

ORIGINAL

Basuco consumption in transgender women across three cities in Colombia

Consumo de basuco en mujeres transgénero, de tres ciudades de Colombia

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Abstract

This article aims to describe the factors associated with basuco consumption in transgender women (TW) in three cities in Colombia, South America. A cross-sectional descriptive study was carried out using Respondent-Driven Sampling (RDS) and included 688 transgender women participants from Bogotá, Medellín and Santiago de Cali. Descriptive analyses, bivariate associations, and a binomial regression were performed. The prevalence of basuco consumption among participants was 11%; factors associated with basuco consumption among TW included having a low socioeconomic level, living alone, feeling vulnerable to HIV, having had an STI in the last year, and consuming marijuana. Substance consumption in TW in Colombia is high when compared to the general population, and the literature shows that basuco consumption is intensified within a context of social vulnerability. Encouraging the development of policies and programs with a comprehensive approach to health and substance use prevention particularly among vulnerable TW considering their unique sociodemographic and economic characteristics, is warranted.

Keywords: transgender women, basuco, substance use, Colombia

Resumen

Este artículo tuvo como objetivo describir los factores asociados al consumo de basuco en mujeres transgénero de tres ciudades de Colombia. Se realizó un estudio descriptivo transversal, a través del muestreo dirigido por los entrevistados (MDE) y en el cual participaron 688 mujeres transgénero de Bogotá, Medellín y Santiago de Cali. Se realizaron análisis descriptivos, asociaciones bivariadas y una regresión de tipo binomial. La prevalencia del consumo de basuco fue de 11%, y los factores asociados a su consumo entre las MT fueron, ser de estrato socioeconómico bajo, vivir sola, percibirse vulnerable al VIH, haber tenido una ITS en el último año y consumir marihuana. El consumo de sustancias en las MT en Colombia es elevado al compararlo con población general, se evidencia que el consumo de basuco se enmarca en el contexto de vulnerabilidad social. Es necesario incentivar la creación de políticas y programas con un abordaje integral en salud, que tengan como uno de los ejes de acción la prevención del consumo de sustancias psicoactivas entre las mujeres transgénero, teniendo en cuenta sus particularidades y características sociodemográficas y económicas.

Palabras clave: mujeres transgénero, basuco, consumo de sustancias psicoactivas, Colombia

■ Received: August 2020; Accepted: June 2021.

■ ISSN: 0214-4840 / E-ISSN: 2604-6334

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Transgender women (TW) are a priority group for public health research. They suffer gender inequities, stigma and discrimination, social exclusion, pathologization of their gender identity, they have few educational and labor opportunities and guarantees, as well as precarious health conditions, since their particular needs have been invisible (Radi & Sardá-Chandiraman, 2016; Scher, 2016). Some studies report that TMs in Latin America (LA) live with a disproportionate burden of disease, disability, and risks that prevent them from effectively enjoying the right to health, as well as an immense increase in violent deaths due to prejudice, police mistreatment, persecution and low life expectancy. Moreover, it is estimated that more than 50% of them work as street vendors, or sex workers, have a low level of education, do not have access to housing, while a quarter do not use health services (Comisión Interamericana de Derechos Humanos, 2015; Organización Panamericana de la Salud, 2011; Sandoval-Rebollo, Domínguez-Cornejo & Rosales-Galarza, 2019; SInViolencia LGBT, 2019).

Within this precarious health situation TW face multiple problems, for example, the consequences derived from unsafe body transformations, reproductive health problems and Sexually Transmitted Infections (STIs), especially HIV. Stigma and transphobia have been shown to cause mental health problems, such as stress, depression, anxiety, suicidal ideation and post-traumatic stress disorder (Bazargan & Galvan, 2012; Organización Panamericana de la Salud, 2011; Yarns, Abrams, Meeks & Swell, 2016). In addition, TW are among the groups most vulnerable to the use of psychoactive substances (PAS).

Over the last decade, studies in Colombia have shown a critical rise in psychoactive substance (PAS) use, especially among the younger population; the PAS reportedly in common use are tobacco, alcohol, marijuana, cocaine and their derivatives, such as basic coca paste, known as basuco in some Latin American countries (Ministerio de Salud y Protección Social, 2015). The consumption of basuco, or *pitillo* or *Kete* as coca paste is also called in different Latin American countries, represents a problem of social inequalities and less favored groups; for this reason, it has not been the object of research, unlike cocaine. There is thus a lack of really reliable qualitative and quantitative data to help explain its use. The impurities of the product and the added substances result in lower market prices compared to cocaine hydrochloride (Téllez-Mosquera & Cote-Menéndez, 2005). Because of its impurities, basuco is known to be much more harmful than cocaine, and the substances used in its preparation prevent intravenous or intramuscular administration, resulting in its use in the form of cigarettes, pipes and other routes of pulmonary administration (Larrea-Torrelío, 2007).

Basuco is also known in North America as crack cocaine, rock and freebase, but there are some differences. Crack

arises from mixing cocaine hydrochloride with sodium bicarbonate and water or ammonia, while basuco is a crude extract of the coca leaf mixed with water, sulfuric acid and kerosene, gasoline or battery water, making it an intermediate component in the preparation of cocaine hydrochloride (Dávila, Solórzano, Premoli de Percoco, Quiñones & Petrosino, 2001).

The wide availability and low cost of basuco in urban areas greatly facilitates its consumption in large quantities; in fact, the price becomes negligible if the person is also involved in the distribution of the product. In Colombia, population centers of more than one million inhabitants report greater use, with Bogotá, Medellín and its metropolitan area, and Cali in that order having the highest prevalences of cocaine use, thus indicating a similar pattern of basuco consumption (Ministerio de Salud y Protección Social, 2015). Studies have shown that the epidemiological profile of basuco users generally corresponds to people from lower strata, with little education, and mostly men (Isaza, Suárez, Henao & González, 2010; Téllez-Mosquera et al., 2005).

The effects of basuco and cocaine use are known since they are psychotropic drugs that can stimulate or accelerate the activity of the central nervous system, and their action may affect the various systems of the body. Basuco use can be predictive of generating polydrug use, raising the number of doses in injection drug users, and the probability of acquiring a sexually transmitted disease and seropositivity for HIV and hepatitis C (Berbesi-Fernández, Segura-Cardona, Montoya-Vélez & Hernández-Rendón, 2016).

There is not much evidence of specific basuco use in TW, with some reports suggesting frequent use of alcohol and other substances, especially among transgender people who practice sex work or who are on the streets (Ecker, Aubry & Sylvestre, 2019; Scheim, Bauer & Shokoohi, 2017). The most used substances are: alcohol, marijuana, cocaine and its derivatives (Reback & Fletcher, 2014). In addition, the prevalences of use in TW are higher than those in the general population, and up to ten times higher than that of trans men (TM) (Gómez-Gil et al., 2019). This use may be associated with the search for situations that help to cope with the realities of a generally difficult environment, and in order to reduce the effects of alcohol (Gómez-Gil et al., 2019; Yarns et al., 2016). Among the associated factors, it has been found that previous experience of sexual abuse increased the likelihood of cocaine use in TW in the Dominican Republic by almost three times (Budhwani et al., 2017). In Canadian TW, consumption increased among those who had experiences of transphobia, were street dwellers, and sex workers (Scheim et al., 2017). As a consequence, PAS abuse can reduce the ability to negotiate the terms of a sexual encounter, which increases the

vulnerability and risk of HIV infection and sexual violence, among others. (Santos et al., 2014; Scheim et al, 2017).

Despite the systematic increase in PAS use indicated by the studies available in Colombia and the advances that the country has made in developing epidemiological studies on drug production, trafficking and its consequences in the school and general populations, there has been scant research on basuco use. This lack of attention may be linked to the fact that its use has generally been seen as limited to the street population; however, these patterns may be changing, and other vulnerable groups, such as TW, are showing increasing use of this substance.

Given the lack of information regarding the consumption of basuco in Latin American TW, together with the limited information on consumption habits or abuse of alcohol, tobacco and illicit drugs in the trans population that has been growing in recent years, this article aims to characterize the factors associated with basuco use in TW in Colombia.

Method

Study type and general design

A descriptive cross-sectional study was carried out, using the database of a national study entitled: “Vulnerabilidad al VIH y prevalencia de VIH en mujeres transgénero en tres ciudades de Colombia: Bogotá, Medellín y Santiago de Cali” between May and September 2019 (Berbesi et al., 2019). The cities prioritized for this study are the three with the highest estimate of trans women in Colombia and also have the highest HIV prevalences in key populations: men who have sex with men (MSM), and transgender women (Ministerio de Justicia y del Derecho y Ministerio de Salud y Protección Social, 2014).

Procedures and participants

Respondent-driven sampling (RDS) was used, a methodology which is ideal for achieving sample representativeness in those groups where the sampling frame is unknown or which are called “hidden populations”, such as that of transgender women. Recruitment is similar to snowballing or chain referrals, since by collecting data on the size of the social network and limiting the recruitment coupons given out, the results can be adjusted to represent the networks of the sampled population (Carballo-Diéguez et al., 2011).

Taking into account RDS theory, nine seeds were initially sought for the recruitment process (three in each city), which ended with the inclusion of 20 seeds in the three cities to reach the required sample size. These were identified through social organizations, key actors in the population and institutional actors. Seeds were selected who stated that they were able to reach a large group of trans women, who had leadership, visibility, and recognition, and were diverse in terms of their sociodemographic characteristics, while

meeting minimum eligibility criteria: assignment of male sex at birth, identification with female gender, of legal age and residing in the cities of Bogotá, Medellín (metropolitan area), and Cali (metropolitan area) and having Colombian citizenship.

All participants, including the seeds, were given three coupons to recruit other eligible participants from their social networks. This chain recruitment system continued until a total of 668 participants (excluding seeds) was reached. Following the RDS theory, each person was given an incentive for participating in the study (a supermarket voucher worth COP 40,000, approximately USD 12) and a secondary one linked to the successful recruitment of three new participants (COP 30,000 in cash, approximately USD 9). Sample size was reached within 18 weeks.

Instrument and variables

A survey meeting the guidelines for repeated behavioral surveys in populations at risk of HIV was applied (Family Health International, 2000), adjusted in Colombia by a group of experts from the funding entity. This survey was divided into 12 sections: social and demographic characteristics, health and access to services, body transformations, sexual history, sexually transmitted infections, practicing sex work, condom and lubricant, knowledge about HIV/AIDS, exposure, intervention and HIV test, use of psychoactive substances, social networks and stigma/discrimination. In addition, rapid HIV tests were performed and those testing positive were confirmed through an Elisa test with filter paper. Basuco use was set as the outcome variable through the yes/no question: Have you smoked or inhaled *pipa*, crack or basuco in the last 6 months? The control variables of the study were: age, educational level (none/preschool/primary, secondary, technical or technological, and university/graduate), occupation (employed/independent, hairdresser/dressmaker, none/student, and prostitution/show/webcam), marital status (single, married/partner/widowed), socioeconomic stratum (used in Colombia for classifying residential properties that should receive public services; the lower the stratum the lower the economic capacity), income (according to legal minimum monthly wage current in Colombia –SMMLV– in 2019, approximately COP 925,000 or USD 289), living alone (yes/no), social support (yes/no), vulnerability to HIV (low, medium-high), sexually transmitted infections in the last year (yes/no), HIV diagnosis (positive/negative), discrimination in the last year (yes/no), lifetime money in exchange for sex (yes/no), cocaine use (yes/no), marijuana (yes/no) and alcohol (yes/no), in the last 6 months, forced relationships in the last year (yes/no), casual partners in 6 months (yes/no) and discomfort/health problems in the last year (yes/no).

The surveys were applied electronically, by personnel trained for this purpose, in a venue located in each city in a place accessible to the population.

This study was approved by the ethics committee of CES University, in a session on February 19, 2019. The requirements of the Scientific, Technical and Administrative Standards for Health Research were followed, according to Resolution 008430 of October 4, 1993 of the Ministry of Health of Colombia, classified as research with minimal risk. All participants signed an informed consent where they voluntarily agreed to be part of the study.

Analysis

For the bivariate analyses performed using chi square, TW records that did not have data on whether they had consumed basuco or not were excluded, resulting in a total of 618 observations. Two logistic regression models (unadjusted and adjusted) were then built in order to explore the factors associated with basuco use. In the logistic regression models, the outcome variable (basuco) was included with each of the study variables using the ‘enter’ method. In the multivariate model, the significant variables ($p < 0.05$) were entered in

the bivariate analysis. Data were analyzed with RDSAT and weighted in SPSS®, version 21, with institutional license.

Results

Results show that the TW participating in the research were mostly young, with an average age of 32.9 years ($SD = 12.7$), with 46.9% practicing sex work/webcam and shows as their occupation, followed by 23.5% who were hairdressers or dressmakers. By socioeconomic stratum, 39.9% were found to be from stratum three or higher, 33.6% from stratum two and 26.5% from stratum one. A large majority (79.1%) were single, the rest were married, living with partners or widowed. In terms of educational level, 86.1% finished high school or had a higher education. More than half of the TW received a monthly minimum wage or less than this, 68.5% lived with someone, 35.6% had dependents and 60.0% had support or help from a family member or friend in case of need (Table 1).

Table 1
Sociodemographic characteristics by basuco use in TW

Variables	(n %)	Basuco		p*
		Yes	No	
		68 (11.1%)	549 (88.9%)	
Age				
18-24 years	187 (27.2)	14 (7.5)	173 (92.5)	0.048
25-34 years	249 (36.2)	29 (11.6)	220 (88.4)	
35-44 years	106 (15.4)	19 (17.9)	87 (82.1)	
45 years and over	146 (21.2)	14 (9.6)	132 (90.4)	
Occupation				
Employee/freelance	104 (17.6)	17 (16.3)	87 (83.7)	0.052
Hairdresser/dressmaker	139 (23.5)	8 (5.8)	131 (94.2)	
Unemployed/student	71 (12.0)	15 (21.1)	56 (78.9)	
Prostitution/show/webcam	277 (46.9)	28 (10.1)	249 (89.9)	
Stratum				
Stratum 1	158 (26.5)	34 (21.5)	124 (78.5)	0.001
Stratum 2	200 (33.6)	14 (7.0)	186 (93.0)	
Stratum 3 or higher	238 (39.9)	20 (8.4)	218 (91.6)	
Marital status				
Single	483 (79.1)	55 (11.4)	428 (88.6)	0.416
Married/with partner/widowed	128 (20.9)	13 (10.2)	115 (89.8)	
Educational level				
None/preschool/primary	86 (13.9)	13 (15.1)	73 (84.9)	0.087
Secondary	424 (68.6)	49 (11.6)	375 (88.4)	
Technical/technology	108 (17.5)	6 (5.6)	102 (94.4)	
Income				
No income	81 (13.2)	15 (18.5)	66 (81.5)	0.013
Minimum wage or below	320 (52.2)	41 (12.8)	279 (87.2)	
Between one and two minimum wages	127 (20.7)	7 (5.5)	120 (94.5)	
More than two minimum wages	85 (13.9)	6 (7.1)	79 (92.9)	
Living alone				
Yes	195 (31.5)	80 (41.0)	115 (59.0)	0.028
No	425 (68.5)	139 (32.7)	286 (67.3)	
Social support				
Yes	367 (60.0)	30 (8.2)	337 (91.8)	0.002
No	425 (68.5)	139 (32.7)	286 (67.3)	

*Note. $p < 0.05$ values in bold.

Regarding other characteristics, it was found that more than 62.7% of TW saw themselves as vulnerable to HIV, 12.8% had an STI in the previous year, 82.5% had suffered some type of discrimination, 4.1% were forced to have sexual relations in the previous year, 12.1% of those surveyed said they had sex without a condom, 49.3% had had occasional partners in the last year and 39.1% had health problems in the previous year (Table 2).

Regarding the use of PAS, 30.6% reported having used cocaine, 51.7% marijuana, 70.7% alcohol and 11% basuco in the 6 months prior to the survey, with important differences by city. Bogotá is the city with the highest prevalence of basuco consumption (17.6%), Medellín reports the highest prevalence of marijuana use (61.6%) and Cali reports the highest consumption of cocaine (37.7%) (Figure 1).

When performing the analysis of basuco use with the variables of interest, a statistically significant association was found between basuco use and being aged between 25 and 44 years, being from socioeconomic stratum one, not having social support, living alone, feeling vulnerable to HIV, having had an STI, using cocaine, marijuana, having been forced to have sex in the last year, having received money in exchange for sex at some point in their life, and having had health problems in the last year.

In the logistic regression model, the same variables remained significant except for age. When comparing TW that consume basuco with non-users of this substance, it was found that being from stratum one increased the possibility of consumption by more than three times (OR 3.65; CI-1.291-5.452), as did living alone compared to

Table 2
Behavioral characteristics by basuco use in TW

Variables	(n %)	Basuco		p*
		Yes	No	
		76 (11)	612 (89)	
Vulnerability to HIV				
Low	200 (37.3)	11 (5.5)	189 (94.5)	0.002
Medium-high	336 (62.7)	45 (13.4)	291 (86.6)	
HIV				
Positivo	167 (27.3)	23 (13.8)	144 (86.2)	0.130
Negativo	444 (72.7)	45 (10.1)	399 (89.9)	
STI				
Yes	78 (12.8)	20 (25.9)	58 (74.4)	0.000
No	533 (87.2)	48 (9.0)	485 (91.0)	
Cocaine				
Yes	187 (30.6)	29 (15.5)	158 (84.5)	0.018
No	424 (69.4)	39 (9.2)	385 (90.8)	
Marijuana				
Yes	316 (51.7)	55 (17.4)	261 (82.6)	0.000
No	295 (48.3)	13 (4.4)	282 (95.6)	
Alcohol				
Yes	431 (70.7)	42 (9.7)	389 (90.3)	0.061
No	179 (23.3)	26 (14.5)	153 (85.5)	
Discrimination				
Yes	107 (17.5)	15 (14.0)	92 (86.0)	0.205
No	504 (82.5)	54 (10.7)	450 (89.3)	
Forced sexual relations in the previous year				
Yes	25 (4.1)	6 (24.0)	19 (76.0)	0.049
No	586 (95.9)	62 (10.6)	524 (89.4)	
Use of condoms				
Yes	537 (87.9)	57 (10.6)	480 (89.4)	0.184
No	74 (12.1)	11 (14.9)	63 (85.1)	
Receiving money in exchange for sex at least once, lifetime				
Yes	491 (80.5)	62 (12.6)	429 (87.4)	0.010
No	119 (19.5)	6 (5.0)	113 (95.0)	
Occasional partners in the last 6 months				
Yes	301 (49.3)	28 (9.3)	273 (90.7)	0.099
No	310 (50.7)	40 (12.9)	270 (87.1)	
Health complaints or problems				
Yes	239 (39.1)	43 (18.0)	196 (82.0)	0.000
No	373 (60.9)	26 (7.0)	347 (93.0)	

*Note. $p < 0.05$ values in bold.

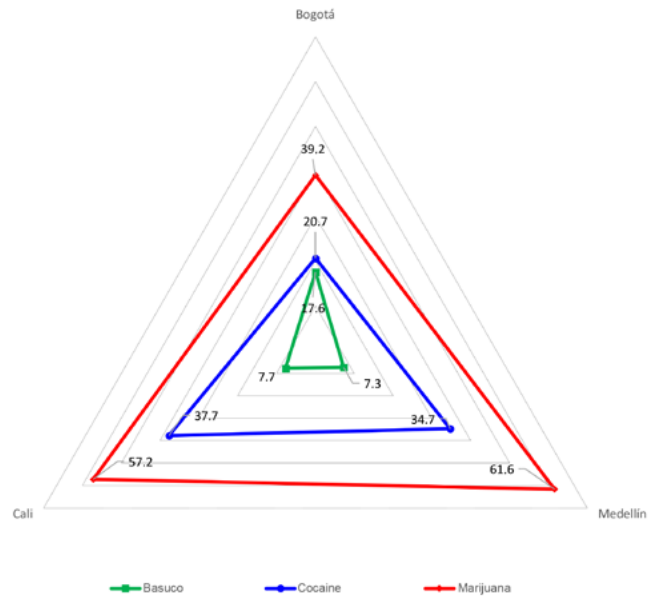
Table 3
Factors associated with basuco use in TW

Variables	Unadjusted model	Adjusted model
	OR (95%CI)	AOR (95% CI)
Age		
18-24 years	1.17 (0.514-2.260)	
25-34 years	1.74 (0.817-3.688)	
35-44 years	1.92 (0.772-4.776)	
45 years and over	1	
Stratum		
Stratum 1	2.93 (1.620-5.310)	3.65 (1.291-5.452)
Stratum 2	0.78 (0.384-1.606)	0.77 (0.347-1.71)
Stratum 3 or higher	1	1
Income		
No income	3.10 (1.117-8.616)	
Minimum wage or below	2.01 (0.807-5.016)	
Between one and two minimum wages	0.85 (0.276-2.64)	
More than two minimum wages	1	
Living alone		
Yes	2.47 (1.474-4.124)	2.75 (1.477-5.114)
No	1	1
Social support		
Yes	1	
No	2.13 (1.283-3.548)	
Vulnerability to HIV		
Low	1	1
Medium-high	2.65 (1.339-5.256)	2.33 (1.109-4.903)
STI		
Yes	3.56 (1.981-6.382)	2.97 (1.414-6.252)
No	1	1
Cocaine		
Yes	1.80 (1.080-3.018)	
No	1	
Marijuana		
Yes	4.65 (2.48-8.71)	3.49 (1.474-4.124)
No	1	1
Forced sexual relations in the previous year		
Yes	2.72 (1.049-7.068)	
No	1	
Receiving money in exchange for sex at least once, lifetime		
Yes	2.71 (1.148-6.401)	
No	1	
Health complaints or problems		
Yes	2.96 (1.760-4.981)	2.37 (1.477-5.714)
No	1	1

those who lived with someone (OR 2.75; 95% CI -1.477-5.114).

TW who felt vulnerable to HIV were 2.3 times more likely to consume; this likelihood increased similarly (by 2.9 times (OR 2.97; CI-1.41- 6.25)) in those who had an STI in the last year. It was found that the use of marijuana increased the probability of basuco consumption by 3.4 times and that among the TW reporting a health problem this consumption potential was also increased with respect to those that did not report problems (OR 2.37; CI- 1.477-5.714) (Table 3).

Figure 1
Prevalence of psychoactive substance use by city in trans women in Colombia



Discussion

According to the literature search carried out, this study is the first to date to determine basuco use in Colombian TW. The main finding is a prevalence of basuco use among TW of around 11%. Despite the fact that this substance is commonly used in the country, there is little research on its use in vulnerable groups. The findings show that the use of this substance in this population is associated with a combination of socioeconomic, behavioral and social environment conditions which complicate intervention approaches, as has been reported in other research on the subject (Family Health International, 2000; SIIS Centro de Documentación y Estudios, 2014).

The sociodemographic profile of basuco users shows a panorama of social vulnerability, with consumption predominating in the TW of stratum one, aged 32 years on average, who completed high school, do not receive an income, do not work or are students. Similar results were reported in a review carried out by the Organization of American States (2014), in users of cocaine base paste in Latin America, which had the following in common: average user age of around 30 years, average educational level, without an income, not working, with a large percentage of street dwellers and a high probability of engaging in risky sexual behaviors. In addition, other factors that were found in this study were that the TW lived alone and did not feel that they had social support; the situations characterizing their living conditions are another factor, because many TW are expelled from their homes at an early age due to the stigma and discrimination and have poor social networks, a finding that was also reported in an injection drug user population (Berbesi-Fernández et al., 2016).

One of the most prominent results was problematic PAS use among TW. High prevalences of cocaine, marijuana and alcohol use were reported, at considerably higher percentages than those observed in cisgender women and even in other groups with high prevalences such as MSM (Valencia et al., 2018). This situation, which was already known in basuco users, was also reported in a national survey in Uruguay in which it was observed that practically all users of “base paste” were poly-users, and that more than half the demand for rehabilitation occurred in users of this drug, given its “highly addictive” characteristics and the high vulnerability of its users (Observatorio Uruguayo de Drogas, 2014).

On comparing the consumption prevalences found in this study with those reported in other international studies, it was found that in TW in San Francisco (United States) the most widely used substance was marijuana (29%), 13.4% consumed crack cocaine, and 58% drank alcohol (Santos et al., 2014). Meanwhile, a study in Houston (United States), reported a prevalence of cocaine and/or cocaine paste use of 40%, high rates of intimate partner violence, sexual violence and suicidal ideation (Risser et al., 2005). Among Colombian TW, marijuana and alcohol use was higher, with a slightly lower percentage for basuco use, but one which was higher when compared to the use of this substance in TW in the Dominican Republic, which was 5.3% (Budhwani et al., 2017). In addition, the findings are consistent with those of the survey on PAS use in Colombia, which shows that the most widely used illicit substance was marijuana, followed by cocaine; on the other hand, it has been reported that only 1.2% of those surveyed had used basuco at some point in their life (Keuroghlian, Reisner, White & Weiss, 2015; Ministerio de Justicia y del Derecho y Ministerio de Salud y Protección Social, 2014).

The relationship between alcohol or recreational drug use, risky sexual behaviors and STIs is quite solid and is known as “chemsex”, especially in MSM research, with consistent results found in the present study, in which the use of basuco increased the risk of contracting STIs (Organization of American States, 2014; SIIS Centro de Documentación y Estudios, 2014). The literature describes the increased likelihood when using psychoactive substances of engaging in risky sexual behaviors, such as having multiple partners or sexual encounters in a single night, exchanging sex for drugs, a reduced ability to negotiate unsafe sexual encounters, or suffering sexual violence, the latter showing a statistical association in the present study (Valencia et al., 2018). Although no association was found between basuco and HIV infection, as has been reported in other research, a significant percentage of TW using this drug were seropositive (Millar et al., 2018).

Mental health and drug use in TW is reported as an important problem in this population; systematic collection of information in this field, however, is completely lacking,

with no surveys specifically directed at the trans population. This is due not only to the difficulties involved in sampling, but also because they are not prioritized on the public health agenda. There are few strategies with a differential approach to prevent PAS use in Colombia, and programs have focused especially on schoolchildren, adolescents and street dwellers. TW as a group have been excluded from social programs, and they generally find themselves in problematic work and social environments, where the sale and consumption of drugs is affordable, especially basuco at such low prices.

It is therefore recommended that the creation of policies and programs with a comprehensive approach to health be encouraged, which should include a dimension of action focusing on the prevention of PAS use in the trans population, taking into account their particularities and sociodemographic and economic characteristics.

Given that this was a cross-sectional study, it was not possible to establish temporal sequence or causality. As it was based on self-reports, TW may in some cases have forgotten details regarding some questions; RDS is considered sample dependent on the social network, which may have limitations when reporting population estimates, affecting the generalizability of the results obtained.

A strength of this study was being the first of its kind carried out in Colombian TW using RDS methodology; it is also the first to report on basuco use in this population, which could help to implement prevention strategies. It is recommended that mental health studies be carried out in the trans population which explore the factors associated with basuco use and include the young trans population, since there is little data in Colombia regarding this population and onset or patterns of use.

Acknowledgments

We thank all the transgender women who agreed to participate in the study for their valuable collaboration and information. We thank the people who participated as “seeds” for their identification with the study which made it possible to access the population in each of the cities studied.

Funding for this study came from the Global Fund to Fight AIDS, Tuberculosis and Malaria, within the framework of Grant Agreement No. 216146 with La Empresa Nacional Promotora de Desarrollo Territorial –Enterritorio, which, in turn, signed a contract with the CES University in Medellín.

Conflict of interests

The authors of this article declare no conflicts of interest.

References

- Bazargan, M. & Galvan, F. (2012). Perceived discrimination and depression among low-income Latina male-to-female transgender women. *BMC Public Health*, *12*, 663-670. doi:10.1186/1471-2458-12-663.
- Berbesi-Fernández, D.Y., Segura-Cardona, Á.M., Montoya-Vélez, L. & Hernández-Rendón, M. (2016). Consumo de basuco en usuarios de drogas inyectables en Colombia. *Revista Cubana Salud Pública*, *42*, 276-283.
- Berbesi-Fernández, D.Y., Segura-Cardona, Á., Martínez-Rocha, A., Molina-Estrada, A., Ramos-Jaraba, S. M. & Bedoya-Mejía, S. (Eds.) (2019). *Vulnerabilidad al VIH y prevalencia de VIH en mujeres transgénero en tres ciudades de Colombia: Bogotá, Medellín y Santiago de Cali*. Medellín: Universidad CES Editorial.
- Budhwani, H., Hearld, K. R., Milner, A. N., McGlaughlin, E., Charow, R., Rodriguez-Lauzurique, R. M.,... Paulino-Ramirez, R. (2017). Transgender women's drug use in the Dominican Republic. *Transgender Health*, *2*, 188-194. doi:10.1089/trgh.2017.0032.
- Carballo-Diéguez, A., Balan, I., Marone, R., Pando, M. A., Dolezal, C., Barreda, V.,... Ávila, M. M. (2011). Use of respondent driven sampling (RDS) generates a very diverse sample of men who have sex with men (MSM) in Buenos Aires, Argentina. *PLoS One*, *6*. doi:10.1371/journal.pone.0027447.
- Comisión Interamericana de Derechos Humanos. (2015). *Violencia contra las personas Lesbianas, Gay, Bisexuales, Trans e Intersexuales en América* [OEA/Ser.L/V/II. Rev.2.Doc. 36]. <http://www.oas.org/es/cidh/informes/pdfs/ViolenciaPersonasLGBTI.pdf>.
- Dávila, L., Solórzano, E., Premoli de Percoco, G., Quiñones, B. & Petrosino, P. (2001). El consumo de basuco como agente causal de alteraciones en la encía. *Revista Cubana Estomatología*, *38*, 137-144.
- Ecker, J., Aubry, T. & Sylvestre, J. (2019). A review of the literature on LGBTQ adults who experience homelessness. *Journal of Homosexuality*, *66*, 297-323. doi:10.1080/00918369.2017.1413277.
- Gómez-Gil, E., Simulionyte, E., Balcells-Oliveró, M., Valdés, M., Salamero, M., Guillamón, A. & Esteva, I. (2019). Patrones de consumo de alcohol, tabaco y drogas ilegales en personas transexuales. *Adicciones*, *31*, 189-195. doi:10.20882/adicciones.945.
- Family Health International. (2000). *Behavioral Surveillance Surveys*. Arlington, VA: Family Health International.
- Isaza, C., Suárez, P., Henao, J. & González, M. (2010). Características demográficas y de consumo en pacientes adictos a heroína o derivados de la coca. *Investigaciones Andina*, *12*, 24-34.
- Keuroghlian, A. S., Reisner, S. L., White, J. M. & Weiss, R. D. (2015). Substance use and treatment of substance use disorders in a community sample of transgender adults. *Drug and Alcohol Dependence*, *152*, 139-146. doi:10.1016/j.drugalcdep.2015.04.008.
- Larrea-Torrelío, G. A. (2007). *Historia y producción de drogas en el siglo XX, hoja de coca, cocaína y fármacos*. Doctoral dissertation on Economía. La Paz: Repositorio Institucional Universidad Mayor de San Andrés.
- Millar, B. M., English, D., Moody, R. L., Rendina, H. J., Cain, D., Antebi-Gruszka, N.,... Parsons, J. T. (2018). Day-level associations between substance use and HIV risk behavior among a diverse sample of transgender women. *Transgender Health*, *3*, 210-219. doi:10.1089/trgh.2018.0032.
- Ministerio de Justicia y del Derecho y Ministerio de Salud y Protección Social. (2014). *Estudio nacional de consumo de sustancias psicoactivas – 2013*. <https://cutt.ly/7bXMhHo>.
- Ministerio de Salud y Protección Social. (2015). *Encuesta nacional de salud mental 2015*. <https://cutt.ly/IbXCQfI>.
- Observatorio Uruguayo de Drogas. (2014). *Pasta base de cocaína en Uruguay*. <https://cutt.ly/ibX097S>.
- Organization of American States. (2014). *Consumo de pasta base de cocaína en América del Sur: Revisión de los aspectos epidemiológicos y médico-toxicológicos*. <https://cutt.ly/ObX05My>.
- Organización Panamericana de la Salud. (2011). *Por la salud de las personas trans. Elementos para el desarrollo de la atención integral de personas trans y sus comunidades en Latinoamérica y el Caribe*. https://pdf.usaid.gov/pdf_docs/PA00JQ81.pdf.
- Radi, B. & Sardá-Chandiraman, A. (2016). *Travesticidio / transfemicidio: Coordinadas para pensar los crímenes de travestis y mujeres trans en Argentina*. [Boletín del Observatorio de Género, 9]. <https://www.aacademica.org/blas.radi/14.pdf?view>.
- Reback, C. J. & Fletcher, J. B. (2014). HIV prevalence, substance use, and sexual risk behaviors among transgender women recruited through outreach. *AIDS and Behavior*, *18*, 1359-1367. doi:10.1007/s10461-013-0657-z.
- Risser, J. M. H., Shelton, A., McCurdy, S., Atkinson, J., Padgett, P., Useche, B.,... Williams, M. (2005). Sex, drugs, violence, and HIV status among male-to-female transgender persons in Houston, Texas. *International Journal of Transgenderism*, *8*, 67-74. doi:10.1300/J485v08n02_07.
- Santos, G. M., Rapues, J., Wilson, E. C., Macias, O., Packer, T., Colfax, G. & Raymond, H. F. (2014). Alcohol and substance use among transgender women in San Francisco: Prevalence and association with human immunodeficiency virus infection. *Drug and Alcohol Review*, *33*, 287-295. doi:10.1111/dar.12116.
- Sandoval-Rebollo, E. M., Domínguez-Cornejo, M. M. & Rosales-Galarza, E. R. (2019). *La situación de acceso a derechos de las personas trans en México: Problemáticas y propuestas*. México: Embajada de los Estados Unidos en México. <https://almascautivasorg.files.wordpress.com/2019/02/la-situacion-3b3n-de-acceso-a-derechos>

- de-las-personas-trans-en-méxico.-investigación-completa.pdf.
- Scheim, A. I., Bauer, G. R. & Shokoohi, M. (2017). Drug use among transgender people in Ontario, Canada: Disparities and associations with social exclusion. *Addictive Behaviors*, 72, 151-158. doi:10.1016/j.addbeh.2017.03.022.
- Scher, A. (2016). Estigma y discriminación hacia hombres que tienen sexo con otros hombres (HSH) y mujeres trans: El impacto en la vulnerabilidad y riesgo frente al VIH/SIDA. [Independent Study Project (ISP) Collection. 2461]. https://digitalcollections.sit.edu/isp_collection/2461.
- SIIS Centro de Documentación y Estudios. (2014). *Desigualdades socioeconómicas, consumo de drogas y territorio*. <https://cutt.ly/RbXM1nC>.
- SIIViolencia LGBT. (2019). *El prejuicio no conoce fronteras. Homicidios de lesbianas, gay, bisexuales, trans e intersex en países de América Latina y el Caribe 2014-2019*. <https://cutt.ly/9bXGAVZ>.
- Téllez-Mosquera, J. & Cote-Menéndez, M. (2005). Efectos toxicológicos y neuropsiquiátricos producidos por consumo de cocaína. *Revista de la Facultad de Medicina*, 53, 10-26.
- Valencia, J., Gutiérrez, J., Troya, J., González-Baeza, A., Dolengevich, H., Cuevas, G. & Ryan, P. (2018). Consumo de drogas recreativas y sexualizadas en varones seronegativos: Datos desde un screening comunitario de VIH. *Revista Multidisciplinaria del SIDA*, 6, 7-19.
- Yarns, B. C., Abrams, J. M., Meeks, T. W. & Sewell, D. D. (2016). The mental health of older LGBT adults. *Current Psychiatry Reports*, 18, 1-11. doi:10.1007/s11920-016-0697-y.

