Original Article

TEXTO & CONTEXTO ENFERMAGEM
TEXT & CONTEXT NURSING TEXTO & CONTEXTO ENFERMERÍA

MONITORING OF CERVICAL CANCER CONTROL ACTIONS AND ASSOCIATED FACTORS

Eduarda Ferreira dos Anjos[1]
Poliana Cardoso Martins[1]
Nília Maria Brito de Lima Prado[1]
Vanessa Moraes Bezerra[1]
Patty Fidelis de Almeida[2]
Adriano Maia dos Santos[1]

[1]Universidade Federal da Bahia, Programa de Pós-Graduação em Saúde Coletiva. Vitória da Conquista, Bahia, Brasil.
[2]Universidade Federal Fluminense. Niterói, Rio de Janeiro, Brasil.

ABSTRACT

Objective: to analyze factors associated with the monitoring of actions to control cervical cancer in the Family Health Strategy, in a health region of northeastern Brazil.
Method: a cross-sectional study conducted from January to March 2019 by means of interviews with 241 physicians and nurses from the Family Health Teams of the Vitória da Conquista health region, Bahia, Brazil. Adequate monitoring was assessed by the degree of actions taken to promote, prevent and actively seek to control cervical cancer. Three blocks of variables were tested as explanatory: professional characterization and training; organization of the unit and access to cytopathological exam; and care coordination and integration. Poisson regression with robust variance was employed, adopting hierarchical entry of variables.
Results: 51.9% (95% CI: 45.5-58.2) of the professionals performed adequate monitoring for the control of cervical cancer. Being a nurse, working in the municipality's primary care network (≥2 years), disclosure of results collection through posters and other communication means, existence of a high-grade lesion, time to perform the biopsy ≤1 month, and agility in the release of the reports were elements associated to the outcome.
Conclusion: even with the extended coverage of the Family Health Strategy, small municipalities in the Northeast have characteristics that impose obstacles to comprehensiveness, favoring the incidence of high-grade lesions and greater difficulty in the control of cervical cancer. Assessing the assistance quality in this level revealed challenges in the regionalized network.

DESCRIPTORS: Primary health care. Cervical neoplasms. Screening programs. Pap test. Quality of health care.

HOW CITED: Anjos EF, Martins PC, Prado NMBL, Bezerra VM, Almeida PF, Santos AM. Monitoring of cervical cancer control actions and associated factors. Texto Contexto Enferm [Internet]. 2021 [cited YEAR MONTH DAY]; 30:e20200254. Available from: https://doi.org/10.1590/1980-265X-TCE-2020-0254

MONITORAMENTO DAS AÇÕES DE CONTROLE DO CÂNCER CERVICOUTERINO E FATORES ASSOCIADOS

RESUMO

Objetivo: analisar fatores associados ao monitoramento das ações para controle do câncer cervicouterino na Estratégia Saúde da Família, em região de saúde do Nordeste brasileiro.
Método: estudo transversal realizado de janeiro a março de 2019, por meio de entrevistas com 241 médicos e enfermeiros das Equipes de Saúde da Família da região de saúde de Vitória da Conquista, Bahia, Brasil. O monitoramento adequado foi mensurado pelo grau de realização de ações de promoção, prevenção e busca ativa para controle do câncer cervicouterino. Três blocos de variáveis foram testados como explicativos: caracterização e capacitação profissional; organização da unidade e acesso ao citopatológico; e coordenação do cuidado e integração assistencial. Empregou-se a regressão de Poisson com variância robusta, adotando a entrada hierárquica de variáveis.
Resultados:51,9% (IC95%: 45,5-58,2) dos profissionais realizavam monitoramento adequado para controle do câncer cervicouterino. Ser enfermeiro, atuar na atenção primária do município (≥2 anos), divulgação da coleta por cartazes e outros veículos de comunicação, existência de lesão de alto grau, tempo de realização da biópsia ≤1 mês e agilidade na liberação dos laudos foram elementos associados ao desfecho.
Conclusão: mesmo com alta cobertura da Estratégia Saúde da Família, municípios de pequeno porte do Nordeste acumulam características que conferem obstáculos à integralidade, favorecendo a incidência de lesão de alto grau e maior dificuldade de controle do câncer cervicouterino. Avaliar a qualidade da assistência nesse nível revelou desafios em rede regionalizada.

DESCRITORES: Atenção primária à saúde. Neoplasias do colo de útero. Programas de rastreamento. Teste de Papanicolaou. Qualidade da assistência à saúde.

MONITOREO DE LAS ACCIONES DE CONTROL PARA EL CÁNCER CERVICAL Y FACTORES ASOCIADOS

RESUMEN

Objetivo: analizar factores asociados al monitoreo de las acciones para el control del cáncer cervical en la Estrategia de Salud de la Familia, en una región de salud del noreste de Brasil.
Método: estudio transversal realizado entre enero y marzo de 2019, por medio de entrevistas con 241 médicos y enfermeros de los Equipos de Salud de la Familia de la región de salud de Vitória da Conquista, Bahía, Brasil. El monitoreo adecuado se evaluó por medio del grado en el que se realizaron acciones de promoción, prevención y búsqueda activa para el control del cáncer cervical. Se probaron tres bloques de variables como explicativos: caracterización y capacitación profesional; organización de la unidad y acceso al examen citopatológico; y coordinación de la atención e integración asistencial. Se usó regresión de Poisson con varianza robusta, adoptando entrada jerárquica de variables.
Resultados:51,9% (IC 95%: 45,5-58,2) de los profesionales realizaban un monitoreo adecuado para el control del cáncer cervical. Ser enfermero, desempeñarse en el sector de atención primaria del municipio (≥2 anos), la exposición de los resultados de los exámenes a través de posters y otros medios de comunicación, la existencia de lesiones de alto grado, el tiempo para realizar la biopsia ≤1 mes, y la agilidad en la emisión de los informes fueron elementos asociados al resultado.
Conclusión: incluso con extensa cobertura de la Estrategia de Salud de la Familia, los municipios pequeños del noreste acumulan características que imponen obstáculos a la integralidad, lo que favorece la incidencia de lesiones de alto grado y mayor dificultad para controlar el cáncer cervical. Evaluar la calidad de la asistencia en este nivel dejó al descubierto desafíos en la red regionalizada.

DESCRIPTORES: Atención primaria de la salud. Neoplasias de cuello uterino. Programas de detección. Prueba de Papanicolaou. Calidad de la asistencia a la salud.

INTRODUCTION

Care for women's health, from the perspective of cervical cancer (CC) control, requires assistance integration of health actions and services in Health Care Networks (HCNs) to guarantee access and resoluteness in an appropriate place and in a timely manner[1–2]. In this logic, the HCN would be a productive arrangement that combines the territorial concentration of certain services (specialized and hospital services) and the dispersion of others - Primary Health Care (PHC) - and should be structured based on the horizontal and vertical integrations of the care levels in inter-municipal health territories[3–4].

Among the effective strategies for early detection of CC are the organized screening programs, which depend on the wide coverage and organization of PHC, both for the recruitment of women and for the performance of the cervical cytopathological examination, a method widely used for the detection of the precursor injuries[1–2]. Women diagnosed with high-grade squamous intraepithelial lesion (HSIL) must be referred to secondary units for diagnostic confirmation and treatment[5].

CC control depends on a qualified and organized PHC, integrated with the other care levels, in a given health region[6]. In the case of CC, in addition to recruitment and to the performance of the cytopathological examination, PHC teams are responsible for referring women who need diagnostic confirmation and treatment of the precursor lesions to specialized care units, and longitudinal monitoring, even when the user is in other care levels[7]. Thus, CC is an appropriate tracer condition to assess the quality of care provided in the HCN, as it mobilizes the health services in different points of care, in addition to being a long-term disease, with known and effective treatment[8].

However, extended PHC coverage and regular CC screening are not sufficient for women to adhere to prevention programs[9] due to cultural representations[10], low socioeconomic status[11–12], and quality of screening[13], in addition to the time between diagnosis and treatment initiation[14].

In this logic, it is considered that the assessment of a health region can benefit direct locoregional policies and inter-manager agreements, as well as the care provided at the interface of the municipalities[15]. In addition, CC is still a very prevalent problem in the Northeast Region[2] and requires investments to overcome inequalities[11,16]. The control of this condition depends on an articulated and equitable network, based on intersectoral work and full access[5,14]. It is also considered that the use of CC as a tracer condition is an efficient tool to capture the nuances of the PHC services inserted in the HCN, in addition to the coverage indicators, making it possible to evaluate aspects related to quality of care[8,13].

In this perspective, this article analyzes adequate monitoring, within the PHC scope, of the CC control actions and associated factors.

METHOD

This is a cross-sectional study conducted from January to March 2019. A tracer condition was used to assess the quality of health care in CC monitoring actions[8] carried Oct by Family Health Teams (FHTs), in the Vitória da Conquista health region, Bahia, Brazil.

This health region is composed of 19 municipalities, with approximately 33% of the population living in the rural area[17]. At the time of collection, there were 177 FHTs, 83 from urban areas and 94 from rural areas (Table 1).

Table 1 – Sociodemographic and health characteristics, Vitória da Conquista health region, Bahia, Brazil, 2019.

Size	City	Distance from the Headquarter	Estimated pop.‖ (2018)*	Pop.‖ RA¶/ UA** (2010)*	††HDI (2010)*	Pop.‖ benefited by the BFP‡‡ (2019)†	FHS£ coverage (2018)‡	Number of FHTs*** (2018)§
Stratum 1 – Up to 10,000 inhabitants	Maetinga	130 km	3,577	4,221 **2,817**	0.538	39.2%	100%	RA:04/ UA:01
	Ribeirão do Largo	109 km	6,304	3,955 **4,647**	0.540	45.1%	100%	RA:03/ UA:01
	Cordeiros	162 km	8,585	5,617 **2,551**	0.579	28.8%	100%	RA:02/ UA:02
	Mirante	139 km	8,844	**8,698** **1,809**	0.527	31.6%	100%	RA:04/ UA:01
	Caraíbas	82.7 km	9,107	**7,709** **2,513**	0.555	35.9%	100%	RA:03/ UA:01
	Bom Jesus da Serra	95.1 km	9,942	**7,345** **2,768**	0.546	39.4%	100%	RA:02/ UA:02
Stratum 2 – From 10,001 to 25,000 inhabitants	Piripá	124 km	10,952	6,588 **6,195**	0.575	28.5%	100%	RA:04/ UA:02
	Presidente Jânio Quadros	122 km	12,505	9,454 **4,198**	0.542	37.3%	100%	RA:04/ UA:03
	Caetanos	72.5 km	15,524	10,348 **3,291**	0.542	43.1%	100%	RA:05/ UA:01
	Tremedal	82.5 km	16,608	13,090 **3,939**	0.528	33.9%	100%	RA:04/ UA:03
	Belo Campo	63.7 km	17,317	6,992 **9,029**	0.575	38.7%	100%	RA:03/ UA:03
	Condeúba	149 km	17,319	9,436 **7,462**	0.582	32.8%	100%	RA:05/ UA:03
	Encruzilhada	97.9 km	17,593	18,636 **5,130**	0.544	33.2%	100%	RA:06/ UA:02
	Anagé	52.3 km	18,194	**20,592** 4,924	0.540	36.3%	100%	RA:08/ UA:03
Stratum 3 – From 25,001 to 50,000 inhabitants	Cândido Sales	85.5 km	25,332	8,632 **19,286**	0.601	33.8%	100%	RA:03/ UA:07
	Planalto	47.5 km	**26,092**	**9,612** **14,869**	0.560	33.9%	100%	RA:06/ UA:03
	Barra do Choça	30.7 km	**32,018**	12,381 **22,407**	0.551	39.4%	100%	RA:06/ UA:06
	Poções	69.1 km	46,862	10,042 **34,659**	0.604	37.7%	100%	RA:04/ UA:11
Stratum 4 – More than 50,001 inhabitants	Vitória da Conquista	Headquarter	338,885	32,127 **274,739**	0.678	16.9%	44.5%	RA:18/ UA:28
	Health Region	—	641,560	205,475 422,309	—	—	71.1%	RA:94/ UA:83

Source: **Instituto Brasileiro de Geografia e Estatística* (IBGE);
†Single Registry; ‡e-Manager Primary Care; §Data provided by municipal primary care coordinating offices, ‖Pop: Population; ¶RA: Rural Area; **UA: Urban Area; ††HDI: Human Development Index; ‡‡BFP: *Bolsa Família* Program; £FHS: Family Health Strategy; ***FHTs: Family Health Teams.

FHT physicians and nurses were interviewed, as they were responsible for collecting the cytopathological exam results at the Family Health Units (FHUs), in addition to monitoring the patients in cases of precursor lesions and CC. From this perspective, physicians and nurses operate the care line management in the micro-politics of the work in health, through health promotion actions and monitoring of CC control.

The sample corresponded to 354 physicians and nurses from the FHTs of the region. For sample composition, 50% prevalence was adopted for unknown events and 95% confidence level, and a minimum sample of 240 professionals was obtained, considering 30% for losses. After sample calculation, stratification was performed, being proportional to the number of professionals registered in the FHTs of each municipality. The professionals who were not active (vacation, leave, etc.) during the study period were excluded.

A total of 241 interviews were conducted, through the application of questionnaires by duly trained interviewers, with the use of tablets. The questionnaire used was adapted from an instrument applied to a research study in Bahia[15], in which information from the National Cancer Institute (*Instituto Nacional de Câncer*, INCA)[2] and the Primary Care Notebooks was added[1]. A pilot study was also carried Oct in a municipality of a neighboring health region to adapt the research instrument, the logistics and the field organization.

The dependent variable was "adequate monitoring of CC control actions" in PHC. The following actions were considered to obtain this variable: "Visits of community health agents, nurses or physicians to mobilize women to carry Oct preventive measures"; "Health education on the topic"; "Conduction of joint efforts to expand access to the cytopathological exam in the FHU"; "Registration of women who were examined in the unit"; "Monitoring of the registry to identify women with delayed or altered exams"; and "Active search for women with delayed results collection or altered exam results". These actions were investigated with options for dichotomous answers - "yes/no".

The event was dichotomized into "adequate/inadequate", with those that answered positively all the questions related to the aforementioned actions being classified as adequate. It is considered that these actions are minimum attributions of PCH[1–2,5].

The independent variables were selected in dimensions: I - "Professional characterization and training"; II - "Organization of the unit and access to the cytopathological exam"; and III - "Care coordination and integration", as shown in Figure 1.

For data evaluation, descriptive analyses were performed by means of the measures of absolute and relative frequencies. For the bivariate analysis, the differences between the proportions were assessed by Pearson's chi-square test. The analysis of the factors associated with the outcome was performed by means of Poisson regression with robust variance, estimating the prevalence ratio, the p-value and the 95 confidence interval (95% CI). Variables with a significance level ≤0.20 were included in the multivariate analysis.

The possible associations between independent variables and "adequate monitoring" were assessed by different models, adjusted through hierarchical entry of variables (Figure 1). Initially, the association between monitoring and the variables from dimension I was assessed. In the second model, the variables from dimension II were introduced and, in the third model, the variables from dimension III were added. The variables of the most distal blocks remained as adjustment factors for the hierarchically lower blocks. For the interpretation of the results, the identification of a statistically significant association ($p \leq 0.05$) between a given factor under study and "adequate monitoring", after adjusting for the potential factors of the same block and the upper hierarchical blocks, indicates the existence of an independent effect, specific to that factor. The comparison between models was conducted by the Akaike Information Criterion (AIC). The *Stata* statistical package, version 15.0, was used in data analysis.

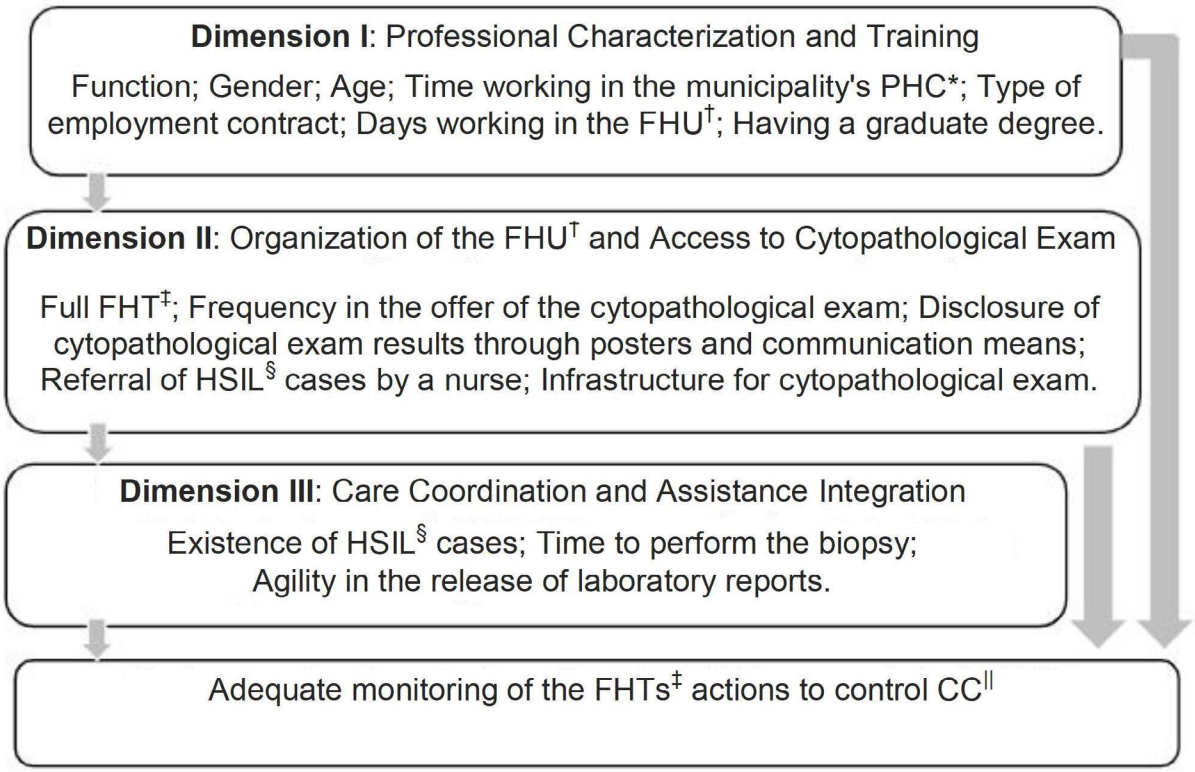

Figure 1 – Hierarchical conceptual model for the analysis of adequate monitoring of the actions of the Family Health Teams for the control of cervical cancer. Vitória da Conquista, Bahia, Brasil, 2019.
*PHC: Primary Health Care; †FHU: Family Health Unit; ‡FHTs: Family Health Teams; §HSIL: High-grade Squamous Intraepithelial Lesion; ||CC: Cervical Cancer.

Compliance of the rules for research with human beings, set forth in Resolution No. 466/12 of the Brazilian National Health Council, was guaranteed. The participants signed the Free and Informed Consent Form, proving their consent to participate in the study.

RESULTS

The study participants were 241 professionals (109 physicians and 132 nurses). Of this total, 148 (83.6%) worked in different FHTs of the health region - 80 FHTs (85%) in the rural area and 68 FHTs (82%) in the urban area - therefore being quite representative of the regional phenomena regarding the PHC practices.

In this study, 51.9% (95% CI: 45.5-58.2) of the professionals performed adequate monitoring of the CC control actions in the health region.

Contextually, they were teams located in a health region in the range between low (16 municipalities) and medium (3 municipalities) human development index (HDI). Of the set of municipalities, 15 had at least one third of their population as beneficiaries of the *Bolsa Família* Program (federal income transfer program). In the region, one third of the population lived in rural areas and 18 municipalities had a population of less than 50,000 inhabitants (84% of the population lived in rural areas), as shown in Table 1.

Of the 241 professionals interviewed, the majority was female (71.8%), was aged between 30 and 39 years old (47.7%), and the nurses represented 54.8%. In relation to their experience in PHC, most of the professionals (56.4%) have worked in the same municipality for at least two years. Regarding training, most had graduate degrees (67.2%). The employment contract (53.1%) was the predominant type of employment relationship (Table 2).

Table 2 – Characterization of the teams/units and bivariate analysis of adequate monitoring of the actions for the control of cervical cancer, Vitória da Conquista health region, Bahia, Brazil, 2019. (n=241)

Variable	*N (%)	Prevalence (%)	†PR	‡95% CI	§p-value
Professional characterization and training					
Function					<0.001
Physician	109 (45.2)	29.4	1.00		
Nurse	132 (54.8)	70.5	2.40	1.76-3.28	
Gender					0.037
Male	68 (28.2)	41.2	1.00		
Female	173 (71.8)	56.1	1.36	1.01-1.86	
Age					0.060
20-29 years old	70 (29.1)	40	1.00		
30-39 years old	115 (47.7)	57.4	1.43	1.03-1.99	
≥40 years old	56 (23.2)	55.4	1.38	0.95-2	
Time working in PHC‖, in the municipality					<0.001
< 2 years	105 (43.6)	36.2	1.00		
≥2 years	136 (56.4)	64	1.77	1.33-2.35	
Type of contract					<0.001
Commissioned position or other	13 (5.4)	69.2	1.00		
PMM¶	46 (19.1)	23.9	0.35	0.18-0.65	
Contract	128 (53.1)	50.8	0.73	0.49-1.1	
Statutory	54 (22.4)	74.1	1.07	0.72-1.6	
Days working in the FHU**					0.293
Up to 3 days	12 (5)	66.7	1.00		
4 days or more	229 (95)	51.1	0.77	0.5-1.17	
Graduate Degree					<0.001
No	79 (32.8)	32.9	1.00		
Yes	162 (67.2)	61.1	1.86	1.32-2.6	
Organization of the FHU and access to the cytopathological exam					
Full FHT††					0.198
No	13 (5.4)	69.2	1.00		
Yes	228 (94.6)	50.9	0.73	0.5-1.08	
Frequency in the offer of the cytopathological exam					0.895
Monthly	22 (9.9)	50	1.00		
Biweekly	50 (22.4)	56	1.12	0.7-1.82	
Weekly or more	151 (67.7)	54.3	1.09	0.7-1.69	
Disclosure of cytopathological exam results through posters and communication means					0.004
No	98 (41.3)	40.8	1.00		
Yes	139 (58.7)	59.7	1.46	1.11-1.93	
Referral of HSIL‡‡ cases by a nurse					<0.001
No	61 (25.6)	31.1	1.00		
Yes	177 (74.4)	59.9	1.92	1.3-2.85	

Table 2 – Cont.

Variable	*N (%)	Prevalence (%)	†PR	‡95% CI	§p-value
Infrastructure for the cytopathological exam					<0.001
Inadequate	14 (5.8)	21.4	1.00		
Partially adequate	106 (44.2)	42.4	1.98	0.71-5.55	
Totally adequate	120 (50)	64.2	2.99	1.09-8.25	
Care coordination and assistance integration					
Existence of HSIL‡‡ cases					0.003
No	103 (46.4)	43.7	1.00		
Yes	119 (53.6)	63.9	1.46	1.13-1.89	
Time to perform the biopsy					0.005
≥1 month	95 (63.8)	52.6	1.00		
<1 month	54 (36.2)	75.9	1.44	1.13-1.84	
Agility in the release of the laboratory reports					0.004
Never	45 (19.2)	31.1	1.00		
Sometimes	98 (41.7)	58.2	1.87	1.17-2.98	
Always	92 (39.1)	58.7	1.89	1.18-3.01	

*N: Absolute Number (it can vary with respect to the non-respondents); †PR: Prevalence Ratio; ‡CI: Confidence Interval; §Pearson's chi-square test; ‖PHC: Primary Health Care; ¶PMM: *Programa Mais Médicos* (More Doctors Program); **FHU: Family Health Unit; ††FHT: Family Health Team; ‡‡HSIL: High-grade Squamous Intraepithelial Lesion.

In the bivariate analysis (Table 2), the following were positively associated with the "adequate monitoring" outcome, in block 1: being a nurse; being female; working in the municipality's PHC for two years or more; being a statutory public servant; and having a graduate degree. In block 2: full FHTs; disclosure of exam results through posters and other communication means; referral of HSIL cases by a nurse; and adequacy of the infrastructure for the cytopathological examination. In block 3: existence of HSIL cases; time ≤1 month for biopsy; and agility in the release of the laboratory reports.

In the multivariate analysis (Table 3), the following remained associated in the first model: being a nurse; working in the municipality's PHC for two years or more. In the second model: disclosure by the team of the cytopathological exam results through posters and other communication means. In the third model: existence of HSIL cases; time to perform the biopsy ≤1 month; understanding, by the professional, that the laboratory is "sometimes" or "always" agile in the release of reports.

Table 3 – Multivariate analysis of adequate monitoring of the actions for the control of cervical cancer, Vitória da Conquista health region, Bahia, Brazil, 2019. (n=241)

Variables	**Model 1			††Model 2			‡‡Model 3		
	*PR	†95% CI	‡p-value	*PR	†95% CI	‡p-value	*PR	†95% CI	‡p-value
Professional characterization and training									
Function									
Physician	1.00			1.00			1.00		
Nurse	2.18	1.6-3	<0.001	2.21	1.59-3.07	<0.001	2.15	1.49-3.1	<0.001

Table 3 – Cont.

Variables	**Model 1			††Model 2			‡‡Model 3		
	*PR	†95% CI	‡p-value	*PR	†95% CI	‡p-value	*PR	†95% CI	‡p-value
Time working in PHC§, in the municipality									
< 2 years	1.00			1.00			1.00		
≥2 years	1.46	1.1-1.9	0.007	1.42	1.1-1.9	0.013	1.24	0.92-1.68	0.158
Organization of the FHU‖ and access to the cytopathological exam									
Disclosure of cytopathological exam results through posters and communication means									
No				1.00			1.00		
Yes				1.37	1.1-1.7	0.014	1.29	1-1.64	0.046
Care coordination and assistance integration									
Existence of HSIL¶ cases									
No							1.00		
Yes							1.39	1.06-1.82	0.017
Time to perform the biopsy									
≥1 month							1.00		
<1 month							1.41	1.15-1.73	0.001
Agility in the release of the laboratory reports									
Never							1.00		
Sometimes							1.90	1.23-2.94	0.004
Always							1.77	1.14-2.75	0.011
Akaike Criterion	395.8242			387.8353			253.3005		

*PR: Prevalence Ratio; †CI: Confidence Interval; ‡p-value ≤0.05; §PHC: Primary Health Care; ‖FHU: Family Health Unit; ¶HSIL: High-grade Squamous Intraepithelial Lesion; **Model 1: Adjusted Poisson regression between the variables of the professional characterization and training blocks; ††Model 2: Adjusted Poisson regression between the variables of the professional characterization and training blocks, and organization of the unit and access to the cytopathological exam; ‡‡ Model 3: Adjusted Poisson regression between the variables of the professional characterization and training blocks, organization of the unit and access to the cytopathological exam, and care coordination and integration.

DISCUSSION

Adequate monitoring of the CC control actions showed low prevalence in the studied region. Elements that make up adequate monitoring are essential attributes of an effective CC prevention and control program to ensure extended screening coverage and high adherence to treatment[5].

Accordingly, in the perception of the professionals, there are two issues to consider: coverage extension and quality of care. In the first case, the health region had extended FHT coverage (71%) 100% in 18 of the municipalities studied - and practically all teams (96%) routinely performed cytopathological exams (data not shown in the table). In the second question, the opinion of almost half of the professionals revealed a perception of actions that were inadequate for the investigated outcome.

Territories with a predominance of small, poor and rural municipalities add socioeconomic predictors to a greater burden of diseases, as well as worse cancer prevention and control[13–14]. Such aspect requires proactive care practices, that is, that the professionals recognize social determinants that become barriers and identify population groups with less access to the health services, even when there is formal coverage[10,16] with a focus on CC[18–19], for combating inequalities[11].

Therefore, extended coverage and high frequency in the offer of the cytopathological exam do not guarantee by themselves timely access[6] nor the expected resolvability and longitudinality required for the CC care line[7]. Different factors can be associated with non-adherence to the Pap test in service provision scenarios, from aspects related to women's education and income[11–12] to symbolic/cultural precepts of the user and of the professionals[6,10,20], or to the population size of the municipality[13].

In this study, better CC monitoring was found when performed by a nurse. Nevertheless, in Australia, the involvement of nurses in screening increased the confidence and adherence levels of vulnerable women[21]. In addition, the Nursing clinical practice has been encouraged in different countries to expand the scope of the actions in PHC and, also, to expand care resolvability[22–23]. In Brazil, the predilection for preventive care carried Oct by nurses was also verified, relating both to the gender of the professional and to quality of care, especially due to qualified listening and greater bond with the community[6].

However, the research outcome, "adequate monitoring", was focused on the assessment of organizational aspects, on educational actions and active search, being more common to the practice of nurses[24], since physicians routinely concentrate on care actions in the biomedical perspective. In addition, there is lack of interest on the part of the physicians in performing the cervical examination in PHC[6].

In addition to that, other data contrast the experience of the professionals in the region under study. One third of the physicians have worked in the same municipality for less than six months and two thirds had another job, while approximately 5% of the nurses have worked for less than six months in the same municipality and 83% dedicated exclusively to the FHT (data not shown in the table).

There was an association between longer time working in the municipality's PHC and better monitoring of the CC control actions. From this perspective, turnover of professionals in the FHTs influences the work dynamics and the bond with the population, being an obstacle to care longitudinality[7] and coordination[25].

The time of experience in PHC is an important indicator for professional quality in the care of chronic conditions, which require continuous, proactive and integrated responses and actions[3]. The cytopathological examination is an invasive procedure, which encompasses important taboos for exposing the intimacy of the female body[20]. Therefore, professionals who form bonds with women are more likely to gain their trust to perform the exam, resulting in adherence to screening[6,26]. Despite the fact that the type of employment relationship did not maintain an association in the final model, probably due to the sample size, the shorter working time in PHC reflects the difficulty in attracting and retaining professionals[27], especially physicians, in northeastern Brazil, compromising timely access and continuity of care.

The ways of disclosing the appointment of a cytopathological exam and clarifying the procedure can increase female adherence to screening[5,9,28]. In this sense, in the region studied, disclosure through posters and other communication means was associated with adequate monitoring for CC control. It is noteworthy that coverage is insufficient to guarantee the search for the service[27]. In view of this, it is necessary to maximize communication so that the information related to the screening and the offer of the service in the FHU reach priority groups[5]. As this requires proactive actions, the teams that develop mechanisms for disclosing the screening are probably also the most articulated and committed, hence they have the most appropriate performance in community mobilization.

In addition, when professionals reported HSIL diagnoses, there was also an association with adequate monitoring. This aspect can be linked to the growth of the organization and reach of the PHC services[29], as well as to the increase in the coverage of the cytopathological exams[13,27]. However, this result can also indicate late diagnosis, resulting from a service with failed screening and insufficient quality. Such a relationship requires other studies to better understand the associated factors.

Likewise, a shorter time to perform the biopsy, as well as greater speed in the release of reports by the reference laboratory, were positively associated with the outcome. These findings suggest a line of care with responses in a timely manner, at different care levels, contributing to more credibility of the actions offered and favorable articulation between the FHTs and the diagnostic support system.

Even so, it is probable that the screening program will have no impact on the incidence of CC, if it is not associated with treatment[5]. In this sense, the prevailing socioeconomic characteristics among the municipalities in the region are unfavorable to attracting and retaining professionals in PHC[27], even in the specialties necessary for the assistance back office[4], for the constitution of a resolute care line, requiring a long waiting time for treatments[7].

Nevertheless, small municipalities have a very fragile integration of services, in addition to the incipient communication mechanisms across the care levels[4], with serious problems for clinical coordination[25,30]. Therefore, the municipalities in the studied region accumulate synergistic characteristics that can favor the incidence of HSIL and, consequently, more difficulty in controlling CC, even with extended coverage of the FHT. Furthermore, the monitoring of CC control actions depends on an organized[27] and integrated[20] PHC; therefore, assessing quality of care at this level revealed the challenges to be overcome in a regionalized network.

Finally, quantitative studies on PHC, using a tracer condition, tend to rely on secondary data. In this study, primary data obtained from professionals working at FHUs, registered or not, in the National Program for Improvement of Access and Quality in Primary Care (*Programa Nacional de Melhoria do Acesso e da Qualidade da Atenção Básica*, PMAQ-AB) were used, which can more closely reflect the vicissitudes of the professionals' practices, since FHUs registered in the PMAQ-AB tend to have better physical structure and work processes. Another advantage was the scope, in its entirety, of the sample number and the low amount of information lost, which reinforces its validity.

However, cross-sectional studies do not provide knowledge on the time and cause relationships of the associations observed. Despite being representative, the sample size was probably not sufficient to verify some associations. There was also difficulty in comparing the results with other quantitative studies, due to the scarcity of research of this nature that adopt the outcome used in the design of regionalized networks.

CONCLUSION

The data show that access and agility in the delivery of laboratory reports, as well as the wide PHC coverage, are necessary for a better quality of care provided within the scope of a universal and comprehensive health system. However, the context of the territory in which care is provided must be considered as an important element, taking into consideration the prevention and greater resolvability of cases.

Thus, this is a study with certain innovation, from the perspective adopted, since it focuses PHC in the perspective of a regional network to discuss problems that happen in the territory, but which transcend the responsibility of only the municipal entity, and that, therefore, need to be understood as a whole. The probability of generalization of these data is strong, considering the majority of small municipalities in Brazil and also the networks with similar contexts, especially in the North and Northeast regions.

Regions with a large rural extension, lower income and fewer resources are inhabited by more vulnerable women and struggle to retain professionals, configuring additional characteristics to be overcome for the provision of health care. In this sense, mechanisms for improving work bonds can result in greater rapport and trust among the team members and in better quality of the care provided.

Finally, in the logic of the regional network, PHC presents itself as a model of fundamental care since, despite the social, structural and organizational problems, it is the preferred locus for the production of health care, even in complex and adverse contexts. Therefore, this study emphasizes the need for greater investments to guarantee the solidity of PHC, causing the continuous improvement of the health gains of the Brazilian population.

REFERENCES

1. Ministério da Saúde (BR). Secretaria de Atenção à Saúde. Departamento de Atenção Básica. Controle dos cânceres do colo do útero e da mama. Brasília, DF(BR): Ministério da Saúde; 2013 [cited 2019 Oct 15]. Available from: http://bvsms.saude.gov.br/bvs/publicacoes/controle_canceres_colo_utero_2013.pdf
2. Instituto Nacional do Câncer. Coordenação de Prevenção e Vigilância. Divisão de Detecção Precoce e Apoio à Organização de Rede. Diretrizes brasileiras para o rastreamento do câncer do colo do útero. [Internet] 2016 [cited 2019 Oct 15]. Available from: https://www.inca.gov.br/sites/ufu.sti.inca.local/files//media/document//diretrizesparaorastreamentodocancerdocolodoutero_2016_corrigido.pdf
3. Almeida PF, Giovanella L, Martins Filho MT, Lima LD. Regionalized networks and guarantee of specialized health care: the experience of Ceará, Brazil. Ciênc Saúde Coletiva [Internet]. 2019 [cited 2019 Jan 10];24(12):4527-40. Available from: https://doi.org/10.1590/1413-812320182412.25562019
4. Santos AM, Giovanella L. Managing comprehensive care: a case study in a health district in Bahia State, Brazil. Cad Saúde Pública [Internet]. 2016 [cited 2019 Nov 20];32(3):e00172214. Available from: https://doi.org/10.1590/0102-311X00172214
5. Organização Pan-Americana da Saúde. Controle integral do câncer do colo do útero [Internet]. Washington, D.C. (US): OPAS; 2016 [cited 2019 Oct 17]. Available from: http://iris.paho.org/xmlui/bitstream/handle/123456789/31403/9789275718797-por.pdf?
6. Fernandes NFS, Galvão JR, Assis MMA, Almeida PF, Santos AM. Access to uterine cervical cytology in a health region: invisible women and vulnerable bodies. Cad Saúde Pública [Internet]. 2019 [cited 2019 Dec 15];35(10):e00234618. Available from: https://doi.org/10.1590/0102-311x00234618
7. Galvão JR, Almeida PF, Santos AM, Bousquat A. Healthcare trajectories and obstacles faced by women in a health region in Northeast Brazil. Cad Saúde Pública [Internet]. 2019 [cited 2019 Dec 15];35(12):e00004119. Available from: https://doi.org/10.1590/0102-31100004119
8. Bottari CMS, Vasconcellos MM, Mendonça MHM. Câncer cérvico-uterino como condição marcadora: uma proposta de avaliação da atenção básica. Cad Saúde Pública [Internet]. 2008 [cited 2018 Jan 15];24(Suppl 1):s111-22. Available from: https://doi.org/10.1590/S0102-311X2008001300016
9. González ZM. Programa de detección del cáncer cervicouterino: políticas públicas y experiencias de los actores que implementan el programa en el estado de Veracruz, México. Salud Colect [Internet]. 2017 [cited 2019 Dec 15];13(3):521-35. Available from: https://doi.org/10.18294/sc.2017

10. Campos EA, Castro LM, Cavalieri FES. “A woman’s illness”: experience and meaning of cervical cancer of woman who underwent Pap test. Interface (Botucatu) [Internet]. 2017 [cited 2019 Dec 15];21(61):385-96. Available from: https://doi.org/10.1590/1807-57622016.0159

11. 11.Oliveira MV, Guimarães MDC, França EB. Factors associated with failure to take a Pap smear test among Quilombola women. Ciênc Saúde Coletiva [Internet]. 2014 [cited 2019 Nov 10];19(11):4535-44. Available from: https://doi.org/10.1590/1413-812320141911.15642013

12. Silva RCG, Silva ACO, Peres AL, Oliveira SR. Profile of women with cervical cancer attended for treatment in oncology center. Rev Bras Saúde Mater Infant [Internet]. 2018 [cited 2020 Mar 10];18(4):695-702. Available from: https://doi.org/10.1590/1806-93042018000400002

13. Barcelos MRB, Lima RCD, Tomasi E, Nunes BP, Duro SMS, Facchini LA. Quality of cervical cancer screening in Brazil: external assessment of the PMAQ. Rev Saúde Pública [Internet]. 2017 [cited 2020 Jan 15];51:67. Available from: https://doi.org/10.1590/s1518-8787.2017051006802

14. Arbyn M, Weiderpass E, Bruni L, de Sanjosé S, Saraiya M, Ferlay J, et al. Estimates of incidence and mortality of cervical cancer in 2018: a worldwide analysis. Lancet Glob Health [Internet]. 2020 [cited 2020 Apr 15];8(2):e191-e203. Available from: https://doi.org/10.1016/S2214-109X(19)30482-6

15. Souza MKB, Almeida PF, Santos AM, Santos DB, Martins Júnior DF. Estratégias e métodos da pesquisa sobre a Atenção Primária à Saúde na coordenação do cuidado em redes regionalizadas. In: Almeida PF, Santos AM, Souza MKB, eds. Atenção primária à saúde na coordenação do cuidado em regiões de saúde. Salvador, BA(BR): Edufba; 2015. p. 117-45.

16. Richard L, Furler J, Densley K. Haggerty J, Russel G, Levesque J-F, et al. Equity of access to primary healthcare for vulnerable populations: the IMPACT international online survey of innovations. Int J Equity Health [Internet]. 2016 [cited 2019 Dec 10];15:64. Available from: https://doi.org/10.1186/s12939-016-0351-7

17. Instituto Brasileiro de Geografia e Estatística. Panorama: Cidades da Bahia, Censo demográfico 2010. Rio de Janeiro, RJ(BR): IBGE; 2010. [cited 2019 Dec 9]. Available from: https://cidades.ibge.gov.br/brasil/ba/panorama

18. Canfell K, Kim JJ, Brisson M, Keane A, Simms KT, Caruana M, et al. Mortality impact of achieving WHO cervical cancer elimination targets: a comparative modelling analysis in 78 low-income and lower-middle-income countries. Lancet [Internet]. 2020 [cited 2020 Apr 20];395(10224):591-603. Available from: https://doi.org/10.1016/S0140-6736(20)30157-4

19. Barbosa IR, Souza DLB, Bernal MM, Costa ICC. Regional inequalities in cervical cancer mortality in Brazil: trends and projections through to 2030. Ciênc Saúde Coletiva [Internet]. 2016 [cited 2020 Jan 15];21(1):253-62. Available from: https://doi.org/10.1590/1413-81232015211.03662015

20. Malta EFGD, Gubert FA, Vasconcelos CTM, Chaves ES, Silva JMFL, Beserra EP. Inadequate pratice related of the Papanicolaou test among women. Texto Contexto Enferm [Internet]. 2017 [cited 2020 Mar 20];26(1):e505001. Available from: https://doi.org/10.1590/0104-07072017005050015

21. Perks J, Algoso M, Peters K. Nurse practitioner (NP) led care: cervical screening practices and experiences of women attending a women’s health centre. Collegian [Internet]. 2018 [cited 2019 Nov 20];25(5):493-9. Available from: https://doi.org/10.1016/j.colegn.2017.12.007

22. Toso BRGO, Filippon J, Giovanella L. Nurses’ performance on primary care in the National Health Service in England. Rev Bras Enferm [Internet]. 2016 [cited 2019 Nov 20];69(1):182-91. Available from: https://doi.org/10.1590/0034-7167.2016690124i

23. Laurant M, van der Biezen M, Wijers N, Watananirun K, Kontopantelis E, van Vught AJ. Nurses as substitutes for doctors in primary care. Cochrane Database Syst Rev [Internet]. 2018 [cited 2019 Nov 20];16(7):CD001271. Available from: https://doi.org/10.1002/14651858.CD001271.pub3

24. Hämel K, Toso BRGO, Casanova A, Giovanella L. Advanced Practice Nursing in Primary Health Care in the Spanish National Health System. Ciênc Saúde Coletiva [Internet]. 2020 [cited 2019 Apr 20];25(1):303-14. Available from: https://doi.org/10.1590/1413-81232020251.28332019

25. Vázquez ML, Vargas I, Garcia-Subirats I, Unger JP, De Paepe P, Mogollón-Pérez AS, et al. Doctors' experience of coordination across care levels and associated factors. A cross-sectional study in public healthcare networks of six Latin American countries. Soc Sci Med [Internet]. 2017 [cited 2019 Nov 20];182:10-9. Available from: https://doi.org/10.1016/j.socscimed.2017.04.001

26. Armstrong N, James V, Dixon-Woods M. The role of primary care professionals in women's experiences of cervical cancer screening: a qualitative study. Fam Pract [Internet]. 2012 [cited 2019 Apr 20];29(4):462-6. Available from: https://doi.org/10.1093/fampra/cmr105

27. Tomasi E, Oliveira TF, Fernandes PAA, Thumé E, Silveira DS, Siqueira FV, et al. Estrutura e processo de trabalho na prevenção do câncer de colo de útero na Atenção Básica à Saúde no Brasil: Programa de Melhoria do Acesso e da Qualidade – PMAQ. Rev Bras Saúde Mater Infant [Internet]. 2015 [cited 2019 Dec 18];15(2):171-80. Available from: https://doi.org/10.1590/S1519-38292015000200003.

28. Ribeiro JC, Andrade SR. Health surveillance and pap test coverage: integrative review. Texto Contexto Enferm [Internet]. 2016 [cited 2019 Dec 18];25(4):e5320015. Available from: https://doi.org/10.1590/0104-07072016005320015

29. Pires DEP, Vandresen L, Machado F, Machado RR, Amadigi FR. Primary healthcare management: what is discussed in the literature. Texto Contexto Enferm [Internet]. 2020 [cited 2020 June 18];28:e20160426. Available from: https://doi.org/10.1590/1980-265X-TCE-2016-0426

30. Aller MB, Vargas I, Coderch J, Calero S, Cots F, Abizanda M, et al. Development and testing of indicators to measure coordination of clinical information and management across levels of care. BMC Health Serv Res [Internet]. 2015 [cited 2019 Dec 19];15:323. Available from: https://doi.org/10.1186/s12913-015-0968-z

NOTES

ORIGIN OF THE ARTICLE
Extracted from the thesis entitled “Evaluation of the Quality of the Cervical Cancer Control Actions in a Health Region of Northeastern Brazil”, presented in 2020 to the Graduate Program in Collective Health of the Federal University of Bahia.

CONTRIBUTION OF AUTHORITY
Study design: Anjos EF, Santos AM.
Data collection: Anjos EF.
Data analysis and interpretation: Anjos EF, Martins PC, Bezerra VM, Almeida PF, Santos AM.
Discussion of the results: Anjos EF, Martins PC, Almeida PF, Santos AM.
Writing and/or critical review of the content: Anjos EF, Martins PC, Prado NMBL, Bezerra VM, Almeida PF, Santos AM.
Review and final approval of the final version: Anjos EF, Martins PC, Prado NMBL, Bezerra VM, Almeida PF, Santos AM.

ACKNOWLEDGMENT
To the Research Support Foundation of the State of Bahia (FAPESB), which funded the research project through Public Notice No. 08/2015 - Support for Research Projects for Young Scientists in the State of Bahia.

FUNDING INFORMATION
Coordination for the Improvement of Higher Level Personnel - Brazil (CAPES) – Funding Code 001.
Research Support Foundation of the State of Bahia (FAPESB) – Term of Grant “JCB0003/2016”.

APPROVAL OF ETHICS COMMITTEE IN RESEARCH
Approved in the Research Ethics Committee of the Federal University of Bahia, opinion No.624,168/2014, Certificate of Presentation for Ethical Appreciation No. 27247414.0.0000.5556.

CONFLICT OF INTERESTS
There is no conflict of interests.

HISTORICAL
Received: June 18, 2020.
Approved: September 28, 2020.

CORRESPONDING AUTHOR
Adriano Maia dos Santos
maiaufba@ufba.br