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Knowledge, attitudes, and practices related to Pap test in Northeastern Brazil

ABSTRACT

OBJECTIVE: To assess the knowledge, attitudes and practices of women related to the Pap test and the association between these behaviors and sociodemographic characteristics.

METHODS: A household survey with quantitative approach was conducted. A total of 267 women aged 15 to 69 years, randomly selected in a stratified manner, living in the city of São José de Mipibu, Northeastern Brazil, were interviewed in 2007. A questionnaire consisting of pre-coded open questions was administered and answers were described and analyzed, as for adequacy of knowledge, attitudes, and practices of women regarding the Pap test. Tests of association were carried out between sociodemographic characteristics and behaviors studied at a 5% significance level.

RESULTS: Although 46.1% of the women interviewed showed adequate knowledge about the Pap test, a significantly higher proportion of adequacy was seen regarding attitudes and practices, 63.3% and 64.4%, respectively. Higher schooling was associated with adequacy of knowledge, attitudes, and practices. The main barriers to the Pap test were negligence, non-requesting by their physicians, and shame.

CONCLUSIONS: The physician is the main source of information about the Pap test. However, women who more often attend medical visits, despite their good practice, show low adequacy of knowledge and attitudes related to the Pap test, which indicates that they are not receiving appropriate information on the test's purpose, advantages and benefits to women's health.

DESCRIPTORS: Cervix Neoplasms Prevention. Vaginal Smears. Health Knowledge, Attitudes, Practice. Socioeconomic Factors. Women's Health. Cross-Sectional Studies.

INTRODUCTION

Uterine cervix cancer (UCC) is the second leading cause of cancer death among women worldwide, and higher incidence rates are seen in developing countries.^{11,21} In Brazil, it is the third most common cancer affecting women, following non-melanoma skin cancer and breast cancer.^{10,a} Crude incidence rates of UCC per 100,000 women, estimated in 2008, were 19.18 nationwide, 17.58 in the northeastern region, 15.8 in the northeastern state of Rio Grande do Norte.^a

^a Ministério da Saúde. Secretaria de Administração a Saúde. Instituto Nacional do Câncer. Coordenação de Prevenção e Vigilância de Câncer. Estimativas 2008: Incidência de Câncer no Brasil. Rio de Janeiro; 2007

UCC etiology is directly associated to persistent human papillomavirus (HPV) infection with high oncogenic potential. HPV infection is considered a necessary cause but not sufficient for the development of UCC since viral DNA is found in 99.7% of all cases.^{14,20,21}

The natural history of UCC reveals that it has great potential for prevention and cure as it slowly progresses through several stages of precancerous intraepithelial lesions before developing into an invasive form.^{7,18} This characteristic associated to the relatively easy diagnosis allows to detect this disease at early stages when treatment results in high cure rates.³ In addition, the infectious nature of UCC etiology makes preventive actions feasible, including vaccination against two HPV types with greater oncogenic potential.^{3,14, 22}

The Papanicolaou cytology test (Pap test) is a simple method that can detect atypical squamous cells from the cervical epithelium. Today it is still the most suitable approach for UCC screening as it is a fast, easy-to-perform, painless test performed on an outpatient basis at low cost that has proven effective and efficient for mass screening.^{7,13} Pap test effectiveness in reducing UCC mortality rates has been assessed in comparative studies of time trends that showed significant rate reduction in some countries after the introduction of UCC screening programs. Epidemiological case-control studies carried out in many countries, including Brazil, have shown increased risk of UCC among women who have never had a Pap test, in addition to a risk increase proportional to time elapsed since the last test.^{5,9}

In 1988, the Brazilian *Ministério da Saúde* (Ministry of Health) adopted the World Health Organization (WHO) recommendations²³ for UCC management in women aged between 25 and 60 years that proposes a three-year interval between Pap tests after two prior negative results with one year-interval between them. However, studies have pointed that about 40% of Brazilian women of all ages have never been tested.^{17,a} The reasons for low testing include: difficult access to health services; a test procedure involving genital exposure; and emotional discomfort due to modesty and taboo, socioeconomic conditions, and poor knowledge on gynecological cancer.¹

In routine practice, there have been evidenced some barriers to Pap test concerning different aspects of women's life that make it difficult to achieve the desired coverage. Information on Pap test coverage and factors associated to non-testing of women living in northeastern Brazil is still scarce.

The objective of the present study was to analyze knowledge, attitudes, and practices of women related

to Pap test and their association with behaviors and sociodemographic and sexual and reproductive characteristics and other factors that may be potential barriers to testing.

METHODS

Cross-sectional study based on a household survey conducted in the city of São José de Mipibu, northeastern Brazil, from March to September 2007. São José de Mipibu is located 37 km away from the state capital city. It has an estimated population of 39,148 inhabitants, of which 21,649 living in the rural area and 17,499 in the urban area and 19,692 females. Of all, 70.5% are literate and have incomplete elementary schooling.^b The population is mostly of low income and the main economic activities in the city are agriculture, cattle farming, extractivism, and trade. The local public health system comprises two state-run hospitals with a total of 66 beds, 20 basic health units and 15 teams of the *Programa Saúde da Família* (Family Health Program).

The study target population consisted of women from both rural and urban areas aged 15 to 69 years selected through stratified random sampling. Adolescents were included in the study as the Brazilian Ministry of Health *Programa Sistema de Informação do Câncer do Cólado Útero* (Siscolo – Uterine Cervix Cancer Information System Program) has reported that many women younger than 25 had abnormal Pap tests.

The sample size was estimated based on the estimated number of women living in the city who met the age criteria. In the sampling plan, the study population was divided into two strata corresponding to rural and urban areas. The urban population was then subdivided into two strata of socioeconomic condition: middle and low. To assess the association between the characteristics studied and knowledge, attitudes and practices related to Pap test χ^2 test of association was used. A 5% significance level was set.

The inclusion criteria included women living in the city aged 15 to 69 who have had sex initiation and agreed to participate in the study. They underwent an interview using a structured questionnaire^{4,7} applied by trained interviewers.

For the analysis of data about knowledge, attitudes and practices of women related to Pap test, there were adopted the definitions as described by Gamarra et al⁶ as follows:

^a Ministério da Saúde. Instituto Nacional do Câncer. Conhecendo o Viva Mulher. Programa nacional de controle de câncer do colo do útero e da mama. Rio de Janeiro; 2007.

^b Instituto Brasileiro de Geografia e Estatística. Mapa base dos municípios do estado do Rio Grande do Norte. Brasília; 2005.

- adequate knowledge: when women said they have heard about the Pap test, and were aware it was for cancer prevention, either for general cancer or specifically for uterine cervix cancer prevention;
- inadequate knowledge: when women said they have heard about the Pap test but were not aware of its purpose;
- adequate attitude: when women considered periodical testing necessary, and correctly indicated the reasons to get tested;
- inadequate attitude: when women considered testing not really necessary or unnecessary or did not have an opinion about it;
- adequate practice: when women said they were last tested no more than three years ago;
- inadequate practice: when women said they were last tested more than three years ago, were tested only once in their lifetime, or were never tested.

SPSS program 13.0 was used for database construction and statistical analyses.

Women were provided information about the study, its objectives and assurance of confidentiality, and those who met the inclusion criteria were invited to participate in the study. Those who voluntarily agreed to participate signed a free informed consent and were interviewed.

The study was approved by the Research Ethics Committee of *Universidade Federal do Rio Grande do Norte*.

RESULTS

The study sample comprised 267 women aged between 15 and 69 years, mean age 37.8 (SD = 14.85) years who had sex initiation. Of these, 34.8% lived in the rural area and 65.2% in the urban area of the study city in different districts. Most (58.4%) were younger than 40 years old, sexually active, Catholic, homemaker, married or had a steady partner, had one to six children, incomplete elementary schooling, and a family income of up to one monthly minimum wage.

In regard to the level of knowledge on Pap test, 98.1% of respondents had heard about it, but only 46.1% had adequate knowledge. The main source of information about the Pap test was the medical doctor (mentioned by 40.1% of respondents), followed by female friends or family (20.2%), community health workers (19.8%), radio and TV (8.4%) and other providers at basic health care units (6.5%) (Table 1). The majority of respondents (96.2%) considered testing necessary. However, only 63.3% of them showed adequate attitudes and were

Table 1. Source of information and adequacy of knowledge related to Pap test. City of São José do Mipibu, Northeastern Brazil, 2007. (n=267)

Variable	n	%
Aware of the test		
Yes	262	98.1
No	5	1.9
Knowledge on the test		
Adequate	123	46.1
Inadequate	144	53.9
Who informed on the test		
Community health workers	52	19.8
Medical doctor	105	40.1
Health care unit staff	17	6.5
Friend or family	53	20.2
Radio/TV	22	8.4
School	5	2.0
Coworkers	2	0.8

aware of its advantages and benefits and correctly stated the importance of periodical testing. Among those who showed adequate attitudes, 66.9% justified the need of testing to specifically prevent UCC and 33.1% to prevent cancer in general (Table 2).

With respect to their practices, 85.0% of women interviewed reported that they have been tested, 15.0% reported that they have never been tested, and 64.4% that they have been tested at least once every three years following the Brazilian *Ministério da Saúde* recommendations for adequate practice. Of these, most (54.6%) spontaneously sought care services for testing and their main motivation was UCC prevention. Other reasons mentioned were: all women should get tested periodically (14.5%); it is not an uncomfortable test (4.1%); and testing is free (2.3%). The other group of women who also had adequate practice reported getting tested due to medical (22.7%), female friends or family advice (1.7%) (Table 3).

With respect to barriers to testing, the main reasons reported for not getting tested at the recommended frequency were: negligence (22.1%), test was not requested by the medical doctor (7.4%), and feelings of shame (6.3%) (Table 3).

The analysis of sociodemographic characteristics showed an association between schooling and knowledge, attitudes and practices related to Pap test. The employment status, frequency of gynecological visits, parity, and being sexually active affected the respondents' practices. Area of residence and marital status had an effect on knowledge and attitudes while contraception use influenced their knowledge and practices. As for family income, a p-value very close to the statistical

Table 2. Attitudes and reasons reported by women for getting Pap test. City of São José do Mipibu, Northeastern Brazil, 2007. (n= 267)

Variable	n	%
The need of testing		
Necessary	257	96.2
Unnecessary	10	3.8
Attitude		
Adequate	169	63.3
Inadequate	98	36.7
Reason for testing		
Prevent uterine cervix cancer	113	66.9
Prevent cancer	56	33.1
Medical doctor advice	12	7.1
Community health worker advice	8	4.7
Friend or family advice	12	7.1

significance level was found for adequate attitude of women with higher family income. When adequacy of the behaviors studied was analyzed according to socio-economic condition, a significantly higher proportion of middle-class women had adequate knowledge and attitudes towards testing. As for the practice related to Pap test, no association was seen with socioeconomic condition (Table 4).

DISCUSSION

It was found that 85.0% of respondents reported they have had a preventive Pap test at least once in their lifetime. This proportion is similar to that reported in the cities of São Luís⁴ and São Paulo,¹⁵ Northeastern and Southeastern Brazil, respectively. However, when taking into consideration the Brazilian *Ministério da Saúde* recommendations of getting tested at least once every three years, the coverage rate was only 64.4%, which is similar to that seen nationwide (66%)¹⁹ but lower than that reported in São Paulo (77.3%)¹⁵ and Pelotas (68.9%),⁸ Southern Brazil. It was also found that 35.6% of respondents had not been tested at the recommended frequency, of which 15% reported they had never been tested, which is consistent with that found in São Luís (17.6%),⁴ São Paulo (13.9%),¹⁵ and Campinas (11.2%),¹ Southeastern Brazil.

More educated, middle-class single women living in the urban area who used any contraception method showed higher rates of adequate knowledge on Pap test. This can be explained by the fact that they have more access to information about the test and more opportunities to get tested. Among single women and those using any contraception, higher rates of adequate knowledge can be due to the fact that they more often seek medical advice to prevent unplanned pregnancies.

Table 3. Practices, adequacy of practices, and barriers to Pap test reported by women. City of São José do Mipibu, northeastern Brazil, 2007. (n=267)

Variable	n	%
Type of practice		
Have ever been tested	227	85.0
Never been tested	40	15.0
Practice		
Adequate	172	64.4
Inadequate	95	35.6
Reason for adequate practice towards testing		
To prevent uterine cervix cancer	94	54.6
Medical doctor advice	39	22.7
All women should be tested	25	14.5
Test is not uncomfortable	7	4.1
Test is free	4	2.3
Friend or family advice	3	1.7
Barrier to practice towards testing		
Feelings of shame	6	6.3
Test was not requested by medical doctor	7	7.4
Test is uncomfortable	3	3.2
No time available for testing	2	2.1
Negligence	21	22.1
Health unit is far away from home	1	1.1

Only 63.3% of women showed adequate attitude toward Pap test by stating its advantages and benefits to their health and correctly justifying their motivation to get periodical testing. This rate is similar to that reported among South African women¹² (60.6%) but it is greater than that reported among Brazilian women¹⁶ (45.6%) and lower than that reported in Argentinean women⁶ (80.5%). Among those showing adequate attitudes, 66.9% considered periodical testing necessary to prevent UCC and 33.1% to prevent cancer in general. A significant proportion of women (36.7%), despite considering testing necessary, were not aware of its benefits to their health. It may suggest that, when these women were provided information about the test, they were not informed on its importance for screening and early diagnosis and treatment of lesions to prevent their progression to malign forms, which is crucial for UCC prevention.

More educated, middle-class single women living in the urban area with higher family income had more adequate attitudes towards testing. This finding is similar to that reported among Argentinean women⁶ associated to schooling; among Brazilian women¹⁶ associated to schooling and marital status; and associated to schooling and family income.¹ These women

Table 4. Assessment of adequacy of knowledge, attitudes and practices of women related to Pap test according to sociodemographic and reproductive characteristics. City of São José do Mipibu, Northeastern Brazil, 2007. (n=267)

Variable	Adequate knowledge			Adequate attitudes			Adequate practices			
	Total	n	%	p	n	%	p	n	%	p
Age (years)										
≥ 40	111	47	42.3	0.303	70	63.1	0.946	66	59.5	0.272
≤ 39	156	76	48.7		99	63.5		103	66.0	
Area of residence										
Rural area	93	17	18.3	0.000	17	18.3	0.000	62	66.7	0.403
Urban area	174	106	60.9		152	87.4		107	61.5	
Stratum										
Rural	93	17	18.3	0.000	17	18.3	0.000	62	66.7	0.486
Middle class	56	56	100.0		56	100.0		37	66.1	
Lower class	118	50	42.0		96	81.4		70	59.3	
Schooling										
Never went to school	33	6	18.2	0.001	5	15.2	0.011	1	3.0	0.010
Incomplete elementary school	132	56	42.4		55	41.7		57	43.2	
Complete elementary school	12	8	66.7		7	58.3		7	58.3	
Incomplete middle school	25	13	52.0		15	60.0		13	52.0	
Complete middle school	60	37	61.7		38	63.3		42	70.0	
High school/college	5	3	60.0		3	60.0		3	60.0	
Marital status										
Single	86	50	58.1	0.006	63	73.0	0.022	49	57.0	0.255
Married	131	58	44.3		81	61.8		89	67.9	
Others	50	15	30.0		25	50.0		31	62.0	
Religion										
Catholic	214	99	46.3	0.583	137	64.0	0.434	137	54.0	0.618
Evangelic	41	17	41.5		23	56.1		26	63.4	
Others	12	7	58.3		9	75.0		6	50.0	
Paid job										
Yes	68	31	45.6	0.927	38	55.9	0.141	51	75.0	0.020
No	199	92	46.2		131	65.8		118	59.3	
Family income (monthly minimum wages)										
Up to 1	167	73	43.7	0.514	99	59.3	0.090	100	59.9	0.320
2 to 4	86	44	51.2		58	67.4		59	68.6	
≥5	14	6	42.6		12	85.7		10	71.4	
Medical visits in the last year										
Yes	217	100	46.1	0.992	138	63.6	0.833	158	72.8	0.000
No	50	23	46.0		31	62.0		11	22.0	
Sexually active										
Yes	193	87	45.1	0.600	117	60.0	0.143	136	70.5	0.000
No	74	36	48.6		52	70.3		33	44.6	
Contraception use										
Yes	166	96	57.8	0.032	99	59.6	0.112	120	72.3	0.000
No	101	27	26.7		70	69.3		49	48.5	
Parity										
None	57	33	57.9	0.163	41	71.0	0.184	27	47.4	0.001
1 to 3	128	58	45.3		82	64.0		95	74.2	
4 to 6	59	22	37.3		31	52.5		37	62.7	
7 or more	23	10	43.5		15	65.2		10	43.5	
Total	267	123	46.1		169	63.3		169	63.3	

are more aware of the advantages and benefits of periodical testing, and have better access to information and health services.

The analysis of self-reported information on testing has some limitations. It may be that some respondents do not see a clear distinction between gynecological examination and the procedure of specimen collection for Pap test. Also, some testing may have been performed not for prevention but rather due to gynecological complaints in a visit for treatment purposes, which might lead to overestimated testing rates. However, Kahn et al,¹¹ in a study of women based on self-reported data, demonstrated high validity levels of this analysis.

Pap test offering as a single action for UCC prevention is not enough to ensure reduced mortality rates among women with cancer. The expected beneficial effects of Pap test require awareness and compliance to practices of periodical testing as recommended by the Brazilian *Ministério da Saúde*. The present study found that, despite 85.0% of respondents reported being tested, only 64.4% had been tested at the desired frequency. Only these women showed adequate practices towards testing. This rate is twice as high as that reported in Argentina,⁶ slightly higher than that reported in rural women in South Africa,¹² and similar to that described in women in Pelotas.¹⁶

Among those women showing adequate practices, most (54.6%) spontaneously sought testing at health services with the main motivation of UCC prevention. The most cited barriers to testing were: negligence (22.1%); test was not requested by the medical doctor

(7.4%); feelings of shame (6.3%); uncomfortable test (3.2%), and others (3.2%). These findings are similar to that reported in Argentinean women.⁶

The highest rates of adequate practice towards testing were seen among women with higher schooling, those who had a paid job, more often attended medical visits, were sexually active, had between one and three children, and were using any contraception. This can be explained by their greater access to information about testing. On the other hand, sexually active women more frequently attend health services seeking advice on family planning or prenatal care and are thus better advised on getting UCC prevention testing. Similar results were reported in Argentinean women⁶ regarding higher attendance rates to medical visits and parity, and in Campinas,¹ with respect to schooling.

In the light of that, it is evident that medical providers have a major role in promoting adequate practices towards testing and therefore increasing Pap test coverage among women in the community studied. Nevertheless, it seems that communication between providers and women seeking care including the level of language used and/or advice on the purposes and advantages of periodical testing may not be clear or effective enough. But we have to bear in mind that the number of visits may not have been adequate to clarify all their questions, or that the women studied did not appropriately utilize health services. This fact requires attention from the city's health managers to improve care provided to this population to allow better understanding on testing, and its advantages and benefits for women's health to increase testing rates following the Brazilian *Ministério da Saúde* recommendations.

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