



# Sexually transmitted infection and HIV/AIDS counseling practice in primary health care in the city of Montes Claros, Minas Gerais, Brazil, 2015-2016\*


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## Abstract

**Objective:** to investigate self-reported counseling practice of primary health care (PHC) professionals on sexually transmitted infections (STI) and HIV/AIDS in Montes Claros, MG, Brazil, 2015-2016. **Methods:** this was a cross-sectional study using a questionnaire answered by PHC physicians and nurses; their practice was classified as being adequate/inadequate based on the recommendations of Ministry of Health manuals; four thematic areas were investigated – counseling provision; prevention measures; risk behavior and vulnerability assessment; serological testing. **Results:** 146 professionals participated (41.1% physicians; 58.9% nurses); only 25.7% of professionals reported adequate practices; the area with the highest proportion of inadequate self-reported practice was ‘risk behavior and vulnerability assessment’ (69.9%); physicians overall practice was more likely to be appropriate than that of nurses (OR=3.48 – 95%CI 1.57;7.70), especially for ‘serological testing’. **Conclusion:** self-reported STI and HIV/AIDS counseling practices in PHC were found to be inadequate, revealing the need to intensify health professional awareness-raising/training.

**Keywords:** Counseling; Sexually Transmitted Diseases; Primary Health Care; Cross-Sectional Studies.

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## Introduction

Addressing HIV/AIDS and sexually transmitted infections (STIs) is a challenge faced by society in terms of establishing measures to control susceptibilities linked to individual and contextual aspects.<sup>1,2</sup> On the Brazilian scenario, government authorities and civil society organizations have made efforts to increase knowledge about and use of technologies capable of improving the quality of life of individuals with STIs or HIV/AIDS. In addition, investments have been made in prevention and control measures, such as detection of new cases of HIV infection.<sup>2</sup>

Counseling is a light technology and an essential practice for reducing STI/HIV/AIDS transmission. It has the potential to reduce situations of risk of exposure to STIs, by enabling a direct and personalized relationship with health service users.<sup>3</sup>

*High quality counseling as well as testing are essential for fighting the STI/HIV/AIDS epidemic, since they reduce risk behavior and prevent new infection.*

High quality counseling as well as testing are essential for fighting the STI/HIV/AIDS epidemic, since they reduce risk behavior and prevent new infection.<sup>4</sup> Based on these assumptions and also on the evolution of HIV/AIDS in Brazil, at the end of the 1990s, the Counseling and Testing Centers (CTAs) and their actions were decentralized to primary health care (PHC) with the aim of achieving early HIV diagnosis. A function of PHC is to carry out actions of an individual and collective nature, as is the case of the issues addressed in this study, namely STI transmission prevention.<sup>5,6</sup>

Providing counseling about STIs/HIV/AIDS is therefore essential, enabling the health professional and the service user to get closer to each other and share knowledge and ideas.<sup>7</sup>

When consulting Brazil's national literature, there is a scarcity of studies dedicated to regular monitoring of STI/HIV/AIDS counseling in PHC, to the point of the status of this practice being unknown in many regions of the country. From this perspective, this study aimed to investigate self-reported PHC health professional STI/HIV/AIDS counseling practices.

## Methods

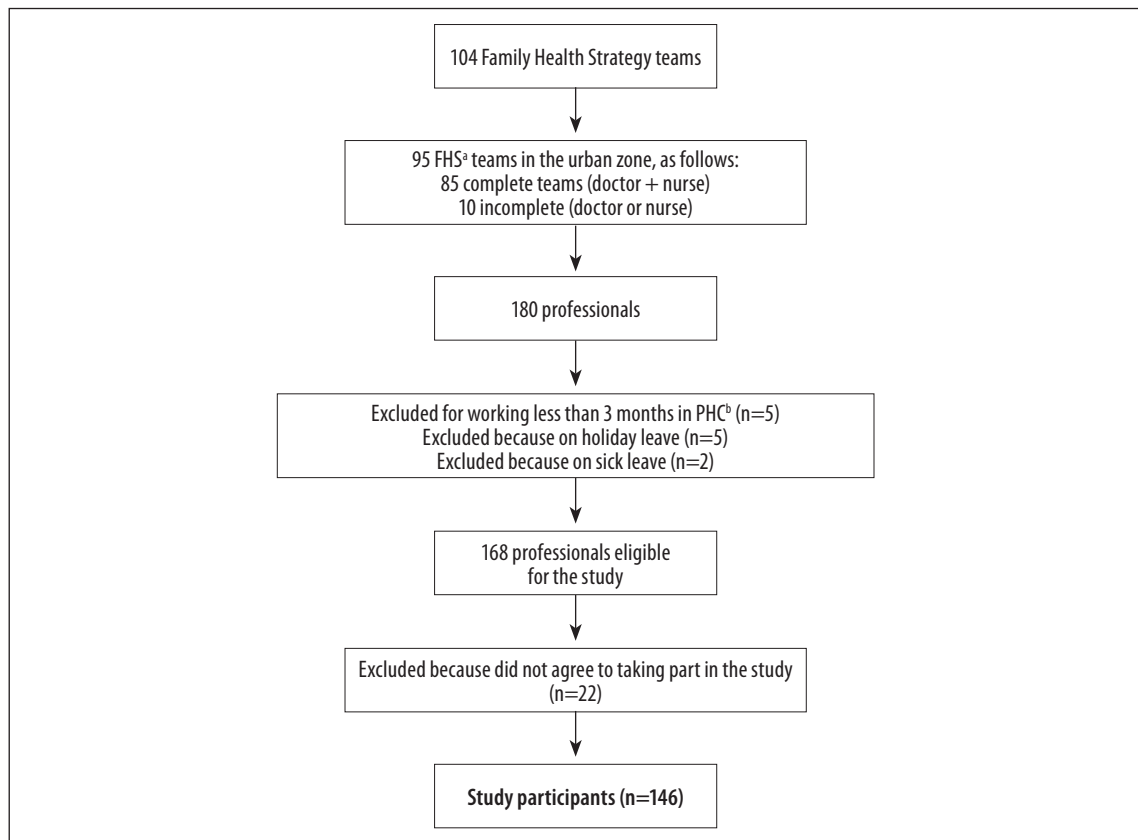
This was a cross-sectional study conducted in Montes Claros, located in the state of Minas Gerais, Brazil. Montes Claros is a large municipality with an estimated population of over 390,000 inhabitants, as well as being the largest urban center in the state's northern region. Its area of influence extends beyond northern Minas Gerais into the southwest region of the state of Bahia.

The study was conducted in Primary Health Care (PHC) services, represented by Family Health Strategy (ESF) teams working in the urban area of the municipality. At the time of data collection, Montes Claros had 95 ESF teams.

The number of health professionals working at local primary health care centers (UBS) was provided by the City Health Department. A census was carried out which found a population of 180 health professionals comprised of nurses and doctors at urban UBS eligible to take part in the study (Figure 1). Professionals with less than three months service time were excluded from the study (given the possibility of a newly admitted professional not having provided counseling but having their practice assessed), as were those who were on leave during the study period (on holiday or sick leave). Data collection took place at the same time. Losses were taken to be only eligible subjects who refused to take part in the study. As a result, 168 professionals took part in the study.

Data was collected by administering a questionnaire over the period 2015-2016. The researcher responsible for this sought out health professionals, presented the proposed study to them and invited them to take part in it. The list of questions was given to each doctor and nurse to be answered at the UBS, in the presence of the researcher, during normal working hours. However, some professionals stated that they were so busy that they could not answer the questionnaire there and then. In these cases, a time was agreed on for the questionnaires to be returned, and this was within two days on average. To this end, the researcher called these respondents by telephone beforehand in order to confirm when the completed questionnaire would be returned.

The questions were divided into two parts. The first part was comprised of sociodemographic questions and questions about the health professionals' qualifications:



a) FHS: Family Health Strategy.

b) PHC: primary health care.

**Figure 1 – Diagram showing selection of primary health care doctors and nurses study participants, Montes Claros, Minas Gerais, 2015-2016**

- a) sex (male; female);
- b) age (in years);
- c) marital status (married/ common-law marriage; single; separated or widowed);
- d) practices a religion (yes; no);
- e) nationality (Brazilian; other);
- f) professional category (doctor; nurse);
- g) nature of graduation institution (private; public)
- h) time since graduation (in years);
- i) time working in PHC (in months); and
- j) qualified in Family Health (yes/no).

Qualification in Family Health was considered by the study as having completed ‘Residency’ (medical or multiprofessional) in Family Health and having a diploma in Family and Community Health.

The second part of the questionnaire was comprised of 27 items related to self-reported counseling practice,

all of which were based in expected practice of PHC professionals as recommended in the following manuals prepared and published by the Brazilian Ministry of Health ‘STD/HIV/AIDS Counseling in Primary Care’,<sup>5</sup> ‘Workshop on STD/HIV/AIDS Counseling in Primary Care’<sup>6</sup> and ‘Primary Care Booklets: HIV/AIDS, hepatitis and other STDs’.<sup>7</sup> In accordance with the recommendations contained in these manuals, the items were divided into four thematic areas, namely:

- I. Counseling provision (7 items)
- II. Prevention measures (6 items)
- III. Risk behavior and vulnerability assessment (10 items)
- IV. Serological testing (4 items)

Before being used in the study, the questions were submitted for analysis by two infectious disease specialist physicians, one PHC specialist physician, one PHC and

IST specialist physician, one PHC specialist nurse and two STI specialist nurses, for content validation. They assessed the questionnaire as to the presence or absence of the following criteria: comprehensiveness, objectivity, clearness and relevance.<sup>8</sup> Following their assessment, four items were altered/reformulated at their request. They then assessed the questionnaire again and saw no need to make further changes.

A Likert scale was used for each questionnaire item, with five answer options for each item, whereby respondents could choose which option best described their practice in relation to STI/HIV/AIDS counseling. A score was given for each item on the scale: (i) always (score=5); (ii) frequently (score=4); (iii) sometimes (score=3); (iv) rarely (score=2); (v) never (score=1). No score was given to the item 'don't know/refused to answer' (DK/RA), nor for items left blank (missing), whereby both these situations were treated similarly for statistical purposes. The scores for item 25 were inverted, given its nature: 'always' represented the worst situation, while 'never' represented the best situation.

A pilot study was conducted with ten health professionals working at UBS in the municipality's rural zone in order to test the questionnaire beforehand. These professionals were not involved in the definitive study as it was conducted in urban zone UBS. The professionals consulted in the pilot study did not report any difficulties or uncertainties about answering the questionnaire and so it was approved without alterations for the definitive study.

The collected data were analyzed using the Statistical Package for Social Sciences (SPSS)<sup>®</sup> version 17.0. First of all descriptive analyses were performed for all variables. For the descriptive analysis of the items relating to counseling practice, the scores obtained using the Likert scale were grouped into three categories: (i) always/frequently; (ii) sometimes; (iii) rarely/never. In order to assess internal consistency of the answers, Cronbach's alpha ( $\alpha$ ) was calculated for each thematic area, as well as for all 27 items together (overall scale), taking scores  $\geq 0.60$  as being indicative of good internal consistency of the scale used.<sup>9</sup>

Scores were calculated for each thematic area by adding each person's scores for the answers to each item comprising the thematic area and dividing the sum of the score by the number of items comprising the thematic area. The resulting score was transformed into a continuous scale of adjusted scores ranging

from 0 to 10, with the aim of avoiding overestimation of the scores for the self-reported practice, in keeping with the analysis methods used for another instrument, namely the Primary Care Assessment Tool (PCATool-Brasil),<sup>10</sup> adopted in a previous study which also used a Likert scale.<sup>11</sup> As such, the following formula was adopted:

$$\text{Adjusted score} = [(\text{score obtained} - 1) / (\text{maximum score} - \text{minimum score})] \times 10$$

The maximum score considered in the study was 5 (always) while the minimum was 1 (never). The answer replacement or imputation procedure was used to treat DK/RA type answers. The imputation criterion consisted of replacing DK/RA and blank answers by the average of the answers observed (measure of central tendency) for the thematic area, provided that at least 50% of answers were DK/RA and blank answers.<sup>12</sup> In this study, eleven cases were submitted to this statistical procedure. In turn, cases for which the sum of blank (missing) and DK/RA answers accounted for 50% or more of the total items of a thematic area were excluded before posterior score analysis.<sup>10,12</sup>

For each thematic area calculated, the adjusted scores were dichotomized: where  $\geq 7.5$  points were considered to be adequate self-reported practice (scores of four or more on the Likert scale); and where  $< 7.5$  points were considered to be inadequate self-reported practice (score equal to or less than three on the Likert scale). The cut-off point of 7.5 was adopted based on the best answer level for the practice reported by the professionals, i.e., the 'always' and 'frequently' options, representing answers greater than or equal to 4 on the Likert scale used, as this is the Ministry of Health recommendation for PHC professionals.<sup>6,7</sup>

The calculation used for the overall score, representative of overall counseling practice, considered the four thematic areas together, in order to estimate the average of the adjusted scores for each area. Once again self-reported practice was dichotomized between adequate or inadequate using the same cut-off point of 7.5. Missing cases were considered to be those individuals for whom two or more thematic areas were not calculated.

Bivariate analyses were then performed using Pearson's chi-square test ( $\chi^2$ ) or Fisher's exact test, to assess for association between (i) overall and thematic self-reported adequate/inadequate STI/HIV/AIDS counseling practice (dependant variable) and (ii)

the sociodemographic and professional qualification variables. A 5% significance level was adopted.

The project study was approved by the State University of Montes Claros Research Ethics Committee (CEP/Unimontes), as per (consolidated) Report No. 890.235. All required ethical aspects were respected. In order to take part in the study, the professionals signed a Free and Informed Consent form and total anonymity was ensured. The results obtained were made available to the Montes Claros City Health Department as a means of informing the planning of actions in keeping with the reality found.

## Results

Of the 168 eligible professionals, 146 agreed to take part in the study, representing an 87.0% response percentage. 58.9% of the respondents were nurses (Table 1). Of the total number of doctors, 18.3% were Cuban. Distribution of the professionals according to the frequency with which they fulfilled the items relating to self-reported counseling practice is shown in Table 2. The overall Cronbach alpha coefficient was 0.88, while for the thematic areas the coefficients were as follows: counseling provision, 0.65; risk behavior/vulnerability assessment, 0.85; prevention measures, 0.71; and serological testing, 0.60.

For the 'Counseling provision' thematic area, the majority of professionals (79.5%) reported always/frequently providing individual counseling on STI/HIV/AIDS in private with the service user. With regard to 'Prevention measures', the proportion of professionals who always/frequently discussed STI/HIV/AIDS prevention measures during counseling was also 79.5%. As for 'Risk behavior and vulnerability assessment', 75.3% of professionals always/frequently discussed mother-to-child STI and HIV transmission with each pregnant woman during prenatal appointments. With regard to 'Serological testing', 87.7% of professionals taking part in the study rarely/never omitted IST diagnosis, while only 11.6% indicated testing for all service users they attended to at their UBS.

The proportions of professionals with adequate self-reported counseling practices in each area were as follows: 31.9% for the 'Counseling provision' thematic area; 28.2% for 'Risk behavior/vulnerability assessment'; 64.1% for 'Prevention measures' and 40.1% for 'Serological testing'. When considering overall practice, 25.7% of professionals had adequate self-reported practices, while 74.3% had inadequate practices.

Table 3 shows bivariate analysis of overall PHC professional adequate practice, considering the sociodemographic and professional qualifications variables. Professional category was the only variable showing association with adequate counseling practice ( $p=0.002$ ): doctors had more likelihood of having adequate practices when compared to nurses ( $OR=3.48 - 95\%CI 1.57;7.70$ ). Based on this result, analysis per thematic area was performed for the 'professional category' variable. 'Serological testing' was the only thematic area to show significant difference between the two professional categories studied, with greater probability of adequate practice by doctors than by nurses ( $p=0.001$ ) (Table 4).

## Discussion

These results indicate that in the PHC services studied, STI/HIV/AIDS counseling practices are below the ideal standard recommended by the Ministry of Health. This fact is of concern as it may indicate failure to carry out important counseling actions in the daily work of these professionals in their primary health care centers (UBS). The items analyzed were based on recommendations contained in manuals published by the then Ministry of Health National STD and AIDS Program, now known as the Department of Chronic Conditions and Sexually Transmitted Infections, which implies that study participants had not received guidance or training from the PHC center where they worked. It should be emphasized that PHC is the propitious scenario for STI/HIV/AIDS counseling provision, given the preventive nature of PHC and its articulation with health care and the community it serves.<sup>13</sup>

This study found a low proportion of doctors and nurses qualified in Family Health, which may also contribute to inadequate self-reported counseling practices. Counseling is an activity to be developed by duly trained health professionals and is not limited just to referring service users for HIV testing.<sup>5</sup> It is essential to include STI/HIV/AIDS counseling as part of the training of these professionals, whether through university postgraduate programs or through Ministry of Health actions, always with the aim of achieving early detection of these diseases and quality in the approach taken by PHC services in relation to service users.

A study conducted in Spain<sup>14</sup> in 2013 indicated that training and preparation for working with pre-

**Table 1 – Sociodemographic and professional qualification characteristics of primary health care doctors and nurses, Montes Claros, Minas Gerais, 2015-2016**

Variables	N	%
<b>Sex</b>		
Female	103	70,5
Male	43	29,5
<b>Age (in years)</b>		
≥30	79	54,1
<30	67	45,9
<b>Marital status</b>		
Married / common-law marriage	68	46,6
Single	69	47,3
Separated or widowed	9	6,1
<b>Practices a religion</b>		
Yes	133	91,1
No	13	8,9
<b>Nationality</b>		
Brazilian	135	92,5
Other	11	7,5
<b>Professional category</b>		
Doctor	60	41,1
Nurse	86	58,9
<b>Nature of graduation institution</b>		
Private	83	56,8
Public	63	43,2
<b>Time since graduation</b>		
0-3 years	61	41,8
4-10 years	66	45,2
More than 10 years	19	13,0
<b>Time working in PHC<sup>a</sup></b>		
≥31 meses	73	50,0
<31 meses	73	50,0
<b>Qualified in Family Health</b>		
Yes	37	25,3
No	109	74,7

a) PHC: primary health care.

vention and counseling is a way of enabling targeted and effective efforts in keeping with an individual's needs and based on provision of all-round care. Some 80.0% of professionals taking part in that study stated the importance of continuing education in order to provide better counseling and a better approach to giving the result of HIV serological testing, leaving them more confident and with greater resolute capacity.

The presence of trained professionals was also noted in a study conducted in Zimbabwe, Africa,<sup>15</sup> in 2012, and has been associated with greater case resolute capacity, early diagnosis of HIV infection and fewer complications in IST cases, thus producing a more effective response in addressing STIs/AIDS. A study conducted in France in 2015 with 407 PHC professionals found that only 8% had been trained to fulfill the recommendations for performing testing together with counseling.<sup>16</sup>

**Table 2 – Distribution of primary health care doctors and nurses, by frequency of fulfillment of items relating to self-reported sexually transmitted infection, human immunodeficiency virus and AIDS counseling practice, Montes Claros, Minas Gerais, 2015-2016**

Items assessed	Always/ frequently n (%)	Sometimes n (%)	Rarely/ never n (%)	DK/RA n (%)
<b>Thematic area 1: counseling provision</b>				
1. I provide individual counseling on STIs/HIV/AIDS in private with service users.	116 (79.5)	11 (7.6)	13 (8.7)	6 (4.2)
2. I make appointments for service users who need counseling on STIs/HIV/AIDS.	79 (54.0)	25 (17.1)	35 (24.0)	7 (4.9)
3. I spend enough time to provide quality counseling for service users seen by me.	85 (58.1)	38 (26.0)	15 (10.3)	8 (5.6)
4. I include on the team's routine those users who have needs related to STIs.	71 (48.5)	32 (21.9)	33 (22.6)	10 (7.0)
5. When counseling, I feel at ease to discuss issues related to sex with service users.	102 (69.9)	34 (23.3)	6 (4.0)	4 (2.8)
6. I carry out household visits to service users with needs related to STIs/HIV/AIDS.	29 (19.8)	34 (23.3)	77 (52.7)	6 (4.2)
7. I have more than one STI/HIV/AIDS counseling sessions with service users when necessary.	73 (50.0)	43 (29.3)	19 (13.0)	11 (7.7)
<b>Thematic area 2: prevention measures</b>				
8. I discuss safer sex practices with all service users during counseling.	102 (69.9)	32 (21.9)	9 (6.1)	3 (2.1)
9. I discuss the importance of STI/AIDS prevention prior to conception for women of childbearing age.	101 (69.2)	29 (19.8)	16 (11.0)	–
10. I discuss STI/HIV/AIDS-related prevention methods during counseling.	116 (79.5)	24 (16.4)	02 (1.4)	4 (2.8)
11. I discuss the importance of condom use with each service user seen by me.	101 (69.2)	32 (21.9)	12 (8.2)	1 (0.7)
12. I provide information about male and female condoms.	108 (74.0)	31 (21.2)	6 (4.1)	1 (0.7)
13. I offer condoms to service users having STI/HIV/AIDS counseling.	111 (76.0)	14 (9.6)	15 (10.3)	6 (4.1)
<b>Thematic area 3: risk behavior and vulnerability assessment</b>				
14. I discuss the relationship between injecting and non-injecting drug use and risk of ST transmission with service users who use drugs.	67 (45.8)	36 (24.7)	37 (25.3)	6 (4.2)
15. I discuss the relationship between injecting and non-injecting drug use and risk of contracting STIs with service users who use drugs.	69 (47.3)	37 (25.4)	32 (21.9)	8 (5.4)
16. I address differences in vulnerabilities related to STIs/AIDS.	50 (34.2)	50 (34.2)	38 (26.1)	8 (5.5)
17. I discuss the risks of acquiring STIs, including HIV infection, with each service user during counseling.	109 (74.7)	27 (18.3)	4 (2.8)	6 (4.2)
18. I discuss the risks of STI transmission and HIV infection with each user during counseling.	107 (73.2)	30 (20.5)	5 (3.5)	4 (2.8)
19. I discuss the risk of mother-to-child STI transmission and HIV infection with each pregnant woman during prenatal care sessions.	110 (75.3)	20 (13.7)	16 (11.0)	–
20. I discuss prior history of STIs with each service user during STI/HIV/AIDS counseling.	73 (50.0)	41 (28.1)	30 (20.5)	2 (1.4)
21. I ask each service user about their current and past number of sex partners during STI/HIV/AIDS counseling.	88 (60.3)	38 (26.0)	18 (12.3)	2 (1.4)
22. I ask about service users' sexual orientation during each STI/HIV/AIDS counseling session.	62 (42.4)	37 (25.4)	45 (30.8)	2 (1.4)
23. I discuss sexual practices (oral, vaginal and anal sex) with each service user during STI/HIV/AIDS counseling.	53 (36.3)	47 (32.2)	43 (29.4)	3 (2.1)
<b>Thematic area 4: serological testing</b>				
24. I request authorization/consent for HIV and other STI testing during STI/HIV/AIDS counseling.	100 (68.5)	13 (8.9)	28 (19.2)	5 (3.4)
25. I have omitted ST diagnosis to avoid unpleasantness in my relationship with service users.	10 (6.8)	04 (2.7)	128 (87.7)	4 (2.8)
26. I request HIV and other STI tests to be performed along with counseling.	84 (57.5)	34 (23.2)	17 (11.6)	11 (7.7)
27. I indicate HIV testing for all individuals I see at the health center, regardless of the original reason for their seeking care.	17 (11.6)	27 (18.4)	96 (65.8)	6 (4.2)

Legend:  
 DK/RA= Doesn't know/refused to answer.  
 ST: sexually transmitted infection.  
 HW: human immunodeficiency virus.  
 AIDS: acquired immunodeficiency syndrome.

**Table 3 – Bivariate analysis between adequate/inadequate overall primary health care doctor and nurse self-reported sexually transmitted infection, human immunodeficiency virus and AIDS counseling and sociodemographic and professional qualification variables, Montes Claros, Minas Gerais, 2015-2016**

Variables	Adequate self-reported practice <sup>a</sup> n (%)	Inadequate self-reported practice n (%)	OR <sup>b</sup> (IC95% <sup>c</sup> )	p <sup>d</sup> -valued
<b>Sex</b>				0.076
Male	15 (41.7)	28 (26.9)	1.93 (0.87;4.27)	
Female	21 (58.3)	76 (73.1)	1.0	
<b>Age (in years)</b>				0.244
≤30	17 (47.2)	58 (55.8)	0.71 (0.33;1.51)	
>30	19 (52.8)	46 (44.2)	1.0	
<b>Marital status</b>				0.458
Married / common-law marriage	18 (50.0)	49 (47.1)	1.12 (0.52;2.39)	
Single or separated	18 (50.0)	55 (52.9)	1.0	
<b>Practices a religion</b>				0.223
Yes	29 (80.6)	91 (87.5)	0.59 (0.21;1.62)	
No	7 (19.4)	13 (12.5)	1.0	
<b>Professional category</b>				0.002
Doctor	23 (63.9)	35 (33.7)	3.48 (1.57;7.70)	
Nurse	13 (43.5)	69 (61.5)	1.0	
<b>Time since graduation</b>				0.562
0-3 years	15 (41.7)	43 (41.3)	1.01 (0.47;2.18)	
4 years or more	21 (58.3)	61 (58.7)	1.0	
<b>Nature of graduation institution</b>				0.115
Public	19 (52.8)	41 (39.4)	1.71 (0.80;3.68)	
Private	17 (47.2)	63 (60.6)	1.0	
<b>Qualified in Family Health</b>				0.447
Yes	20 (55.6)	61 (58.7)	0.88 (0.41;1.89)	
No	16 (44.4)	43 (41.3)	1.0	
<b>Nationality</b>				0.302
Brazilian	32 (88.9)	97 (93.3)	0.57 (0.15;2.10)	
Cuban	4 (11.1)	7 (6.7)	1.0	
<b>Prior training in STI/HIV/AIDS<sup>e</sup> counseling</b>				0.504
Yes	9 (25.0)	28 (26.9)	0.90 (0.37;2.16)	
No	27 (75.0)	76 (73.1)	1.0	
<b>Do you provide STI/HIV/AIDS counseling?</b>				0.499
Yes	33 (91.7)	97 (93.3)	0.79 (0.19;3.24)	
No	3 (8.3)	7 (6.7)	1.0	
<b>Length of PHC<sup>f</sup> service</b>				0.193
≥31 months	21 (58.3)	50 (48.1)	1.51 (0.70;3.25)	
<31 months	15 (41.7)	54 (51.9)	1.0	

a) Dependant variable reference category.

b) OR: odds ratio.

c) 95%CI: 95% confidence interval.

d) Pearson's chi-square test.

e) STI/HIV/AIDS: sexually transmitted infections/human immunodeficiency virus/acquired immunodeficiency syndrome.

f) PHC: primary health care.



**Table 4 – Bivariate analysis between professional category and thematic areas of self-reported sexually transmitted infection, human immunodeficiency virus and AIDS counseling practice in primary health care, Montes Claros, Minas Gerais**

Thematic area	Nurse		Doctor		p-value
	n	%	n	%	
<b>Counseling provision</b>					0.232
Adequate	24	28.9	21	36.2	
Inadequate	59	71.1	37	63.8	
<b>Risk behavior/vulnerability assessment</b>					0.058
Adequate	19	22.6	21	36.2	
Inadequate	65	77.4	37	63.8	
<b>Prevention measures</b>					0.364
Adequate	56	65.9	37	61.7	
Inadequate	29	34.1	23	38.3	
<b>Serological testing</b>					0.001
Adequate	23	28.0	34	56.7	
Inadequate	59	72.0	26	43.3	
<b>Overall practice</b>					0.002
Adequate	23	63.9	35	33.7	
Inadequate	13	43.5	69	61.5	

A systematic review of publications in Europe selected from the period covering 2006-2017 found that professionals working in PHC have specific training needs related to epidemiology and HIV prevention, as well as the benefits of treating infection, early HIV diagnosis and case management as soon as it is diagnosed.<sup>17</sup> According to the Spanish study mentioned above,<sup>14</sup> such training needs were not found to be associated with length of time since graduation, work environment or health care specialty, nor with their degree of confidence in giving serological testing results.

With regard to 'Counseling provision', it is noteworthy that a large part of the respondents reported providing individual STI/HIV/AIDS counseling in private at their UBS. This fact probably reflects professionals' concern for ensuring the service user's right to confidentiality of the information generated during care, possibly attributed to persistent stigma and discrimination in relation to STIs/AIDS. Measures to protect the confidentiality of those who seek primary health care services must be guaranteed, as a means of reducing the likelihood of not returning to the service, complications resulting from STIs and late diagnosis of HIV infection.<sup>18</sup> A study conducted in PHC in India in 2018 indicated that the lack of an adequate place to provide counseling can compromise confidentiality

and result in lower adherence to care. Confidentiality of service user information is a consolidated right that users should require the health team to ensure when assessing the service provided.<sup>19</sup>

The 'Prevention measures' thematic area had the highest percentage of adequate self-reported practice. This may reveal health professional awareness in working with prevention, shown through their availability for presenting and discussing safer sex practices, information about STIs and condom use with service users. However, it is important to highlight that STI/AIDS prevention activities are highly susceptible to contextual, geographic, social, economic and cultural variations. The national guidelines on counseling recommend specific actions, aimed at guiding professionals in providing counseling tailored to each case they attend to.<sup>6,7,20</sup> This implies the importance of proposing continuing education actions for PHC professionals. A longitudinal study conducted over 12 months in the United States found that trained professionals were 12% more likely to offer routine counseling as way of preventing individuals at greater risk of infection from transmitting HIV/AIDS or other STIs to other people.<sup>21</sup>

The 'Risk behavior and vulnerability assessment' thematic area had the lowest percentage of adequate self-reported practice. This thematic area of counseling

requires attention, since it is the moment when the professional speaks and acts in order for the service user to understand and assess their own risks, avoiding unsafe sexual practices that can expose them or other individuals to infection. Studies indicate that a health professional's ability to assess risk of contracting HIV and other STIs depends on training, confidence and specific skills brought to bear during counseling.<sup>22,23</sup> Notwithstanding, the practice of addressing mother-to-child HIV transmission during prenatal care self-reported by the majority of participants stood out, indicating their degree of commitment to reducing interurrences during pregnancy and maternal mortality.<sup>24</sup>

Finally, with regard to 'Serological testing', adequate practice in PHC was found in less than half of the participants. This finding also corroborates results of studies conducted in developed countries.<sup>14,25</sup> In PHC in Belgium, for example, during counseling given by health professionals, the majority of HIV tests were requested at the patient's initiative: HIV test requests were rarely made by professionals during prenatal care, while during postnatal care, patients diagnosed as having HIV were referred for confirmatory testing as part of a norm to be complied with. The Belgian study found that the main barriers to providing rapid HIV testing were fear of offending the patient, limited knowledge of the benefits of HIV diagnosis, mistaken concepts about HIV risk, lack of guidelines and lack of time to provide it.<sup>25</sup> Returning to the study conducted with doctors in Spain, it also found that the main causes for not requesting rapid HIV testing included lack of training about this kind of test (56.4%) and lack of time to provide it, both during pre-test and post-test counseling (49.4%).<sup>14</sup>

Our study found that during counseling provided to service users at primary health care centers, doctors and nurses rarely/never omitted IST diagnosis. This data has a positive effect for PHC with regard to its objective of identifying new cases of people with ISTs or HIV, and thus avoiding future complications. Disclosure of diagnosis in PHC is essential for case preparation, planning and follow-up, in order to achieve greater likelihood of favorable case progression and/or health recovery. Differently to the purpose of this study, other studies have identified elements that inhibit this task: fear of prejudice, discrimination and the person's reaction; discomfort in being exposed to family members or partners; and the fear arising from awareness of responsibilities to be taken on.<sup>26,27</sup>

It is a cause of concern that only 11.6% of professionals request HIV testing for all primary health care center users. This percentage represents lost testing and counseling opportunities. In 2017, a qualitative study conducted in the Netherlands<sup>8</sup> showed that doctors only requested HIV testing when they perceived risk of infection. A study conducted in France<sup>29</sup> in 2016 showed that the main reasons for indicating HIV testing in PHC were patient requesting testing (91.0%) and risk of HIV infection (62.0%), whereby the most was not made of other opportunities for the same procedure with other service users.

Our study found that likelihood of overall adequate counseling practice was greater among doctors, as a consequence of better performance reported for the 'Serological testing' thematic area. Doctors are recommended to request HIV testing both as part of routine prenatal care and also when providing other forms of care; whereas for nurses this recommendation is restricted to prenatal care. In addition, differences in the type of training received by these professionals result in whether HIV testing is offered or not: doctors' professional training includes, preferentially, conduct directed towards diagnosing diseases, whereas nurses are oriented towards disease prevention and patient care. In Montes Claros, it should be noted that the municipal health service has its own health care protocol, which supports nurses requesting HIV testing not just in prenatal care within PHC.<sup>30</sup> Two assumptions can be made in view of this fact and the results found: lack of institutional guidance may have contributed to unfamiliarity with the protocol and the predictable consequences of this; or, despite knowledge of the protocol authorizing them to request HIV testing, they did not put it into practice in their everyday work. It is fundamental to train and raise the awareness of nurses to request HIV testing when providing counseling outside of the antenatal setting, as recommended by the protocol.

This study and its objective also face limitations owing to its cross-sectional design which prevents the results presented from being taken to be cause and effect, owing to the 'temporality' variable not being measured. In addition, although the data collection instrument used is totally faithful to the protocols defined by the Ministry of Health, it is original and only underwent content validation. The study's main limitation, however, relates to assessment of practices based on self-reporting. This type of data collection is

known to be subject to bias, owing to overvaluing of practices considered to be “politically correct” (social desirability bias). Prevalence of inadequate practices in PHC may be even greater than that revealed in the results presented here.

Despite the limitations presented, we believe that the panorama revealed is useful, allowing the magnitude and the nature of the weak points of STI/HIV/AIDS counseling in PHC to be recognized and its results to be generalized. This recognition can contribute to the planning of strategies adequately aimed at the problems identified, as well as opening the way for future research.

This study described self-reported STI/HIV/AIDS counseling in PHC and its authors characterized it as being inadequate. The thematic area with the greatest proportion of inadequate self-reported practice was ‘Risk behavior and vulnerability assessment’. It was found that STI/HIV/AIDS counseling practices in PHC, to the extent that they have not yet reached the desired level, can compromise the quality of care provided

in meeting service users’ STI/AIDS needs. The results found emphasize the need for continuing education and awareness-raising of primary health care professionals, thus building their capacity to effectively meet the objectives of the Brazilian National Health System – (SUS).

### Authors’ contributions

Barbosa TLA took part in the study conception and design, data collection and analysis, writing and critically reviewing the article. Gomes LMX took part in the study conception and design, data collection and analysis, writing, critically reviewing and approving the final version of the article. Haikal DSA and Batista de Paula AM took part in data analysis, writing, critically reviewing and approving the final version of the article. Cardoso L and Holzmann APF took part in data collection and analysis, critical review and approval of the final version of the article. All authors take on responsibility for all aspects of this work, including guaranteeing its accuracy and integrity.

### References


1. Pinto VM, Basso CR, Barros CRS, Gutierrez EB. Fatores associados às infecções sexualmente transmissíveis: inquérito populacional no município de São Paulo, Brasil. *Ciênc Saúde Colet* [Internet]. 2018 jul [citado 2019 dez 20];23(7):2423-32. Disponível em: <http://www.scielo.br/pdf/csc/v23n7/1413-8123-csc-23-07-2423.pdf>. doi: 10.1590/1413-81232018237.20602016
2. Ministério da Saúde (BR). Departamento de IST, Aids e Hepatites Virais. HIV / Aids. *Bol Epidemiol* [Internet]. 2016 nov [citado 2017 abr 8];5(1):3-55. Disponível em: <http://www.aids.gov.br/pt-br/pub/2016/boletim-epidemiologico-de-aids-2016>
3. Pequeno CS, Macêdo SM, Miranda KCL. Aconselhamento em HIV/AIDS: pressupostos teóricos para uma prática clínica fundamentada. *Rev Bras Enferm* [Internet]. 2013 maio-jun [citado 2019 dez 20];66(3):437-41. Disponível em: <http://www.scielo.br/pdf/reben/v66n3/a20v66n3.pdf>. doi: 10.1590/S0034-71672013000300020
4. Kalumbi L, Kumwenda S, Chidziwisano K. Counsellors' experience during training and home based HIV counselling and testing in Zomba District, Malawi. *Malawi Med J* [Internet]. 2014 Mar [cited 2019 Dec 20];26(1):1-7. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4062776/>
5. Ministério da Saúde (BR). Manual de aconselhamento em DST/HIV/Aids para a atenção básica [Internet]. Brasília: Ministério da Saúde; 200- [citado 2019 dez 20]. Disponível em: [http://bvsm.s.saude.gov.br/bvs/publicacoes/manual\\_simplificado.pdf](http://bvsm.s.saude.gov.br/bvs/publicacoes/manual_simplificado.pdf)
6. Ministério da Saúde (BR). Secretaria de Vigilância em Saúde. Programa Nacional de DST e Aids. Oficina de aconselhamento em DST/HIV/Aids para atenção básica [Internet]. Brasília: Ministério da Saúde; 2005. 64 p. Disponível em: [http://bvsm.s.saude.gov.br/bvs/publicacoes/acons\\_ind\\_atenbasica01\\_web.pdf](http://bvsm.s.saude.gov.br/bvs/publicacoes/acons_ind_atenbasica01_web.pdf)
7. Ministério da Saúde (BR). Secretaria de Atenção à Saúde. Departamento de Atenção Básica. HIV/Aids, hepatites e outras DST [Internet]. Brasília: Ministério da Saúde; 2006 [citado 2019 dez 20]. 196 p. (Cadernos de atenção básica, n. 18). Disponível em: <http://bvsm.s.saude.gov.br/bvs/publicacoes/abcad18.pdf>
8. Alexandre NMC, Coluci MZO. Validade de conteúdo nos processos de construção e adaptação de instrumentos de medidas. *Ciênc Saúde Coletiva* [Internet]. 2011 jul [citado 2019 dez 20];16(7):3061-68. Disponível em: <http://www.scielo.br/pdf/csc/v16n7/06.pdf>. doi: 10.1590/S1413-81232011000800006

9. Bland JM, Altman DG. Statistics notes: cronbach's alpha. *BMJ* [Internet]. 1997 Feb [cited 2019 Dec 20]; 314:572. Available from: <https://www.bmj.com/content/314/7080/572>. doi: 10.1136/bmj.314.7080.572
10. Ministério da Saúde (BR). Secretaria de Atenção em Saúde. Departamento de Atenção Básica. Manual do instrumento de avaliação da atenção primária à saúde primary care assessment tool PCATool-Brasil [Internet]. Brasília: Ministério da Saúde; 2010 [citado 2019 dez 20]. 80 p. Disponível em: [http://bvms.saude.gov.br/bvs/publicacoes/manual\\_avaliacao\\_pcatool\\_brasil.pdf](http://bvms.saude.gov.br/bvs/publicacoes/manual_avaliacao_pcatool_brasil.pdf)
11. Paes NA, Silva CS, Figueiredo TMRM, Cardoso MAA, Lima JO. Satisfação dos usuários hipertensos com os serviços da rede de atenção primária no Brasil: um estudo de validação. *Rev Panam Salud Pública* [Internet]. 2014 mar-abr [citado 2019 dez 20];36(2):87-93. Disponível em: <https://www.scielosp.org/article/rpsp/2014.v36n2/87-93/>
12. Fraser G, Yan R. Guided multiple imputation of missing data: using a subsample to strengthen the missing-at-random assumption. *Epidemiology* [Internet]. 2007 Mar [cited 2019 Dec 20];18(2):246-52. Available from: <https://insights.ovid.com/crossref?an=00001648-200703000-00013>. doi: 10.1097/01.ede.0000254708.40228.8b
13. Guanilo MCTU, Takahashi RF, Bertolozzi MR. Avaliação da vulnerabilidade de mulheres às doenças sexualmente transmissíveis – DST e ao HIV: construção e validação de marcadores. *Rev Esc Enferm USP* [Internet]. 2014 ago [citado 2019 dez 20];48(esp):152-9. Disponível em: [http://www.scielo.br/pdf/reeusp/v48nspe/pt\\_0080-6234-reeusp-48-esp-156.pdf](http://www.scielo.br/pdf/reeusp/v48nspe/pt_0080-6234-reeusp-48-esp-156.pdf). doi: 10.1590/S0080-623420140000600022
14. Agustí C, Fernández-López L, Mascort J, Carrillo R, Aguado C, Montoliu A, et al. Acceptability of rapid HIV diagnosis technology among primary health care practitioners in Spain. *AIDS Care* [Internet]. 2013 Oct [cited 2019 Dec 20];25(5):544-9. Available from: <https://www.tandfonline.com/doi/abs/10.1080/09540121.2012.726339>. doi: 10.1080/09540121.2012.726339
15. Sibanda EL, Hatzold K, Mugurungi O, Ncube G, Dupwa B, Siraha P, et al. An assessment of the Zimbabwe ministry of health and child welfare provider initiated HIV testing and counselling programme. *BMC Health Serv Res* [Internet]. 2012 May [cited 2019 Dec 20];12(131). Available from: <https://bmchealthservres.biomedcentral.com/articles/10.1186/1472-6963-12-131>
16. Rocchetti V, Viard JP. Family practitioners screening for HIV infection. *Med Mal Infect* [Internet]. 2015 May [cited 2019 Dec 20];45(5):157-64. Available from: <https://www.sciencedirect.com/science/article/pii/S0399077X15000864?via%3Dihub>. doi: 10.1016/j.medmal.2015.03.007
17. Deblonde J, Beckhoven DV, Boffin N, Sasse A, Nöstlinger C, Supervie V, et al. HIV testing within general practices in Europe: a mixed-methods systematic review. *BMC Public Health* [Internet]. 2018 Oct [cited 2019 Dec 20];18(1191). Available from: <https://bmcpublihealth.biomedcentral.com/articles/10.1186/s12889-018-6107-0>
18. Soares PS, Brandão ER. Não retorno de usuários a um centro de testagem e aconselhamento do Estado do Rio de Janeiro: fatores estruturais e subjetivos. *Physis* [Internet]. 2013 set [citado 2019 dez 20];23(3):703-21. Disponível em: <http://www.scielo.br/pdf/physis/v23n3/03.pdf>. doi: 10.1590/S0103-73312013000300003
19. Chellaiyan VG, Raut DK, Khokhar A. Integrated counseling and HIV testing centers of Delhi: an evaluation. *J Family Med Prim Care* [Internet]. 2018 Jul-Aug [cited 2019 Dec 20];7(4):791-5. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6132007/>. doi: 10.4103/jfmpc.jfmpc\_128\_17
20. Sanga Z, Kapanda G, Msuya S, Mwangi R. Factors influencing the uptake of voluntary HIV counseling and testing among secondary school students in Arusha City, Tanzania: a cross sectional study. *BMC Public Health* [Internet]. 2015 May [cited 2019 Dec 20];15(452). Available from: <https://bmcpublihealth.biomedcentral.com/articles/10.1186/s12889-015-1771-9#citeas>. doi: 10.1186/s12889-015-1771-9
21. Mizuno Y, Zhu J, Crepaz N, Beer L, Purcell DW, Johnson CH, et al. Receipt of HIV/STD prevention counseling by HIV-infected adults receiving medical care in the United States. *AIDS*. 2014 Jan [cited 2019 Dec 20];28(3):407-15. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4645275/>. doi: 10.1097/QAD.0000000000000057
22. Nurutdinova D, Rao S, Shacham E, Reno H, Overton ET. STD/HIV risk among adults in the primary care setting: are we adequately addressing our patients' needs? *Sex Transm Dis* [Internet]. 2011 Jan [cited 2019 Dec 20];38(1):30-2. Available from: <https://insights.ovid.com/crossref?an=00007435-201101000-00006>. doi: 10.1097/OLQ.0b013e3181e9afda
23. Chin T, Hicks C, Samsa G, McKellar M. Diagnosing HIV infection in primary care settings: missed opportunities. *AIDS Patient Care STDS* [Internet]. 2013 Jul [cited 2019 Dec 20];27(7):392-7. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3704080/>. doi: 10.1089/apc.2013.0099

24. Rocha CME, Dias SF, Gama AF. Conhecimentos sobre o uso de contraceptivos e prevenção de DST: a percepção de mulheres imigrantes. *Cad Saúde Pública* [Internet]. 2010 maio [citado 2019 dez 20];26(5):1003-12. Disponível em: <http://www.scielo.br/pdf/csp/v26n5/22.pdf>. doi: 10.1590/S0102-311X2010000500022
25. Apers H, Nostlinger C, Van Beckhoven D, Deblonde J, Apers L, Verheyen K, et al. Identifying key elements to inform HIV-testing interventions for primary care in Belgium. *Health Promot Int* [Internet]. 2019 May [cited 2019 Dec 20]. Available from: <https://academic.oup.com/heapro/advance-article/doi/10.1093/heapro/daz037/5485754>. doi: 10.1093/heapro/daz037
26. Andrade RFV, Araújo MAL, Vieira LJES, Reis CBS, Miranda AE. Violência por parceiro íntimo após diagnóstico de doenças sexualmente transmissíveis. *Rev Saúde Pública* [Internet]. 2015 fev [citado 2019 dez 20];49(3):1-9. Disponível em: [http://www.scielo.br/pdf/rsp/v49/pt\\_0034-8910-rsp-S0034-89102015049005424.pdf](http://www.scielo.br/pdf/rsp/v49/pt_0034-8910-rsp-S0034-89102015049005424.pdf). doi: 10.1590/S0034-8910.2015049005424
27. Gultie T, Genet M, Sebsibie G. Disclosure of HIV-positive status to sexual partner and associated factors among ART users in Mekelle Hospital. *HIV AIDS (Auckl)* [Internet]. 2015 Jul [cited 2019 Dec 20];7:209-14. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4501449/>. doi: 10.2147/HIV.S84341
28. Joore IK, Geerlings SE, Brinkman K, van Bergen JEAM, Prins JM. The importance of registration of sexual orientation and recognition of indicator conditions for an adequate HIV risk-assessment. *BMC Infect Dis* [Internet]. 2017 Feb [cited 2019 Dec 20];17:178. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5329968/>. doi: 10.1186/s12879-017-2279-y
29. Fraisse T, Fourcade C, Brazes-Sanz J, Koumar Y, Lavigne JP, Sotto A, et al. A cross sectional survey of the barriers for implementing rapid HIV testing among French general practitioners. *Int J STD AIDS* [Internet]. 2016 Oct [cited 2019 Dec 20];27(11):1005-12. Available from: [https://journals.sagepub.com/doi/full/10.1177/0956462415605413?url\\_ver=Z39.88-2003&rfr\\_id=ori:rid:crossref.org&rfr\\_dat=cr\\_pub%3dpubmed](https://journals.sagepub.com/doi/full/10.1177/0956462415605413?url_ver=Z39.88-2003&rfr_id=ori:rid:crossref.org&rfr_dat=cr_pub%3dpubmed). doi: 10.1177/0956462415605413
30. Secretaria Municipal de Saúde de Montes Claros (MG). Protocolo de assistência à saúde na rede municipal de Montes Claros. Montes Claros: Secretaria Municipal de Montes Claros; 2006. Vis, cone norit. Torum publiem tam popotam ni publis M. Catidit.

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