

Factors Associated with the Consumption of NSP in Adolescents Admitted to Outpatient Treatment

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Abstract

The present study aims to determine the factors associated with the consumption of substance "H" in adolescents attended at a university teaching center. The applied sampling method was intentional non-probabilistic; 306 adolescent consumers of the substance called "H" were selected. Analyzes were performed according to the type of variables and were described by analyzing descriptive statistics: mean, standard deviation, median, and frequency and proportions. The normality test was performed, using the Kolmogorov-Smirnov (K-S) statistic. Non-parametric tests: Mann Whitney U and Kruskal Wallis and independence was evaluated with the Chi-square statistic. The statistical program IBM SPSS version 25.0 was used. Results: 83% are men, with a mean age of 15.25 years. The average age of initiation of consumption is 12.29 years. The consumption time they have is an average of 2.96 years. 95.4% study and enjoy watching TV or sports, and only 7.8% do their homework. There is polydrug use, and its causal risk factors are conflicts with the family, although they are also a support for adolescents; close consumers their friends and family; consumption and sale of drugs in their educational centers. It is concluded that the causal factors are related to the influence of their social environment that put adolescents at risk and vulnerability to the consumption of the substance called "H", and the consequences of that consumption have an impact on their development as well as on the psychological spheres particularly to the development of his personality.

Keywords: *Adolescence, drug use, associated factors.*

Introduction

The consumption of psychoactive substances is a Public Health problem according to the declaration of the Ecuadorian constitution; and it is the adolescent population that is most vulnerable to its distribution and supply. International drug control and control reports reveal the emergence of new psychoactive substances (NPS) in the prevalence along with opioids and benzodiazepines, although there is an increase in marijuana consumption (OAS-CICAD 2019). The Americas report also expresses the challenge posed by the emergence and increase of NPS, counterfeit substances and traditional drugs that are mixed with new psychoactive substances (NPS) or other toxic adulterants.

It is the adolescent population that is most vulnerable to its distribution and supply. Adolescence as a stage of human development goes through identity crises that seek to find its autonomy and freedom; However, the external factors of its context could put pressure on the inner senses of this adolescent. Erickson, (Bordignon, 2005) agrees with

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this identity crisis as opposed to the confusion of role, and expresses that this generates a modification in the social bond with their peers, assuming new roles, being essential in this process the influence of the sociocultural context. On the other hand, Domínguez (2013) refers that at this stage the adolescent becomes vulnerable to drug use as a result of the process of affective separation from their parents, and search for acceptance of peers and new motivating experiences, or sense of protest before the mandates of adults and norms of society.

However, it is also necessary to consider that in adolescence "addiction can be understood as a mode of relationship in which it seeks to resolve situations or conflictive states in an inadequate way" (Hernanz 2015), the author raises "the abusive use of new technologies, the problems derived from their classification and the aspects of personality, as well as the mechanisms that must be contemplated both for its approach and for its treatment".

At the end of 2018, the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) was monitoring more than 730 new psychoactive substances, 55 of which were detected for the first time in Europe in the same year. These substances make up a wide range of drugs, such as synthetic cannabinoids, stimulants, opioids and benzodiazepines. Less commonly, new opioids have also been found in blotting paper and smoking herb mixtures; In these cases, there may be no indication that they contain potent opioids, which could pose a risk of intoxication for people who use them, especially if they do not have a pre-existing tolerance to opioids. (EMCDDA, 2019).

In 2017, about 53.4 million people worldwide had used opioids in the previous year, 56% more than in 2016. Of those, 29.2 million had used opiates such as heroin and opium, a 50 percent increase from 2016 estimates of 19.4 million. The rapid increase in NPS is associated with synthetic opioids, heroin continues to reach the market despite declining opium production and increased seizures. (UNODC 2019). Heroin is the most widely used opioid on the European drug market. Traditionally, two types of heroin have been imported into Europe. The most common is brown (base chemical form), which is produced primarily from morphine extracted from opium poppy.

According to the National Survey of Drug Use and Consumption in students of ninth grade of basic general education, first and third year of high school in 2016 in Ecuador, heroin is, on average, the second most consumed illicit drug, after marijuana, with a prevalence of 2.51% (Technical Secretariat of Integral Drug Prevention, 2017). This drug is considered one of the most dangerous to health. Globally (considering information from 86 countries), an estimated 190,900 drug-related deaths were recorded in 2015, largely attributed to opioid use (UNODC, 2017). Substance "H" is a mixture between an opioid, in this case heroin, with any other substance, this narcotic is highly addictive (SETAD, 2018)

In Ecuador, the presence of heroin (psychoactive component of the substance called "H" or "Hache"), among other opiates, is one of the most worrying problems, mainly in the group of adolescents; these are the revelations of the Report on the chemical characterization of heroin in Ecuador (SETAD 2018). According to the National Survey of Drug Use and Consumption in students of ninth grade of basic general education, first and third year of high school in 2016, heroin is, on average, the second most consumed illicit drug, after marijuana, with a prevalence of 2.51% (Technical Secretariat of Integral Drug Prevention, 2017). Substance "H" is a mixture between an opioid, in this case heroin, with any other substance, this narcotic is highly addictive (SETAD, 2018)

The Chemical Characterization Report of heroin in Ecuador based on 233 substances seized between 2013 and 2016, determined that the substance known as "H" in 81% of the samples contains between 11% and 50% concentration of heroin, with a low number of samples with less than 10% and more than 50%. This suggests that the heroin being marketed in Ecuador is not homogeneous, which could suggest different marketing strategies for different groups of potential buyers. For its part, the general conclusion is

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that this seized drug that was analyzed is not pure, with an average of 28.95% heroin. (SETAD, 2018)

Dependence on different SPAs is defined as a chronic and recurrent disorder characterized by abusive and continuous use, regardless of the negative consequences it causes (DSM-IV). The ICD-10 classification indicates that, in addiction, drug use has a compulsive character and is characterized by lack of control, the subject continues in consumption regardless of the evidence of the clear consequences and physical conditions that this practice entails.

The risk factors according to the study Nalven in 2020 in adolescents who use heroin identified that the highest consumption is due to the consumption of heroin substance among their peers (OR = 1.15, $p < 0.001$) or in the last month (OR = 1.02, $p = 0.047$). alcohol use increases heroin use in adolescents, sociodemographic, peer and neighborhood risk factors and alcohol use as discussed by Thrul in 2021. The consequences of subsequent risk of opioid misuse in a cohort of urban adolescents being the consequences of drug sales, violence and delinquency in friendly neighborhoods, antisocial behavior, such as hitting or threatening someone, stealing, and damaging the property of others. (Thrul et al., 2021)

The objective of this study is to determine factors associated (causes and consequences) to the consumption of substance "H" in adolescents attended in a university teaching center, for this first identify the causal factors that induce the consumption of substance H in adolescents, then describe the consequences of the consumption of substance H in adolescents, and finally infer among the causal variables of the consumption of substance "H" in this sample.

Methods

A retrospective observational study was developed, with a descriptive exploratory scope, the data come from the outpatient treatment care record in adolescents derived from schools in the marginal urban neighborhoods of the city of Guayaquil, the study sample consists of 306 adolescents from 12 to 18 years of age who were consumers of the substance called "H", To those who were applied a welcome interview, where information was collected, an analysis of the data obtained from the records of patients of outpatient treatment was carried out.

The sampling method applied was intentional non-probabilistic. The teens came with their authorization to the center as patients to seek help with their families for treatment. From the record selected in the first contact process and the time they received treatment, there are 810 cases of adolescent drug users. 306 adolescents who are users of the substance called "H" were selected. It should be noted that informed consent was applied in adolescents with their parents where their privacy and confidentiality of patients is protected.

Procedure

In the internal procedure of the Care Center he complied with a route. In the first contact it allowed to collect sociodemographic data of the population attended, after this when being referred to the professional on duty through the interviews the screening form was applied which inquired about the type of drug, frequency, consequences; the interviews were used for the analysis of the demand, voluntariness to change of the adolescents and their relative. In the first phase, the examination and diagnosis was carried out; in phase 2, insertion into therapeutic groups of adolescents and others for families, this phase corresponded to 10 sessions, and then Phase 3 of follow-up.

Data analysis

Analyses were performed according to the type of variables and were described by analyzing descriptive statistics: mean, standard deviation, median (V. Quantitative) and frequency and proportions (V. Qualitative).

The normality test was performed using the Kolmogorov-Smirnov (K-S) statistic. Nonparametric tests: U of Mann Whitney and Kruskal Wallis and independence was evaluated with the Chi-square statistic. The statistical program IBM SPSS version 25.0 was used.

Results

In this study, a sample of 306 adolescents was analyzed, 83% (254) are men, with the mean age of 15.25 years with 1.53 years of standard deviation. The average age of onset of use is 12.29 years with 2.08 years of dispersion. The consumption time they have is an average of 2.96 years with a standard deviation of 2.06 years. 95.4% (292) are students, who in free time and recreation 58.5% are dedicated to watching TV or doing sports, and only 7.8% do homework. 98% of adolescents do not use alcohol or cigarettes, but 22.9% use marijuana, as well as 13.1% use cocaine, 6.2% use heroin and 14.4% another type of drug.

Adolescents consume substance "H" daily (49.3%) and weekly (41.8%), the term they use most to refer to the amount is *funda* (40.2%) and *passes* (33.3%), which consume an amount between 1 to 4 and the days of greatest consumption are during the week (40.2%) and only 27.8% every day.

Most consume it at school (61.1%) because their friends (school = 48.4% and school / neighborhood = 29.1%) also consume it, in addition 52.9% buy it at school. 48% have problems with their parents and 11.4% problems at school. Faced with this problem, the attitude that the family has taken is to ask for support / advice / help (49%) and 10.8% of families have had an attitude of disappointment / rejection of the problem presented by adolescents.

The symptoms of biological and psychological expression against consumption presented by adolescents are dizziness, vomiting and sleep (22.5%), bone pain, fevers and chills (15.4%) and 12.7% present aggressiveness, anxiety and bad behavior. The state of change presented by the consumer is contemplation (55.6%) and family (82%) contemplation. Most have social support from family (89.2%) and 17% social support from friends. See Table 1, which shows the more detailed information and tables in ANNEX 1.

Table 1. Demographic characteristics of adolescents who use substance H

	N (%)	Min - Max	Stocking	D.E.
Sex				
Man	254 (83,0)			
Women	52 (17,0)			
Age				
Age		12 to 18	15,25	1,53
Age of initiation of use		8 to 18	12,29	2,08
Consumption time		0 to 8	2,96	2,06
Occupation				
Student	292 (95,4)			
Work with family and friends	5 (1,6)			
External work	4 (1,3)			
Study and work	1 (0,3)			

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Neither studies nor works	4 (1,03)
Free time and recreation	
Sleep	8 (2,6)
Does homework	24 (7,8)
Go out with friends	22 (7,2)
Date the bride	11 (3,6)
Watch TV	84 (27,5)
Use the internet on your computer/cell phone	14 (4,6)
Plays sports	95 (31,0)
Help your parents at home or work	12 (3,9)
Listen to music	19 (6,2)
Video games	17 (5,6)

N=306

A normality test was performed on the variable age of initiation of consumption. The Kolmogorov Smirnov (KS) statistic was used which determined that it does not have a normal distribution, therefore, non-parametric tests were performed to compare the medians with the Mann-Whitney or Kruskal Wallis U Test.

Table 2 shows the possible causes in the initiation of consumption to substance "H". Women have started consuming at 11 years of average age earlier than men who started consuming at 12 years of average age and that average age difference is significant ($p < 0.05$). The causes that they begin to consume so young are due to problems with their parents and is significant ($p < 0.05$). Therefore, it can be said that adolescents begin to consume substance "H" (drug) because of the problems they have with their parents at home.

Table 2. Causes of consumption of substance "H" according to age of onset of use

	N=306	Min - Max	Mean	Std. Deviation	Mediate	UM/KW	p
Sex							
man	254	8 - 18	12,43	2,112	12,00		
woman	52	9 - 16	11,60	1,752	11,00	5114,000	0,009
Total	306	8 - 18	12,29	2,076	12,00		
Current stressors							
Problems with their parents	147	9 - 18	12,33	2,117	12,00		
Separation or divorce of parents	19	10 - 16	12,16	1,772	12,00		
Problems with siblings	15	10 - 17	12,67	2,440	13,00		
Problems at school	35	9 - 17	13,46	2,381	13,00		
Economic problems in the family	19	10 - 15	11,26	1,695	10,00	18487,000	0,010
Problems with friends/gang/girlfriend	15	10 - 17	12,20	2,007	12,00		
Consumption/abstinence/health	29	10 - 14	11,48	1,326	11,00		
Legal problems	9	8 - 13	11,67	1,803	13,00		
None	18	10 - 16	12,33	1,749	12,50		

Total	306	8 - 18	12,29	2,076	12,00	12,00
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UM: U Mann-Whitney, KW: Kruskal Wallis Test

Through the independence test, using the Chi-square statistic, it determined that there are significant differences between the frequency of consumption and the symptoms of biological and psychological expression compared to the consumption of substance "H" ($p < 0.05$), as well as the state of change in the consumer ($p < 0.05$). That is, when consuming substance "h" daily / weekly in adolescents causes the symptoms of dizziness, vomiting and sleepiness, bone pain and aggressiveness, and the state of change of the consumer is that they accept the problem they have with respect to consumption (contemplation); As shown in Table 3.

Table 3. Consequences according to frequency of consumption

	Frequency of consumption				P
	Total	Everyday	Weekly	Monthly	
	n (%)	n (%)	n (%)	n (%)	
Current stressors					
Problems with their parents	147 (48,0)	77 (51,0)	53 (41,4)	17 (63,0)	
Separation or divorce of parents	19 (6,2)	11 (7,3)	7 (5,5)	1 (3,7)	
Problems with siblings	15 (4,9)	7 (4,6)	6 (4,7)	2 (7,4)	
Problems at school	35 (11,4)	18 (11,9)	17 (13,3)	0 (0)	
Economic problems in the family	19 (6,2)	8 (5,3)	9 (7,0)	2 (7,4)	0,178
Problems with friends/gang/girlfriend	15 (4,9)	8 (5,3)	7 (5,5)	0 (0)	
Consumption/abstinence/health	29 (9,5)	15 (9,9)	10 (7,8)	4 (14,8)	
Legal problems	9 (2,9)	1 (0,7)	7 (5,5)	1 (3,7)	
None	18 (5,9)	6 (4,0)	12 (9,4)	0 (0)	
Total	306 (100)	151 (100)	128 (100)	27 (100)	
Family attitude					
Support/advice/help	150 (49,0)	70 (46,4)	66 (51,6)	14 (51,9)	
Distrust/control	30 (9,8)	12 (7,9)	14 (10,9)	4 (14,8)	
Worry	27 (8,8)	17 (11,3)	10 (7,8)	0 (0,0)	
Anger/discomfort	23 (7,5)	9 (6,0)	12 (9,4)	2 (7,4)	0,657
Sadness/crying	23 (7,5)	11 (7,3)	10 (7,8)	2 (7,4)	
Disappointment/rejection	33 (10,8)	20 (13,2)	10 (7,8)	3 (11,1)	
Comprehension	20 (6,5)	12 (7,9)	6 (4,7)	2 (7,4)	
Total	306 (100)	151 (100)	128 (100)	27 (100)	
Symptoms of biological and psychological expression against consumption					
Headache and nausea	37 (12,1)	16 (10,6)	18 (14,1)	3 (11,1)	
Bone pain, fever, and chills	47 (15,4)	25 (16,6)	16 (12,5)	6 (22,2)	
Active, cheerful and empowered	17 (5,6)	9 (6,0)	5 (3,9)	3 (11,1)	
Aggression, anxiety and bad behavior	39 (12,7)	27 (17,9)	10 (7,8)	2 (7,4)	0,040
Insomnia and tiredness	18 (5,9)	13 (8,6)	3 (2,3)	2 (7,4)	
Abstinence	12 (3,9)	5 (3,3)	7 (5,5)	0 (0,0)	
Headache and bone pain	13 (4,2)	6 (4,0)	7 (5,5)	0 (0,0)	
Dizziness, vomiting and	69 (22,5)	31 (20,5)	33 (25,8)	5 (18,5)	

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sleepiness					
Relaxation, feel good	12 (3,9)	8 (5,3)	3 (2,3)	1 (3,7)	
Discomfort generate	9 (2,9)	3 (2,0)	6 (4,7)	0 (0,0)	
Increased appetite	2 (0,7)	1 (0,7)	1 (0,8)	0 (0,0)	
Loss of appetite and decay	11 (3,6)	5 (3,3)	5 (3,9)	1 (3,7)	
None	20 (6,5)	2 (1,3)	14 (10,9)	4 (14,8)	
Total	306 (100)	151 (100)	128 (100)	27 (100)	
Consumer Change Status					
Pre-contemplation	97 (31,7)	49 (32,5)	36 (28,1)	12 (44,4)	
Contemplation	170 (55,6)	90 (59,6)	67 (52,3)	13 (48,1)	0,029
Preparation	39 (12,5)	12 (7,9)	25 (19,5)	2 (7,4)	
Total	306 (100)	151 (100)	128 (100)	27 (100)	
Family Change Status					
Pre-contemplation	19 (6,2)	12 (7,9)	6 (4,7)	1 (3,7)	
Contemplation	251 (82,0)	124 (82,1)	105 (82,0)	22 (81,5)	0,877
Preparation	27 (8,8)	11 (7,3)	13 (10,2)	3 (11,1)	
Action for change	9 (2,9)	4 (2,6)	4 (3,1)	1 (3,7)	
Total	306 (100)	151 (100)	128 (100)	27 (100)	

Discussion

This study shows that the causal factors and consequences of the consumption of drug H in adolescents from marginal urban sectors are complex and very worrying for the integral health of adolescents in Guayaquil and globally as mentioned by UNODC studies in 2017 that has caused the death of 190,900 people, our population attended to receive outpatient treatment in a teaching center, The results obtained indicate that the factors are associated with multiple family, educational, social, economic and cultural problems, most adolescents are boys from low-income families and with social marginalization, which would indicate that the drug H, due to its accessibility, cost and manipulation has been thought of in the low-income market to extend the territory of drug trafficking gangs in the city, so greater access to heroin, the greater the risk of drug use in adolescents in Guayaquil as suggested by the Ocaña study in 2019. The students were referred by the school because they could not sustain the problems of drug consumption that afflicted the educational institutions of that area. Ocaña-Gordillo & Kliewer, 2019.

We can infer that drug use in adolescents is polydrug use, with preferences to the substance called "H" with an average of three years of consumption and a weekly frequency, which we could presume a consumption of dependence; being the context of consumption the educational space as demonstrated by the Technical Secretariat of Integral Drug Prevention in 2017.

A first factor is the staff, social acceptance, group membership and imitation of peers during their socialization process, it can be mentioned that microtrafficking has entered educational contexts where access and value of the drug h is accessible to adolescents, in addition they are used for the sale of drugs to not be judged according to Ecuadorian legal regulations, his friends are close consumers with 77.5%, being the place of consumption is the school 61.1% and the place of sale is the school, as reflected in the study of Bhandari in 2021 in Nepal his friends are one of the causes of 95% for drug consumption as in his family

Following with the same thread the highest percentage as the most important stressor is related to problems with their parents, so the family is a factor for the consumption of the

adolescent, this does not speak of indicators of dysfunction that involve divorces, separations, and economic problems, also the presence of close consumers of their relatives, this is related to studies conducted in the United States, which highlights that adolescents from families of low socioeconomic status may use drugs because they experience greater exposure to family-related stressors, such as job instability and drug use by parents, and less access to healthy and enjoyable activities without substances (Aschengrau et al., 2021)

The family as a risk factor for the conflicts they present affect as a cause of consumption in adolescents, however, this family is facing this crisis, seek help for their relatives due to the acuteness of the symptoms produced by this lethal substance, being perceived as the most significant social support to achieve its improvement and stop consumption in adolescents.

Another factor that affects is in a smaller percentage the disappointment and rejection of the family before the social stigma and the management of the symptomatology generated by the drug h from the loss of control and social deterioration that adolescents have in such a short time, in addition to certain psychotic symptoms that are difficult to manage, as indicated in other studies the presence of twenty-two percent reported a psychiatric diagnosis in the studies of (Pugatch et al., 2001), this symptomatology could affect the development of adolescents by chemical components on the health of their bodies.

The incidence of family violence in adolescents who start earlier the onset of consumption than male adolescents, is a risk factor and causal for the consuno, considered as an escape from family problems, being their friends and partners who initiate them to drug use, these circumstances present in the family and educational context, It shows the lack of an adult who can accompany the crisis and solve problems of the development of adolescents. When adolescents are unable to adapt to life's difficulties, they are more likely to cope with problems with negative coping strategies, such as substance use (Tian et al., 2021).

The adolescents in this study do not distribute their free time effectively, they dedicate to leisure and free time unproductive and non-formative activities, where the vast majority spend many hours on TV and social networks, so heroin consumption generates that they are deficient to solve problems (Baldacchino et al., 2015)

One of the consequences of the consumption of the substance called "H" is the affectation in the development and growth of adolescents, by the chemical components of this lethal drug that contains heroin in a low percentage and the rest up to rat venom, which we assume its impact on their body, hormonal, neurological and cognitive growth in adolescents between 12 to 15 years who are at their entire stage of development, That somatic affectation of pain and nausea due to intoxication affect their learning process, the lack of control and deregulation of their body and will to achieve mind-body well-being. Substance abuse in adolescence increases the likelihood of unemployment, physical health problems UNODC, 2022. The consequence in eating behaviors of the substance called "H" produces loss of appetite since adolescents spend most of their time looking for drugs and by not consuming a good diet, affects their development

A second consequence is the withdrawal symptoms that are more marked in the consumption of the drug h in adolescent patients who do not finish their development process, do not manage to have control over somatic pains, so that the compulsion and management of craving are intolerable, having to perform risky behaviors to be able to consume the drug to achieve a pseudo relaxation, This becomes a recursive that will deteriorate the biological part of adolescents over the years. Stress and negative mood can appear as substance withdrawal symptoms, which in turn results in repetitive drug use. (Tian et al., 2021)

A third consequence is the beliefs of false welfare state to achieve the hedonism of a Western culture that seeks pleasure through drug use, drugs activate adolescents to conquer and achieve their referents of social models and conquests of power, through drugs they are socially inhibited reaching relationships with women, initiating sexually, which gives him status and prestige within groups. Chronic heroin use can lead to deficits in impulse inhibition and control. (Baldacchino et al., 2015). The consumption disinhibits them to have fun in their free time and be a leader in their groups of drug users, generating pseudo-joy within social gatherings, discos, sports and social events accompanying with music and dance in some cases,

The polarization of the state of mind in the passage from a false sense of well-being to anxiety, insomnia, discouragement, fatigue, evidence ambiguity and dissociation, thus moving away from the normality of the mental state considered as well-being, this in turn produces the increase of negativistic behaviors, opposition and challenge typical of adolescents before the family and social norms that is exacerbated under the effect of the drug and, As indicated by the results there is an aggressive behavior that could lead to problems in the development of their personality in adulthood affecting their interpersonal relationships and with their social, family and community environment. heroin use generates psychological distress loneliness, anxiety insomnia, psychological distress in this population from 41 countries or regions were 43.9% and 30 438, 58 adolescents (Tian et al., 2021)

The impact of the chemical components of the substance called "H" causes that in the process of change both the family and the adolescent jump from the stage of precontemplation to contemplation, that is, from not accepting having a problem and requiring help, to recognizing having a problem, although awareness and determinism for change will need not only to relieve body pains but awareness of a true change. So the search for change is related to detoxification to achieve immediate relief on the somatic plane but not psychological.

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