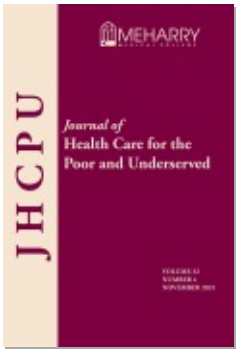
Factors Associated with Home Remedy Use by Adults Who Do Not Attend Health Care Facilities: Evidence from Peruvian Population-based Survey, 2019



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ORIGINAL PAPER

Factors Associated with Home Remedy Use by Adults Who Do Not Attend Health Care Facilities: Evidence from Peruvian Population-based Survey, 2019

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Abstract: We estimated home remedy use (HRU) prevalence and associated factors in adults who present symptoms, disease, or accidents using the National Household Survey 2019. The estimation was performed in a population that did not access a health care facility. We conducted an analytical cross-sectional study in adults over 18 years of age. The dependent variable was HRU (Yes/No) as the main reason for not going to health care facilities. We collected these variables: age, sex, education, marital status, ethnicity, region of residence, chronic diseases or disability, and health insurance. The HRU prevalence was associated with older participants, who lived in the highlands or the jungle, belonged to Quechua or Aymara ethnic groups, and had comprehensive health insurance. In contrast, there was a lower HRU prevalence for those enrolled in private insurance. The HRU was associated with various socio-demographic factors in adults with any symptoms, illness, or accidents not attending health centers.

Key words: Traditional medicine, health care system, insurance, ethnic groups, Peru.

Home remedy use (HRU) for the management of various diseases is a common practice around the world. The frequency of the use of home remedies varies according to each country.[1–3] A German study found that 80% of the population uses home remedies.[1] In Latin America, according to a Colombian study, 60% of the population who do not use health care facilities use medicinal herbs or home remedies.[2] In Peru, a study found that 30% of the population not attending a health care facility, used HR.[3]

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However, the differences presented above reflect no standard definition about HRU, which is as yet undetermined. Some studies define HRU as simple interventions to manage minor health problems and exclude dietetic supplements and medical herb and plants products.[1] On the other hand, other studies suggest that HRU includes the use of medical herbs, animal parts, or mineral products in a therapeutic way, and preparation in a domestic environment.[4]

There are different socio-demographic factors associated with greater HRU, such as being female, being African American, coming from a rural environment, and having a lower educational level.[5–7] Even though some of these features are common to some countries, HRU is a practice that depends on cultural traits; therefore, findings from one context cannot be extrapolated to other contexts.

Peru has a fragmented health system with relatively low use of formal health care providers; self-medication is a common practice, and there are frequent drug shortages at all levels in health facilities.[8–11] Peruvians have a long tradition of using traditional medicine, including home remedies alone or as complementary allopathic medicine.[12–15]

Regarding disease burden, by 2016, non-communicable diseases represented 66.2% of the years of healthy life lost, while non-communicable, maternal, perinatal, and nutritional diseases represented 21.4%.[16]

Traditional medicine in Peru provides options for almost all these diseases or their symptoms; however, to date, its use is not regulated. While there are government initiatives for its commercialization, based on quality standards, studies on its therapeutic benefits and safety are scarce.[17] Although these remedies can serve as an alternative in a fragmented and inefficient health system such as the Peruvian one, a better understanding of the magnitude and characteristics of use will allow opportunities to propose key interventions. Therefore, our study aims to estimate HRU prevalence and the associated factors in the adult population in Peru with any symptoms, diseases, or accidents in the previous four weeks who did not attend a health care facility.

Methods

Survey design. We performed a secondary data analysis through an analytical cross-sectional design of the National Household Survey (ENAHO) from Peruvian National Institute of Statistics and Informatics for 2019.[18]

Population, sample, and sampling. ENAHO is a socioeconomic monitoring national survey with a representative sample. The type of sampling was probabilistic, stratified, multi-stage, and independent. The target population includes urban and rural dwellings and their occupants, excluding armed forces living in training camps and ships and people residing in collective dwellings (such as hotels, hospitals, asylums, jails).

The primary sampling unit in the urban area was the urban population center with more than 2,000 inhabitants. The secondary sampling unit in the urban area was the dwelling conglomerate with 120 inhabitants, and the tertiary unit was the private home.

There were two types of primary sampling units for the rural area: the urban population center with 500 to less than 2,000 inhabitants and the registration area with an average of 100 private homes. The secondary sampling unit was the conglomerate, with an average of 120 private homes, and the tertiary sampling unit was the dwelling.

The final sampling size for 2019 was 128,276 people belonging to 39,820 dwellings: 24,308 in the urban area and 15,512 in the rural area.

The analysis included all adults over 18 years who did not attend a health care facility despite presenting a health problem in the previous four weeks. A subset of people (48,511 of 128,276) was excluded for not having any health care problem in the previous four weeks; another 38,315 registers were excluded for attending a health care facility, and 9,896 for being under 18 years old, and 8,312 for having incomplete data (Figure 1).

Variables and measurements. The dependent variable was HRU (Yes/No) and was constructed based on question 409 of the health questionnaire (What are the main reasons you did not go to a health care facility?). We consider the participants who used home remedies instead of going to a health care facility as home remedy users.

The independent variables were: sex; age, stratified as 18–29 years, 40–49, 50–59 and 60 and more years; marital status (single, cohabitating partner, married, widowed, divorced/separated); primary language (native language or Spanish); educational level (without educational level, elementary education, high school and university, and non-university); geographic region of residency (Lima, coast, mountain range, and jungle); residency zone (Yes/No); disability (Yes/No); chronic disease (Yes/No); health insurance (no insurance, comprehensive public health insurance [SIS], social security system [EsSalud], armed forces and police health insurance, and private health insurance) and ethnicity (Mestizo, Quechua, Aymara, Amazon Native, Black, White, and other races and ethnicities).

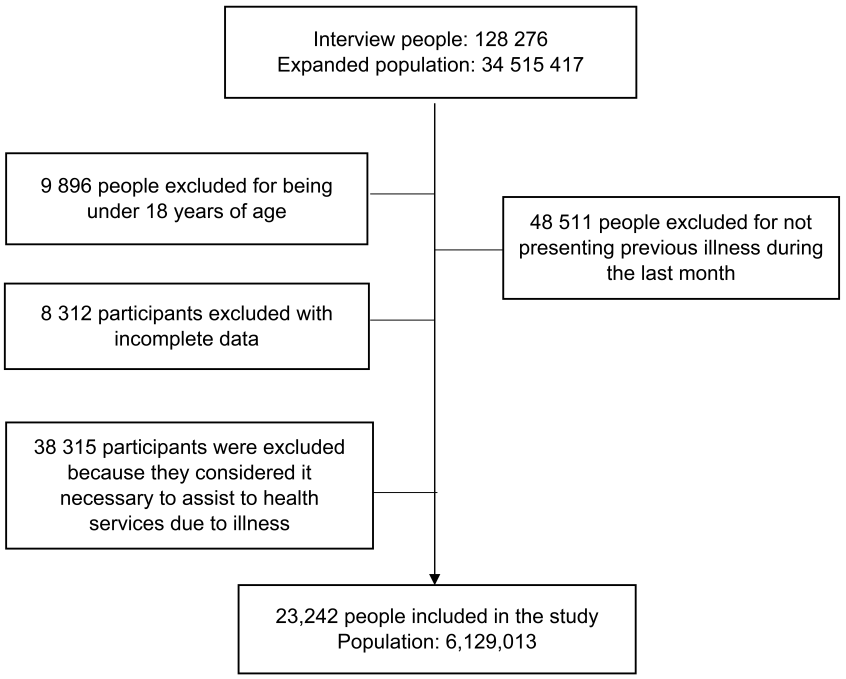

Figure 1. Flowchart of the selection of participants included in the analysis. National Household Survey (ENAHO) 2019.

Statistical analysis. We used the statistical package STATA® v16.0 (STATA Corporation, College Station, Texas, EE. UU.) with the module "complex survey data" (svy). The descriptive results are presented as absolute frequencies and proportions weighted by complex sampling with 95% confidence intervals (95% CI). The bivariate analysis was performed using the chi-square test for complex samples, with a prior evaluation of the assumptions.

We used generalized linear models of the Poisson family, crude and adjusted, for complex samples. We calculated crude and adjusted prevalence ratio (PR) with 95% CI and used the variables with a p value <.05 for the adjusted analysis. Since ethnicity and language are collinear variables, only the first one was included for multivariable analysis.

Ethical considerations. The database of the National Household Survey (ENAHO) allows free access (http://iinei.inei.gob.pe/microdatos/) and does not have identifiers in a way that guarantees anonymity. Spoken informed consent took place before the data collection, which did not require biological samples.

Results

We analyzed 23,242 participants representing a total population of 6,129,013. Of the sample, 55.4% were women, and the average age was 46.8 years. The most frequent marital stage was being married (32.4%). Regarding education, 36% of the total had completed their high school education. Most of the respondents lived in the mountain range (39.1%). The predominant ethnic identity was Mestizo (49.1%), and the most widely spoken language was Spanish (72.6%). Most of the total participants (92.3%) reported not having a disability, 56.7% suffered from a chronic disease, and the country's comprehensive health insurance (SIS) was the most frequent type of insurance (47.1%). Over one-fifth (22.6%) reported HRU as the main reason it for not attending a health care facility (Table 1).

The bivariate analysis showed statistically significant associations between HRU and age, marital status, educational level, region, health insurance, ethnicity, language, and geographical area (p <.001) (Table 2). Older adults had a higher HRU prevalence (27.5%) than younger adults (16%). Widowers reported the highest HRU prevalence (29.8%), while single people represented the lowest prevalence. Those who had no education had the highest HRU prevalence (36.3%) compared with those who had higher education (15.6%). The participants with private insurance reported the lowest HRU prevalence, and the participants with SIS presented the highest prevalence, with 6.2% and 27.9%, respectively. Among the ethnic groups, Quechua (35.1%) and Aymara (37.4%) had a higher HRU prevalence compared with the mestizo ethnic group, which had the lowest HRU prevalence (14.6%). Participants from the mountain range (36.9%) and the rural residency zone (33.8%) showed the highest HRU prevalence.

In crude analyses, people between 30–49 years, 50–59 years, and more than 60 years had a higher HRU prevalence. Additionally, there was a higher prevalence in participants with cohabitating partners and married or widowed participants compared with single participants. People with lower education levels (non-education, only elementary, or even only up to high school) when compared with others with higher

Table 1.

GENERAL CHARACTERISTICS OF ADULTS WHO DID NOT ATTEND A HEALTH CARE FACILITY DESPITE PRESENTING A HEALTH PROBLEM IN THE LAST FOUR WEEKS (N = 23,242)

Characteristics	Absolute frequency n	Weighted proportion[a] %	95%CI
Home remedies use			
No	17,754	77.4	76.2–78.6
Yes	5,488	22.6	21.3–23.7
Sex			
Women	12,712	55.4	54.6–56.2
Men	10,530	44.6	43.7–45.3
Age			
Mean (95%CI)		46.84	46.4–47.2
18 to 29 years	4,594	20.9	20.1–21.7
30 to 49 years	3,895	17	16.4–17.7
50 to 59 years	8,484	35.8	35–36.7
60 and olders	6,269	26	25.2–26.9
Marital Status			
Single	4,777	22.5	21.7–23.3
Cohabiting	6,310	26.5	25.4–27.4
Married	7,874	32.4	31.5–33.4
Widower	1,786	7.3	6.9–7.7
Divorced/separated	2,495	11.1	10.5–11.7
Educational level			
No instruction	2,014	7.4	6.9–7.9
Elementary education	7,637	29	28.2–29.9
High school	7,604	36	35–37
Non-university higher education	2,660	12.4	11.7–13
University higher education or postgraduate	3,327	15	14.2–15.8
Geographic region of residency			
Metropolitan Lima	2,151	25.8	24.1–27.5
Coast	6,904	22.8	21.3–24.2
Mountain range	9,474	39.1	37.3–41.1
Jungle	4,713	12.2	11.2–13.2
Disability			
No	21423	92.3	91.8–92.9
Yes	1819	7.6	7–8.1
Health insurance			
No health insurance	5918	27.3	26.3–28.3
Comprehensive health insurance (SIS)	11900	47.1	45.9–48.4
Social security system (EsSalud)	4685	21.4	20.5–22.3

(*continued on p. 2115*)

Table 1. (*continued*)

Characteristics	Absolute frequency n	Weighted proportion[a] %	95%CI
Health system of the Armed Forces and Police	253	1.3	1–1.5
Private health insurance	486	2.7	2.3–3.1
Ethnicity			
Mestizo	11296	49.1	47.7–50.5
Quechua	6751	28.6	27.1–30.1
Aymara	1212	5	4–6.1
Native from Amazon	584	1.1	.9–1.3
Black	1481	7	6.4–7.5
White	977	4.7	4.3–5.1
Other races	941	4.3	3.9–4.7
Language			
Spanish	16452	72.6	71–73
Native Language	6706	27.1	25.7–28.6
Foreign Language	52	.2	1.6–3.5
Sign Language/ No speaks	52	.1	0–.1
Chronic illness			
No	10044	43.3	42.2–44.3
Yes	13198	56.7	55.6–57.7
Residency zone			
Urban	14239	74.4	73.3–75.5
Rural	9003	25.6	24.4–26.6

Note
[a]Weights and design effect of the complex survey sampling were included.

education levels had a higher HRU prevalence. Additionally, higher levels were found in mountain range and rural area inhabitants in comparison with other regions and in people without any insurance and SIS beneficiaries in comparison with people in other financial coverage modalities. People with private insurance had a lower HRU prevalence. The HRU was more prevalent in all other ethnic groups than the Mestizo, with exception for Whites. People who speak a native or foreign language compared with those who speak Spanish showed a higher prevalence of HRU. Table 3 shows the crude regression model with the PR values with their 95% CI.

In the adjusted analysis, the association between HRU and age remaining statistically significant, 30–49 years (PR=1.14; 95% CI: 1.00–1.29), 50–59 years (PR=1.26; 95 % CI:1.12–1.42) and over 60 years (PR=1.34; 95% CI:1.17–1.55); compared with being 18 to 29 years. Similarly, there was an association between HRU and living in the

Table 2.

PREVALENCE OF THE USE OF HOME REMEDIES IN ADULTS WHO DID NOT ATTEND A HEALTH CARE FACILITY DESPITE PRESENTING A HEALTH PROBLEM IN THE LAST FOUR WEEKS (N = 23,242)

	Home remedies use (n=5488)			No home remedies use (n=17754)			
Characteristics	**n**	**%**	**CI95%**	**n**	**%**	**CI95%**	**p value[a]**
Gender							
Women	3,072	23.1	21.8–24.5	9,640	76.9	75.4–78.1	.056
Male	2,416	21.9	20.4–23.2	8,114	78.1	76.7–79.5	
Age (years)							
Mean							
18 to 29 years	776	16	14.3–17.8	3818	84	82.1–85.6	<.001
30 to 49 years	814	20	18.2–22.2	3081	80	77.7–81.7	
50 to 59 years	2166	24	22.4–25.4	6318	76	74.5–77.5	
≥60 years	1732	27.5	25.7–29.3	4537	72.5	70.6–74.2	
Marital status							
Single	842	16.7	15.1–18.3	3935	83.3	82.6–84.8	<.001
Cohabitating	1473	22.3	20.3–24.3	4837	77.7	75.6–79.6	
Married	2113	25.8	24.1–27.5	5761	74.2	72.4–75.8	
Widowed	534	29.8	67.2–73.1	1252	70.2	67.2–73.1	
Divorced/ separated	526	20.8	76.7–81.4	1969	79.2	76.7–81.4	
Educational level							
No instruction	726	36.3	33.3–39.3	1288	63.7	60.6–66.6	<.001
Elementary education	2223	28.6	27–30.2	5414	71.4	69.7–72.9	
High school	1622	20.1	18.4–21.8	5982	79.9	78.1–81.5	
University and non-university education	917	15.6	14–17.2	5070	84.4	82.7–85.9	
Geographic region of residency							
Metropolitan Lima	242	11.7	10–13.7	1909	88.3	86.2–89.9	<.001
Coast	872	12.3	11.2–13.4	6032	87.7	86.5–88.7	
Mountain range	3453	36.9	34.6–39.1	6021	63.1	60.8–65.3	
Jungle	921	18.6	16.8–20.5	3792	81.4	79.4–83.1	
Disability							
No	5027	22.5	21.3–23.8	16396	77.5	76.2-78.7	.6784
Yes	461	23.1	20.4–26.1	1358	76.9	73.9–79.6	
Health insurance							
No health insurance	1281	20.2	18.5–21.9	4637	79.8	78.1–81.5	<.001
Comprehensive health insurance (SIS)	3374	27.9	26.2–29.7	8526	72.1	70.3–73.8	
Social security system (EsSalud)	768	16.4	14.8–18.2	3917	83.6	81.8–85.2	
Health system of the Armed Forces and Police	32	15.5	9.9–23.4	221	84.5	76.6–90.1	
Private health insurance	33	6.2	3.8–9.8	453	93.8	90.2–96.2	

(*continued on p. 2117*)

Table 2. (*continued*)

Characteristics	Home remedies use (n=5488)			No home remedies use (n=17754)			
	n	%	CI95%	n	%	CI95%	p value[a]
Ethnicity							
Mestizo	1795	14.6	13.5–15.6	9501	85.4	84.3–86.4	<.001
Quechua	2443	35.1	32.5–37.7	4308	64.9	62.2–67.4	
Aymara	402	37.4	29.6–45.7	810	62.6	54.2–70.3	
Native from Amazon	129	20.4	16.4–25	455	79.6	74.9–83.5	
Black	301	19.7	17–22.7	1180	80.3	77.2–82.9	
White	183	17.0	14.3–20.1	794	83.0	79.8–85.6	
Other races	235	24.1	20.6–27.9	706	75.9	72–79.3	
Language							
Spanish	2922	16.4	15.4–17.3	13530	83.6	82.6–84.5	<.001
Native Language	2544	38.9	36.2–41.5	4162	61.1	58.4–63.7	
Foreign Language	14	33.2	17.9–53.2	38	66.7	46.7–82	
Sign Language/ No speaks	8	28.3	13.6–49.7	24	71.7	50.2–86.3	
Chronic illness							
No	2264	21.9	20.2–23.5	7780	78.1	76.4–79.7	.1367
Yes	3224	23	21.8–24.3	9974	76.9	75.6–78.1	
Residency zone							
Urban	11684	18.7	17.2–20.2	11684	81.3	79.7–82.7	<.001
Rural	6070	33.8	31.9–35.6	6070	66.2	64.3–68	

Note
[a]Weights and design effect of the complex survey sampling were included.

highlands (PR=2.35: 95% CI:1.96–2.81) and in the jungle (PR=1.42; 95% CI:1.17–1.72). Other groups were also more likely to use HRU: those who live in Lima; those who belong to the Quechua ethnic group (PR=1.45; 95% CI:1.30–1.60), Aymara (PR=1.46; 95% CI:1.15–1.83) or other ethnicities (PR=1.45; 95% CI:1.24–1.70) vs. the Mestizo ethnic group; and those participants insured by the SIS (PR=1.19; 95% CI:1.05–1.33), compared with being covered by social security. Finally, having private insurance is associated with a lower HRU prevalence (PR=0.37; 95% CI: 0.32–0.82) (Table 3).

Discussion

Our study's main findings show that two out of 10 Peruvians with symptoms, illness, or accidents in the four weeks preceding the survey used home remedies instead of reaching a health care facility. The main factors associated with home remedy use were age over 30 years; living in the highlands or jungle; belonging to the Quechua, Aymara, or other smaller ethnic groups; and being covered by the public comprehensive health insurance. Additionally, we found lower use of home remedies for those covered by private health insurance.

Table 3.

GENERALIZED LINEAR MODELS OF THE POISSON FAMILY FOR HOME REMEDIES USE IN ADULTS WHO DID NOT ATTEND A HEALTH CARE FACILITY DESPITE PRESENTING A HEALTH PROBLEM IN THE LAST FOUR WEEKS (N = 23 242)

	Crude model			Adjusted model[a]		
Exposition	**PR**	**95%CI**	**p value**	**aPR**	**95%CI**	**p value**
Sex						
Women	Ref.			Ref.		
Men	0.94	.89–1.00	.057			
Age						
Mean (95%CI)						
18 to 29 years	Ref.			Ref.		
30 to 49 years	1.26	1.11–1.42	<.001	1.14	1.01–1.29	.044
50 to 59 years	1.49	1.34–1.66	<.001	1.26	1.12–1.42	<.001
≥60 years	1.72	1.53–1.93	<.001	1.34	1.17–1.55	<.001
Marital Status						
Single	Ref.			Ref.		
Cohabiting	1.34	1.20–1.48	<.001	1.06	.93–1.18	.360
Married	1.55	1.39–1.71	<.001	1.03	.91–1.16	.607
Widower	1.78	1.57–2.02	<.001	1.08	.92–1.24	.333
Divorced/separated	1.24	1.09–1.42	.001	1.04	.89–1.19	.630
Educational level						
University and no-university education	Ref.			Ref.		
No instruction	2.33	2.06–2.62	<.001	1.13	.97–1.31	.101
Elementary education	1.84	1.65–2.04	<.001	1.10	.96–1.24	.164
High school	1.29	1.16–1.44	<.001	1.09	.97–1.22	.120
Geographic region of residency						
Metropolitan Lima	Ref.			Ref.		
Coast	1.05	.87–1.25	.622	1.01	.84–1.20	.918
Mountain range	3.14	2.65–3.72	<.001	2.35	1.96–2.81	<.001
Jungle	1.59	1.32–1.91	<.001	1.42	1.17–1.72	<.001
Disability						
No	Ref.			Ref.		
Yes	1.03	.90–1.17	.677			
Health insurance						
No health insurance	Ref.			Ref.		
Comprehensive health insurance (SIS)	1.23	1.09–1.39	.001	1.09	.97–1.23	.135
Social security system (EsSalud)	1.70	1.52–1.90	<.001	1.19	1.05–1.34	.005
Health system of the Armed Forces and Police	.94	.61–1.46	.797	.95	.63–1.42	.793
Private health insurance	.38	.23–.60	<.001	.52	.32–.83	.006

(*continued on p. 2119*)

Table 3. (*continued*)

	Crude model			Adjusted modela		
Exposition	**PR**	**95%CI**	**p value**	**aPR**	**95%CI**	**p value**
Ethnicity						
Mestizo	Ref.			Ref.		
Quechua	2.41	2.18–2.66	<.001	1.45	1.30–1.60	<.001
Aymara	2.56	2.04–3.22	<.001	1.46	1.15–1.83	.001
Native from Amazon	1.40	1.12–1.75	.003	1.24	.98–1.56	.063
Black	1.35	1.16–1.58	<.001	1.11	.96–1.28	.141
White	1.17	.98–1.40	.091	1.02	.85–1.21	.813
Other races	1.65	1.40–1.94	<.001	1.45	1.24–1.70	<.001
Language						
Spanish	Ref.			Ref.		
Native Language	2.37	2.19–2.57	<.001			
Foreign language	2.03	1.16–3.53	.012			
Sign language/ No speaks	1.73	.89–3.34	.105			
Chronic illness						
No	Ref.			Ref.		
Yes	1.06	.98–1.13	.138			
Residency zone						
Urban	Ref.			Ref.		
Rural	1.80	1.63–1.98	<.001	1.01	.90–1.12	.898

Note
[a]Adjusted model for sex, age, education, marital status, geographic region of residency, rural residency, chronic health problem, disability and health insurance.

The findings on HRU prevalence are lower than the ones reported in countries such as Germany (80%); India (68.6%); Colombia (61%); and Brazil (1.9%).[1,3,4,19] These differences can be explained by the different definitions of "home remedies," as well as different methodological tools. The German study included a questionnaire for specific home remedies, the reasons and the frequency of use; this methodology could improve people's understanding of the questions allowing a well-defined and more regular report on the use of each home remedy.[1] The Indian study was carried out among mothers of children with respiratory problems, and the questionnaire had specific questions about HRU according to the symptoms.[19] On the other hand, in Colombia, the survey aimed to identify associated factors with self-medication for specific health conditions, where home remedies were included as an option for symptom relief. Finally, a Peruvian study based on the ENAHO 2015, showed that the use of home remedies represented 7.7% of the patients who preferred self-medication before going to a health care facility.[3]

Our findings show age as one of the factors associated with HRU, with a higher prevalence beginning at theage of 30, increasing with age. This information agrees with the Brazilian study findings, where the average HRU age was 50.4 years and increased

with age. The incremental use in the elderly could be related to the knowledge about home remedies provided through generations.[4,7]

There is no clear definition of home remedies, which could lead people to understand the term *home remedy* differently, thus over- or underestimating its prevalence. A Brazilian study described medicinal herbs as the most frequently used form of home remedy.[4] In Peru, there is also a wide range of HRU, especially in the highlands and jungle, which could be explained by their beliefs, the wide variety of medicinal herbs species, and their easy access.[12–17,19,20] A Peruvian study showed that up to 50% of surveyed people used medicinal plants for treating chronic diseases.[14] A study in Cuzco reported that 83.2% of participants used medicinal herbs for various digestive, urinary, and respiratory symptoms.[15] Similarly, when looking at another Peruvian highland city, the use of medicinal plants was reported to go up to 68.7%.[21]

Our study found a higher HRU prevalence in Indigenous peoples and ethnic minorities that frequently inhabit the mountain range and jungle regions.[22–25] Studies carried out in Andean and Amazonian communities showed that their population prefers to use natural remedies for health problems[21,22] even though financial health coverage has improved.[26,27] Thus, other access barriers and sociocultural factors might play a role: considering that the condition is not severe enough to look for a health provider, difficult geographical access to health care facilities, delay in getting care, lack of medicines in the health center, mistreatment and lack of knowledge about local diseases by health care providers.[3,23] Similarly, stigma, discrimination, language barriers, mistrust and discomfort with health personnel, lack of cultural awareness, and an annual turnover of health workers, are factors that weaken the relationship between the community and the health system.[28,29] On the other hand, it is essential to recognize that ethnic groups can use home remedies according to their vision of the human body, the cultural principles and beliefs as they relate to the concept of disease and its proper management (which may be regarded as an Indigenous worldview about health-illness). This has also been seen in similar populations such as Guatemalan groups of Mayan descent in Mexico.[30,31]

One of the main factors related to greater HRU was having comprehensive public health insurance (SIS). This finding could be a controversial result because people without insurance have a higher prevalence of non-use of formal health care services.[11] However, the SIS population does not have a formal job, has fewer years of study, and lives in areas of poverty. Thus, improvements in health coverage have not fulfilled the role of bringing the health system closer to the population due to socio-demographic factors and cultural and practical barriers such as those enumerated above.[3,23,28,29] A Peruvian study analyzed the gap between population and health coverage, finding that despite the favorable evolution of SIS coverage, only 31.27% of affiliates sought care for health problems at their health care facilities.[32] This is key to understanding that financial coverage does not always translate in to access to care. Several factors play a role in access; for instance, drug availability has been described as an issue in public facilities.[10] In contrast, having private insurance was associated with a higher HRU prevalence compared with those with social insurance, which could probably be explained by the fact that those affiliated with social security are more likely to use the outpatient consultation of their health care networks, which would reduce the con-

sumption of home remedies.[26] However, over the past several years, social insurance has offered programs featuring complementary medicines as part of therapy; in these programs, home remedies are based on medicinal plants but prescribed by specialist health professionals.[33]

The relevance of our findings lies in the identification of several socio-demographic factors associated with HRU. Traditional medicine practices are deeply rooted in Andean and Amazon societies. Public policy stakeholders could use these findings as a starting point to design interventions to regulate the use of home remedies. Institutional policies (such as the social security integrating traditional medicine elements within a controlled environment.[33,34] More research is needed to evaluate the effectiveness of home remedies for some easy-to-manage pathologies without the presence of adverse effects. On the other hand, educational interventions seeking to reduce self-medication with home remedies may not be sufficient; note that when our findings showed that there are no differences among educational levels regarding HRU.

The present study has some limitations. First, as secondary data analysis, the research question was not formulated before the survey design, so we only included the ENAHO survey variables in the analysis. For future research, these variables must be considered since they can influence the use of remedies. Second, the ENAHO variables do not have a standard definition for home remedies; consequently, there is no available information about the different types of home remedies the participants used. Third, the study's cross-sectional design does not allow us to assess causality; therefore, the research scope is limited to frequency estimation and factors associated with HRU. Yet, these factors can be used as starting points for designing public health and research interventions, as previously discussed. Finally, the exclusion of people under 18 years old could represent a selection bias; however, no differences were found in terms of sex and region among the included and excluded observations.

Our study raises some challenges. Although HRU is ingrained in our society and some sociodemographic factors seem to influence this practice, difficulties on accessing care might favor their use, as previously discussed. Effectiveness and safety studies of home remedies are urgently needed; one means of monitoring their potential effects, including adverse events, is to incorporate them in some existing health programs. Finally, although our study is the first representative of its type in our country, further research is needed to determine whether the factors found are independent of the ones acting as access barriers to care in general.

In conclusion, the study findings show that a fifth of the assessed population who reported the presence of symptoms, illness, or accident in the four weeks before the survey and did not go to a health care facility made use of home remedies. Some sociodemographic factors associated with the use of home remedies were identified, such as age, ethnicity, region of origin, and type of health insurance.

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