

Knowledge of health students about prophylaxis pre and post exposure to HIV



Conhecimento de estudantes de saúde acerca da profilaxia pré e pós exposição ao HIV
Conocimiento de estudiantes de la salud acerca de la profilaxia pré y post exposición al VIH

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ABSTRACT

Objective: To evaluate students' knowledge of nursing and medical courses at a public university on prophylaxis before and after exposure to HIV/AIDS.

Method: cross-sectional study, carried out with nursing and medical students (n = 167). In order to explain the effect of variables on knowledge, the Multinomial Logistic Regression was used.

Results: Participants had a mean of 23.03 years, female (56.5%), unmarried (64.3%), and heterosexual (86.3%). The level of knowledge demonstrated was mostly medium (49.4%), and only 28.6% showed a high knowledge about the subject. The multivariate analysis showed that the course (p = 0.03) and age (p = 0.01) were associated with a higher level of knowledge.

Conclusions: Nursing and medical students possess knowledge considered as average about HIV preventive prophylaxis, thus it is up to the health education institutions to provide subsidies for a better training of students, treating the theme as a transversal subject in their training.

Keywords: Knowledge. Pre-exposure prophylaxis. Post-exposure prophylaxis. Students, health occupations. Acquired immunodeficiency syndrome.

RESUMO

Objetivo: Avaliar o conhecimento de alunos dos cursos de enfermagem e medicina de uma universidade pública sobre a profilaxia pré e pós exposição ao HIV/Aids.

Método: estudo transversal, realizado com estudantes de enfermagem e medicina (n=167). Para explicar o efeito das variáveis sobre o conhecimento, utilizou-se a Regressão Logística Multinomial.

Resultados: Os participantes tinham em média 23,03 anos, sexo feminino (56,5%), solteiros (64,3%), heterossexuais (86,3%). O nível de conhecimento demonstrado foi majoritariamente médio (49,4%), e apenas 28,6% demonstraram um alto conhecimento acerca da temática. A análise multivariada mostrou que o curso (p=0,03) e a idade maior que 24 anos (p=0,01) foram associados a um maior nível de conhecimento.

Conclusões: Estudantes de enfermagem e medicina possuem conhecimento considerado como médio sobre as profilaxias preventivas ao HIV, cabendo assim às instituições de ensino em saúde fornecer subsídios para uma melhor formação dos estudantes, tratando o tema como assunto transversal em sua formação.

Palavras-chave: Conhecimento. Profilaxia pré-exposição. Profilaxia pós-exposição. Estudantes de ciências da saúde. Síndrome de imunodeficiência adquirida.

RESUMEN

Objetivo: Evaluar el conocimiento de alumnos de los cursos de enfermería y medicina de una universidad pública sobre la profilaxis pre y post exposición al VIH / SIDA.

Método: estudio transversal, realizado con estudiantes de enfermería y medicina (n = 167). Para explicar el efecto de las variables sobre el conocimiento, se utilizó la Regresión Logística Multinomial.

Resultados: Los participantes tenían en promedio 23,03 años, sexo femenino (56,5%), solteros (64,3%), y eran heterossexuales (86,3%). El nivel de conocimiento demostrado fue mayoritariamente medio (49,4%), y sólo el 28,6% demostró un alto conocimiento acerca de la temática. El análisis multivariado mostró que el curso (p = 0,03) y la edad (p = 0,01) se asociaron a un mayor nivel de conocimiento.

Conclusiones: Estudiantes de enfermería y medicina poseen conocimiento considerado como medio sobre las profilaxis preventivas al VIH, por lo tanto, corresponde a las instituciones de educación sanitaria proporcionar subsidios para una mejor capacitación de los estudiantes, tratando el tema como un tema transversal en su capacitación.

Palabras clave: Conocimiento. Profilaxis pre-exposición. Profilaxis posexposición. Estudiantes del área de la salud. Síndrome de inmunodeficiencia adquirida.

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■ INTRODUCTION

Infection by the Human Immunodeficiency Virus (HIV) still has a major impact on public health worldwide, with 35 million people living with the virus. The epidemic currently proves to be more challenging in developing countries, as it disproportionately affects groups considered key to infection control (trans people, men who have sex with men, the black population)⁽¹⁾.

Considering its global impact, there is a clear need for additional highly effective prevention methods, with an emphasis on HIV Post-Exposure Prophylaxis (PEP), available in the Unified Health System (SUS) since 1999, which stands out for its high effectiveness in reducing the risk of acquiring the infection, being recommended after sexual transmission or percutaneous exposure, that is, in case of sexual violence, unprotected sexual intercourse (without using a condom or with a ruptured condom) and in the occurrence of an occupational accident (with sharp objects or direct contact with biological material)⁽²⁻³⁾.

As a more recent strategy, Pre-Exposure Prophylaxis (PrEP) has also stood out for its effectiveness, proven in clinical and demonstration studies, with a reduction in the risk of infection ranging from 92% to 100%. PrEP consists of the daily use of a combination of two oral drugs, tenofovir disoproxil fumarate and emtricitabine, in order to prevent HIV infection. Quarterly clinical follow-up is necessary, evaluating behaviors, testing for the detection of HIV and other Sexually Transmitted Infections (STIs) and liver and kidney function tests. Its indication in Brazil is preferentially for some population segments considered more vulnerable to HIV/AIDS, such as the homosexual population and other men who have sex with men, trans people, sex workers, serodiscordant couples and individuals in constant use of PEP⁽²⁾.

Despite its proven effectiveness, deficiencies in the PrEP implementation process in health services are still perceived. Thus, it is highlighted that the training of professionals who will work in this combined HIV prevention context, among them, nursing and medical students, must be optimized, being a crucial point for infection control, as well as for the comprehensive care for PVHIV⁽⁴⁻⁵⁾. The students need to understand that the aforementioned prophylaxis (PEP and PrEP) must be added to other preventive measures, since they must be professionals capable of providing quality and comprehensive assistance to PVHIV and will be a key player in infection control, removing any barriers to health access and contributing to the achievement of goals related to the end of the epidemic⁽⁵⁾.

However, although greater access to scientific production is available to these students, or they obtain the means to build their learning related to HIV more easily, this does not represent a guarantee that the student has managed to develop sufficient knowledge to intervene in breaking the HIV/AIDS transmission chain, which can only be achieved with the use of effective preventive measures⁽⁴⁾.

It is common for some professionals to find it difficult to manage HIV, and to show resistance. The first step in proposing a change in this scenario is to identify the knowledge they have on the subject, then proposing interventions. In this perspective, the Ministry of Health provides abundant technical and scientific material, through clinical guidelines and protocols, with the objective of guiding and supporting professional conduct in the face of HIV cases, expanding aspects related to care, combined prevention as a strategy for HIV prevention, which includes biomedical, behavioral and structural interventions⁽²⁾.

Considering the recent implementation of PrEP in the Brazilian territory, the present study aimed to evaluate the knowledge of nursing and medicine students at a public university on the prophylaxis before and after exposure to HIV/AIDS (PEP and PrEP).

■ METHODS

This is a cross-sectional, analytical study, with its population composed of students from the nursing (N = 106) and medicine (N = 185) schools of a public educational institution, who had already studied infectious diseases and were actively enrolled on campus (N = 291). Students who withdrew from their course during the data collection period were excluded from the study.

These courses were chosen because their students were responsible for planning, executing and evaluating health programming and health care plans, and mainly for acting in the prescription of antiretroviral drugs established in public health programs; within the multidisciplinary team, being more focused on caring for people living with HIV⁽⁶⁾.

The sample size was calculated based on an N = 291 and adopting a 95% confidence interval for samples of population proportions, with a confidence limit of 5%, and a tolerable error of 5%⁽⁷⁾, obtaining a minimum required sample of 168 students.

After proportional stratification, the final sample (n = 168) consisted of 108 medical students and 60 nursing students. It is noteworthy that the selection of participants was by accidental sampling, which was formed by those who were forwarding the answered form, successively in order, until

the sample size was completed. Furthermore, the students participating in the study were instructed to answer the questionnaire using their own knowledge, meaning they should not consult theoretical references on the subject.

Knowledge about prophylaxis before and after exposure to HIV/AIDS was assessed based on 20 multiple-choice items contained in the data collection instrument, which was built specifically for this study after an exhaustive literature review, by researchers with experience in the field, and had undergone an appearance and content validation process. To accomplish this stage, specialists (judges) in the area were invited, obtaining a general Content Validity Coefficient (CVC) of 0.8840 at the end.

Responses to a set of questions (20) that comprised the form were analyzed and scores were subsequently assigned to classify the knowledge of the professionals taking part in the study in relation to PrEP and PEP. Taking as a reference a study by Gomes et al. (2014)⁽⁸⁾, within this theme, each answer considered totally correct, was worth one point. Thus, the level of knowledge (outcome variable) was defined as "Low knowledge" (percentile < 25), "average knowledge" (percentile ≥ 25 to ≤ 75) and "high knowledge" (percentile > 75), that is, a hit rate below 13 questions indicated a low level, 13 to 17 hits - medium level, and 18 to 20 hits - high level. In time, it is worth mentioning that there were questions in which the participants could check more than one alternative, if desired.

The explanatory variables were: Sociodemographic data (age, sex, family income, marital status, religion and sexual orientation); course in which he/she is enrolled/period, workload dedicated to teaching about HIV/AIDS in the course, and means used to obtain this knowledge in the course. As for the variables used to understand knowledge, they were assessed based on questions involving the meaning of prophylaxis, recommendations, priority populations for use, time and method of use, health monitoring, form of access to prophylaxis and its side effects.

The free *Google forms* tool was used, adapting the instrument to an online format, being planned so that all mandatory questions were answered. The questionnaire was configured so that it would only be computed if, at the end, all conditions were satisfied. It is noteworthy that due to the fact that the data collection instrument is considered easy to fill and access, no time was provided for clarifying doubts. Still, the place and the moment in which the students answered the *Google forms* instrument was of free choice.

Data collection from students took place from February to April 2019. Before the collection, a previous visit was made to the coordination of the courses, to inform about the research

and obtain the number of students with active enrollment on campus. To reach the desired sample number, an electronic link which gave access to the survey questionnaire was sent to the email of the participating classes in order to disseminate it, containing information and an invitation to participate.

The data were entered using the Statistical Package for Social Science (SPSS) software version 20.0, in an edited database. To facilitate the analysis, the course period was categorized as intermediate, which corresponds to the sixth and seventh periods for nursing, and eighth, ninth and tenth for medicine; and conclusive, corresponding to the last two periods of each course, eighth and ninth for nursing and eleventh and twelfth for medicine. Frequency distribution and position measurements were used in the univariate analysis.

Pearson's chi-square test (χ^2) or Fisher's exact test were used in the bivariate analysis to associate qualitative variables (classification of knowledge with explanatory variables). To explain the joint effect of the variables on the outcome (knowledge), Multinomial Logistic Regression (RLM) was used with an adjusted odds ratio. The criterion for including variables in the logistic model was the association at the level of $p < 0.20$ in the bivariate analysis. The criterion of significance of the variables in the model, in turn, was an association at the level of $p < 0.05$. The multicollinearity test required for RLM was performed by VIF (Variance Inflation Factor), adopting a VIF above four as the cutoff point for the diagnosis of multicollinearity.

The research composed a macrostudy entitled: "Construction, validation and effect of a mobile application on HIV knowledge among university students," which was approved by the Research Ethics Committee of the Federal University of Piauí (Opinion No.: 2,504,518), in accordance with resolution 466/2012. To participate in the research, after reading the Free and Informed Consent Form *online*, participants indicated that they agreed with the proposed objectives and participation in the study. This consent was applied and obtained online.

■ RESULTS

The students were, on average, 23.03 years old ($SD = \pm 2.78$), from intermediate periods of the course (60.1%), female (56.5%), single (64.3%), lived with more than 3 people in the same house (60.1%), having no individual income (72.6%) but with a family income of five to ten minimum wages (27.4%). They were heterosexual (86.3%) and had a religious belief (83.3%) (Table 1).

Table 1 – Profile of nursing and medical students from a public higher education institution, Teresina - PI, 2019. (n= 168)

Variables	n	%
Course		
Nursing	60	35.7
Medicine	108	64.3
Period		
Intermediate:	101	60.1
Concluding	67	39.9
Age		
Up to 21 years old	43	25.6
From 22 to 24 years old	84	50.0
Over 24 years of age	41	24.4
Mean ± standard deviation	23.03 ± 2.78	
Gender		
Female	95	56.5
Male	73	43.5
Marital status		
Married/Common law marriage	10	6.0
In a committed relationship	49	29.2
Separated	1	,6
Single	108	64.3
Number of people you live with		
Up to 3 people	67	39.9
More than 3 people	101	60.1

Table 1 – Cont.

Variables	n	%
Has individual income		
No	122	72.6
Yes	46	27.4
Average family income per month (MW)		
< 2	39	23.2
From 2 to 4.9	32	19.1
From 5 to 10	46	27.4
> 10	40	23.8
Absent	11	6.5
Sexual orientation		
Bisexual	10	6.0
Heterosexual	145	86.3
Homosexual	13	7.7
Has religious belief		
No	28	16.7
Yes	140	83.3

Source: Direct research, 2019.
MW = Minimum Wage

The knowledge referred to about PrEP was 86.3% and 94.0% about PEP. In addition, 73.2% said they knew where to find PrEP and 87.5% knew where to find PEP. The significant majority of students (94.6%) reported acquiring knowledge about the topic at the university. However, when asked about the priority population for the use of PrEP, criteria for indication and time of use, more than half of them demonstrated

lack of knowledge. Regarding PEP, most of them demonstrated knowledge about the recommendation of use, when to start using it, time of use and side effects. However, they were unsure about the follow-up time (Table 2).

The level of knowledge shown by the students was mostly average (49.4%), and only 28.6% demonstrated a high level of knowledge about PrEP and PEP (Table 3).

Table 2 – Knowledge about pre- and post-exposure prophylaxis (PrEP and PEP) to HIV/AIDS of students in the health area of a public institution of higher education, Teresina - PI, 2019. (n= 168)

Variables	n	%
Have you heard of PrEP		
No	7	4.2
I do not know or do not remember	6	3.6
Yes	155	92.3
Do you know what PrEP is		
No	11	6.5
I do not know or do not remember	12	7.1
Yes	145	86.3
Do you know where to find PrEP		
No	45	26.8
Yes	123	73.2
If so, where^{ab}		
Pharmacies	9	7.3
Reference Hospitals	2	1.6
Health Care Services	123	99.2
Anyone using PrEP should stop using a condom		
No	153	91.1
I don't know	8	4.8
Yes	7	4.2
What is the priority population for using PrEP^a		
Men who have sex with men (MSM)	98	58.3
Lesbian women	26	15.5
HIV serodiscordant partnerships	145	86.3
Trans people	54	32.1

Table 2 – Cont.

Variables	n	%
Sex workers	119	70.8
I don't know	4	2.4
What is the PrEP recommendation criterion^a		
Recurrent episodes of Sexually Transmitted Infections (STIs)	50	29.8
Anal (receptive or insertive) or vaginal intercourse, without using a condom, in the last six months	66	39.3
Anal or vaginal sexual intercourse with an HIV-infected person without a condom	131	78.0
Repeated use of Post-Exposure Prophylaxis (PEP)	63	37.5
How long does it take to use PrEP before exposure to ensure protection from exposure^a		
Any type of relationship requires 10 days of use prior to exposure	41	24.4
Anal intercourse requires 7 days of use prior to exposure	33	19.6
Vaginal intercourse requires 20 days of use prior to exposure	29	17.3
I don't know	89	53.0
How often should a PrEP user take an HIV test		
Every 3 months	124	73.8
There is no need	8	4.8
Once a month	36	21.4
Have you heard of PEP		
No	5	3.0
I do not know or do not remember	4	2.4
Yes	159	94.6
Do you know what PEP is		
No	10	6.0
Yes	158	94.0

Table 2 – Cont.

Variables	n	%
Do you know where to find PEP		
No	21	12.5
Yes	147	87.5
If so, where^{ab}		
Pharmacies	8	5.4
Reference Hospitals	1	0.7
Health Care Services	147	100.0
Situations where PEP is recommended^a		
Occupational accident (with sharp objects or direct contact with biological material)	157	93.5
Unprotected sexual intercourse (without using a condom or upon rupturing a condom)	138	82.1
Sexual violence	160	95.2
Newborns of HIV+ mothers	2	1.2
Children can use PEP		
No	6	3.6
Yes	86	51.2
I do not know or do not remember	76	45.2
What are the side effects of PEP^a		
Headache	94	56.0
Balance disorders	43	25.6
Emotional disorders	1	0.6
Muscle pain	42	25.0
Gastrointestinal effects	120	71.4
Myelotoxicity	1	0.6
There are no side effects	1	0.6

Table 2 – Cont.

Variables	n	%
I don't know	43	25.6
How long after exposure to HIV should PEP be started		
I don't know	13	7.7
Preferably within 7 days of exposure to HIV	4	2.4
Preferably in the first 24 hours and at most 48 hours	28	16.7
Preferably in the first two hours and a maximum of 72 hours	123	73.2
How long should the PEP be taken		
For 28 uninterrupted days	121	72.0
For 72 hours	15	8.9
For the rest of your life	1	0.6
I don't know or I don't want to answer	31	18.5
People using PEP need health monitoring		
It depends on the situation of each person exposed	23	13.7
I don't know	8	4.8
Yes	137	81.5
If so, how long should follow-up last^b		
It depends on each exposed person's individual situation	65	38.7
I don't know	42	25.0
Up to 30 days	12	7.1
Up to 90 days	49	29.2
Where did you learn about PEP and PrEP^a		
Friends	12	7.2
Internet	52	31.1
Others: Study group	1	0.6
Others: Video classes	1	0.6

Table 2 – Cont.

Variables	n	%
Others: Experiences	1	0.6
Healthcare professionals	43	25.7
University	158	94.6

Source: Direct research, 2019.
 a = Questions with multiple possible answers b = Non-mandatory questions

Table 3 – Distribution of knowledge from the study sample about prophylaxis before and after exposure to HIV/AIDS, Teresina - PI, 2019. (n= 168)

Knowledge	Course					
	Medicine		Nursing		Total	
	n	%	n	%	n	%
Low	18	(16.7)	19	(31.7)	37	(22.0)
Medium	54	(50.0)	29	(48.3)	83	(49.4)
High	36	(33.3)	12	(20.0)	48	(28.6)

Source: Direct research, 2019.

The level of knowledge demonstrated by the students showed a statistically significant difference with the variables, course, age, sex and sexual orientation ($p < 0.20$) (Table 4).

In the multivariate model, it is observed that being a medical student increased 2.9 times the chance of having high knowledge about PrEP and PEP, when compared to nursing

students; being between 22 and 24 years old increased the chance of having medium knowledge by 3.0 times and being older than 24 years old increased by 6.6 times the chance of having high knowledge, when compared to those who were up to 21 years old (Table 5).

Table 4 – Level of knowledge on prophylaxis before and after exposure to HIV/AIDS according to the profile of students in the health area of a public institution of higher education, Teresina - PI, 2019. (n= 168)

Course	Knowledge						p-value
	Low		Medium		High		
	n	%	n	%	n	%	
Nursing	19	(51.4)	27	(32.5)	14	(29.2)	0.074^a
Medicine	18	(48.6)	56	(67.5)	34	(70.8)	

Table 4 – Cont.

	Knowledge						p-value
	Low		Medium		High		
	n	%	n	%	n	%	
Period							
Intermediate:	23	(62.2)	50	(60.2)	28	(58.3)	0.937 ^a
Concluding	14	(37.8)	33	(39.8)	20	(41.7)	
Age							
Up to 21 years old	17	(45.9)	14	(16.9)	12	(25.0)	0.006^a
From 22 to 24 years old	17	(45.9)	45	(54.2)	22	(45.8)	
Over 24 years of age	3	(8.1)	24	(28.9)	14	(29.2)	
Gender							
Female	27	(73.0)	41	(49.4)	27	(56.3)	0.055^a
Male	10	(27.0)	42	(50.6)	21	(43.8)	
Marital status							
Married/Common law marriage	-	-	6	(7.2)	4	(8.3)	0.368 ^b
In a committed relationship	10	(27.0)	27	(32.5)	12	(25.0)	
Single	27	(73.0)	50	(60.2)	32	(66.7)	
Number of people you live with							
Up to 3 people	15	(40.5)	34	(41.0)	18	(37.5)	0.923 ^a
More than 3 people	22	(59.5)	49	(59.0)	30	(62.5)	
Has individual income							
No	29	(78.4)	61	(73.5)	32	(66.7)	0.471 ^a
Yes	8	(21.6)	22	(26.5)	16	(33.3)	
Average family income per month (MW)							
< 2	11	(33.3)	16	(20.8)	12	(25.5)	0.567 ^a
From 2 to 4.9	7	(21.2)	18	(23.4)	7	(14.9)	

Table 4 – Cont.

	Knowledge						p-value
	Low		Medium		High		
	n	%	n	%	n	%	
From 5 to 9.9	8	(24.2)	22	(28.6)	16	(34.0)	
> 10	7	(21.2)	21	(27.3)	12	(25.5)	
Sexual orientation							
Bisexual	-	-	7	(8.4)	3	(6.3)	0.028^b
Heterosexual	35	(94.6)	73	(88.0)	37	(77.1)	
Homosexual	2	(5.4)	3	(3.6)	8	(16.7)	
Has religious belief							
No	6	(16.2)	11	(13.3)	11	(22.9)	0.358 ^a
Yes	31	(83.8)	72	(86.7)	37	(77.1)	
Workload^d							
Up to 30 hours	13	(35.1)	30	(36.1)	16	(33.3)	0.959 ^a
From 30 to 90 hours	9	(24.3)	22	(26.5)	15	(31.3)	
Over 90 hours	15	(40.5)	31	(37.3)	17	(35.4)	
Where you acquired knowledge about HIV^c							
Curricular subjects	35	(94.6)	79	(95.2)	48	(100.0)	0.660 ^b
School	1	(2.7)	1	(1.2)	-	-	
Extracurricular internship	-	-	1	(1.2)	-	-	
Events	-	-	1	(1.2)	-	-	
Research groups/Scientific initiation	6	(16.2)	11	(13.3)	6	(12.5)	
Internet	2	(5.4)	-	-	1	(2.1)	
Academic leagues	3	(8.1)	11	(13.3)	8	(16.7)	
Scientific literature	-	-	3	(3.6)	-	-	

Source: Direct research, 2019.

Caption: a = Chi-square test; b = Fisher's exact test. c = Questions with multiple answers; d = Workload dedicated to teaching HIV/AIDS in the course

Table 5 – Multiple logistic regression knowledge about PrEP and PEP according to students’ course, age, sex and sexual orientation. Teresina - PI, 2019. (n= 168)

Variables	Knowledge			
	Medium		High	
	ORa (IC _{95%})	p-value	ORa (IC _{95%})	p-value
Course				
Nursing	1		1	
Medicine	1.5 (0.63 - 3.67)	0.345	2.9 (1.071 - 7.903)	0.03
Age				
Up to 21 years old	1		1	
From 22 to 24 years old	3.0 (1.21 - 7.60)	0.01	1.7 (0.65 - 4.90)	0.26
Over 24 years of age	9.1 (2.2 - 37.2)	0.00	6.6 (1.50 - 29.26)	0.01
Gender				
Female	1		1	
Male	1.8 (0.74 - 4.58)	0.18	1.0 (0.36 - 2.74)	0.99
Sexual orientation				
Heterosexual	1			
Homosexual	1.853 (0.36 - 9.40)	0.45	3.352 (0.65 - 17.20)	0.14

Source: Direct research, 2019.

DISCUSSION

The characterization of the sample indicated that it is a young population, which corroborates with its single profile and living with more than three people in the same house (his family), without his own income and being maintained by the family income. The majority of female students reflects the predominance of students of that gender presented by nursing and medicine schools⁽⁹⁻¹⁰⁾.

Analyzing knowledge about preventive HIV/AIDS prophylaxis among health students is not common in the literature. In this study, this knowledge was mostly classified as medium, corroborating with some studies of this nature, whose knowledge was classified in this way⁽¹¹⁻¹²⁾. Considering that this is a pioneering study in Brazil, with a view to assessing the knowledge of nursing and medical students about PrEP and PEP, the authors found it difficult to make comparisons and interlocutions.

However, international studies demonstrate that students' knowledge is much lower than that found in this study. For example, a survey conducted in Nepal found that only 6% of the surveyed students had a good level of knowledge about PEP⁽¹³⁾. On the other hand, a Cameroonian study carried out with professional nurses observed that 73.7% of the participants had little knowledge about PEP for HIV, demonstrating that the lack of knowledge about the theme is not restricted to students⁽¹⁴⁾.

Differences in knowledge between men and women were also found. Although the female sex was the majority in the study, male students feel less inhibited in discussing the HIV issue with other people and, therefore, become more informed⁽¹⁵⁾. Still, most participants have heard of PEP, as it can be considered high compared to similar studies^(14,16). This is due to the fact that PEP has already been implemented in Brazil since the 1990s, being inserted in the clinical practice of these students.

The knowledge that involves the time when PEP should start was also an important data of the study, since not knowing when it should start can cause problems in care, resulting in a failure in the protocol, becoming a hindrance to people exposed to the virus in obtaining treatment in a timely manner, due to lack of information⁽¹¹⁾. Although a significant portion of the students did not have knowledge about when to start PEP, studies carried out in Ethiopia and Ghana presented more alarming findings, whose ignorance about the beginning of the use of PEP in students was 78.2%⁽¹⁷⁾ and 90%⁽¹¹⁾, respectively.

Medications for HIV prevention have some unpleasant side effects, which often hinder treatment adherence and make it difficult to complete the four-week treatment, which can lead to viral resistance and poor control of HIV infection. Having this knowledge can make the difference between prophylaxis being successful or not, and students/health professionals need to be sure that most symptoms are not serious and can be managed⁽¹⁸⁾.

The results prove that being a medical student considerably increases the chance of having a high knowledge, when compared to nursing students. The lesser knowledge of these students is due to the fact that the subject involving PEP and PrEP is not incorporated to a considerable extent in the curriculum and training of health professionals, especially in the nursing course. Additionally, medical students undergo a longer training period than nursing students, positively favoring their knowledge acquisition⁽⁴⁾.

The age of the interviewees also proved to be an important influence on the participants' knowledge, as shown in a Ghanaian study, in which nurses with more years of experience in health services, and therefore older, demonstrated greater knowledge about preventive HIV prophylaxis. In addition, with regard to graduation, individuals with older age are usually in earlier periods of the course, which may explain the higher level of knowledge demonstrated by these participants⁽¹¹⁾.

Since PrEP is an effective, but still underutilized way to reduce HIV infection, health education institutions should be preparing their students to care for users for whom PrEP is recommended, since nursing and medical students provide primary care in prescription, monitoring and guidance, representing a significant basis for access. However, further studies are needed to find the best methods for teaching students about these prophylaxis, in order to improve the service and access to HIV prevention and to positively interfere in breaking the chain of infection transmission⁽¹⁸⁾.

Difficulties in accessing PrEP are shown mainly as a programmatic vulnerability, generated by the health service itself. The insufficient knowledge of these students reveals a point to be explored urgently by Universities and Health Services, for the improvement in the training of these future professionals, in order to modify this reality. Like the condom, PrEP is adherence-dependent, meaning if it is not used correctly it can result in new infections⁽¹⁹⁾.

Therefore, the discussion of public policies to increase the availability of prevention strategies is important and necessary, however, it should not be done in a casual way, with synergy with an improvement in the quality of the health service being needed, mainly in professional qualification. A complex scenario, since Brazil puts itself in a scenario of regression in its policies for the management of the pandemic⁽²⁰⁾.

Study limitations are likely to have occurred, due to the fact that the information was self-reported and answered at a distance without the supervision of the researchers. However, questionnaires were filled in individually and anonymously, providing greater practicality and convenience to study participants, and reflecting positively on the number of responses obtained. In this way, access to this population was facilitated, making it less expensive for researchers, as well as for participants.

CONCLUSIONS

Nursing and medical students have what is considered medium knowledge on HIV preventive prophylaxis (PrEP and PEP), with a small number of students demonstrating a high level of knowledge. In addition, the level was higher in medical students. Thus, it is up to health education institutions to provide subsidies to better train students, with an emphasis on the context of combined HIV prevention, ensuring more qualified attention to PVHIV in the future.

With regard to strategies to expand students' knowledge on the subject, HIV should be treated as a cross-cutting issue throughout their education, not only applied in the discipline of infectious diseases but also in primary/community care, women's health, men's health, health of vulnerable populations and even in health management, following the goals proposed by government agencies such as UNAIDS, the Ministry of Health and WHO.

Still, this study contributes to obtain an overview of the knowledge of these students, mainly nursing, guiding new teaching strategies and preparing changes based on this mapping, which will reverberate directly in practice, since currently professional nurses also participate in the prescription of prophylaxis preventive measures. In this context, educational institutions need preparation to guarantee the autonomy of professionals in this area of activity, contributing to meet national and international demands and operating directly in the control of HIV infection.

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