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### ORIGINALES

#### Demographic factors, sexual practices and HIV characteristics associated with stigma perception

Factores demográficos, prácticas sexuales y características del VIH asociados a la percepción de estigma

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#### ABSTRACT:

Introduction: Stigma is a label imposed by society that negatively differentiates some people from others, and may lead to rejection, as is the case for HIV-positive individuals.

Objective: To explore demographic factors, sexual practices, and disease characteristics associated to perception of stigma in a group of HIV-positive individuals in 2014 in the city of Medellin, Colombia.

Materials and methods: This was an observational, descriptive, cross-sectional study in 217 patients from Medellin diagnosed with HIV. Perception of stigma was evaluated by applying the Berger scale. Summary and frequency measures, as well as binary logistic regression were calculated.

Results: Average age was 39.3 years (SD 10.79); the sample was predominantly male (83.9%), single (67 %), homosexuals (51.2 %); and 41 % were diagnosed with HIV more than 5 years ago. Perception of stigma was identified in 50.7% of participants, being greater in men (78,2 %). However women were 2.3 times more likely to perceive stigma than men (IC 95% 1,12 - 5,26). Participants in the "separated/divorced/widowed" category were 2.9 times more likely to perceive high stigma than those in the "married/civil union" group (CI 95% 1,02 - 8,44).

Conclusions: The association between different factors and HIV-related stigma was explored. Our results show that being female has a high prevalence of stigma, as previously described by others. In addition, being separated/divorced/widowed" is associated to perception of high stigma.

Keywords: Stigma; HIV; AIDS; Berger scale.

#### **RESUMEN:**

Introducción: El estigma se considera una marca impuesta por la sociedad para negativamente diferenciar unas personas de otras y ser causa de rechazo, en este caso por ser portadoras de VIH.

**Objetivo**: Explorar los factores demográficos, las prácticas sexuales y las características de la enfermedad relacionados con la percepción de estigma en un grupo de personas con VIH en la ciudad de Medellín en el 2014.

**Materiales y métodos**: Estudio observacional, descriptivo, transversal, donde se incluyeron 217 pacientes de Medellín con diagnóstico de VIH para explorar el estigma mediante la escala de Berger, Se realizaron medidas de resumen y frecuencia, regresión logística binaria.

**Resultados**: La edad promedio fue 39,3 (DE 10,79), predominaron los hombres con un 83,9 %, los solteros 67 %, los homosexuales 51,2 %, 41 % llevan más de cinco años con la enfermedad. El estigma se presenta en un 50,7%, siendo más elevado en los hombres (78,2 %), las mujeres tenían 2,3 veces la probabilidad de percepción de estigma alto con respecto a los hombres (IC 95% 1,12 - 5,26), las personas en la categoría "separado/divorciado/viudo" tenían 2,9 veces la probabilidad de percepción de estigma alto que en la categoría "casado/unión libre" (IC 95% 1,02 - 8,44).

**Conclusiones**: Se logró explorar la asociación entre percepción de estigma en pacientes con VIH. Se evidencia que ser del sexo femenino presenta una prevalencia alta al estigma por su condición tal como se ha descrito en otros estudios, así como ser "soltero/separado/viudo" se asocia a la percepción de estigma alto.

Palabras clave: Estigma; VIH; SIDA; Escala de Berger

#### INTRODUCTION

Human immunodeficiency virus (HIV) is the causative agent of acquired immune deficiency syndrome, AIDS, which is characterized an impaired ability to fight infection and disease, which may lead to death if not properly treated <sup>(1)</sup>.

Worldwide, in 2013, 2.1 million of new cases of HIV infection were reported, which is significantly lower than the 3.1 million reported in 2001. In 2013, 1.5 million AIDS-related deaths were reported worldwide, which is also lower compared to 2005, when 2.4 million deaths were registered <sup>(2,3)</sup>.

In Colombia, from 1983 to 2011, a total of 86 232 HIV cases were reported, of which 10 612 are now deceased. In addition, for the year 2011, a total of 7992 cases were reported of which 5831 were HIV positive, 1551 had developed AIDS, 610 had died as a consequence of AIDS-related opportunistic infections, and 71.1% were males and 28.8% females <sup>(4)</sup>.

The HIV/AIDS phenomenon has been mainly studied from the need to find treatments that increase life expectancy of HIV-positive patients. However, this phenomenon goes beyond, since the social component that includes society's perception of this problem, lack of knowledge about the disease and its transmission, and fear of contagion, which, if not intervened, may favor stigmatization of people living with HIV/AIDS (PLWHA)<sup>(5)</sup>.

HIV/AIDS-related stigma is a complex set of attitudes including disgrace, prejudice, exclusion, and discrimination, directed at individuals identified as infected with HIV/AIDS. Because this has been historically associated with poverty, homosexuality, use of psychoactive drugs and prostitution, HIV/AIDS-related stigma affects these individuals' life as well as their families, friends, and communities.

In 2011 in Colombia, with the support of UNAIDS, the study "Positive Voices": Results of the People Living with HIV Stigma Index and Discrimination in Colombia ("*Voces Positivas*") was performed. In that study, conditions regarding HIV-related stigma in Colombia were determined, and 67% of the participants had perceived that other people gossip about them, 43% of them associate the gossiping to their HIV status or

a combination of their HIV status together with another reason for which they could be stigmatized <sup>(6)</sup>.

People infected with HIV experience several types of stigma: anticipated, perceived, and internalized. A person with anticipated stigma is one who feels that at some point he or she will be victim of prejudice and discrimination; while a person experiencing perceived stigma feels prejudiced and discriminated. Finally, a person that has negative feelings about his/herself, which are associated to their HIV status, experiences internalized stigma <sup>(7)</sup>.

Stigma may have consequences for PLWHA, since, for example, they may refrain from initiating treatment because of fear of rejection at health centers, or fear of having to reveal their HIV status to their partners, parents, friends, and work colleagues; hence leading to isolation and affecting their mental health by generating despair, depression, anxiety, and social self-rejection. Therefore, it is necessary to inquire about factors that may be associated with perception of HIV-related stigma in order to identify them as well as the population most affected by them.

#### MATERIALS AND METHODS

An observational, descriptive, cross-sectional study was performed on a population that included all individuals entering specialized centers for HIV from January through December 2015, and that had recent or long-standing HIV diagnosis. a total of 217 patients of legal age were recruited and met the inclusion criteria of having confirmed HIV diagnosis and not having any mental limitations that may prevent communication, which was confirmed by psychiatry personnel tending to these patients. There were no exclusion criteria in this study.

The Berger scale <sup>(8)</sup> was used to assess stigma after consulting and obtaining signed informed consent. All the necessary precautions to protect patient confidentiality were taken in agreement with the Colombian Habeas Data law.

For the statistical analysis, univariate studies were performed to determine relative frequencies. All analyzed variables were qualitative.

Chi-square analysis was performed to determine the association between independent variables and the presence of stigma. A p-value p<0.05 was considered statistically significant. For explanatory purposes, variables achieving statistical significance were subjected to logistic regression. For those variables with p > 0.05 the Hosmer-Lemeshow (p<0.25) test was performed in order to include in the logistic regression analysis variables that met that criteria.

Multivariate analysis was performed using logistic regression for explanatory purposes. Analyses were performed using SPSS (version 21) software licensed to CES University, 95% confidence intervals were considered.

#### RESULTS

The majority of participants were male (83.9%), and average age was 39.38 years old (SD 10.79), being 30 years of age the most frequent; 51.2% were of middle-income, while 48.8% were of low-income. Students are found at a low proportion (8.3%), being

primary and secondary education the most frequent educational level (56.2%). Regarding civil status, the majority was single (67.3%).

Gender identity was predominantly homosexual (51.2%), and regarding sexual practices, we observed that the last sexual relationship was with a male partner (77%), with a stable partner (62.7%), with vaginal penetration (40.1%), and condoms were used by 75.6%.

Most participants (88.5%) considered that they had been infected by sexual transmission. Forty-one percent (41%) had the infection for more than 5 years, and the CD4+ T cell count was greater than 550 cells/mm<sup>3</sup> in 33.2% of participants. In addition, no evidence of chronic disease was observed in 70%, and opportunistic infections were absent in 83.9% of the study population.

The majority of participants considered the quality of the received health care services to be good or excellent, while only 6.5% regarded it as fair or poor.

The prevalence of high stigma perception was of 50.7%, compared to 49.3% that showed a low stigma perception, and this association was more strongly evidenced in females. Moreover, high stigma perception was 2.93 times greater in individuals falling into the "separated/divorced/widowed" category compared to those in the "married/civil union" category (Table 1).

	Stigma perception									
Demographic Characteristics	High		L	<b>OW</b>		CI (95%)			p value	
	Ν	%	Ν	%	RP	Lower limit	Upper limit	<b>X</b> <sup>2</sup>		
Age								0,76	0,85	
20 - 30 years old	28	25,5	29	27,1	1,00	1,00	1,00			
31-40 years old	31	28,2	30	28	1,07	0,52	2,20			
41-50 years old	31	28,2	33	30,8	0,97	0,47	1,98			
50 years or older	20	18,2	15	14	1,38	0,59	3,22			
Total	110	100	107	100						
Sex								5,33	0,02	
Male	86	78,2	96	89,7	1,00	1,00	1,00			
Female	24	21,8	11	10,3	2,43	1,12	5,26			
Total	110	100	107	100						
Socio-economic level								2,89	0,08	
Lower class	60	54,5	46	43	1,59	0,93	2,72			
Middle income	50	45,5	61	57	1,00	1,00	1,00			
Total	110	100	107	100						
Occupation								2,98	0,56	
Employed	25	22,7	30	28	1,00	1,00	1,00			
Self-employed	24	21,8	30	28	0,96	0,45	2,04			
Student	10	9,1	8	8,3	1,50	0,51	4,37			

## Table 1. Demographic characteristics of people living with HIV/AIDS according to stigma perception

Other	29	26,4	18	16,8	1,65	0,76	3,58		
Unemployed	22	20	18	16,8	1,46	0,64	3,32		
Total	110	100	107	100					
<b>Educational level</b>								2,63	0,45
Primary	34	30,9	24	22,4	1,61	0,66	3,93		
Secondary	33	30	31	29	1,21	0,51	2,90		
Technical/Technologic al	29	26,4	36	33,6	0,92	0,38	2,19		
College/Graduate	14	12,7	16	15	1,00	1,00	1,00		
Total	110	100	107	100					
Civil status								4,23	0,12
Single	73	66,4	73	68,2	1,28	0,66	2,47		
Separated/Divorced/ Widowed	16	14,5	7	6,5	2,93	1,02	8,44		
Married/civil union	21	19,1	27	25,2	1,00	1,00	1,00		
Total	110	100	107	100					

Similarly, an association between female gender identity and high perception of stigma is shown in Table 2.

Table 2. Sexual practices of people living with HIV/AIDS, according to perception	)
of stigma	

	Perception of Stigma										
Sexual	H	igh	L	ow		CI (9	<b>05%</b> )				
practices	Ν	%	Ν	%	RP	Lower limit	Upper limit	<b>X</b> <sup>2</sup>	p-value		
Gender identity	y							6,88	0,01		
Male	80	72,4	96	89,7	1,00	1,00	1,00				
Female	25	27,3	11	10,3	2,72	1,26	5,88				
Total	105	100	107	100							
Sexual orientat	ion							0,03	0,84		
Heterosexual	43	39,1	39	36,4	1,30	0,52	3,24				
Homosexual	56	50,9	55	51,4	1,20	0,49	2,91				
Bisexual/Other	11	10	13	12,1	1,00	1,00	1,00				
Total	110	100	107	100							
¿With whom d	id you	have	your l	last sex	ual relati	ionship?		2,97	0,08		
Male partner	90	81,8	77	72	1,75	0,92	3,33				
Female partner	20	18,2	30	28	1,00	1,00	1,00				
Total	110	100	107	100							
Type of bond w	vith yo	our las	t sexu	al part	ner			0,73	0,39		
Stable partner	72	65,5	64	59,8	1,27	0,73	2,20				
Casual partner	38	34,5	43	40,2	1,00	1,00	1,00				
Total	110	100	107	100							
Type of last sex	cual re	elation	ship					0,66	0,71		
Oral sex	30	27,3	31	29	1,05	0,53	2,10				
Vaginal sex	47	42,7	40	37,4	1,28	0,68	2,41				

Anal sex	33	30	36	33,6	1,00	1,00	1,00		
Total	110	100	107	100					
Use of condom	durin		0,12	0,72					
Yes	82	74,5	82	76,6	1,00	1,00	1,00		
No	28	25,5	25	23,4	1,12	0,60	2,08		
Total	110	100	107	100					
Possible infect	ion by	sexual	l trans	smissio	n			0,31	0,57
Yes	96	87,3	96	89,7	1,00	1,00	1,00		
No	14	12,7	11	10,3	1,27	0,55	2,94		
Total	110	100	107	100					

Lastly, we did not identify an association between disease characteristics and high perception of stigma (Table 3).

# Table 3. Disease characteristics of people living with HIV/AIDS, according to perception of stigma

	Perception of Stigma									
Disease	High		Low		_	CI (9				
characteristics	Ν	%	Ν	%	RP	Lowe r limit	Uppe r limit	<b>X</b> <sup>2</sup>	p value	
Health care regime								0,19	0,66	
Contributive	40	36,4	42	39,3	1,00	1,00	1,00			
Subsidized	70	63,6	65	60,7	1,13	0,65	1,95			
Total	110	100	107	100						
Quality of health car	re servi	ces						5,51	0,06	
Excellent	68	61,8	81	75,7	0.33	0,10	1,11			
Good	32	29,1	22	20,6	0,58	0,16	2,09			
Fair/Poor	10	9,1	4	3,7	1,00	1,00	1,00			
Total	110	100	107	100						
Time since diagnosis	5							2,79	0,42	
Less than 1 year	23	20,9	26	24,3	1,00	1,00	1,00			
1 to 2 years	14	12,7	15	14	1,05	0,42	2,64			
2 to 5 years	22	20	28	26,2	0,88	0,40	1,96			
More than 5 years	51	46,4	38	35,5	1,51	0,75	3,05			
Total	110	100	107	100						
Chronic disease								0,00	0,98	
Yes	33	30	32	29,9	1,00	0,56	1,79			
No	77	70	75	70,1	1,00	1,00	1,00			
Total	110	100	107	100						
<b>Opportunistic infect</b>	ions							0,24	0,88	
Tuberculosis	7	6,4	8	7,5	1,00	1,00	1,00			
Other	11	10	9	8,4	1,39	0,36	5,35			
None	92	83,6	90	84,1	1,16	0,40	3,35			
Total	110	100	107	100						

CD4 T cell count								2,91	0,40
<100 cells/mm <sup>3</sup>	11	10	17	15,9	0,72	0,29	1,75		
100-350 cells/mm <sup>3</sup>	36	32,7	29	27,1	1,38	0,70	2,72		
351-550 cells/mm <sup>3</sup>	29	26,4	23	21,5	1,40	0,68	2,88		
>550 cells/mm <sup>3</sup>	34	30,9	38	35,5	1,00	1,00	1,00		
Total	110	100	107	100					

#### DISCUSSION

Stigma has acquired a major role as a determinant of health and general living conditions of people living with HIV/AIDS. The purpose of this study is to improve personal social perceptions and of the environment, safe practices, and vital beliefs of PLWHA in order to identify associated factors that might explain the perception of stigma phenomenon that may affect this population <sup>(4)</sup>.

This study has the limitation of having used the database with which the Berger scale was validated in Colombia, as it is limited for the generation of explanatory or predictive models, but may contribute significant data that may be helpful in generating a profile of PLWHA that perceive stigma. In addition, it had the goal of reducing the level of ignorance, myths, and misconceptions in relation to HIV, as well as to have an impact on victimizing behavior of the population and to significantly reduce stigmatization level <sup>(9)</sup>.

The "Results of the People Living with HIV Stigma Index and Discrimination in Colombia" study, carried out by UNAIDS in 2013, reported that the majority of the surveyed population were men (68%), while women were 25.4%, and the remaining 6.5% was transgender <sup>(6)</sup>. Similar results were observed in our study, in which male population represented 83,9% of participants, as well as in a Mexican study that reported that 82.6% of AIDS cases in 2008 were male, which is in agreement with our study population <sup>(18)</sup>.

In general, the scores of the Berger HIV Stigma scale in our study were similar to those reported for Nigeria <sup>(19)</sup>, in which the average score was 99.5; Canada <sup>(20)</sup>, in which the shortened Berger HIV stigma scale consisting of 20 items exhibited an average score of 49; and China <sup>(24)</sup>, where an average score of 105.7 in the Berger scale was reported. Altogether, these studies provide evidence that the issue of HIV-related stigma in PLWHA knows no borders, and while to different extent, it can be observed in any population or culture.

One of the major findings in our study was that women were more likely to experience perception of high stigma, in agreement with a previous study on a Nigerian population in which the mean stigma score was higher in females (107.32) compared to males (101.46), raising awareness on this issue<sup>(13)</sup>. Similar results were reported by a study in India, in which women had a higher mean stigma score (105.72) in the Berger scale. Thus, it can be inferred that in different cultures and countries there is a clear impact on the perception of high stigma experienced by women. However, a study performed in Washington found that male senior citizens had a higher mean stigma score (98.8) compared to female senior citizens (84.7) <sup>(15)</sup>, suggesting that with increasing age, men experience more stigma than women.

In this study, age was divided into three major categories in which the most economically productive population was represented. Similarly, the UNGASS report of the Colombian Ministry of Health and Social Protection also showed that the majority of the HIV/AIDS population was within similar age ranges, likely explained by the sexual activity and the high risk of infection of those age ranges <sup>(10)</sup>.

We did not identify a significant difference in proportion of people of low income to those of middle income, similar to what was observed in the report of 2013 on HIV/AIDS situation in Colombia <sup>(3)</sup>. This similarity may be explained by the fact that this is a sexually transmitted disease, and both groups may be exposed to infection; however, lower income PLWHA are more likely to experience higher perception of stigma compared to middle-class PLWHA.

At the time of the survey, the majority of participants reported to be employed or studying. However, the observed percentage of unemployment is lower than that informed by the 2013 report on HIV/AIDS situation in Colombia, in which unemployment was 34% <sup>(3)</sup>, and those individuals were more likely to perceive stigma compared to employed participants. Similar observations were reported by a study in Perú, in which being unemployed increased by 29% the probability of perceiving stigma <sup>(21)</sup>.

Regarding educational level, in this study the majority of the population had a high school diploma. However, when analyzing factors associated with perception of stigma, individuals who had completed primary education experienced higher perception of stigma, which is in agreement with a previous study from Nicaragua <sup>(11)</sup>, in which most participants that had a secondary education experienced lower stigma levels compared to those with primary education.

With regards to gender identity, the majority of the participants identify themselves as men or male gender. Those identifying as being of female gender experienced perception of high stigma, consistent with results obtained in a study from Nigeria <sup>(13)</sup>. In Latin America, several studies have identified that the most stigmatized individuals were those considered transgender, because of associated conditions such as homosexuality, prostitution, and use of illegal substances. In the current study, the sample of transgender population was not sufficient to yield any conclusions <sup>(16-18)</sup>.

Our study suggests that being homosexual is not a factor associated with higher stigma, since many of these individuals belong to social organizations or communities that in one way or another provide emotional support to face life with HIV. On the other hand, heterosexual individuals experience stigmatization due to myths or cultural beliefs of the Colombian society, pointing at people with HIV as "unwanted" or with "unacceptable" sexual behaviors. Comparable results were reported by studies in Australia and New York, in which heterosexual people had more negative experiences in terms of stigma, and more negative reactions in relation to their HIV status by different members of their social environment <sup>(22,23)</sup>.

Our study provides an initial approximation to a phenomenon recently being studied by multiple disciplines, including health and social sciences. Our goal is to generate room for discussion and to encourage future qualitative and quantitative research that may be key to understand this phenomenon and to provide answers to different issues and needs of people living with HIV/AIDS in our country.

Based on the Berger scale score, 50,7% of participants exhibited perception of high stigma.

The proportion of perception of high stigma was greater in women than in the male population, and the frequency of perception of high stigma was 2.43 times greater in women compared to men.

The proportion of perception of high stigma was greater in people with primary education, and the frequency of perception of high levels of stigma was 61% greater in participants with primary education compared to those with college/graduate education.

Heterosexuals had a high prevalence of perception of high levels of stigma, and a frequency of perception of high levels of stigma that was 30% greater than those considered bisexual/other.

Quality of health care services directly impacts perception of high stigma. Excellent health care services had a frequency of perception of high stigma that was 67% lower than that classified as fair/poor.

No differences were found in perception of high stigma between people with or without chronic or opportunistic diseases.

People with 5 or more years of diagnosis have a 50% higher frequency of perception of high stigma compared to those with recent diagnosis (less than 1 year).

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