Prevalence, consequences and factors associated with drug use among individuals over 50 years of age in the family perspective

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DOI:
10.1080/13607863.2020.1808879

Highlights

• The number of individuals over the age of 50 years using substances represents a public health concern.

• This population represents a group of individuals with peculiar characteristics and demands, with a high risk of bio-psychosocial vulnerabilities

• To date, research has not investigated the vulnerability (cocaine and violence) triggered by the substances users in the family context.

• Assistance from family members can reduce the damage caused by cocaine use in families.

The prevalence, consequences and factors associated with drug use among individuals over 50 years of age, from the perspective of their families

Abstract

Objectives: The aim of this study was to investigate the prevalence, consequences and factors associated with drug use among individuals over 50 years of age, from the perspective of their families, with particularly reference to cocaine use.

Methods: Cross-sectional study based on secondary data with 624 family members of substance users who sought family support in 14 units of the *Recomeço Família* Program in São Paulo, Brazil.

Results: The participants were predominately men, aged 50 to 59 years (68%); cocaine users (inhaled and/ or smoked); living alone; with a low level of education and were unemployed. They were likely to use family money to pay for their substance use, with a history of theft and aggression against strangers, and were not in treatment. Unlike other participants [≥ 60 years (31.1%)]; who were better educated and retired. In this latter group, 32.8% are alcohol users, 14.8% cocaine users (inhaled and smoked), 32.6% has physically assaulted their family, 39.7% had assaulted someone else and 18.3% had stolen objects or money from home.

Conclusions: The population has peculiar characteristics of vulnerability (cocaine use and violence) that remain under investigated; not only do routes into treatment for older adults (≥ 60) but appropriate treatment packages need to be developed too.

Keywords: OPDP, Health services for the aged, Family, Substance-related disorders, Violence, cocaine

INTRODUCTION

With epidemiological transition and the inversion of the demographic pyramid, it is estimated that by 2025, the number of older adults (age ≥ 60 years old) in the world will double (World Health Organization [WHO], 2016). By 2050, this population will reach about two billion people and will represent one fifth of the world population (WHO, 2016; United Nations [UN], 2017). Almost one in five older adults have one or more mental health condition or substance use (Substance Abuse and Mental Health Services Administration [SAMHSA, 2016]). Substance use disorder (SUD) is a worldwide phenomenon, which is not limited to the younger population (Koechl, Unger & Fischer, 2012), since, more than ever, older adults are reporting substance use at some point in their lives. The present study investigated the prevalence, consequences and factors associated with drug use among individuals over 50 years, from the perspective of their families, with particular attention paid to cocaine use.

The prevalence of SUD in older adults remains relatively constant until the age of 60; thereafter, the rate drops to around 6% to 10% (SAMHSA, 2014; 2016). Despite this, substance use research, especially cocaine and crack in older people with drug problems (OPDP) and its consequences (including violence), remain scarce in scientific literature. Understanding cocaine use by OPDP who are engaged with health services has been limited and remains little explored (Rivers et al., 2004; John & Wu, 2017). In the last few decades, evidence has shown an increase in the prevalence rates of drug use (e.g. alcohol and cannabis) in people over 50 (Doblhamme et al., 2009; Fahmy et al., 2012; Crome et al., 2015).

Drug use around the world has been on the rise, in terms of both overall numbers and the proportion of the world's population that uses drugs. In 2009, the estimated 210 million users represented 4.8 per cent of global population aged 15–64, compared with the estimated 269 million users in 2018, or 5.3% of the population (World Drug Report [WDR], 2020). Whilst the trends of psychoactive substance use by the younger population is growing globally, little is known about the epidemiology of OPDP; for example definitions of age (over 50, 55, 60 and 65 years), types of substances used and the reasons for this modern-day phenomenon (Kaskie et al,. 2017; Flint et al., 2018). The literature review by Taylor & Grossberg (2012) highlighted that traditionally psychoactive substance use has been assumed to curtail as people grow older, whereas

there is an increasing awareness of how common and how unique older substance users are relative to the younger population. Due to gaps in the literature it is difficult to make meaningful comparisons about substance use by older adults in different cultural contexts globally, even in different regions in the same country (UN, 2018). New treatment strategies and public policy reformulations are required to face the problem of substance use and its consequences in this age group (EMCDDA, 2017).

Data from The National Survey on Drug Use and Health (NSDUH) highlights that only 25.8% of people aged 65 and over had used illegal drugs during their lifetime, while lifetime use rates were 53.8% for ages between 60 years old and 64 years old and more than 50% for each age group between 19 and 59 years old. The prevalence of "heavy" alcohol use in 2014 was lower among individuals aged 65 years or older (2.2%), when compared to other age groups (SAMHSA, 2014).

Substance use, particularly the use of cocaine, is extremely prevalent within Brazilian society. According to the 2019 World Drug Report, Brazil is the largest market for cocaine in South America with approximately 1.5 million users of both cocaine powder and crack cocaine (UNODC, 2018). In Brazil, data from the National Survey on Alcohol and Other Drugs (2012) showed an increase in the percentages of individuals in the general population aged ≥ 50 years, from 24.1% (2006) to 27.4% (2012). Among this population, in 2012, lifetime use of cocaine (aspirated) was 2.5% (of which 1.5% (50 - 59 years) and 1% (≥60 years), with a greater predominance among men (Abdalla et al., 2014).

OPDP have a unique combination of characteristics and vulnerabilities, representing a challenge for health services and public policy makers (Boeri et al., 2011). The chronic effects of substance use exacerbate and complicate the natural consequences of the aging process, which itself is often associated with a series of biopsychosocial complications (EMCDDA, 2010; SAMHSA, 2013). In addition, social problems in this age group can arise simultaneously with substance use, such as: extreme poverty and social helplessness, poor housing conditions, living in unsafe neighborhoods and with greater risks of violence, accidents, stigma and discrimination, complicated bereavement, social isolation, lack of social support and financial difficulties (Atkinson, 2016; Bennett et al., 2018). Other issues, such as abuse, neglect and violence can also have a negative impact on the health of this population, with negative repercussions for well-being and quality of life, and depreciating life expectancy (Atkinson, 2016; Bennett et al., 2018).

The risks faced by OPDPs are not catastrophic by themselves, but become part of a vicious circle (EMCDDA, 2010).

Although contact with health services can offer unique opportunities to assess OPDP, SUD remain unassessed or diagnosed among the older adults (EMCDDA, 2010). Health professionals may not have adequate training and the assessment of substance use in older adults can be limited (Royal College of Psychiatrists [RCP], 2019). In addition, OPDP may be reluctant to talk about their problem for fear of being discriminated against due to the double stigmazation associated with both substance use and ageism (EMCDDA, 2010).

OPDP suffer from the physical and mental effects associated with SUD, including overdoses and susceptibility to infections, which should be approached in the same way as they are with younger people (Sarkar et al., 2015). OPDP are more vulnerable to social exclusion, susceptible to isolation from their family and friends, and likely to be involved with networks of drug users and dealers. They are more exposed to marginalization, in general, with higher levels of unemployment, low education, homelessness and are more likely to have been arrested (Cassar et al., 2009). The high degree of psychosocial vulnerability may be compounded by lack of contact with family and friends who are not drug users and to the loss of peers due to death (EMCDDA, 2010). However, when they overcome barriers and engage with treatment, they have better outcomes and improvement in social conditions compared to those who do not engage (EMCDDA, 2010).

Families are considered a cornerstone in supporting people with SUD, though families can also increase vulnerability. It is estimated that more than 25 million Brazilian individuals cohabit with a family member with SUD, according to the National Survey of Drug Users Families (Pacheco et al., 2020). There is an intersection of social vulnerabilities in families, which weaken the bonds, between the individual and the family, since, for each person with SUD; there are four others who live with the problem at home. Thus, families play a crucial role both for prevention and therapeutic interventions associated with SUD (Pacheco et al., 2020).

The high rate of interpersonal problems can result in negative feelings, family aggression and violence in association with impaired social interaction and family dynamics (McCann et al., 2017). The consequences of SUD are not restricted to users only, but significantly extend into the family and people living together (McCann et al.,

2017). Thus, family members (intimate partners, parents, siblings, children, relatives and close friends) are among those who suffer the most and face a variety of problems when supporting people with SUD. In addition, the stigma and social isolation extends to family members, having to work hard to deal with family discussions, dispel the tensions generated by SUD, often involving aggression and violence. Thus family support, understood as emotional, financial and material support, becomes even more challenging, yet remains essential to mitigate the harmful effects of SUD on the physical, psychological, social and financial wellbeing of OPDP (McCann et al., 2017).

Evidence shows an increase in the prevalence of substance use in people over 60 and 65 of age, but little is known about the differences that exist in these groups, and the consequences have been poorly evaluated. Often the problems in this population are presented as generic and studies are often literature reviews (Taylor & Grossberg, 2012; EMCDDA, 2017; Diniz et al., 2017; UN, 2018) but the relationship between drug use and domestic and property violence, drug trafficking, economic/ socio-cultural aspects and the effects of drugs on youth behavior have been well documented (Pillon et al., 2010; Diehl et al., 2016). However, little is known about the impact of OPDP on family members.

There is a need to expand the knowledge about OPDP, to contribute relevant clinical guidelines, and develop public policies aimed at reducing the vulnerability of this population. Substance use by OPDP requires surveillance and research, including tracking substance use in the most vulnerable populations and developing effective care packages to address mental health problems and physical morbidities (Wu & Blazer, 2014).

METHODS

Study design

This is a cross-sectional study conducted based on secondary data from family members who sought outpatient treatment for substance dependence in all 14 units of the Recomeço Família Program, located in the municipalities of São Paulo, Campinas, Guarulhos, Francisco Morato, Jundiaí and Ferraz de Vasconcelos in the State of São Paulo, Brazil. It is a representative sample of OPDP, obtained from a total of 5201 (100%) records of family members, who had sought treatment at the respective services. The sample was 624 (12%) family members of OPDP individuals.

The Recomeço Família Program is part of the Recomeço Program, which aims to provide psychological support and guidance to family members based on the codependency approach, similar to the 12-step models for families attending mutual support groups, such as Al-anon and Nar-anon, Al-teen. It is a multi secretariat program by the Government of the State of São Paulo, implemented in partnership with the State Secretariats of Health, Justice and Citizenship with 11 Citizenship Integration Centers, located in the city of São Paulo, Brazil, and five surrounding cities. The eligibility requirements for the study were the medical records of a user aged 50 years and older (regardless of substance used) and engagement with the Recomeço Família Program for the first time. The data was collected over a 1 month period and involved examination of medical records from 2014-2018 by health care professionals, who had been trained in the data collection process.

Instruments

Standardized instrument were used containing the following information:

a) Socio-demographics information: gender, marital status (single, union stable, divorced / separated, widowed), living with partner, homeless, occupational status (employed, unemployed or retired), education level (elementary degree, high school and tertiary degree) and literate. The nature of the kinship of the person who sought treatment: Father/ mother or guardian, spouse or other family member (brothers, uncles and grandparents). The age of OPDP was defined as an independent variable, categorized into two groups: (Group 1 [G1] = age between 50 to 59 years and Group 2 [G2] = age ≥ 60 years).

b) Substance use: the use of each type of substance was individually evaluated in the preceding three months: alcohol, tobacco, marijuana, cocaine (inhaled), crack (smoked) and Cocaine and/or Crack, benzodiazepines and amphetamines use, with dichotomous responses for each independent variable (Yes / No). The length of time used and the age at which the individual started using were also assessed (LENAD Família, 2013; Sola et al., 2018).

c) Information on the consequences of substance use in terms: composed of 8 items that assessed interpersonal violence in the family, with direct questions, such as: “Have you been victims of aggression and threat to a family member and other people, in the last year?”, “Have you been robbed (money or object) at home by your substance user?", "Have you given your family money to buy drugs to use in the last year?", “Do you as a member of the family talk about the drug use problems with the family users?”; "Has the drug user assaulted someone else?"; "Has the drug user been physically assaulted?"; "Has the drug user threatened a family member?"; "Has the drug user had legal problems?" (Yes/No). (LENAD Família, 2013; Sola et al., 2018). This instrument was validated (psychometric evaluation and test-retest reliability) for the Brazilian population and showed good levels of reliability for its use (Sola et al., 2018).

d) Treatment: whether the user and his or her relative has had some form of treatment for addiction in the last 12 months (Yes/ No) (LENAD Família, 2013; Sola et al., 2018).

Statistical analysis

To analyze the results, a database was created in MS-Excel® spreadsheets by means of double typing. Subsequently, the data was transferred to STATA. Exploratory data analysis was performed by calculating frequencies and percentages to elucidate the sample's characteristics. The Chi-square test was used to measure the degree of association between two variables, to test the significance between two qualitative variables, to compare proportions and the possible divergences between the frequencies observed and expected for a certain event. For multivariate analysis, variables with $p < 0.05$ values were first considered in the bivariate analysis, and then the unadjusted Odds Ratio (OR) was calculated. Thus, variables that did not reach levels of significance were not included in the later stage, in order to include a greater number of variables. Subsequently, the adjusted OR was calculated, considering age through age groups (independent variable) and covariates (sociodemographic, substance use and situations of violence). In a second analysis, each type of substance used was defined as an independent variable [(i) cocaine, (ii) crack and (iii) cocaine/ crack] with the variables related to the violence committed by the OPDP and the treatment reported by family members. For all tests, a significance level of p-value <0.05 with a 95% confidence interval (CI) was considered. Two variables ("Does the family talk about drug use

problems with the users?" and "Are you, as a family member, getting support?"), did not enter the logistic regression analysis because it did not reach the *p*-value < 0.05)

Ethics

The study was approved by the Research Ethics Committee of the Federal University of São Paulo (UNIFESP) (Process No. 90411318.2.0000.5505).

Results

Sociodemographic information

The family members who sought assistance in the Recomeço Program were: 168 (26.9%) wife, 108 (17.3%) children, brothers (95) (15.2%), parents 61 (9.8%) and others (grandparents, stepmother / stepfather and cousins) 14 (2.5%). Of the family members, 112 (79.6%) were female, with a mean age of 44.8 years (standard deviation 16.2) ranging from 12 to 83 years.

The data in Table 1 describes the profile of the total sample and the two groups evaluated. The sample consisted of 624 OPDP individuals, all of whom were cocaine users (inhaled and/ or smoked), divided into two age subgroups: 430 (68%) 50 - 59 years and 194 (31.1%) age ≥ 60 years.

The sociodemographic characteristics of the OPDP show that the majority were male (79.6%), without a partner (65.2%) and were not living on the street (96.0%). Half of the sample had some work, were literate and had attended elementary school. The age range was 50 to 90 years old, with a mean age of 57.2 ± 6.5 years (standard deviation) [95% Confidence Interval (CI) 56.4 - 57.8 years], (data not available in the table).

Particular differences can be noted between the profiles of the two groups evaluated, with the exception of the gender variable, which remained close between men and women in each group. Group 2 (> 60 years old) differed because they were widowed, lived alone, were not on the street, retired, although almost half had studied to a higher level, and a good portion were illiterate (44.4%). (Table 1).

In the multivariate analysis, the results highlighted two peculiarities among individuals in G1, as they had high school education (ORA = 2.3 CI 95% 1.10; 4.92) and are working

(ORA = 2.3 C I95% 1.19; 4.44). When assessing age between groups, in G2 the average age was 65.3 ± 5.0 years, with a range between 60 and 90, and for G1, the average was 53.6 ± 2.7 years, ranging between 50 and 59 years old (data not available in table).

[*Insert Table 1*]

Substance use

In Table 2, in the total sample, a high percentage of alcohol use was observed, but also using a second substance. There are peculiar characteristics about the type of substance used in each group; thus when participants were only using one substance, such as alcohol, tobacco, marijuana and cocaine (inhaled and smoked), these were different between the two groups ($p \leq 0.05$). Among the older OPDPs in G2, the prevalence of alcohol use was 32.8%, 38.8% tobacco, 17.5% cannabis. Regarding cocaine use, there was greater consumption, specifically, differentiating between snorted cocaine use [118 (18.9%)] from crack [n=78 (12 %)] versus "cocaine (inhaled/smoked)" [n=155 (24.8%)] (Table 2). In this group, just over a third were using one or two substances, such as alcohol and/ or tobacco. While among G1 users, around a third used cannabis, cocaine and crack, the OPDPs were multiple drug users (data not shown in the table). In the present sample, there were only three benzodiazepines users and no amphetamine users, and none were injecting substances (data not available in the table). In the multivariate analysis, individuals in G1 (50–59 years) were twice as likely to be cocaine users (ORA = 2.0 CI 95 % 1.14-3.5; $p = 0.016$) and three times more likely to be crack users (ORA = 3.4 CI 95% 1.48-8.0; $p = 0.004$), compared to G2.

[*Insert Table 2*]

Consequences of substance use and treatment

Table 3 shows the differences in the family behavior in relation to the substance use and its consequences. Of the total sample - more than half of the families had talked about the problems related to drug use and its consequences, 15.7% family's gave money to sustain substance use, 20.2% had been robbed (money or objects from home) so the family member could continue their substance use.

In addition, 35.9% and 34% of family members had suffered physical aggression or threats, respectively, and 23.4% reported threats being made by people outside the family. As regards engaging with treatment, for 85.3% of users and half of family members, this was the first time that they had tried to access treatment for substance use.
When comparing the two groups, individuals in G1 had higher percentage of problems, the family members had tried to talk to them about the drug use more frequently; they used family money and they had stolen money or household objects to maintain drug use. The variables related to physical aggression, threats and problems with the judiciary did not differ between samples. However, 39.7% of G2 individuals had threatened someone outside the family. In addition, more people in G1 (79.1%) were engaging with treatment when compared G2 (20.9%), with statistically significant differences.

In the multivariate analysis, individuals in G1 were more likely to belong to a family that tried to negotiate and face problems related to the consequences of drug use. So they talked to their family about problems related to drug use (Odds Ratio Adjusted ORA = 1.5 CI 95% 1.08; 2.20 p = 0.015), as well as problems related to theft of objects or family money to maintain drug use (ORA = 2.3 CI95% 1.41; 3.84 *p* <0.001). On the other hand, this group did not show aggressive behaviors to people outside the family (ORA = 1.7 95% CI 1.15; 2.56; *p* = 0.008).

[Insert Table 3]

Table 4 presents the data from the multivariate analysis that assesses the cocaine and crack use, violence in the family and the individual's participation in treatment. Using crack (ORA = 1.9 CI95% 1.18; 3.12 p = 0.009) and using both cocaine/ crack (ORA = 1.7 CI95% 1.0; 2.82 p = 0.045) almost doubled the chance being in a family that tried to address the problems by giving money to sustain the drug use.

Crack users (ORA = 5.0 CI 95% 2.94; 8.63 p <0.001), cocaine (OR = 1.9 CI 95% 1.18; 3.09 p = 0.009) and cocaine/crack users (ORA = 2.9 = CI 95% 1.88; 4.69 p <0.001) were statistically more likely to have stolen objects or money from the family home. Of those it is noteworthy that only cocaine users were at high risk of robbing from third parties (ORA = 1.8 CI 95% 1.02; 3.09 p = 0.040). In this analysis, it was observed that the crack using OPDP were more likely to be engaging with treatment (ORA = 1.9 CI 95% 1.01; 3.62 *p* <0.001). In addition, crack [OR = 3.2 CI95% 1.83;5.70]; Cocaine [OR

= 3.0 CI95% 1.86;5.01] and in the concomitant use [OR = 3.6 CI95% 2.26;5.93]) were three to four times more likely to have problems with the judiciary.

[*Insert Table 4*]

Discussion

This is one of the few studies carried out in Brazil that has evaluated the consequences associated with substance use - especially cocaine and / or crack - by OPDP, from the perspective of their families. Among the main findings, it is highlighted that the OPDP of G1 (50-59 years) differs in terms of prevalence, type of substance used and consequences when compared to those of G2 (> 60 years). As previously described, aging is a global, multifaceted and challenging phenomenon and there are a number of bio-psychosocial factors which make this population more vulnerable to substance use, and the accompanying adverse consequences can further exacerbate pre-existing health problems, such as chronic non-communicable conditions (NCC) (Atkinson, 2016).

Such characteristics tend to have a negative impact on treatment outcomes for SUD and represent a serious threat to quality of life and well-being. In addition, contribute to already overburdened health services and increase the social, economic, family and health costs of people involved (SAMHSA, 2014; Wu & Blazer, 2014). Therefore, OPDP represents a group of individuals with peculiar characteristics and demands, with a high risk of biopsychosocial vulnerabilities, adding an increased demand upon SUD services, and challenges for health professionals and public policy managers (EMDDCA, 2017).

The differences between sociodemographic information were particular to each group; indeed individuals with SUD are generally heterogeneous with respect to a number of characteristics and domains of functioning (Boeri et al., 2011). In the present sample, social factors related to work, education, living alone (widowed), not being on the street and being retired were the main differences observed (Table 1). Demographic aging presents important challenges, not only because of the increase in the number of people, but also because of the change in the pattern of behavior and the type of substance used by this population. Besides, there is a wide range of health risks such as sexually transmitted infections (STIs) HIV/ AIDS, hepatitis and tuberculosis, social exclusion (stigma/ prejudice) and isolation, meaning their risks are equitable with other age groups (Koechl, Unger & Fischer, 2012; Fahmy et al., 2012).

In terms of substance use, a higher proportion of the older participants concurrently used tobacco and alcohol, and to a lesser extent, marijuana and cocaine use (inhaled and smoked), while cocaine users in the 50- 59 group had more potential risks (inhaled and smoked) (Table 2). The point reinforces that alcohol is still the most used substance among all ages, even with a reduction in consumption later on. In addition, in the past decade, older people are increasingly adopting cocaine, crack and marijuana as the main drugs of choice (Sarkar, 2015). A large scale American study showed that almost 60% 50 and 64 year olds had used alcohol in the last year, 2.6% marijuana and 0.41% cocaine. Alcohol and drugs use was observed more in men. Drug use, unlike the alcohol use, was not associated with education, but was related to marital status (singles) and major depression (Wu & Blazer, 2014).

The current study focuses on the aging process and associated health challenges for OPDP. The main problems were social issues, such as unemployment and retirement. However, these social factors are strongly associated with a wide range of health risks and the negative impact these have on the development of social networks and acquisition of skills and knowledge, all contributing to increased isolation and marginalization (Koechl, Unger & Fischer, 2012; EMCDDA, 2017).

Evidence corroborates these results showing that these individuals, both due to substance use and being over 50, are often already out of the labor market, and may be involved with informal work, unemployed or temporarily economically inactive, which is further reinforced by the low level of education. This economic reality has been previously noted amongst cocaine and crack users, with high levels of social problems related to employment, family and criminality (Paim Kessler et al., 2012). A European study showed that 86% of older drug users who entered treatment primarily for heroin use were unemployed or economically inactive (EMCDDA, 2010).

Another important result of this study was the examination of the consequences of cocaine and/ or crack use for families, especially by individuals aged 50-59 years (Table 3). There is evidence that the compulsive effects of cocaine and/ or crack use combined with the financial costs, resulting several forms violence against the family, corroborating Connolly & Buckley (2016), and have both economic and psychological impacts on the family (Orford et al., 2017). Such behaviours have previously been noted among younger drug users, committing crimes to acquire drugs (Connolly et al., 2008), work in drug trafficking (de Carvalho and Seibel, 2009) or trading sex to finance their crack use (Diehl

et al., 2016). Crack and cocaine use quickly incurs debts, leading to the intimidation from drug dealers, which affect not only the users themselves, but also family members (Connolly & Buckley, 2016).

There are a series of negative experiences which impact upon the family when there is someone with SUD, including the perception that the substance user is generally difficult to deal with. Additionally, families also faces breakdown of relationships, financial difficulties, concern for the health and safety of substance users, generalized fear in the family as a whole and personal anxiety and depression (Orford et al., 2017). There are further negative dimensions to various aspects of family life, including family distancing from the drug user, social isolation, aggressive behavior, lack of interest in healthy social activities among peers not related to drug use and a series of negative emotions (e.g. fear, anger, frustration and resentment) (Marchi et al., 2017). These various dynamics often make the person with SUD the center of priorities within a family (Melhuish, 2011).

These dynamics also contribute to social inequalities and poverty. In the present sample, the peculiar characteristics of psychosocial vulnerability of the OPDP linked to violence, family problems, scarcity of financial resources and low employment opportunities. In addition to drug use itself, these factors can push families further into the drug market, which risks perpetuating a cycle of violence (Diehl et al., 2016; Marchi et al., 2017).

Finally, our study shows that families face the problem of talking to their OPDP individuals about the drug use and its consequences (Table 3) whether that be to relieve their suffering, or in an attempt to contain the behaviors related to the use. Resources need to be made available to support families, since families often need help to establish healthy and satisfactory relationships, to improve the mental and physical health of all individuals (Marchi et al., 2017; Kuerbis, 2019; Pacheco et al., 2020). On the other hand, it is precisely these problems that lead families to seek some type of assistance, from either health or social services, such as the program in question. Bearing that in mind that, in the present sample, the OPDP family member was usually a crack user, and the families were comprised of individuals who were not in treatment and family members had sought similar treatment in the last year. A large number of people, who seek treatment for substances and experience different types of violence related to drug use, belong to families who are doubly exposed to negative and harmful behaviors (Kuerbis, 2019;

Pacheco et al., 2020). Thus, as part of a therapeutic alliance to enhance recovery, it is necessary to understand the interconnection between the family's problems and the personal problems of the OPDP (Diehl et al., 2016; Marchi et al., 2017).

Treatment challenges and implications for clinical practice

An important implication for clinical practice in the present study is the importance of addressing and understanding the association between cocaine/ crack use and the OPDP involvement in multiple forms of violence. The combination of these elements increases the complexity of the individual seeking treatment, as they significantly influence the maintenance in treatment programs therefore, difficulties to manage, requiring the inclusion of other legal dimension that transcend traditional care offered in the biomedical model (Diehl et al., 2016).

There is a growing concern about the lack of health care provision with OPDP family members (RCP, 2015), and that new public policies in many countries need to broaden to reflect specific OPDP issues, including caregivers (Drug Scope, 2014). Due to the physiological changes of aging and NCCs in older adults, the treatment of SUD needs additional specific social and health care relative to the general population (Arndt, Clayton & Schultz, 2011).

Hence, it is important to introduce routine screening for substance use amongst older adults and their respective family members, which goes beyond alcohol and tobacco use, and include screening for other drugs such as cocaine, crack and marijuana. Such screening would increase the chances of early detection of substance use, and hopefully quicker engagement with treatment and reduction of health problems for older adults. In addition, a lessening of the negative consequences of the violence associated with substance use (Castro-Costa & Diehl, 2019).

There is an urgent need to train of health professionals, with the aim of providing encouragement and sustained support for the cessation of substance use and relapse prevention in older adults. In particular, primary health care teams have a key role to play in encouraging OPDP to reflect on the consequences continued use. To function effectively, it is essential that professionals take into account the health beliefs of older

adults and themselves, including knowledge of resources and approaches to abstaining from substance use (Castro-Costa & Diehl, 2019; Pillon et al., 2010).

Substance cessation programs for this population need to target OPDP who are not ready to stop use. The development of networking partnerships for services specifically for older adults and substance user's services is a promising strategy. The goal should be set on improving access and availability of both services - age should not be an impediment to receiving high quality SUD care. Education about the benefits of stopping drugs in OPDP involves understanding the aging process, which is strongly related to the concept of health, and striving for complete physical, psychological and social well-being (Castro-Costa & Diehl, 2019).

Limitations

Despite being a robust sample, secondary data were used and the findings cannot be generalized, since this convenience sample represents perhaps those families most motivated to seek help. Although there are limitations associated with this, the fact that standardized and validated instruments were used ensures the reliability of the source and gives consistency to the measures obtained.

Implications for future studies

OPDP studies should be prioritized due to the scarcity of research both in developed countries and, mainly, in developing nations like Brazil. Broad research is needed to include vulnerable populations, evaluate long-term results and the effectiveness of treatments available for OPDP.

CONCLUSION

The population has peculiar characteristics of vulnerability (cocaine use and violence) that remain under investigated; not only do routes into treatment for older adults (≥ 60) but treatment packages sensitive too need to be developed. Thus moving beyond the perspective of health professionals, creating space to plan approaches that recognize the experience of family members.

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Table 1. Sociodemographic profile of OPDP.

	Total	Age [n (%)]		Odd Ratio [CI 95%]	
		G1 [50 – 59] 430 (68.9)	**G2 [≥ 60] 194 (31.1)**	**Unadjusted**	**Adjusted**
Gender					
Male	499 (79.6)	345 (69.1)	154 (30.9)	1.0 [0.688;1.67]	-
Female	108 (17.9)	73 (67.6)	35 (32.4)	**Ref**	-
Marital status					
Single	96 (15.4)	77 (80.2)* †	19 (19.8)	0.591 [0.331;1.06]	-
Union stable	217 (34.8)	137 (63.1)	80 (36.9)	1.4 [0.935;2.09]	-
Divorced/ sep	73 (11.7)	51 (69.9)	22 (30.1)	1.0 [0.579;1.85]	-
Widowed	24 (3.8)	14 (58.3)	10 (41.7)	1.7 [0.722;4.06]	-
Not declared	214 (34.3)	151 (70.6)	63 (29.4)	**Ref**	**-**
Live with partner					
Yes	217 (34.8)	137 (63.1)	80 (36.9)	**Ref**	**Ref**
No	407 (65.2)	293 (72.0)* †	114 (28.0)	**1.5** [1.05;2.13]*	1.5 [0.935;2.40]
Homeless					
Yes	23 (4.0)	21 (91.3)* †	2 (8.7)	4.8 [1.13;21.0]*	2.4 [0.539;10.64]
No	551 (96.0)	376 (68.2)	175 (31.8)	**Ref**	**Ref**
Ocupational					
Employ	344 (55.1)	281 (81.7)	63 (18.3)	1.8 [1.05;3.34]*	2.3 [1.19;4.44]*
Unemploy	93 (14.9)	75 (80.6)	18 (19.4)	1.7 [0.848;3.61]	2.2 [0.982;4.89]
Retired	116 (18.6)	24 (20.7)	92 (79.3)*	0.110[0.056;0.216]*	0.124 [0.058;0.264]*
Not answer	71 (11.4)	50 (70.4)	21 (29.6)	**Ref**	**Ref**
Schooling					
First degree	160 (25.6)	103 (64.4)	57 (35.6)	0.846 [0.572;1.25]	0.932 [0.562;1.54]
High School	86 (13.8)	71 (82.6)* †	15 (17.4)	2.2 [1.21;4.03]*	2.3 [1.10;4.92]*
College	11 (1.8)	6 (54.5)	5 (45.5)*	0.562 [0.168;1.87]	0.404 [0.099;1.65]*
No answer	367 (58.8)	250 (68.1)	117 (31.9)	**Ref**	**Ref**
Literate					
Yes	212 (81.0)	275 (71.2)	111 (28.8)	3.0 [1.798;5.33]*	**
No	50 (19.0)	28 (44.4)	35 (55.6)*	**Ref**	-

Note: *p-value <0.05 through *Chi*-square test. **The model was unable to execute it for convergence problems. (N=624)

Table 2. Types of substances used by OPDP.

	Total	Age [n (%)] G1 [50 – 59] 430 (68.9)	G2 [≥ 60] 194 (31.1)	Odds Ratio (CI 95%) Unadjusted	Adjusted
Alcohol					
Yes	579 (92.8)	389 (67.2)	190 (32.8)	**Ref**	**Ref**
No	45 (7.2)	41 (91.1)* †	4 (8.9)	**5.0** (1.77;14.2)*	2.9 (0.988;8.56)
Tobacco					
Yes	242 (38.8)	155 (64.0)	87 (36.0)	**Ref**	**Ref**
No	382 (61.2)	275 (72.0)* †	107 (28.0)	**1.4** (1.02;2.03)*	1.4 (0.997;2.03)
Cannabis					
Yes	80 (12.8)	66 (82.5)* †	14 (17.5)	**1.3** (1.27;4.65)*	1.2 (0.616;2.34)
No	544 (87.2)	364 (66.9)	180 (33.1)	**Ref**	**Ref**
Cocaine					
Yes	118 (18.9)	99 (83.9)	19 (16.1)	**2.7** (1.63;3.13)*	**2.0** (1.14;3.51)*
No	506 (81.1)	331 (65.4)	175 (34.6)* †	**Ref**	**Ref**
Crack					
Yes	78 (12,5)	71 (91.0)* †	7 (9.0)	**5.3** (2.38;11.71)*	**3.4** (1.48;8.03)*
No	546 (87.5)	359 (65.8)	187 (34.2)	**Ref**	**Ref**
Cocaine (inhaled /smoked)					
Yes	155 (24.8)	132 (85.2)* †	23 (14.8)	**3.3** (2.03;5.32)*	-
No	469 (75.2)	298 (63.5)	171 (36.5)	**Ref**	**

Note: * *p*-value <0.05 (n = 624) through Chi-square test†, ** variables did not enter the model due to a convergence problem (N = 624).

Table 3. Consequences of substance use and treatment insertion, reported by family members.

		Total	Age [n (%)]		Odds Ratio (CI 95%)	
			G1 [50 – 59] 430 (68.9)	G2 [≥ 60] 194 (31.1)	Adjusted	Unadjusted
The familiar talk about drug use problems with the users	Yes	368 (59.0)	270 (73.4)*	98 (26.6)	**1.6** (1.17;2.33)	**1.5** (1.08;2.20)*
	No	256 (41.0)	160 (62.5)	96 (37.5)*	**Ref**	**Ref**
			0.004*†		0.004*	0.015*
The family gave money for the user to buy drugs to use	Yes	98 (15.7)	78 (79.6)*	20 (20.4)	**1.9** (1.4;3.2)	1.5 (0.904;2.66)
	No	526 (84.3)	352 (66.9)	174 (33.1)*	**Ref**	**Ref**
			0.013*†		0.013*	0.111
The drug user stole some object or money from home	Yes	126 (20.2)	103 (81.7)*	23 (18.3)	**2.3** (1.43;3.81)	**2.3** (1.41;3.83)*
	No	498 (79.8)	327 (65.7)	171 (34.3)	**Ref**	**Ref**
			< 0.001*†		< 0.001*	< 0.001*
The drug user assaulted someone else	Yes	146 (23.4)	88 (60.3)	58 (39.7)*	**Ref**	**Ref**
	No	478 (76.6)	342 (71.5)*	136 (28.5)	**1.6** (1.12;2.44)	**1.7** (1.15;2.56)*
			0.010*†		0.010*	0.008*
The drug user has physically assaulted someone of the family	Yes	224 (35.9)	151 (67.4)	73 (32.6)	**Ref**	-
	No	400 (64.1)	279 (69.8)	121 (30.3)	1.1 (0.784;1.58)	-
			0.545†		0.545	
The drug user threatened some family member	Yes	212 (34.0)	140 (66.0)	72 (34.0)	**Ref**	
	No	412 (66.0)	290 (70.4)	122 (29.6)	1.2 (0.858;1.74)	-
			0.010*†		0.266	
The drug user has already had problems with justice	Yes	103 (16.5)	74 (71.8)	29 (28.2)	1.1 (0.741;1.88)	-
	No	521 (83.5)	356 (68.3)	165 (31.7)	**Ref**	
			0.482†		0.482	
The drug user is in any treatment for addiction (in the last 12 months)	Yes	91 (14.6)	72 (79.1)*	19 (20.9)	**1.8** (1.08;3.16)	1.6 (0.922;2.77)
	No	533 (85.3)	358 (67.2)	175 (32.8)*	**Ref**	**Ref**
			0.023*†		0.024*	0.095
The familiar is in individual care or treatment	Yes	314 (50.3)	214 (69.7)	100 (31.8)	**Ref**	
	No	310 (49.7)	216 (68.2)	94 (30.3)	1.0 (0.765;1.50)	-
			0.681†		0.681	

Note: * *p*-value <0.05 (n = 624) through Chi-square test†, ** variables did not enter the model due to a convergence problem (N = 624).

Table 4. Multivariate analysis - type of substance used, problems related to violence and engagement with treatment, reported by family members.

		Type of substance used								
		Crack [n (%)]			**Cocaine (inhaled) [n (%)]**			**Cocaine (inhaled and smoked) [n (%)]**		
		Yes	**No**	**ORA**	**Yes**	**No**	**ORA**	**Yes**	**No**	**ORA**
		78 (12.4)	**546 (87,5)**	**[CI95%]**	**118 (18.9)**	**506 (81.1)**	**[CI95%]**	**155 (24.8)**	**469 (75.2)**	**[CI95%]**
The family gave money for the user to buy drugs to use	**Yes**	24 (24.5)	74 (75.5)	**2.0** [1.11;3.79]	26 (26.5)	72 (73.5)	1.4 [0.823;2.43]	37 (37.8)	61 (62,2)	**1.7** [1.0;2.82]
	No	54 (10.3)	472 (89.7)	**Ref**	92 (17.5)	434 (82.5)	**Ref**	118 (22.4)	408 (77.6)	**Ref**
		≤0.001*†		**0.021***	**<0.036*†**		0.209	**≤0.001*†**		**0.045***
The drug user stole some object or money from home	**Yes**	44 (34.9)	82 (65.1)	**5.0** [2.94;8.63]	43 (29.5)	83 (65.9)	**1.9** [1.18;3.09]	63 (50.0)	63 (50.0)	**2.9** [1.88;4.69]
	No	34 (6.8)	464 (93.2)	**Ref**	75 (15.7)	423 (84.9)	**Ref**	92 (18.5)	406 (81.5)	**Ref**
		<0.001*†		**< 0.001***	**<0.001*†**		**0.009**	**<0.001*†**		**<0.001***
The drug user assaulted someone else	**Yes**	25 (17.1)	425 (88.9)	-	43 (29.5)	103 (70.5)	**1.8** [1.02;3.09]	70 (31.3)	154 (68.8)	1.1 [0.72;1.70]
	No	53 (11.1)	121 (82.9)	-	75 (15.7)	403 (84,3)	**Ref**	85 (21.3)	315 (78.8)	**Ref**
		0.054			**<0.001*†**		**0.040***	**0.006*†**		0.644
The drug user has had problems with judiciary	**Yes**	34 (33.0)	69 (67.0)	**3.2** [1.83;5.70]	43 (41.7)	60 (58.3)	**3.0** [1.86;5.01]	57 (55.3)	46 (44.7)	**3.6** [2.26;5.93]
	No	44 (8.4)	477 (91.6)	**Ref**	75 (14.4)	446 (85.6)	**Ref**	98 (18.8)	423 (81.2)	**Ref**
		<0.001*†		**< 0.001***	**<0.001*†**		**< 0.001***	**<0.001*†**		**< 0.001***
The drug user is in treatment	**Yes**	21 (23.1)	70 (76.9)	**1.9** [1.01;3.62]	19 (20.9)	72 (79.1)	-	32 (35.2)	59 (64.8)	1.5 [0.89;2.60]
	No	57 (10.7)	476 (89.3)	**Ref**	99 (18.6)	434 (81.4)	-	123 (23.1)	410 (76.9)	**Ref**
		<0.001*†		**< 0.001***	0.078†			**0.014*†**		**0.123**

Note: *p*-value <0.05* through *Chi*-square test†. (N= 624). Odds Ratio Adjusted (ORA)