Ciência & Saúde Coletiva
cienciaesaudecoletiva.com.br
ISSN 1413-8123. v.29, n.5
DOI: 10.1590/1413-81232024295.04772023EN

Determinants factors in the recognition of a usual source of care by Brazilian adolescents

Maísa Mônica Flores Martins (https://orcid.org/0000-0001-8329-614X) [1]
Nília Maria de Brito Lima Prado (https://orcid.org/0000-0001-8243-5662) [2]
Ana Luiza Queiroz Vilasbôas (https://orcid.org/0000-0002-5566-8337) [3]
Rosana Aquino (https://orcid.org/0000-0003-3906-5170) [3]

Abstract *The present study aimed to analyze the demographic, socioeconomic, and health factors and risk behaviors associated with the recognition of a Usual Source of Care (USC), according to gender. This work was a cross-sectional study, based on the National Survey of School Health (2015), conducted with 100,464 Brazilian adolescents. Descriptive analyses were performed based on Pearson's χ2, and the prevalence ratio (PR) through logistic regression models in Stata 14 for each type of USC (Primary Health Care (PHC), Private Practice, Hospital, and Emergency), stratified by sex. Recognition of a USC was reported by 55.5% of the adolescents, 58.6% of whom were female. In the multivariate analysis, the variables that present social, economic, and risk behavior inequalities showed positive associations for USC PHC for both genders. For the other types of USC, the demographic and socioeconomic characteristics showed negative associations. The results of this study showed that PHC is the service with the highest recognition among adolescents in conditions of social vulnerability. This reinforces the need to consolidate the PHC in order to favor the health care of adolescents, establishing bonds and improving access to health actions.*

Key words *Quality Indicators, Health Care, Adolescent, Primary Health Care*

[1] Universidade do Estado da Bahia. R. Silveira Martins 2555, Cabula. 41150-000 Salvador BA Brasil. maisamonica@gmail.com
[2] Universidade Federal da Bahia (UFBA). Salvador BA Brasil.
[3] Instituto de Saúde Coletiva, UFBA. Salvador BA Brasil.

Introduction

Adolescence represents a strategic time to invest in comprehensive care, based on health promotion actions[1,2], which must go beyond preventing risk behaviors, involving aspects related to personal satisfaction, quality of life, protection against drug use and violence, development of social aspects, and access to basic services, such as health, housing, education, and leisure[3].

Given the specificities presented by this population group, it is necessary to build a relationship of bond and trust between adolescents and health services[4]. In this sense, the organization of health services must offer active listening that is welcoming and encourages the regular search for care[5].

Given the complexity of this topic and the needs presented by this age group, the availability of a Usual Source of Care (USC) makes it possible to record information about individuals, which facilitates more accurate diagnosis and treatment, as well as a recognition of health needs and problems[6,7]. A USC is defined as the existence of a professional or a specific healthcare location for individuals to consult when they are sick or need advice about their health[8,9].

Having a USC as a primary health care (PHC) service can guarantee more adequate care for the population[5], and is associated with an increased use of preventive services[10-12], together with a reduction in urgencies and emergencies[13]. Furthermore, the issue of confidentiality is crucial for the patient to feel more comfortable in reporting relevant information and adhering to recommendations[6,14]. If there is no longitudinal link, health care for preventive care can be diminished for adolescents[15].

Studies show a higher prevalence of recognition of USC by younger teens[14], which can be explained by the association between the existence of a USC by parents and the availability and recognition by their children[16]. Regarding the type of USC, those adolescents with less financial conditions and parents with low educational levels were more likely to refer to emergency services as their USC[17].

In Brazil, a nationwide study highlighted high rates of recognition of a USC by the population, with more than a third having PHC as their primary source of care[18], which demonstrates the importance of strengthening PHC through the consolidation and expansion of the Family Health Strategy (ESF)[19], fulfilling its role as an organizer and coordinator of the health system, in addition to solving a large part of the health problems of a given population[20].

Differences between the sexes have been highlighted in studies in the literature, both for the recognition of a USC[14,15,17,21,22], as well as for exposure to risk factors[23-26], since exposure to certain factors does not homogeneously affect millions of Brazilian adolescents[27].

Given these considerations, this study aims to analyze the demographic, socioeconomic, and health factors and risk behaviors associated with the recognition of a USC, according to sex, among Brazilian adolescents.

Methodology

This is a cross-sectional study with data from the National Survey of School Health (*Pesquisa Nacional de Saúde do Escolar* - PeNSE), available on the IBGE website and in the public domain[28]. PeNSE is a periodic survey, carried out through an agreement signed with the Ministry of Health and the Ministry of Education, and with support from the Brazilian Institute of Geography and Statistics (IBGE), based on a probabilistic sampling of Brazilian schoolchildren, in an attempt to understand and assess the various risk and health protection factors of this population group.

The study population consisted of adolescents participating in the third edition of PeNSE, held in 2015, enrolled in the 9th year of primary education (formerly 8th grade), in public or private schools, located in urban and rural areas throughout Brazil[29]. A total of 102,301 students participated in sample 1 of the study, with 102,072 valid questionnaires recorded. For the present study, 1,608 adolescents who did not answer the question concerning the recognition of a USC were excluded, resulting in a sample of 100,464 Brazilian adolescents, in 3,040 schools and 203 allocation strata.

To select the sample, we used the list of elementary schools listed in the 2013 School Census, conducted by the Anísio Teixeira National Institute of Educational Studies and Research (INEP)[29].

The sample size calculation was carried out to provide prevalence estimates in each geographic stratum (capital cities, Federal District, and other Brazilian states), with an error of approximately 3% in the 95% confidence interval (CI), considering a prevalence of 50%, with the first stage of sampling consisting of schools, and the second stage, of eligible classes in selected schools in the

9th year of elementary education[29,30]. The specifications of how the sampling process was carried out considering the stratification of the territory and a sample per conglomerate are available in the book "*Pesquisa Nacional de Saúde do Escolar, 2015*"[29].

The following variables were used to understand the purpose of this study – the recognition of having a USC by Brazilian schoolchildren.

The USC variable was constructed from the following PeNSE questions: "In the last 12 months, have you sought any health service or professional for care related to your own health?" and "In the last 12 months, which health service did you seek most frequently?". Having a USC was considered in cases in which the individual answered affirmatively to the first question and mentioned the type of service in the second question, except when it was mentioned that they always searched for a pharmacy, which was recorded as not having a USC.

The type of health service that the individual reported seeking most frequently in the last 12 months was classified as: a) Primary Health Care (PHC); b) Private medical offices, including alternatives (Private medical office and private clinic); c) Hospital; and d) Emergency, encompassing various alternatives (Emergency room or Emergency Care Unit (*Unidade de Pronto Atendimento* - UPA). All variables were defined as dummies, with "Yes" or "No" as answers.

The independent variables used in the analysis were organized into two blocks:

a) *Sociodemographic and economic aspects*: Age group (≤14 years, 15 to 19 years); Race/color (Black, Brown, Yellow and Indigenous, White); Paid work (No, Yes); School Lag (No, Yes); Maternal education (incomplete secondary education, complete secondary education to complete higher education); and Administrative Dependency of the School (Private, Public).

b) *Behavioral habits and health conditions*: Smoking in the last 30 days (No, Yes - having smoked cigarettes at least one day in the last 30 days); Use of illicit drugs in the last 30 days (marijuana, cocaine, crack, cola, loló, perfume launcher, ecstasy, oxy, etc.) (No, Yes - having used illicit drugs at least one day in the last 30 days); Use of alcohol in the last 30 days (No, Yes - having consumed at least one glass of alcoholic beverage in the last 30 days); Sexual Intercourse (No, Yes); Last unprotected sexual intercourse (No, Yes - Having had the last sexual intercourse without a condom); Physical violence in the last 12 months (No, Yes); Sexual violence in the last 12 months (No, Yes); Considers health status (Regular/Poor/Very bad, Good/Very good); Satisfaction with Body Image (Indifferent/dissatisfied/very dissatisfied, Satisfied/Very satisfied).

A descriptive analysis of the recognition of a USC was carried out according to the independent variables, with the presentation of their corresponding absolute and relative frequencies, measured by Pearson's $\chi 2$ test. Furthermore, a descriptive analysis was performed between USC and the independent variables, stratified by sex. These bivariate analyses were calculated using Pearson's $\chi 2$ test, considering the cluster structure of the data. The analysis was performed based on the svy command. For all analyses, a 5% level of significance was considered.

The magnitude of the association between the recognition of the type of USC and the independent variables was estimated using the prevalence ratio (PR) and their respective 95%CI, using a logistic regression model, stratified by sex.

To define the multivariate modeling, a collinearity analysis was initially performed. After this step, to carry out the diagnosis of the model, all pre-selected variables were included in the model, using the Bayesian Information criteria of Akaike and Schwarz, where it was found that the best adjusted model was the complete model. The PR calculation was estimated by applying the logistic regression model, using the adjrr package of the Stata 14 software. All analyses were carried out using Stata version 14, with the necessary adjustments and corrections for a complex sampling study, taking into account the consideration of the effect of conglomerates (schools), using the sampling weighting factor, depending on the specificities of the sampling process.

This study, as it deals with public domain data (https://www.ibge.gov.br/estatisticas/sociais/educacao/9134-pesquisa-nacional-desaude-do-escolar.html?=&t=microdados), was not a necessary submission for consideration by an ethics committee. PeNSE 2015 was approved by the National Research Ethics Commission (*Comissão Nacional de Ética em Pesquisa* - CONEP), of the National Health Council, through CONEP opinion No. 1,006,467, dated March 30, 2015.

Results

The present study included 100,464 eligible educated adolescents. Of these, 55,783 (55.5%) reported recognizing a USC. Higher proportions were observed among female individu-

als (58.6%), aged less than or equal to 14 years (56.5%) and who self-reported a white race/color (57.8%) (Table 1).

In relation to the socioeconomic characteristics of adolescents and their families, the highest incidence of USC was found among adolescents who did not work (55.1%), were not behind in school (55.4%), with mothers with secondary education to complete higher education (62.1%), and among students from private schools (67.7%). Regarding behaviors and exposure to risk situations, the proportion of adolescents with a USC was higher among those who did not use tobacco (55.2%), who used illicit drugs (56.7%), and who drank alcohol (57.3%) in the last 30 days, who had never sexual intercourse (55.2%), who had the last unprotected sexual intercourse (57.6%), who suffered physical violence (61.2%), and who suffered sexual violence (63.4%) in the last 12 months (Table 1) .

Regarding health characteristics, the proportion of adolescents with USC was higher among those who reported that their health was fair/bad or very bad (55.2%), and who were indifferent/dissatisfied or very dissatisfied with their body image (57.7%). Statistically significant differences at a p-value of 5% were observed for the variables of sex, age group, race/color, school lag, maternal education, administrative dependency, alcohol use in the last 30 days, unprotected sexual intercourse, physical violence and sexual violence in the last 12 months, and satisfaction with body image (Table 1).

In the analysis of prevalence in the recognition of a USC, stratified by sex, statistically significant differences were observed for both sexes for the following characteristics: younger age, white race/color, higher maternal education, private school student, unprotected sexual intercourse, and having suffered physical violence in the last 12 months. Among the variables that presented statistically significant differences only for male adolescents, the following characteristics stand out: not being behind in school, having suffered sexual violence in the last 12 months, and indifferent to very dissatisfied with body image, while among female adolescents, differences were only observed in the initiation of sexual activity (Table 1).

Tables 2 and 3 present the multivariate logistic regression models by type of USC, stratified by sex.

In relation to the recognition of a USC PHC, the variables that were positively associated in both sexes were: race/color black/brown/yellow/indigenous (PR: 1.13; 95%CI: 1.08-1.18, sex male and PR: 1.14; 95%CI: 1.09-1.19, female); having mothers with a lower educational level (PR: 1.26; 95%CI: 1.21-1.32, male and PR: 1.34; 95%CI: 1.28-1.39, female); being a public school student (PR: 2.67; 95%CI: 2.46-2.89, male and PR: 2.88; 95%CI: 2.66-3.11, female); and reported the last unprotected sexual intercourse (PR: 1.20; 95%CI: 1.12-1.28, male and PR: 1, 11; 95%CI: 1.03-1.20, female). Only among male adolescents was there a positive association between having suffered physical violence in the last 12 months (PR: 1.06; 95%CI: 1.01-1.12) and having suffered sexual violence in the last 12 months (PR: 1.19; 95%CI: 1.08-1.31), as compared to female adolescents, who showed an association between doing paid work (PR: 1.08; 95%CI: 1.02-1.15) and showing school lag (PR: 1.09; 95%CI: 1.02-1.16). Lower odds of recognizing a USC PHC were observed among adolescents of both sexes who reported indifference to great dissatisfaction with body image (PR: 0.88; 95%CI: 0.82-0.94, male and PR: 0.87; 95%CI: 0.83-0.91, female), and fair to very poor health status (PR: 0.92; 95%CI: 0.88-0.97, male and PR: 0.95; 95%CI: 0.91-0.99, female), and among female adolescents who reported smoking in the last 30 days (PR: 0.85; 95%CI: 0.77-0.94) (Tables 2 and 3).

For the analysis of the recognition of Private Medical Office USC, the variables that were positively associated in both sexes are related to different risk behaviors. For males, the following stand out: having had the last unprotected sexual intercourse (PR: 1.24; 95%CI: 1.13-1.37), having suffered physical violence in the last 12 months (PR: 1.10; 95%CI: 1.03-1.17), and sexual violence in the last 12 months (PR: 1.21; 95%CI: 1.05-1.39). For females, what stood out was alcohol use in the last 30 days (PR: 1.16; 95%CI: 1.10-1.23). Lower odds of recognizing a Private Medical Office USC were observed among adolescents of both sexes, such as: aged 15 to 19 years (PR: 0.91; 95%CI: 0.85-0.98, male and PR: 0.93; 95%CI: 0.87-0.99, female); race/color black/brown/yellow/indigenous (PR: 0.85; 95%CI: 0.81-0.90, male and PR: 0.85; 95%CI: 0.81-0.89, female), mothers with a lower educational level (PR: 0.63; 95%CI: 0.59-0.67, male and PR: 0.58; 95%CI: 0.55-0.61, female), public school students (PR: 0.37; 95%CI: 0.35-0.39, male and PR: 0.38; 95%CI: 0.37-0.41, female). Only for males, the health status was fair to very poor (PR: 0.89; 95%CI: 0.84-0.96), and for females, having suffered sexual violence in the last 12 months (PR: 0.87; 95%CI: 0.76-0.99) (Tables 2 and 3).

Table 1. Prevalence of the recognition of a Usual Source of Care (USC) according to demographic, socioeconomic, health, and risk behavior characteristics, stratified by sex. Brazil, National Survey of School Health, 2015.

Variables	Sample		Usual Source of Care (USC)						
						Male		Female	
	N	%	N	Yes (%)	P value	Yes (%)	P value	Yes (%)	P value
Sex				0,00					
Male	48,232	48.0	48,232	51.4					
Female	52,232	52.0	52,232	58.6					
Age range				0.00		0.00		0.01	0,01
11 to 14 years of age	67,937	67.6	67,937	56.5		53.3		59.2	
15 to 19 years of age	32,527	32.4	32,527	51.9		47.9		57.0	
Race/color				0.00		0.00		0.00	0,00
Black/Brown/Yellow/Indigenous	67,099	66.8	67,099	53.6		50.0		56.9	
White	33,272	33.2	33,272	57.8		53.6		62.0	
Paid work				0.91		0.08		0.66	0,66
No	87,842	87.5	87,842	55.1		51.0		58.5	
Yes	12,565	12.5	12,407	55.0		52.9		59.1	
School lag				0.00		0.00		0.29	0,29
No	88,150	87.8	88,150	55.4		51.9		58.5	
Yes	12,296	12.2	12,296	52.9		47.8		59.8	
Mother's educational level				0.00		0.00		0.00	0,00
Even incomplete high school	35,516	47.0	35,516	53.5		49.7		56.7	
From high school to higher education	40,138	53.0	40,138	62.1		58.1		66.0	
Administrative dependency of the school				0.00		0.00		0.00	0,00
Private	20,722	20.6	20,722	67.7		64.7		70.6	
Public	79,742	79.4	79,742	53.0		49.1		56.6	
Smoking in the last 30 days				0.31		0.67		0.28	0,28
No	95,137	94.7	95,137	55.2		51.4		58.7	
Yes	5,282	5.3	5,282	53.6		50.5		56.7	
Drug use in the last 30 days				0.29		0.12		0.99	0,99
No	96,603	96.2	96,603	55.0		51.2		58.6	
Yes	3,835	3.8	3,835	56.7		55.1		58.6	
Alcohol use in the last 30 days				0.00		0.00		0.10	0,10
No	78,140	77.8	78,140	54.4		50.5		58.2	
Yes	22,249	22.2	22,249	57.3		54.3		59.8	
Sexual intercourse				0.68		0.89		0.01	0,01
No	72,232	72.0	72,232	55.2		51.4		58.1	
Yes	28,040	28.0	28,040	54.9		51.5		60.8	
Last unprotected sex				0.00		0.00		0.00	0,00
No	91,051	91.6	81,719	54.6		50.4		58.0	
Yes	8,330	8.4	18,627	57.6		54.5		62.9	
Suffered physical violence in the last 12 months				0.00		0.00		0.00	0,00
No	82,220	82.0	82,220	53.8		49.5		57.7	
Yes	17,996	18.0	17,996	61.2		59.6		63.0	
Suffered sexual violence in the last 12 months				0.00		0.00		0.14	0,14
No	96,248	96.0	96,248	54.8		50.8		58.5	
Yes	4,055	4.0	4,055	63.4		66.2		61.2	
Consider health status				0.90		0.88		0.13	0,13
Fair to very bad	71,744	71.5	28,625	55.2		51.3		57.8	
Good very good	28,625	28.5	71,744	55.1		51.4		59.0	
Body image satisfaction				0.00		0.00		0.34	0,34
Indifferent to Very dissatisfied	17,846	19.9	17,846	57.7		54.6		59.1	
Satisfied	71,676	80.1	71,676	54.0		50.2		58.2	

Source: National Survey of School Health (PeNSE), 2015.

Table 2. Estimates using Logistic Regression models for the association between the dependent variables of Types of USCs (PHC, Private Medical Office, Hospital, and Emergency) and the variables according to demographic, socioeconomic, health, and risk behavior characteristics, according to men. Brazil, National Survey of School Health, 2015.

Variables	Type of USC							
	PHC		Private Medical Office		Hospital		Emergency	
	RP	IC(95%)	RP	IC(95%)	RP	IC(95%)	RP	IC(95%)
Age range								
15 to 19 years of age	1.01	(0.96-1.06)	0.91*	(0.85-0.98)	0.85*	(0.75-0.97)	1.02	(0.83-1.27)
Race/color								
Black/Brown/Yellow/ Indigenous	1.13*	(1.08-1.18)	0.85*	(0.81-0.90)	0.94	(0.86-1.04)	1.01	(0.85-1.21)
Paid work								
Yes	1.04	(0.99-1.09)	0.98	(0.91-1.05)	1.00	(0.88-1.14)	1.11	(0.89-1.39)
School lag								
Yes	1.04	(0.98-1.11)	0.96	(0.86-1.06)	1.11	(0.94-1.31)	0.89	(0.66-1.19)
Mother's educational level								
Up to incomplete high school	1.26*	(1.21-1.32)	0.63*	(0.59-0.67)	0.75*	(0.67-0.83)	0.85	(0.70-1.01)
Administrative dependency of the school								
Public	2.67*	(2.46-2.89)	0.37*	(0.35-0.39)	0.66*	(0.60-0.74)	1.12	(0.90-1.39)
Smoking in the last 30 days								
Yes	0.99	(0.90-1.09)	0.97	(0.84-1.12)	0.99	(0.78-1.27)	0.74	(0.49-1.13)
Drug use in the last 30 days								
Yes	0.92	(0.82-1.03)	1.05	(0.91-1.22)	0.66*	(0.49-0.90)	1.98*	(1.35-2.91)
Alcohol use in the last 30 days								
Yes	0.96	(0.90-1.01)	1.03	(0.96-1.11)	1.10	(0.98-1.24)	1.11	(0.89-1.39)
Sexual intercourse								
Yes	0.95	(0.89-1.01)	0.94	(0.85-1.03)	0.78*	(0.66-0.92)	0.63*	(0.46-0.87)
Last unprotected sex								
Yes	1.20*	(1.12-1.28)	1.24*	(1.13-1.37)	1.18	(0.99-1.40)	1.35	(0.98-1.86)
Suffered physical violence in the last 12 months								
Yes	1.06*	(1.01-1.12)	1.10*	(1.03-1.17)	1.41*	(1.27-1.58)	1.48*	(1.21-1.81)
Suffered sexual violence in the last 12 months								
Yes	1.19*	(1.08-1.31)	1.21*	(1.05-1.39)	0.79	(0.59-1.06)	0.82	(0.51-1.33)
Consider health status								
Fair to very bad	0.92*	(0.88-0.97)	0.89*	(0.84-0.96)	1.10	(0.98-1.22)	1.28*	(1.06-1.55)
Body image satisfaction								
Indifferent to Very dissatisfied	0.88*	(0.82-0.94)	1.05	(0.97-1.13)	0.90	(0.78-1.02)	1.13	(0.89-1.42)

*Corresponds to values with statistically significant differences.

Source: National Survey of School Health (PeNSE), 2015.

In the analysis of the outcome, the recognition of USC Hospital, the variables that were positively associated are different between the sexes but are related to characteristics of risk behaviors and assessment of health status. For male individuals, only the variable of having suffered physical violence in the last 12 months (RP: 1.41; 95%CI: 1.27-1.58) stood out, while for females, the practice of the last unprotected sexual relationship (PR: 1.27; 95%CI: 1.04-1.55), sexual vi-

Table 3. Estimates using Logistic Regression models for the association between the dependent variables of Types of USCs (PHC, Private medical office, Hospital, and Emergency) and the variables according to demographic, socioeconomic, health, and risk behavior characteristics, according to women. Brazil, National School Health Survey, 2015.

Variables	Type of USC							
	PHC		Private Medical Office		Hospital		Emergency	
	RP	IC(95%)	RP	IC(95%)	RP	IC(95%)	RP	IC(95%)
Age range								
15 to 19 years of age	1.05*	(1.00-1.10)	0.93*	(0.87-0.99)	0.94	(0.84-1.06)	1.07	(0.89-1.29)
Race/color								
Black/Brown/Yellow/ Indigenous	1.14*	(1.09-1.19)	0.85*	(0.81-0.89)	0.97	(0.88-1.06)	0.94	(0.81-1.08)
Paid work								
Yes	1.08*	(1.02-1.15)	1.01	(0.93-1.10)	1.14	(0.99-1.31)	0.71*	(0.54-0.94)
School lag								
Yes	1.09*	(1.02-1.16)	1.03	(0.93-1.14)	1.03	(0.87-1.22)	0.79	(0.59-1.06)
Mother's educational level								
Up to incomplete high school	1.34*	(1.28-1.39)	0.58*	(0.55-0.61)	0.88*	(0.81-0.97)	0.72*	(0.62-0.84)
Administrative dependency of the school								
Public	2.88*	(2.66-3.11)	0.38*	(0.37-0.41)	0.82*	(0.74-0.91)	1.17	(0.97-1.40)
Smoking in the last 30 days								
Yes	0.85*	(0.77-0.94)	0.93	(0.81-1.06)	1.02	(0.82-1.27)	0.91	(0.64-1.29)
Drug use in the last 30 days								
Yes	0.93	(0.83-1.05)	1.07	(0.93-1.23)	0.81	(0.62-1.07)	1.29	(0.89-1.86)
Alcohol use in the last 30 days								
Yes	0.97	(0.93-1.02)	1.16*	(1.10-1.23)	1.12*	(1.01-1.24)	1.07	(0.90-1.27)
Sexual intercourse								
Yes	1.05	(0.98-1.13)	0.96	(0.87-1.07)	0.86	(0.71-1.04)	1.17	(0.89-1.54)
Last unprotected sex								
Yes	1.11*	(1.03-1.20)	1.08	(0.96-1.21)	1.27*	(1.04-1.55)	0.98	(0.73-1.32)
Suffered physical violence in the last 12 months								
Yes	1.03	(0.98-1.08)	0.96	(0.90-1.02)	1.10	(0.99-1.23)	1.62*	(1.38-1.90)
Suffered sexual violence in the last 12 months								
Yes	1.07	(0.98-1.16)	0.87*	(0.76-0.99)	1.24*	(1.03-1.50)	0.90	(0.65-1.26)
Consider health status								
Fair to very bad	0.95*	(0.91-0.99)	1.00	(0.95-1.05)	1.20*	(1.10-1.31)	1.53*	(1.33-1.77)
Body image satisfaction								
Indifferent to Very dissatisfied	0.87	(0.83-0.91)	0.96	(0.92-1.01)	0.98	(0.89-1.07)	1.03	(0.88-1.20)

*Corresponds to values with statistically significant differences.

Source: National Survey of School Health (PeNSE), 2015.

olence in the last 12 months (PR: 1.24; 95%CI: 1.03-1.50), and health status regular to very poor (PR: 1.20; 95%CI: 1.10-1.31) stood out. Variables that diminish the probability of adolescents recognizing the hospital as USC were observed in both sexes, including: low maternal educational level (PR: 0.75; 95%CI: 0.67-0.83, male and PR: 0, 88; 95%CI: 0.81-0.97, female) and being a public school student (PR: 0.66; 95%CI: 0.60-0.74, male and PR: 0.88; 95%CI: 0.74-0.91, female). Only for

males, those aged 15 to 19 years old (PR: 0.85; 95%CI: 0.75-0.97), the use of illicit drugs in the last 30 days (PR: 0.66; 95%CI: 0.49-0.90), and whose who had already had sexual intercourse (PR: 0.78; 95%CI: 0.66-0.92) stood out (Tables 2 and 3).

Regarding Emergency USC, the variables that were positively associated for both sexes were: physical violence in the last 12 months (PR: 1.48; 95%CI: 1.21-1.81, male and PR: 1.62; 95%CI: 1.38-1.90, female) and a health status of fair to very poor (PR: 1.28; 95%CI: 1.06-1.55, male and PR: 1.53; 95%CI: 1.33-1.77, female). And only for males, drug use in the last 30 days (RP: 1.98; 95%CI: 1.35-2.91) stood out. Lower odds of recognizing an Emergency USC were observed among male adolescents who reported having already begun sexual activity (PR: 0.63; 95%CI: 0.46-0.87) and for females, paid work (PR: 0.71; 95%CI: 0.54-0.94) and mothers' educational level up to incomplete secondary education (PR: 0.72; 95%CI: 0.62-0.84) (Tables 2 and 3).

Discussion

The data from this study showed that more than half of Brazilian adolescents recognized a health service as their USC in the last 12 months of the interview, with the highest frequency being observed among female adolescents, which confirms similar results highlighted in the literature, in which these individual determinants significantly interfere in the recognition of a USC[14,31-38].

Furthermore, the results are similar to studies conducted with different population groups, which evaluated the demand for and use of health services[39-41], as well as the condition of having a USC[18,31,33,34,37], confirming the hypothesis that women take better care for their own health. These findings indicate that this practice has occurred since adolescence[42].

The literature on the recognition of a USC highlights the existence of a relationship that depends on individual needs, mostly determined by demographic, economic, and social factors, health status, and risk behaviors[16,31,38,43], in addition to issues related to the organization of health services, including organizational accessibility[43,44], as well as user/professional relationship, acceptability, establishment of links, and adequacy of services[6,45].

In multivariate models formulated according to the type of USC, demographic and socioeconomic characteristics that indicate greater social and economic vulnerability of adolescents increase the probability of recognizing USC PHC for both sexes. Unlike USC PHC, analyses by Private Medical Office USC and Hospital USC demonstrated that the factors that characterized greater social and economic vulnerability among adolescents diminished the probability of recognizing these USCs. A decrease in the probability of recognition of USC Emergency for females was also found. It was observed that all types of USC analyzed in this study (PHC, Private Medical Office, Hospital, and Emergency) showed positive associations with the presence of risk behaviors.

Adolescents who face social inequalities and inequities in access to healthcare recognize PHC as their USC. Moreover, among the characteristics that presented positive associations, the following stand out: black/brown/yellow/indigenous race/color, low level of maternal education, and being a public-school student, which increases by nearly 3-fold the probability of referring to PHC as one's USC. Based on data from national surveys, prior studies have demonstrated an increase in the use of health services, and a decrease in inequalities in access through PHC[18,46,47]. Considering such characteristics as a proxy for income, persistence of inequalities in access can still be observed[42].

Regarding the factors associated with the type of USC, it was possible to observe differences for both sexes. Especially for USC PHC, in which female adolescents presented a greater number of unfavorable social and economic characteristics that increase the probability of recognizing PHC as their USC, such as paid work and academic delay[48,49].

Although a significant portion of adolescents indicate PHC services as their USC, the implementation of this care model is heterogeneous across the country[44], this heterogeneity reflects inequalities and may be a factor that could explain the results.

Contexts of vulnerability, such as unprotected sexual activity, use of illicit drugs and alcoholic beverages in the last 30 days prior to the interview, and situations of physical or sexual violence in the last 12 months were characteristics that increased the probability of adolescents recognizing all types of USC, especially the hospital and emergency rooms as sources of care. Exposure to risky behavior often reflects health problems or situations that require more immediate attention.

In PeNSE 2012, alcohol consumption in the last 30 days was 26% among adolescents, with the highest prevalence found among girls. Alcohol

consumption is generally a problem that more commonly affects male adolescents[50]. In the present study, alcohol consumption increased the hospital's recognition as a USC for female adolescents. One study reveals that this consumption tends to increase among men as they age[51].

The use of illicit drugs in the last 30 days of the interview showed a positive association among male adolescents with the recognition of Hospital and Emergency USCs. The consumption of illicit drugs is a behavior that can generate dependence and irreversible consequences for the lives of these individuals. The results of a study that analyzed the daily lives of adolescents in a psychosocial care center for alcohol and other drugs identified that the reception and initial impressions about the service are essential for the adherence and permanence of these subjects, which contributes to the effectiveness of care[52].

Sexual behavior is an extremely relevant determinant to evaluate health indicators in population groups of adolescents, as unprotected sexual activity is a worrisome behavior due to the associated risk. Among the findings of this study, it is clear that only Emergency USC did not show an association with unprotected sexual activity. Studies highlight that unprotected sex among adolescents may be related to the use of psychoactive substances and a lack of information concerning sexual and reproductive health at school[53].

Involvement in violent situations was associated with all types of USC, which may be correlated with other conditions of vulnerability for the individual[54]. In situations of this nature, the fact that the adolescent recognizes a service as their USC allows the coping process to be facilitated, since the bond and trust already exist[55].

In addition to risk behavior variables, self-perception of health has been used as a good indicator to evaluate individuals' behavior when seeking health services[56]. For the outcomes of hospital and emergency rooms, poor health status showed a positive association. These are worrisome findings that may have a strong relationship with an individual's contextual, social, and cultural issues.

The present study demonstrated that the variables that characterized unfavorable socioeconomic conditions diminish the probability of recognizing emergency room services as their USC, or do not present statistically significant differences. These findings are contrary to some studies in American literature, in which individuals with low income conditions report emergency room services as their USC[22,57,58]. It is important to mention that emergency services in the vast majority of cases do not allow longitudinality and/or continuity of care[18].

It is possible to highlight, as a potentiality of this study, the methodological criteria for adapting the methods used in statistical analysis, given that we opted for a methodological strategy that has not been adopted by studies of this nature, which is the estimation of PR through the model of logistic regression, whose results not only allow us to evaluate the robustness of the established analysis plan, but also compare our results with those from other studies. The methodological rigor adopted to correct cluster sampling and weighting procedures for all analyses is also of utmost importance, which makes the comparison of these estimates even more relevant so as to forge an understanding of the role of these analysis strategies when estimating PR in situations where the data is correlated.

Final considerations

Studies on the recognition of a source of care by adolescents are relevant, as they are infrequent and can contribute to the organization of actions and the planning of programs and policies for the public in question. This study highlighted important implications for the healthcare model in Brazil, from the perspective of implementing PHC, especially in adolescent health care.

The study showed that 55% of Brazilian school adolescents reported using a USC and identified the determinants that were related to this recognition. In relation to USC PHC, the results demonstrated, for both sexes, that the recognition of adolescents was associated with the following socioeconomic conditions and behavioral factors: being public school students, low maternal educational level, race/color black/brown/yellow/indigenous people, academic lag, unprotected sexual activity, and involvement in situations of physical and sexual violence. Conversely, more unfavorable social conditions reduced the likelihood of the recognition of the Private Medical Office USC. The recognition of Hospital and Emergency Room Services as USC by adolescents was positively associated with behavioral risk factors, such as drug use and involvement in situations of physical violence, and a self-perception of health status as fair to very poor.

As PHC is the level of care that offers services organized based on care models that take into account the needs of the subjects, the consolidation

of PHC can favor the establishment of bonds and the recognition of a USC by individuals, resulting in better conditions of access to prevention and health promotion actions and longitudinal and lasting care.

The main limitations of the study were the cross-sectional design, which did not allow for causal inferences, and the use of questionnaires answered by adolescents, which are subject to information bias. However, it is important to note that the clarity and simplicity in the formulation of questions regarding the variables studied and the time frame of the last 12 months to search for health services possibly contributed to avoiding memory and understanding problems, minimizing the possibility of such biases.

Further investigations on the topic among adolescents are recommended, using other methodological approaches, such as qualitative research, which provides an in-depth exploration of the recognition of a USC, which can enable the identification of other factors that may lead adolescents to choose USC. Furthermore, it is necessary to develop and strengthen public policies in Brazil as a critical strategy to enhance access to PHC for this age group.

Collaborations

MMF Martins contributed to the conception and design, analysis and interpretation of data, writing of the article and final approval of the version to be published. R Aquino collaborated with the conception and design, interpretation of data, relevant critical review of the intellectual content and final approval of the version to be published. NMBL Prado participated in the relevant critical review of the intellectual content and final approval of the version to be published. ALQ Vilasbôas contributed with relevant critical review of the intellectual content and final approval of the version to be published.

References

1. Silva RF, Engstrom EM. Atenção integral à saúde do adolescente pela Atenção Primária à Saúde no território brasileiro: uma revisão integrativa. *Interface (Botucatu)* 2020; 24(1):e190548.
2. Bhutta ZA, Ahmed T, Black R, Cousens S, Dewey K, Giugliani E, Haider BA, Kirkwood B, Morris SS, Sachdev HP, Shekar M; Maternal and Child Undernutrition Study Group. What works? Interventions for maternal and child undernutrition and survival. *Lancet* 2008; 371(9610):417-440.
3. Senna SRCM, Dessen MA. Reflexões sobre a saúde do adolescente brasileiro. *Psicol Saude Doen* 2015; 16(2):217-229.
4. Costa RF, Queiroz MVO, Zeitoune RCG. Cuidado aos adolescentes na atenção primária: perspectivas de integralidade. *Esc Anna Nery* 2012; 16(3):466-472.
5. Cunha EM, Giovanella L. Longitudinalidade/continuidade do cuidado: identificando dimensões e variáveis para a avaliação da Atenção Primária no contexto do sistema público de saúde brasileiro. *Cien Saude Colet* 2011; 16(Supl. 1):1029-1042.
6. Starfield B. *Atenção primária: equilíbrio entre necessidades de saúde, serviços e tecnologia*. Brasília: Unesco/Ministério da Saúde; 2002.
7. Frank BRB, Viera CS, Ross C, Obregón PL, Toso BRGO. Avaliação da longitudinalidade em unidades de Atenção Primária à Saúde. *Saude Debate* 2015; 39(105):400-410.
8. Stransky ML. Two-year stability and change in access to and reasons for lacking a usual source of care among working-age US adults. *Public Health Reports* 2017; 132(6):660-668.
9. Carpenter WR, Godley PE, Clark JA, Talcott JA, Finnegan T, Mishel M, Bensen J, Rayford W, Su LJ, Fontham ET, Mohler JL. Racial differences in trust and regular source of patient care and the implications for prostate cancer screening use. *Cancer* 2009; 115(21):5048-5059.
10. Starfield B, Shi l. The medical home, access to care, and insurance: a review of evidence. *Pediatrics* 2004; 113(Supl. 4):1493-1498.
11. Allred N, Wooten KG, kong Y. The association of health insurance and continuous primary care in the medical home on vaccination coverage for 19- to 35-month-old children. *Pediatrics* 2007; 119(Supl. 1):S4-S11.
12. Smith PJ, Santoli JM, Chu SY, Ochoa DQ, Rodewald LE. The association between having a medical home and vaccination coverage among children eligible for the vaccines for children program. *Pediatrics* 2005; 116(1):130-139.
13. Bartman BA, Moy E, D'angelo LJ. Access to ambulatory care for adolescents: the role of a usual source of care. *J Health Care Poor Underserved* 1997; 8(2):214-226.
14. Rew L, Resnick M, Beuhring, T. Usual sources, patterns of utilization, and foregone health care among Hispanic adolescents. *J Adolesc Health* 1999; 25(6):407-413.
15. Dempsey AF, Freed GL. Health care utilization by adolescents on medicaid: implications for delivering vaccines. *Pediatrics* 2010; 125(1):43-49.
16. Devoe JE, Tillotson CJ, Wallace LS, Angier H, Carlson MJ, Gold R. Parent and Child Usual Source of Care and Children's Receipt of Health Care Services. *Ann Fam Med* 2011; 9(6):504-513.
17. Wilson KM, Klein JD. Adolescents who use the emergency department as their usual source of care. *Arch Pediatr Adolesc Med* 2000; 154(4):361-365.
18. Dourado I, Medina MG, Aquino R. The effect of the Family Health Strategy on usual source of care in Brazil: data from the 2013 National Health Survey (PNS 2013). *Int J Equity Health* 2016; 15(1):151.
19. Macinko J, Mendonça CS. Estratégia Saúde da Família, um forte modelo de Atenção Primária à Saúde que traz resultados. *Saude Debate* 2018; 42(n. esp. 1):18-37.
20. Aquino R, Medina MG, Nunes CA, Sousa MF. Estratégia Saúde da Família e reordenamento do sistema de serviços de saúde. In: Paim JS, Almeida-Filho N, organizadores. *Saúde Coletiva: teoria e Prática*. Rio de Janeiro: Medbook; 2014. p. 353-371.
21. Vingilis ER, Wade TJ, Seeley JS. Predictors of adolescent self-rated health. Analysis of the National Population Health Survey. *Can J Public Health* 2002; 93(3):193-197.
22. Schappert SM. Ambulatory care visits of physician offices, hospital outpatient departments, and emergency departments: United States, 1995. *Vital Health Stat* 1997; 13(129):1-38.
23. Coutinho ESF, França-Santos D, Magliano ES, Bloch KV, Barufaldi LA, Cunha CF, Vasconcelos MTL, Szklo M. ERICA: padrões de consumo de bebidas alcoólicas em adolescentes brasileiros. *Rev Saude Publica* 2016; 50(Supl. 1):8s.
24. Pinto LW, Assis SG. Violência familiar e comunitária em escolares do Município de São Gonçalo, Rio de Janeiro, Brasil. *Rev Bras Epidemiol* 2013; 16(2):288-300.
25. Moreira TC, Belmonte EL, Vieira FR, Noto AR, Ferigolo M, Barros HMT. A violência comunitária e o abuso de álcool entre adolescentes: comparação entre sexos. *J Pediatr* 2008; 84(3)244-250.
26. Benetti SPC, Gama C, Vitolo M, Silva MB, D'Ávila A, Zavaschi ML. Violência comunitária, exposição às drogas ilícitas e envolvimento com a lei na adolescência. *Psico* 2006; 37(3):279-286.
27. Fundo das Nações Unidas para a Infância (Unicef). *O direito de ser adolescente: Oportunidade para reduzir vulnerabilidades e superar desigualdades*. Brasília: UNICEF; 2011.
28. Instituto Brasileiro de Geografia e Estatística (IBGE). *PeNSE - Pesquisa Nacional de Saúde do Escolar* [Internet]. [acessado 2020 dez 13]. Disponível em: https://www.ibge.gov.br/estatisticas/sociais/educacao/9134-pesquisa-nacional-de-saude-do-escolar.html?=&t=resultados.
29. Instituto Brasileiro de Geografia e Estatística (IBGE). *Pesquisa nacional de saúde do escolar: 2015*. Rio de Janeiro: IBGE; 2016.
30. Oliveira MM, Campos MO, Andreazzi MAR, Malta DC. Características da Pesquisa Nacional de Saúde do Escolar - PeNSE. *Epidemiol Serv Saude* 2017; 26(3):605-616.

31. Klein JD, Wilson KM, Mcnulty M, Kapphahn C, Collins KS. Access to medical care for adolescents: results from the 1997 Commonwealth Fund Survey of the Health of Adolescent Girls. *J Adolesc Health* 1999; 25(2):120-130.
32. Rohrer JE, Kruse G, Zhang Y. Hispanic ethnicity, rural residence, and regular source of care. *J Community Health* 2004; 29(1):1-13.
33. Tsai J, Shi L, Yu WL, Lebrun LA. Usual source of care and the quality of medical care experiences: a cross-sectional survey of patients from a Taiwanese Community. *Med Care* 2010; 48(7):628-634.
34. Jerant A, Bertakis KD, Fenton JJ, Franks P. Gender of physician as the usual source of care and patient health care utilization and mortality. *J Am Board Fam Med* 2013; 26(2):138-148.
35. An AR, Kim K, Lee JH, Sung NJ, Lee SI, Hyun MK. Having a usual source of care and its associated factors in Korean adults: a cross-sectional study of the 2012 Korea Health Panel Survey. *BMC Fam Pract* 2016; 17(1):167.
36. Davis MA, Guo C, Titler MG, Friese CR. Advanced practice clinicians as a usual source of care for adults in the United States. *Nurs Outlook* 2017; 65(1):41-49.
37. Kim KM, Jeon H, Lee JH. Having a Physician Rather than a Place as a Usual Source of Care Would Be Better - from 2012 Korea Health Panel Data. *J Korean Med Sci* 2017; 32(1):4-12.
38. Sung NJ, Lee JH. Association between Types of Usual Source of Care and User Perception of Overall Health Care Service Quality in Korea. *Korean J Fam Med* 2019; 40(3):143-150.
39. Nunes BP, Flores TR, Duro SMS, Saes MO, Tomasi E, Santiago AD, Thumé E, Facchini LA. Utilização dos serviços de saúde por adolescentes: estudo transversal de base populacional, Pelotas-RS, 2012. *Epidemiol Serv Saude* 2015; 24(3):411-420.
40. Oliveira MM, Andrade SSCA, Campos MO, Malta DC. Fatores associados à procura de serviços de saúde entre escolares brasileiros: uma análise da Pesquisa Nacional de Saúde do Escolar (PeNSE), 2012. *Cad Saude Publica* 2015; 31(8):1603-1614.
41. Araújo MEA, Silva MT, Andrade KRC, Galvão TF, Pereira MG. Prevalência de utilização de serviços de saúde no Brasil: revisão sistemática e metanálise. *Epidemiol Serv Saude* 2017; 26(3):589-604.
42. Oliveira MM, Andrade SSCA, Stopa SR, Malta DC. Procura por serviços ou profissionais de saúde entre adolescentes brasileiros, segundo a Pesquisa Nacional de Saúde do Escolar de 2015. *Rev Bras Epidemiol* 2018; 21(Supl. 1):e180003.
43. Mullachery P, Silver D, Macinko J. Changes in health care inequity in Brazil between 2008 and 2013. *Int J Equity Health* 2016; 15(1):140.
44. Lima-Costa MF, Turci MA, Macinko J. Estratégia Saúde da Família em comparação a outras fontes de atenção: indicadores de uso e qualidade dos serviços de saúde em Belo Horizonte, Minas Gerais, Brasil. *Cad Saude Publica* 2013; 29(7):1370-1380.
45. Macinko J, Lima-Costa MF. Horizontal equity in health care utilization in Brazil, 1998-2008. *Int J Equity Health* 2012; 21(11):33.
46. Andrade MV, Noronha KVMS, Menezes RM, Souza MN, Reis CB, Martins DR, Gomes L. Desigualdade socioeconômica no acesso aos serviços de saúde no Brasil: um estudo comparativo entre as regiões brasileiras em 1998 e 2008. *Econ Apl* 2013; 17(4):623-645.
47. Politi R. Desigualdade na utilização de serviços de saúde entre adultos: uma análise dos fatores de concentração da demanda. *Econ Apl* 2014; 18(1):117-137.
48. Frenzel HS, Bardagi MP. Adolescentes trabalhadores brasileiros: um breve estudo bibliométrico. *Rev Psicol Organ Trab* 2014; 14(1):79-88.
49. Alberto MFP, Santos DP, Leite FM, Lima JW, Wanderley JCV. O trabalho infantil doméstico e o processo de escolarização. *Psicol Soc* 2011; 23(2):293-302.
50. Malta DC, Mascarenhas MDM, Porto DL, Barreto SM, Morais Neto OL. Exposição ao álcool entre escolares e fatores associados. *Rev Saude Publica* 2014; 48(1):52-62.
51. Strauch ES, Pinheiro RT, Silva RA, Horta BL. Uso de álcool por adolescentes: estudo de base populacional. *Rev Saude Publica* 2009; 43(4):647-655.
52. Galhardi CC, Matsukura TS. O cotidiano de adolescentes em um Centro de Atenção Psicossocial de Álcool e outras Drogas: realidades e desafios. *Cad Saude Publica* 2018; 34(3):*e00150816*.
53. Oliveira-Campos, M, Nunes ML, Madeira FC, Santos MG, Bregmann SR, Malta DC, Giatti L, Barreto SM. Comportamento sexual em adolescentes brasileiros, Pesquisa Nacional de Saúde do Escolar (PeNSE 2012). *Rev Bras Epidemiol* 2014; 17(Supl. 1):116-130.
54. Begue L, Roche S, Duke AA. Young and armed: a cross- sectional study on weapon carrying among adolescents. *Psych Crime Law* 2016; 22(5):455-472.
55. Santos MJ, Mascarenhas MDM, Malta DC, Lima CM, Silva MMA. Prevalência de violência sexual e fatores associados entre estudantes do ensino fundamental - Brasil, 2015. *Cien Saude Colet* 2019; 24(2):535-544.
56. Claro LBL, March C, Mascarenhas MTM, Castro IAB, Rosa MLG. Adolescentes e suas relações com serviços de saúde: estudo transversal em escolares de Niterói, Rio de Janeiro, Brasil. *Cad Saude Publica* 2006; 22(8):1565-1574.
57. Newton MF, Keirns CC, Cunningham R, Hayward RA, Stanley R. Uninsured adults presenting to US emergency departments: assumptions vs data. *JAMA* 2008; 300(16):1914-1924.
58. Weber EJ, Showstack JA, Hunt KA, Colby DC, Callaham ML. Does lack of a usual source of care or health insurance increase the likelihood of an emergency department visit? Results of a national population- based study. *Ann Emerg Med* 2005; 45(1):4-12.

Article submitted 01/01/2023
Approved 08/07/2023
Final version submitted 10/07/2023

Chief editors: Romeu Gomes, Antônio Augusto Moura da Silva