ORIGINAL ARTICLE

FACTORS ASSOCIATED WITH THE NON-USE OF HEALTH SERVICES IN LGBTI PEOPLE FROM PERU

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ABSTRACT

Objective: To determine the factors associated with the non-use of health services in a sample of the lesbian, gay, bisexual, transgender, and intersex population of Peru. **Materials and methods**: Analytical cross-sectional study, analysis of secondary data from the First LGBTI Survey of Peru. Those who suffered from a medical condition during the last twelve months and had to receive medical attention were considered a variable of interest. Crude prevalence ratios (PRc) and adjusted (PRa), with 95% confidence intervals (95% CI) were calculated using Poisson regressions with robust variance. Three models were developed, adjusted to variables grouped according to sexual orientation, gender identity, and intersexuality. **Results**: 55.4% were male at birth, the median age was 25 years (IR: 21-30). 16% stated that they had not sought medical attention. The three models presented a negative association in having suffered a chronic disease, infectious, contagious diseases, and mental illness and those who expressed their orientation openly. Not being respected for the gender they identified with was related to not using the services in model 3. Models 1 and 3 included a positive association with not being respected with the gender identified. **Conclusion**: Suffering from a mental illness, an infectious contagious disease, a chronic disease, and not being treated with respect according to their gender identity are factors associated with the non-use of health services.

Keywords: Sexual and gender minorities; Health Services, Healthcare Disparities, Peru (Source: MeSH NLM)

FACTORES ASOCIADOS A LA NO UTILIZACIÓN DE SERVICIOS DE SALUD EN PERSONAS LGBTI DE PERÚ

RESUMEN

Objetivo: Determinar los factores asociados a la no utilización de servicios de salud en una muestra de la población de lesbianas, gais, bisexuales, transgénero e intersexuales (LGBTI) de Perú. **Materiales y métodos:** Estudio transversal analítico, análisis de datos secundarios de la Primera Encuesta LGBTI de Perú. Se tomó como variable de interés a las personas que tuvieron alguna enfermedad durante los últimos doce meses y que tuvieron que recibir atención médica. Se calcularon razones de prevalencias crudas (RPc) y ajustadas (RPa), con intervalos de confianza al 95% (IC 95%), usando regresiones de Poisson con varianza robusta. Se desarrollaron tres modelos, ajustados a variables agrupadas en correspondencia con la orientación sexual, identidad de género e intersexualidad, respectivamente. **Resultados:** El 55,4% fueron registrados como varones al nacer, la mediana de la edad fue 25 años (Rango intercuartil: 21-30). El 16% manifestó no haber buscado atención médica. Los tres modelos presentaron una asociación negativa respecto de padecer una enfermedad crónica, enfermedad infectocontagiosa, enfermedad mental y en quienes expresaban su orientación abiertamente. El no ser respetados por el género con el que se identificaban estuvo relacionado a no usar los servicios en el modelo 3. Los modelos 1 y 3, incluyeron una asociación positiva con no ser respetados con el género que se identifica. **Conclusión:** Padecer de alguna enfermedad mental, una enfermedad infectocontagiosa y una enfermedad crónica además de no ser tratado con respeto según el género con el que se identifica son factores asociados a la no utilización de los servicios de salud.

Palabras clave: Minorías Sexuales y de Género; Servicios de Salud; Disparidades en la Atención de Salud; Perú (Fuente: DeCS BIREME).

INTRODUCTION

In recent decades, public awareness and scientific interest in addressing the problems faced by the lesbian, gay, bisexual, transgender and intersex (LGBTI) community has been increasing [1]. This is mainly due to heteronormativity or heterosexism, which generates violence and discrimination, and is aggravated by the stigmatization of sexual orientation [2,3].

The existing gaps regarding access to health services for LGBTI people are centered on the structural discrimination and institutionalized violence suffered by this community, which causes several disparities when it comes to receiving medical care. This factor is strongly associated with not seeking health services due to internalized stigma and having suffered discrimination by health workers or patients [3,4]. This creates an environment of poor communication and mistrust in the health system from the LGBTI community; as well as chronic isolation, postponement or refusal to receive medical attention, even when their ailments can put their health at great risk [5].

A study in the United States showed that 18% of LGBTI adults reported avoidance of medical care for themselves or their family members because of anticipated discrimination, while 16% reported discrimination in health services [4]. Regarding transgender individuals, one study found that they were more likely to delay seeking medical care compared with cisgender participants because they anticipate discrimination [5]. Similarly, 41% of transgender women avoided seeking medical care mainly because of stigma and discrimination [3].

In addition, some health policies, such as HIV/AIDS prevention, specifically targeted to a subpopulation (e.g., sex workers), are implemented with an unspoken labeling and stigmatization of these people, which increases the rejection of assistance provided by the health system [6]. They may feel that being present or enjoying some benefit is not right for them and, therefore, may exclude themselves from healthcare services [7].

In Peru, it was reported that 26% of Peruvian members of the LGBTI community perceive that access to healthcare continues to be limited by multiple gaps regarding access. Ayacucho and Piura are the regions with the highest rate of vulnerability (39% and 35% respectively) [8]. Institutionalized discrimination and violence cause inequalities when it comes to receiving medical care and constitute the institutional gaps described in various contexts [9]; there is still no information on the conditions that lead an LGBTI person not to use health services in case of illness.

KEY MESSAGES

Motivation for the study: One of the main problems of the LGBTI community is the gap in access to healthcare. In Peru, discrimination and institutionalized violence create inequalities when it comes to receiving medical care.

Main findings: The factors associated with non-utilization of health services by LGBTI people were having mental illness and not being treated respectfully because of the gender with which each person identifies.

Implications: The creation of comprehensive care protocols with a focus on LGBTI people would allow the dignified and non-discriminatory treatment of this population.

This research aims to determine the factors associated with the non-utilization of health services in a sample of the LGBTI population in Peru. This will help to understand the reasons why this population renounces their health rights. Likewise, the development of comprehensive care protocols and the promotion of future research focused on the LGBTI community will allow us to understand how they are treated, with the mission of establishing an initial point of discussion regarding the needed comprehensive healthcare for the most vulnerable populations, such as the LGBTI community.

MATERIALS AND METHODS

Design and area of the study

We carried out an analytical cross-sectional study, using secondary data from the First Virtual Survey for LGBTI people, conducted by the Instituto Nacional de Estadística e Informática (INEI) in 2017. This survey is of an exploratory, non-probabilistic nature, as no preliminary information was available about the size of the population.

The survey was conducted between May 17 and August 17, 2017 through an online questionnaire disseminated on the INEI website on social networks and other electronic media. We counted with the support of various LGBTI organizations to reach the target population and to try to eliminate biased responses by non-LGBTI people. The survey coverage included the entire Peruvian national territory, including urban and rural areas [10].

Population and sample

The survey included people 18 years of age or older, residents of Peru who identified themselves as part of the LGBTI community or who, without identifying themselves with these categories, did not ascribe to the binary or rigid definitions of masculine or feminine, and had access to the electronic questionnaire. The initial population of the survey was 12,027 participants from all over the country.

Participants were excluded if they did not answer the questions that allowed them to identify or define themselves as part of the group, corresponding to questions 112, 113, 114 and 120 of the questionnaire [10], which addressed sex registered at birth, sexual orientation, gender identity and intersexuality, respectively. In addition, those who did not answer questions 105 and 106, corresponding to the variable of interest that delimits those who have had a health problem during the last twelve months and have visited a health facility for care, respectively, were excluded. Finally, only members of LGBTI communities who despite having had the need to use health services did not do so for various reasons were considered. The final population was 5,386 participants.

Variables and instruments

The electronic questionnaire consisted of 71 questions, which included general data about socio-demographic characteristics such as age, sex registered at birth, education, health, occupation, identity, body and sexuality, family environment, disability, ethnicity (36 questions); discrimination and violence (11 questions); knowledge of LGBTI rights (3 questions); citizen participation (2 questions); perception of LGBTI status (4 questions) and housing and household data (5 questions).

The variables included in the study were determined based on a previous theoretical review of the barriers of sexual minorities to access health services [11], which considered aspects related to sexual orientation, gender identity, intersexuality; in addition to socioeconomic, geographic, demand and supply aspects that influence access to health services [12]. To determine the dependent variable, we first selected the persons who reported having any disease (question 105: "In the last 12 months, did you have any health problem such as..."). Then, it was cross-checked with the response "I did not seek care", an alternative response corresponding to question 106 ("Where did you go to seek care for this illness?").

We also considered questions covering the variables of age, sex registered at birth, place of residence, ethnicity,

marital status, level of education, having health insurance, history of chronic noncommunicable diseases (asthma, chronic bronchitis, emphysema, arterial hypertension, diabetes mellitus) in the last 12 months, history of infectious diseases (tuberculosis, sexually transmitted infections, HIV/AIDS) or mental health (anxiety, depression), reasons for not using health services, having suffered some type of discrimination by health personnel, having been forced to undergo STI or HIV testing. In addition, we included variables regarding sexual orientation, gender diversity and sexual characteristics, sexual orientation, gender identity, intersex, whether they openly express their sexual orientation, whether a family member knows about their sexual orientation or gender identity. The definitions of the terms used in the variables corresponding to sexual diversity, gender diversity and sexual characteristics can be found in the glossary attached as supplementary material.

Procedure and statistical analysis

The data modules were downloaded from the INEI web page to analyze the data. Subsequently, the necessary data were extracted from the module uploaded in SPSS v.25, exported to a Microsoft Excel 2013 file and then we kept only the variables of interest previously delimited and corroborated by the authors.

Data were analyzed in the Stata version 15 statistical package (StataCorp, College Station, Texas, USA), where qualitative variables were presented as frequencies and percentages; quantitative variables were presented as medians and interquartile ranges, after evaluating their distribution.

Simple linear regression was applied on all variables and variance inflation factors were calculated to assess multicollinearity among the independent variables. We found that the variables gender identity, sexual orientation and intersexuality presented multicollinearity. Therefore, and due to the importance of these variables in the study, three models were developed with the intention of including these variables in the same adjusted analysis model. The multivariate analysis included in each model the variables with a $p < 0.20$ in the bivariate analysis: age, place of residence, educational level, health insurance, history of STIs, history of chronic noncommunicable diseases, history of mental health diseases, fearlessly expressed sexual orientation, partner relationship, forced to be tested for STIs, the gender with which he/she identifies was not respected, had to change his/her appearance, and sex registered at birth.

For each model, crude (PRc) and adjusted (PRa) prevalence ratios and their 95% confidence intervals (95% CI) were calculated using Poisson regressions with robust variance. A statistically significant association was considered when the prevalence ratios with a 95% CI did not include 1.

Ethical considerations

The protocol of this study is included in the National Registry of Health Research Projects (PRISA) of the INS (Registration code: EI0000000660). In addition, the ethical considerations expressed in the Helsinki declaration were taken into account. Only the data considered relevant for the study were extracted from the database, and those that would allow us to recognize the identity of the individuals were ignored. The data used in the present investigation are of public domain and do not contain information that would allow the identification of any individual.

RESULTS

There was a final population of 5,386 people, after excluding 6.4% (771) for not identifying themselves as part of the group (heterosexuals, non-intersexuals, non-transgender) and 48.8% (5,870) for not answering if they presented any disease in the last twelve months; finally, 0.1% (11) of the records were eliminated because they had incomplete and non-concordant information whose content was offensive and/or obscene at the time of evaluation by the authors, these data are shown in detail in a flow chart (Figure 1).

From the final population, 55.4% (2984) were registered as male at birth, the median age was 25 years (IQR: 21 to 30); 44.2% (2,379) reported being gay, 5.9% (316) were transsexual and only 4.4% (233) reported being intersex. Likewise, 57.1% (3,058) of the participants reported having university education and 52.2% (2777) reported not having a partner. The other general characteristics are summarized in Table 1.

Regarding health, 29.7% (1,600) reported not having insurance. During the last twelve months, 49.4% (2,658) reported having suffered from some mental illness associated to adaptation disorders, such as anxiety or depression. However, 16% (862) of the participants reported that they had not sought medical care, with lack of money being the most frequent reason (31.3%). The geographic distribution of non-use of health services is shown in Figure 2.

Regarding the non-use of health services, the multivariate analysis showed a negative association in the three models with having graduate studies, having suffered from a chronic non-communicable disease, having suffered from a sexually transmitted infection, and openly expressing sexual orientation or gender identity; in addition, model 3 included a negative association with residing in Lima. Likewise, a positive association was found in all three models with having presented some mental health problem corresponding to an adaptive disorder; on the other hand, models 1 and 3 included a positive association with not
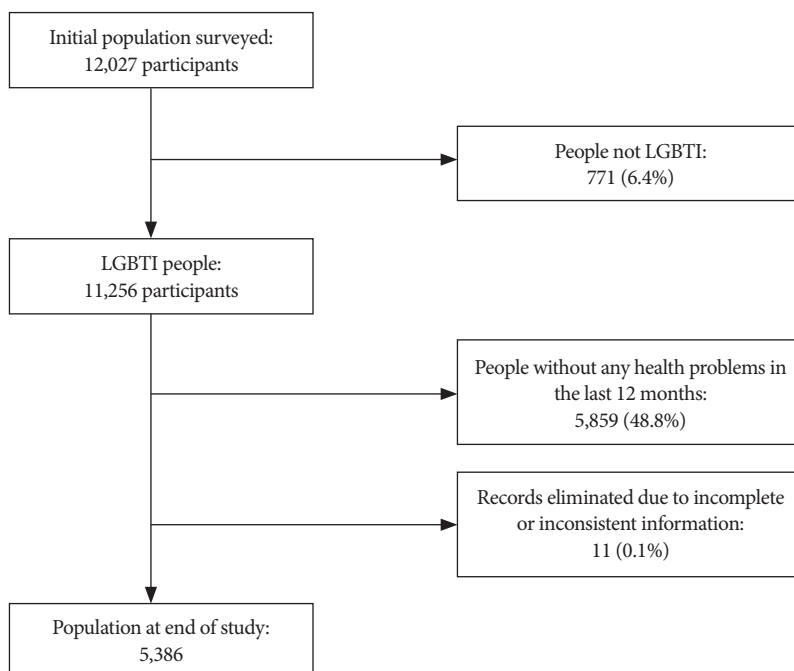

Figure 1. Flowchart of the selection of the study population.

Table 1. General characteristics of the studied LGBTI population.

| Characteristics	n	%
Age	25 (21-30) [a]	
Sex registered at birth		
Female	2,400	44.6
Male	2,984	55.4
Educational level		
No higher education	751	14.0
With technical studies	1,089	20.3
University studies	3,058	57.1
Postgraduate studies	461	8.6
Partner		
No partner	2,777	52.2
With partner, not cohabiting	1,671	31.4
With partner, cohabiting	764	14.4
More than one partner	105	2.0
Sexual Orientation		
Heterosexual	119	2.2
Homosexual, gay	2,379	44.2
Homosexual, lesbian	989	18.4
Bisexual	1,366	25.4
Another [b]	530	9.8
Intersexual		
No	4,477	84.2
Yes	233	4.38
Doesn't know	607	11.42
Gender identity		
Transgender person [c]	316	5.9
Cisgender person	4,450	85.2
Queer gender person [d]	474	8.9

[a] Median and interquartile ranges; [b] pansexual, asexual, demisexual; [c] transsexual, transgender, transvestite; [d] persons of non-binary gender.

being respected because of the gender with which he/she identifies (Table 2).

DISCUSSION

This research found that socioeconomic limitation and lack of trust in health personnel were the main reasons for not using health services, which are related to what has been reported in previous studies; where, compared to heterosexuals, sexual minorities tend to delay care due to cost, previous negative experiences in medical care, not being able to obtain appointments, and avoiding bothering a care provider [13]. One in six LGBTI adults reported that they avoided seeking care due to anticipated and experienced discrimination in health care settings [4].

We found that having postgraduate education decreased the prevalence of non-utilization of health services. Although specific studies of this determinant in the LGBTI population are scarce, it is known that educational level influences adequate access to healthcare [14]. A higher level of education is related to
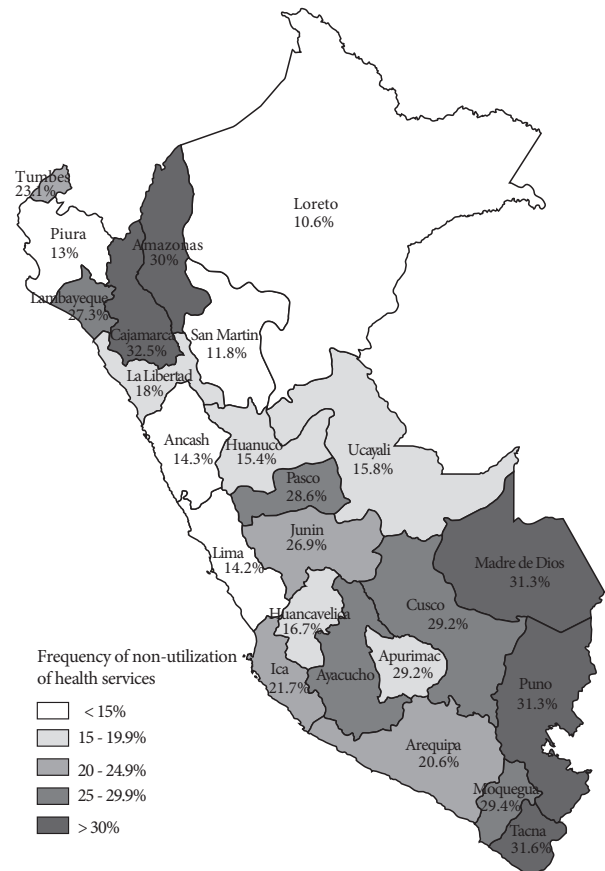
Figure 2. Frequency of non-utilization of health services by geographic location.

a better socioeconomic level and fewer barriers to access health services [15]. On the other hand, residing in Lima decreased the frequency of non-utilization of health services. This could be due to the fact that, unlike other cities in Peru, Lima has progressively implemented health services with a rights-based approach oriented towards the integration and acceptance of the LGBTI population [16]. The challenge remains to implement and strengthen them at the national level [17].

We also found that the prevalence of non-utilization of health services was lower in those who had health insurance. Not having health insurance could imply the need to make a payment for medical care, which would constitute an economic barrier. This is consistent with reports from the United States, where sexual minorities had a higher frequency of delaying medical care because of costs [18]. Although the majority of the population reported being affiliated with health insurance, there are groups, such as the transgender population, that find it difficult to be affiliated because they often do not use their legal name because it does not coincide with their gender identity [19] or because the services offered do not adequately cover their needs [20].

On the other hand, almost half of the sample population reported having suffered some mental health problem in the

Table 2. Bivariate and multivariate analysis between factors associated with the non-utilization of health services among LGBTI people in Peru.

Variable	Non-utilization of health services							
	Crude model		**Adjusted model 1**		**Adjusted model 2**		**Adjusted model 3**	
	PRc (95% CI)	p value	PRa (95% CI)	p value	PRa (95% CI)	p value	PRa (95% CI)	p value
Age	0.94 (0.93-0.95)	<0.001	0.99 (0.98-1.00)	0.118	0.99 (0.98-1.00)	0.115	0.99 (0.98-1.00)	0.081
Sex registered at birth								
Female	Reference		Reference		Reference		Reference	
Male	0.64 (0.56-0.73)	<0.001	1.17 (0.95-1.45)	0.129	1.19 (1.04-1.37)	0.013	1.19 (1.04-1.36)	0.013
Expresses their sexual orientation or gender identity without fear of rejection.								
No	Reference		Reference		Reference		Reference	
Yes	0.70 (0.61-0.81)	<0.001	0.80 (0.70-0.93)	0.003	0.80 (0.70-0.93)	0.003	0.80 (0.64-0.93)	0.003
Was forced to undergo STI or HIV testing								
No	Reference		Reference		Reference		Reference	
Yes	0.60 (0.44-0.82)	<0.001	0.78 (0.60-1.03)	0.078	0.78 (0.60-1.03)	0.078	0.80 (0.61-1.05)	0.610
Educational level								
No higher education	Reference		Reference		Reference		Reference	
With technical studies	0.74 (0.61-0.91)	0.004	1.03 (0.81-1.25)	0.972	1.01 (0.81-1.26)	0.943	0.99 (0.80-1.24)	0.956
University studies	0.82 (0.69-0.96)	0.017	0.89 (0.74-1.07)	0.208	0.89 (0.74-1.07)	0.198	0.89 (0.74-1.06)	0.197
Postgraduate studies	0.31 (0.21-0.46)	<0.001	0.50 (0.33-0.76)	0.001	0.49 (0.32 – 0.75)	0.001	0.49 (0.34-0.75)	0.001
Relationship with a partner								
No partner	Reference		Reference		Reference		Reference	
With a partner, not cohabiting	0.90 (0.78-1.05)	0.211	0.95 (0.82-1.10)	0.486	0.96 (0.83-1.11)	0.563	0.96 (0.87-1.11)	0.577
With a partner, cohabiting	0.62 (0.49-0.78)	<0.001	0.95 (0.76-1.18)	0.647	0.93 (0.74-1.17)	0.547	0.95 (0.76-1.19)	0.662
More than one partner	0.65 (0.36-1.15)	0.141	1.17 (0.62-2.18)	0.630	1.36 (0.75-2.45)	0.314	1.20 (0.65-2.22)	0.560
Place of residence								
Province	Reference		Reference		Reference		Reference	
Lima	0.84 (0.73-0.97)	0.021	0.98 (0.95-1.02)	0.378	0.98 (0.95-1.02)	0.399	0.98 (0.95-1.02)	<0.001
Health insurance								
No	Reference		Reference		Reference		Reference	
Yes	0.51 (0.44-0.58)	<0.001	0.75 (0.66-0.85)	<0.001	0.75 (0.66-0.86)	<0.001	0.75 (0.66-0.85)	<0.001
History of chronic non-communicable diseases								
No	Reference		Reference		Reference		Reference	
Yes	0.26 (0.21-0.33)	<0.001	0.72 (0.33-0.54)	<0.001	0.42 (0.33-0.54)	<0.001	0.41 (0.33-0.54)	<0.001
History of infectious diseases								
No	Reference		Reference		Reference		Reference	
Yes	0.10 (0.07-0.15)	<0.001	0.18 (0.11-0.29)	<0.001	0.18 (0.12-0.29)	<0.001	0.18 (0.11-0.29)	<0.001
History of mental health problems								
No	Reference		Reference		Reference		Reference	
Yes	8.48 (6.84-10.52)	<0.001	4.78 (3.71-6.15)	<0.001	4.85 (3.77-6.25)	<0.001	4.74 (3.68-6.10)	<0.001
Respect for their gender identity								
No	Reference		Reference		Reference		Reference	
Yes	1.25 (1.05-1.50)	0.014	1.26 (1.06-1.50)	0.010	1.29 (0.93-1.23)	0.333	1.26 (1.06-1.49)	0.008
Change of appearance								
No	Reference		Reference		Reference		Reference	
Yes	1.34 (1.16-1.56)	<0.001	1.08 (0.94-1.24)	0.288	1.08 (0.93-1.24)	0.333	1.08 (0.94-1.24)	0.285
Sexual Orientation								
Heterosexual	Reference		Reference		-	-	-	-
Homosexual, gay	0.67 (0.45-0.99)	0.049	1.11 (0.72-1.72)	0.636	-	-	-	-
Homosexual, lesbian	0.89 (0.59-1.35)	0.595	1.08 (0.70-1.69)	0.722	-	-	-	-
Bisexual	1.17 (0.78-1.75)	0.444	1.14 (0.75-1.75)	0.540	-	-	-	-
Another [a]	1.31 (0.87-1.99)	0.199	1.09 (0.70-1.71)	0.693	-	-	-	-
Gender Identity								
Cisgender	Reference		-	-	Reference		-	-
Transgender	1.17 (0.80-1.71)	0.409	-	-	0.91 (0.69-1.20)	0.515	-	-
Queer gender	1.30 (1.05-1.61)	0.014	-	-	1.07 (0.88-1.12)	0.496	-	-
Intersexuality								
No	Reference		-	-	-	-	Reference	
Yes	0.57 (0.38-0.86)	0.007	-	-	-	-	0.64 (0.41-0.99)	0.045
Doesn't know	1.25 (1.05-1.48)	0.013	-	-	-	-	1.14 (0.94-1.37)	0.175

Model 1. Includes the sexual orientation variable. Model 2. Includes the variable gender identity. Model 3. Includes the variable intersexuality. [a] demisexual, sapiosexual. PRa: adjusted prevalence ratio; 95% CI: 95% confidence interval.

last twelve months. This finding is similar to that reported in various national and international studies [21,22], where the stress of minorities, stigmatization and discrimination negatively affect their mental health [23], particularly in intolerant environments such as the Peruvian society [24]. This makes adequate care of mental health problems of LGBTI people a priority; however, unlike health problems such as chronic non-communicable diseases or STIs, mental illness increased the prevalence of non-utilization of health services. A Canadian study reports that sexual minorities' main barriers to mental health care were inability to pay, insufficient insurance coverage, preferring to "wait" for problems to go away, discomfort talking about emotions, and embarrassment [25]. Of these barriers, the last two are likely to have particular connotations in the Peruvian context, where health personnel are not trained to care for LGBTI people and, even worse, could have negative attitudes towards them [26]. This would lead not only to inadequate mental health care, but also to the exposure to negative or violent attitudes. Given the specific challenges of LGBTI people, such as problems in identity development, couple relationships, parenting problems, problems related to their families, among others, there is a need to include guidelines throughout the country to address their mental health, and to decrease heterosexism and bias in medical care [26,27].

We observed that fearlessly expressing their sexual orientation and gender identity increased the frequency of non-utilization of health services. This patient empowerment could facilitate appropriate medical care for their health problems; however, it must be accompanied by an environment that facilitates this scenario. Thus, a study in the United States found that, in those states with laws against discrimination against sexual minorities, sexual minority women were more likely to declare their gender identity or sexual orientation to their health care provider, which improved medical care and patient satisfaction [28].

On the other hand, we also found that, in the models for gender identity and intersexuality, not respecting the gender with which the patient identifies increased the prevalence of non-utilization of health services. This is consistent with a study conducted in the United States, where transgender individuals were found to have a high proportion of delaying or not seeking medical care due to health system discrimination [29]. It has also been observed that health care providers, especially heterosexual and male providers, may have negative attitudes towards LGBTI patients, which is a manifestation of the systemic discrimination to which our society subjects them [26].

It has been found that recognizing oneself as intersex decreased the frequency of non-utilization of health services. This may be because intersex persons need adequate medical care to understand the physical characteristics of intersex and non-binary gender identity until the patient is able to identify with some gender and some sex, if desired [30]. Research on the problems affecting intersex people is still scarce, so these findings should be contextualized in the framework of specific studies that can lead to better policies, education, health care, and ethical responsibility on the part of our healthcare system.

It is important to provide information on the needs of LGBTI people in general and with emphasis on future health professionals, with useful and reliable information that includes comprehensive care for the LGBTI-oriented community. Likewise, the State, in its duty to ensure a universal health service respecting the rights of all people, should address the disparities in access and use of health services that are currently fragmented, being this group one of the most vulnerable. The creation of comprehensive care protocols with a focus on LGBTI people would make it possible to sensitize and educate health personnel.

This research had several limitations. The survey, being of a non-probabilistic exploratory nature, did not include prior information on the size of this population in order to select a sample. In view of this, the results obtained refer to the population that participated in the survey and cannot be extrapolated to the total LGBTI population of Peru. Because the survey was conducted virtually, access was limited to only LGBTI people who had internet access. Some of the questions correspond to events that occurred up to twelve months in advance, so there could be memory bias in the filling out of the survey, despite this, the variables included define in a detailed and specific manner each of the variables of interest. Likewise, the self-reported survey responses may constitute an information bias. Finally, the design of the survey prevented a case-control study, so there is no cause-effect directionality between the associated factors and the non-utilization of health services.

Finally, we can conclude that having a mental illness and not being treated with respect according to gender predisposed members of the LGBTI community not to use health services. In contrast, the factors that influenced them to use health services were having openly expressed their sexual orientation or being affiliated with some type of health insurance.

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ERRATA

In the article "Factors associated with the non-use of health services in LGBTI people from Peru", with number DOI: 10.17843/rpmesp.2021.382.6149, published in Rev Peru Med Exp Salud Publica. 2021;38(2):240-7.

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Where it says:

Table 1. General characteristics of the studied LGBTI population.

Characteristics	n	%
Age		25 (21-30)[a]
Sex registered at birth		
Female	2400	44.6
Male	2984	55.4
Educational level		
No higher education	751	14.0
With technical studies	1089	20.3
University studies	3058	57.1
Postgraduate studies	461	8.6
Partner		
No partner	2777	52.2
With partner, not cohabiting	1671	31.4
With partner, cohabiting	764	14.4
More than one partner	105	2.0
Sexual Orientation		
Heterosexual	119	2.2
Homosexual, gay	2379	44.2
Homosexual, lesbian	989	18.4
Bisexual	1366	25.4
Another [b]	530	9.8
Intersexual		
No	4477	84.2
Yes	233	4.38
Doesn't know	607	11.42
Gender identity		
Transgender person [c]	316	5.9
Cisgender person	4540	85.2
Queer gender person [d]	474	8.9

[a] Median and interquartile ranges; [b] pansexual, asexual, demisexual; [c] transsexual, transgender, transvestite; [d] persons of non-binary gender.

It should say:

Table 1. General characteristics of the studied LGBTI population.

Characteristics	n[a]	%
Age		25(21-30) [b]
Sexo registrado al nacer		
Female	2400	44.6
Male	2984	55.4
Missing data	2	
Educational level		
No higher education	751	14.0
With technical studies	1089	20.3
University studies	3058	57.1
Postgraduate studies	461	8.6
Missing data	27	
Partner		
No partner	2777	52.2
With partner, not cohabiting	1671	31.4
With partner, cohabiting	764	14.4
More than one partner	105	2.0
Missing data	69	
Sexual Orientation		
Heterosexual	119	2.2
Homosexual, gay	2379	44.2
Homosexual, lesbian	989	18.4
Bisexual	1366	25.4
Another[c]	530	9.8
Missing data	3	
Intersexual		
No	4477	84.2
Yes	233	4.38
Doesn't know	607	11.42
Missing data	69	
Gender identity		
Transgender person [c]	316	5.9
Cisgender person	4540	85.2
Queer gender person [d]	474	8.9
Datos perdidos	56	

[a]Not all variables have the same number of observations, missing data are expressed in an additional row in each category and are not counted in the relative frequencies, [b] median and interquartile ranges; [c] pansexual, asexual, demisexual; [d] transsexual, transgender, transvestite; [e] persons of non-binary gender.

p. 245

Where it says:

Table 2. Bivariate and multivariate analysis between factors associated with the non-utilization of health services among LGBTI people in Peru.

Variable	Crude model		Adjusted model 1		Adjusted model 2		Adjusted model 3	
	PRc (95% CI)	p value	PRa (95% CI)	p value	PRa (95% CI)	p value	PRa (95% CI)	p value
Age	0.94 (0.93-0.95)	<0.001	0.99 (0.98-1.00)	0.118	0.99 (0.98-1.00)	0.115	0.99 (0.98-1.00)	0.081
Sex registered at birth								
Female	Reference		Reference		Reference		Reference	
Male	0.64 (0.56-0.73)	<0.001	1.17 (0.95-1.45)	0.129	1.19 (1.04-1.37)	0.013	1.19 (1.04-1.36)	0.013
Expresses their sexual orientation or gender identity without fear of rejection.								
No	Reference		Reference		Reference		Reference	
Yes	0.70 (0.61-0.81)	<0.001	0.80 (0.70-0.93)	0.003	0.80 (0.70-0.93)	0.003	0.80 (0.64-0.93)	0.003
Was forced to undergo STI or HIV testing								
No	Reference		Reference		Reference		Reference	
Yes	0.60 (0.44-0.82)	<0.001	0.78 (0.60-1.03)	0.078	0.78 (0.60-1.03)	0.078	0.80 (0.61-1.05)	0.610
Educational level								
No higher education	Reference		Reference		Reference		Reference	
With technical studies	0.74 (0.61-0.91)	0.004	1.03 (0.81-1.25)	0.972	1.01 (0.81-1.26)	0.943	0.99 (0.80-1.24)	0.956
University studies	0.82 (0.69-0.96)	0.017	0.89 (0.74-1.07)	0.208	0.89 (0.74-1.07)	0.198	0.89 (0.74-1.06)	0.197
Postgraduate studies	0.31 (0.21-0.46)	<0.001	0.50 (0.33-0.76)	0.001	0.49 (0.32 – 0.75)	0.001	0.49 (0.34-0.75)	0.001
Relationship with a partner								
No partner	Reference		Reference		Reference		Reference	
With a partner, not cohabiting	0.90 (0.78-1.05)	0.211	0.95 (0.82-1.10)	0.486	0.96 (0.83-1.11)	0.563	0.96 (0.87-1.11)	0.577
With a partner, cohabiting	0.62 (0.49-0.78)	<0.001	0.95 (0.76-1.18)	0.647	0.93 (0.74-1.17)	0.547	0.95 (0.76-1.19)	0.662
More than one partner	0.65 (0.36-1.15)	0.141	1.17 (0.62-2.18)	0.630	1.36 (0.75-2.45)	0.314	1.20 (0.65-2.22)	0.560
Place of residence								
Province	Reference		Reference		Reference		Reference	
Lima	0.84 (0.73-0.97)	0.021	0.98 (0.95-1.02)	0.378	0.98 (0.95-1.02)	0.399	0.98 (0.95-1.02)	<0.001
Health insurance								
No	Reference		Reference		Reference		Reference	
Yes	0.51 (0.44-0.58)	<0.001	0.75 (0.66-0.85)	<0.001	0.75 (0.66-0.86)	<0.001	0.75 (0.66-0.85)	<0.001
History of chronic non-communicable diseases								
No	Reference		Reference		Reference		Reference	
Yes	0.26 (0.21-0.33)	<0.001	0.72 (0.33-0.54)	<0.001	0.42 (0.33-0.54)	<0.001	0.41 (0.33-0.54)	<0.001
History of infectious diseases								
No	Reference		Reference		Reference		Reference	
Yes	0.10 (0.07-0.15)	<0.001	0.18 (0.11-0.29)	<0.001	0.18 (0.12-0.29)	<0.001	0.18 (0.11-0.29)	<0.001
History of mental health problems								
No	Reference		Reference		Reference		Reference	
Yes	8.48 (6.84-10.52)	<0.001	4.78 (3.71-6.15)	<0.001	4.85 (3.77-6.25)	<0.001	4.74 (3.68-6.10)	<0.001
Respect for their gender identity								
No	Reference		Reference		Reference		Reference	
Yes	1.25 (1.05-1.50)	0.014	1.26 (1.06-1.50)	0.010	1.29 (0.93-1.23)	0.333	1.26 (1.06-1.49)	0.008
Change of appearance								
No	Reference		Reference		Reference		Reference	
Yes	1.34 (1.16-1.56)	<0.001	1.08 (0.94-1.24)	0.288	1.08 (0.93-1.24)	0.333	1.08 (0.94-1.24)	0.285
Sexual Orientation								
Heterosexual	Reference		Reference		-	-	-	-
Homosexual, gay	0.67 (0.45-0.99)	0.049	1.11 (0.72-1.72)	0.636	-	-	-	-
Homosexual, lesbian	0.89 (0.59-1.35)	0.595	1.08 (0.70-1.69)	0.722	-	-	-	-
Bisexual	1.17 (0.78-1.75)	0.444	1.14 (0.75-1.75)	0.540	-	-	-	-
Another [a]	1.31 (0.87-1.99)	0.199	1.09 (0.70-1.71)	0.693	-	-	-	-
Gender Identity								
Cisgender	Reference		-	-	Reference		-	-
Transgender	1.17 (0.80-1.71)	0.409	-	-	0.91 (0.69-1.20)	0.515	-	-
Queer gender	1.30 (1.05-1.61)	0.014	-	-	1.07 (0.88-1.12)	0.496	-	-
Intersexuality								
No	Reference		-	-	-	-	Reference	
Yes	0.57 (0.38-0.86)	0.007	-	-	-	-	0.64 (0.41-0.99)	0.045
Doesn't know	1.25 (1.05-1.48)	0.013	-	-	-	-	1.14 (0.94-1.37)	0.175

Model 1. Includes the sexual orientation variable. Model 2. Includes the variable gender identity. Model 3. Includes the variable intersexuality. [a] demisexual, sapiosexual. PRa: adjusted prevalence ratio; 95% CI: 95% confidence interval.

It should say:

Table 2. Bivariate and multivariate analysis between factors associated with the non-utilization of health services among LGBTI people in Peru.

Variable	Non-utilization of health services							
	Crude model		Adjusted model 1		Adjusted model 2		Adjusted model 3	
	PRc (95% CI)	p value	PRa (95% CI)	p value	PRa (95% CI)	p value	PRa (95% CI)	p value
Age	0.94 (0.93-0.95)	<0.001	0.99 (0.98-1.00)	0.118	0.99 (0.98-1.00)	0.115	0.99 (0.98-1.00)	0.081
Sex registered at birth								
Female	Reference		Reference		Reference		Reference	
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Expresses their sexual orientation or gender identity without fear of rejection								
No	Reference		Reference		Reference		Reference	
Yes	0.70 (0.61-0.81)	<0.001	0.80 (0.70-0.93)	0.003	0.80 (0.70-0.93)	0.003	0.80 (0.64-0.93)	0.003
Was forced to undergo STI or HIV testing								
No	Reference		Reference		Reference		Reference	
Yes	0.60 (0.44-0.82)	<0.001	0.78 (0.60-1.03)	0.078	0.78 (0.60-1.03)	0.078	0.80 (0.61-1.05)	0.610
Educational level								
No higher education	Reference		Reference		Reference		Reference	
With technical studies	0.74 (0.61-0.91)	0.004	1.03 (0.81-1.25)	0.972	1.01 (0.81-1.26)	0.943	0.99 (0.80-1.24)	0.956
University studies	0.82 (0.69-0.96)	0.017	0.89 (0.74-1.07)	0.208	0.89 (0.74-1.07)	0.198	0.89 (0.74-1.06)	0.197
Postgraduate studies	0.31 (0.21-0.46)	<0.001	0.50 (0.33-0.76)	0.001	0.49 (0.32 – 0.75)	0.001	0.49 (0.34-0.75)	0.001
Relationship with a partner								
No partner	Reference		Reference		Reference		Reference	
With a partner, not cohabiting	0.90 (0.78-1.05)	0.211	0.95 (0.82-1.10)	0.486	0.96 (0.83-1.11)	0.563	0.96 (0.87-1.11)	0.577
With a partner, cohabiting	0.62 (0.49-0.78)	<0.001	0.95 (0.76-1.18)	0.647	0.93 (0.74-1.17)	0.547	0.95 (0.76-1.19)	0.662
More than one partner	0.65 (0.36-1.15)	0.141	1.17 (0.62-2.18)	0.630	1.36 (0.75-2.45)	0.314	1.20 (0.65-2.22)	0.560
Place of residence								
Province	Reference		Reference		Reference		Reference	
Lima	0.84 (0.73-0.97)	0.021	0.98 (0.95-1.02)	0.378	0.98 (0.95-1.02)	0.399	0.98 (0.95-1.02)	0.375
Health insurance								
No	Reference		Reference		Reference		Reference	
Yes	0.51 (0.44-0.58)	<0.001	0.75 (0.66-0.85)	<0.001	0.75 (0.66-0.86)	<0.001	0.75 (0.66-0.85)	<0.001
History of chronic non-communicable diseases								
No	Reference		Reference		Reference		Reference	
Yes	0.26 (0.21-0.33)	<0.001	0.72 (0.33-0.54)	<0.001	0.42 (0.33-0.54)	<0.001	0.41 (0.33-0.54)	<0.001
History of infectious diseases								
No	Reference		Reference		Reference		Reference	
Yes	0.10 (0.07-0.15)	<0.001	0.18 (0.11-0.29)	<0.001	0.18 (0.12-0.29)	<0.001	0.18 (0.11-0.29)	<0.001
History of mental health problems								
No	Reference		Reference		Reference		Reference	
Yes	0.10 (0.07-0.15)	<0.001	0.18 (0.11-0.29)	<0.001	0.18 (0.12-0.29)	<0.001	0.18 (0.11-0.29)	<0.001
Respect for their gender identity								
No	Reference		Reference		Reference		Reference	
Yes	1.25 (1.05-1.50)	0.014	1.26 (1.06-1.50)	0.010	1.29 (0.93-1.23)	0.333	1.26 (1.06-1.49)	0.008
Cambio de apariencia								
No	Reference		Reference		Reference		Reference	
Yes	1.34 (1.16-1.56)	<0.001	1.08 (0.94-1.24)	0.288	1.08 (0.93-1.24)	0.333	1.08 (0.94-1.24)	0.285
Sexual Orientation								
Heterosexual	Reference		Reference		-		-	
Homosexual, gay	0.67 (0.45-0.99)	0.049	1.11 (0.72-1.72)	0.636	-	-	-	-
Homosexual, lesbian	0.89 (0.59-1.35)	0.595	1.08 (0.70-1.69)	0.722	-	-	-	-
Bisexual	1.17 (0.78-1.75)	0.444	1.14 (0.75-1.75)	0.540	-	-	-	-
Another [a]	1.31 (0.87-1.99)	0.199	1.09 (0.70-1.71)	0.693	-	-	-	-
Gender Identity								
Cisgender	Reference		-	-	Referencia		-	-
Transgender	1.17 (0.80-1.71)	0.409	-	-	0.91 (0.69-1.20)	0.515	-	-
Queer gender	1.30 (1.05-1.61)	0.014	-	-	1.07 (0.88-1.12)	0.496	-	-
Intersexuality								
No	Reference		-	-	-	-	Referencia	
Yes	0.57 (0.38-0.86)	0.007	-	-	-	-	0.64 (0.41-0.99)	0.045
Doesn't know	1.25 (1.05-1.48)	0.013	-	-	-	-	1.14 (0,94-1.37)	0.175

Model 1. Includes the sexual orientation variable. Model 2. Includes the variable gender identity. Model 3. Includes the variable intersexuality. [a] demisexual, sapiosexual.
PRa: adjusted prevalence ratio; 95% CI: 95% confidence interval.