas, it is the group effect that encourages young people to experiment with illicit drugs. The latter more often declare that they are pressured by other young people to do so. In rural areas, it is curiosity that seems to push young people to experiment with these illicit products. Age of onset of use: 42.9% of users started using drugs between the ages of 20 and 29, 27.1% between the ages of 30 and 39, 15.7% between the ages of 40 and 49, 12.4% between the ages of 50 and 59, 2.6% between the ages of 60 and 69, and 0.3% between the ages of 70 and 80. Users who started using APS before the age of 60 represented almost all of our study population 99.7% and only 0.3% for those who started after the age of 60. Our results are similar to the study conducted in the city of Marrakech [9]. Thus, it is usual to distinguish two forms of addiction in elderly subjects. Early addiction (before the age of 60), representing in our study, almost all the users (99.7%). In fact, these are subjects who use APS from adulthood and who have reached an advanced age (over 60 years). Older or late-onset addiction (after 60 years of age) constitutes a negligible proportion (0.3%) in our study population. It is often a reaction to processes of loss and change related to aging (isolation, retirement, disabling illness, infirm or bedridden spouse, and difficulty in adapting to an institution...) [5]. Thus, it can be stated that elderly people using APS were not elderly at the time of initiation; they are essentially adult subjects using APS who over the years have become elderly. Compared to early-onset users, late-onset users appear to be in better psychological and physical health and have an overall better prognosis [13, 14].

Stay abroad: In our study population, 65.7% had stayed abroad and among them, 80.4% had started to use APS. Migrants, regardless of country, consistently have a higher incidence of drug abuse/dependence than the general population. In fact, the level of acculturation would be closely associated with the risk of developing addictive behaviors: the higher the level of acculturation, and therefore the cultural references of the country of origin abandoned and those of the host country adopted, the higher the risk of developing an addictive behavior [15]. Indeed, the person who finds himself far from home becomes more anxious, and when he is confronted with economic difficulties the only refuge seems to be the use of drugs to relieve him and to escape from reality [16]. In our study, the stay abroad is a determinant of heroin use with ( $p$  value  $<0.001$ ).

Evaluation of dependence among SPA users: Dependence was found in all drug users. It was severe for 91.3% of the users, moderate for 4.3% of the users and light for 4.3% of the users. Concerning the study conducted in the city of Marrakech [9] 36% of the users presented themselves to the center with a severe addiction, while 31% had a moderate addiction, 20% a light addiction and 13% no addiction. In fact, it is recognized that injectable drugs such as heroin and cocaine/crack are highly addictive, leading very quickly to a strong psychic and/or physical dependence, hence their name "hard drugs" [17].

Previous incarceration: Among the drug users, almost 1/3 (32.9%) had been in prison at least once. The most frequent reason for incarceration was drug use (60.9%), followed by drug possession (39.1%), drug trafficking (17.4%), theft (17.4%), and intentional injury (8.7%). Senegal has ratified all the international conventions on the fight against HIV/AIDS. Moreover, at the national level, a whole arsenal of legal provisions has been put in place to repress drug trafficking and use. Senegal has adopted Law 97 18 of December 1, 1997 on the Drug Code [18]. In addition, this legal framework became much more restrictive with the adoption of a law by the National Assembly, called the "Latif Gueye Law" which criminalizes drug trafficking. This law modified articles 95 and 103 of the drug code, thus criminalizing both domestic and international drug trafficking. However, a review of anti-drug strategies over the last 15 years has shown that neither crop neither eradication campaigns nor the repression of trafficking and consumption have contributed to restricting the growth of narcotic crops [1]. Similarly, illicit crop substitution programs and the tightening of the legal framework have had little success in substantially reducing the use of APS.

Psychiatric comorbidities: Among the psychiatric comorbidities, depressive disorders (5.7%), anxiety disorders (5.7%), and eating disorders (1.4%) should be noted. The pathologies affecting the mental health of drug users are increasingly studied, but they remain no fewer complexes insofar as drug use and psychopathological disorders are intertwined and may be involved in causal interrelations. Drugs and psychopathologies "reciprocally influence their manifestations and their evolution by following one another, intertwining and sometimes confusing" [19]. Nevertheless, it is necessary to distinguish between non-specific mental disorders, which are the most frequently observed in the trajectory of drug addicts, psychiatric complications directly linked to drug use and, finally, personality pathologies which may pre-exist drug addiction. The frequency of psychiatric comorbidity among drug addicts is considered by all authors to be particularly high (from 70 to 90% among those who seek care) [19].

Somatic comorbidities: The most frequently found pathologies were viral affections (HIV, HCV, HBV) for 12.9%, metabolic affections (HTA, diabetes,...) for 11.4%, pulmonary pathologies (pulmonary tuberculosis, interstitial lung disease) for 11.4%, gastric pathologies (gastric

tuberculosis, peptic ulcer) for 4.3%, neurological pathologies (cortical atrophy, epilepsy) for 2.9%. In our cohort, users are confronted with the coexistence of communicable diseases (tuberculosis, viral diseases, neuropathies...) and non-communicable diseases (HTA, diabetes...). Indeed, advanced age alone is an irreversible risk factor for non-communicable diseases but also exposes to the occurrence of communicable diseases. Indeed, advanced age often leads to a decrease in immunity, making the elderly vulnerable to communicable diseases. In addition, injecting drug use exposes to the occurrence of infectious diseases in particular viral (AIDS, hepatitis...) [20].

**Products used:** The most consumed drug was heroin for half (50%) of the users followed by alcohol (20%) tobacco (15.7%), crack (10%) and cannabis (4.3%). In our study, the majority of drug users were urban dwellers (71.4%) who used heroin more frequently ( $p = 0.008$ ), whereas cannabis was found particularly among rural dwellers (28.6%) ( $p = 0.021$ ). Since the 1990s, there has been an evolution whereby Africa has become a transit hub for heroin and cocaine for international criminal organizations. The circulation of drugs has been facilitated in Africa by the complicity of certain authorities, corruption, and local conflict situations for the financing of war (purchase of arms, payment of mercenaries, etc.) [1]. In short, the economic and social institutional problems in most of the countries of sub-Saharan Africa are at the root of the worsening drug situation.

**Regular follow-up:** Only 7.1% of the users had regular medical follow-up, while 92.9% were lost to follow-up. The absence of regular medical follow-up was more frequent among heroin users, with a statistically significant difference ( $p = 0.0268$ ). On the other hand, regular medical follow-up was independent for the other drugs (alcohol, cannabis, etc.). The impact of the family environment on the decrease in the number of drop-outs was discussed by McKay JR *et al.* who described that family support was found to be a factor associated with the initiation of treatment and the maintenance of abstinence during follow-up [21]: family and social support were mediators of the response to treatment at 6 months and at 24 months (during follow-up). Latkin *et al* [22] showed that when a high proportion of the network of friends was made up of drug users, the probability of use increased ( $OR = 25.36$  (1.72 - 375) ( $p = 0.02$ )). This study stated that having a low proportion of drug users in one's network and more friends who could encourage cessation was associated with reduced use. Wasserman *et al* [23] illustrated the importance of the social network on cocaine use. At treatment entry, these authors observed that cocaine users in this study had more friends who used cocaine. They had high exposure to the product; they were more demoralized and they were in demand to stop using. After 3 months of treatment, exposure to the product and an increase in the number of social contacts who were using were associated with a reduction in abstinence. In addition, participants who were demoralized were less abstinent.

## 5. Conclusion and Recommendations

### 5.1. Conclusion

The use of psychoactive drugs is a public health problem in the world. Even if the young population is more exposed to the use of psychoactive substances, the elderly are also concerned by this scourge and they must not be neglected in the fight and prevention programs. In fact, most of the elderly people who use APS had started to use them before the age of 60. In fact, they are "drug addicted" adults who have continued to use drugs beyond the age of 60, i.e. "drug addicted adults who have aged".

### 5.2. Recommendations

#### 5.2.1. To the Public

- 1) Strengthen policies and programs for the professional integration of young people as part of the fight against emigration;
- 2) To set up awareness programs on the harmful effects of the consumption of psychoactive substances;

#### 5.2.2. At CEPIAD

- 1) To ensure the training of health workers on the management of addiction to psychoactive substances at all levels of the health pyramid;
- 2) To adapt screening tools for APS addiction to the elderly.

#### 5.2.3. To the Authorities

- 1) Strengthen legislative measures against the sale and use of psychoactive substances and against youth immigration.
- 2) To put at the level of the embassies services of listening and accompaniment of the emigrants even clandestine.

## Conflicts of Interest

The authors declare that they have no competing interests.

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