Knowledge, attitudes and practice related to Papanicolaou smear test among Argentina's women

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Vaginal smears. Cervix neoplasms, prevention & control. Health knowledge, attitudes, practice.

Abstract

Objectives
To evaluate the knowledge, attitudes, and practice regarding the Papanicolaou test in an Argentinean community.
Methods
Two hundred women were interviewed at their homes in Puerto Leoni, Misiones, Argentina. Women were selected by simple random sampling. Answers were described in terms of knowledge, attitudes, and practice, ant their respective adequacies with respect to the Papanicolaou test, as previously defined. Adequacy was compared between the categories of the control variables by χ^2 test with a 5% significance level.
Results
Knowledge and practice of the Papanicolaou test were adequate in 49.5% and 30.5% of subjects, respectively, although the attitude towards the test was considered adequate in 80.5% of subjects. Another important finding was that women reported as the main reason for not undergoing the test the lack of a request by a physician or healthcare professional.
Conclusions
Our results show a need for increasing the information provided to the public, especially by healthcare services and professionals, thus generating knowledge among the population of the advantages and benefits of Papanicolaou testing.

INTRODUCTION

Approximately 230 thousand women die every year as a consequence of cervical cancer (CC), and at least 80% of these deaths occur in developing countries. CC is the second most frequent neoplasia worldwide, and leads incidence and mortality statistics in less favored areas. Nevertheless, this type of cancer is considered as easily diagnosable and has high remission rates when identified early. Furthermore, it is preventable, given the infectious character of its etiology, attributed to the Human Papillomavirus.[2,*]

The differences observed between developed and developing countries with respect to mortality by CC may be attributed directly to the performance or not of the Papanicolaou (Pap) test. Different studies show a correlation between reduced mortality and Pap testing.[4,13] The Pap test is regarded by the Pan-American Health Association as the primary tool for the early diagnosis of cervical neoplasms.*

In Argentina, Pap tests, or smears, are available as a routine procedure in healthcare centers for over 30 years. However, only in 1997 the country began to provide an organized program for the prevention of CC.[10] Even though Pap smears are widely available in healthcare facilities across the country, there has been no significant reduction in the rates of CC mortality in the last years, and test cov-

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erage is still very low, being estimated at 15-25%.[11]

The estimated mortality rate in Argentina is 4.46 deaths per 100 thousand women.[11] This rate is lower than those of other Latin-American countries such as Mexico, Chile, and Costa Rica, with mortality rates of 14.5, 11.7, and 10.9 deaths per 100 thousand women, respectively.[13] However, the distribution of this mortality across the national territory is uneven, poorer provinces showing rates up to three times the national average. This is the case in Formosa and Misiones, whose rates are the highest in the country (15.4 and 12.0 per 100 thousand women, respectively). More developed provinces, on the other hand, show rates that fall below the national average, as is the case of Buenos Aires, where the mortality rate by CC is 2.8 deaths per 100 thousand women.[11]

Studies identifying factors that determine adherence to Pap testing among Argentinean women are still scarce.[11,12] We have thus carried out the present investigation, which aims to assess knowledge, attitudes, and practice of the Pap smear test and analyze their association with sociodemographic variables among women.

METHODS

The present study was conducted in the municipality of Puerto Leoni (2.329 inhabitants),[8] in the province of Misiones, Argentina, in May 2003. This was a household survey in which 200 women aged 18-64 years living in the municipality were selected through simple random sampling. We used a list of female voters enrolled until 29 October 2002, which included all women registered for voting in the municipality. Women in the list were numbered and randomly drawn until the desired sample size was reached.

Sample size was calculated at 185 women. Assuming 10% losses due to refusals and other reasons, we arrived at a total 205 women. The following formula was used:

$$n = Nz^2p\,(1-p) / [d^2\,(N-1) + z^2p\,(1-p)]$$

in which: N= total population (735); z= value corresponding to the confidence level (1.96^2=3.84); d= absolute precision (0.05^2=2.5^{-03}); and p= proportion of the population with the studied characteristic (0.2).

There were 2.4% losses from the established sample: three women refused to participate in the study and two women were not interviewed due to not being able to answer the questionnaire. Therefore, 200 women (97,5% of selected women) participated in the study.

We employed a structured questionnaire, composed mostly of pre-coded, but with some open questions. In its elaboration, we used and adapted questions taken from questionnaires used in other studies.[3,12,14] Both the instrument and the data collection process were fine-tuned in a pilot study including 30 women from Puerto Leoni that did not participate in the main study. Four interviewers were trained to administer the questionnaire. Participants answered the questions only after reading and signing a term of free and informed consent. In the analysis, we adopted the following definitions, used in an earlier study:[3]

- *Adequate knowledge*: Women who had heard of the test and who knew that it was meant to detect cancer in general or cervical cancer specifically.
- *Inadequate knowledge*: Women who had never heard of the test, or who had heard of it but were not aware that it was aimed to detect cancer or cervical cancer.
- *Adequate attitude*: Women who considered it necessary to undergo Pap smears periodically.
- *Inadequate attitude*: Women who considered Pap smears little necessary or unnecessary, who had no opinion on the matter, or who had never heard of the test.
- *Adequate practice*: Women who underwent a Pap smear in the three years prior to the interview.
- *Inadequate practice*: Women who underwent a Pap smear more than three years prior to the interview or who never had the test.

We evaluated the association between adequacy of knowledge, attitude, and practice regarding Pap smears and sociodemographic characteristics such as age, schooling, marital status, income, and medical appointment in the year preceding the interview.

In order do calculate income in terms of basic food rations (BFR), we used the collected information on the monthly income of family members and the price of the BFR in May 2003 (323.21 Argentinean pesos). The price of the BFR is estimated monthly by the Ministry of Economics,[9] and is based on the prices and consumption habits of a typical Argentinean family, excluding expenses related to non-food goods and services such as clothing, transportation, education, and healthcare. Total family income was divided by the price of the BFR and classified according to the correspondent number of BFRs for each family. Regarding the use of contraceptives at the time of the interview, women were classified initially into three categories: a) those using tubal ligation, hormonal contraceptives or IUDs; b) those using the Oginoknauss method, *coitus interruptus*, or condoms; and C) whose that did not use contraceptive methods. This variable was

Table 1 - Distribution of women with respect to the characteristics studied. Puerto Leoni, Misiones-Argentina, 2003. (N=200)

Characteristics	N	%
Age groups (years)		
18-27	63	31.5
28-40	62	31.0
41-64	75	37.7
Schooling (years)		
Did not attend school	13	6.5
1-6	84	42.0
7-8	62	31.0
9+	41	20.5
Work outside home		
Yes	77	38.5
No	123	61.5
Marital status		
Single	22	11.0
Separated/divorced/widowed	23	11.5
Married/with partner	155	77.5
Family income (in basic food rations)		
<1	142	71.0
1-2	49	24.5
>2	9	4.5
Persons supported by family income		
Up to 4	73	36.5
5-8	97	48.5
9+	30	15.0
Attended healthcare service in last 12 months		
Yes	154	77.0
No	46	23.0
Parity		
None	18	9.0
1-3	70	35.0
4-6	58	29.0
7+	54	27.0
Contraception		
Ligation, hormonal contraceptive, IUD	60	30.0
Coitus interruptus, condom, or Oginoknauss	51	25.5
Do not use	89	44.5

later divided into two categories: women who used contraceptive methods and those who did not.

We used Epi Info 2002 v. 3.01 software in order to generate a database and perform data analyses. We used the χ^2 test with a 5% significance level for testing differences between proportions.

The project for the present study was approved by the Research Ethics Committee of the Nursing School of the *Universidad Nacional de Misiones*.

RESULTS

Of the 200 women interviewed, 37.5% were aged 40 years or more; 42% reported schooling between one and six years; 71% had monthly family incomes below one basic food ration; 61.5% did not work outside home; 77.5% were married or living with a partner; 77% reported appointments in healthcare facilities in the year preceding the interview; 91% reported one or more deliveries and 56% reported four or more deliveries; and 55.5% reported use of contraceptive methods (Table 1).

Regarding knowledge of Pap smears, 92.5% of women reported having heard of the test, but only 49.5% of them were classified as having adequate knowledge as defined by the criteria established in the present study. Major sources of information about the test mentioned were radio/television, friends/family, and healthcare institutions (Table 2).

Knowledge about the test was significantly associated with some of the characteristics studied. Significantly greater proportions of adequate knowledge were identified among women with seven or more years of schooling and among women that attended healthcare facilities in the previous year. In addition, greater proportions of adequate attitude towards the test were found among women with greater schooling, who reported working outside home, who had less than six children, and who reported use of contraceptive methods. Higher percentages of adequate practice were found among women with incomes of one BFR or more, who attended healthcare services in the previous year, and who had less than six children (Table 3).

Among of the women interviewed, 80.5% were classified as having adequate attitudes towards Pap smears, the preventive and diagnostic characters of Pap smears being the two main reasons for undergoing the test (Table 4). Regarding practice, 46.5% of women reported having taken the test in their lifetimes and 30.5% in the three years preceding the test, the latter being classified as with adequate practice (Table 5). Major hindrances to the practice of Pap smears identified among these women were the lack of requests by physicians or other healthcare professionals, followed by the fact of not feeling ill or showing any symptoms (Table 5).

DISCUSSION

The supply of Pap smears for the early detection of

Table 2 - Knowledge, source of knowledge, and adequacy of knowledge of Papanicolaou smear. Puerto Leoni, Misiones, Argentina, 2003. (N=200)

Characteristics	N	%
Heard about the Pap test		
Yes	185	92.5
No	15	7.5
Adequate knowledge		
Yes	99	49.5
No	101	50.5
Source of knowledge*		
Radio/TV	89	44.5
Friends/family	85	42.5
Healthcare institution	81	40.5
Work	11	5.5
Church	9	4.5
School	14	7.0
Others	4	2.0
Does not apply**	15	7.5

*More than one answer possible for each woman (sum >100%)
**Never heard about the Pap test

Table 3 - Evaluation of the adequacy of knowledge, attitude, and practice concerning the Papanicolaou test according to the characteristics studied. Puerto Leoni, Misiones, Argentina, 2003. (N=200)

Characteristics	Total	Adequate knowledge N (%)	p	Adequate attitude N (%)	p	Adequate practice N (%)	p
Age (years)							
≥40	81	44 (54.3)	–	61(75.3	–	25 (30.9)	–
≤39	119	55 (46.2)	NS	100 (84.0)	NS	36 (30.3)	NS
Schooling (years)							
≥7	103	60 (58.3)	–	93 (90.3)	–	37 (35.9)	–
≤6	97	39 (40.2)	0.01	68 (70.1)	0.00	24 (24.7)	NS
Work outside home							
Yes	77	39 (50.6)	–	68 (88.3)	–	27 (35.1)	–
No	123	60 (48.8)	NS	93 (75.6)	0.03	34 (27.6)	NS
Marital status							
Married/single	55	1 (52.1)	–	125 (80.6)	–	44 (28.4)	–
Others	45	18 (40.0)	NS	36 (80.0)	NS	17 (37.8)	NS
Income (BFR)							
≥1 BFR	58	32 (55.2)	–	51 (87.9)	–	28 (48.3)	–
<1 BFR	142	67 (47.2)	NS	110 (77.5)	NS	33 (23.2)	0,00
Attended healthcare unit							
Yes	154	84 (54.5)	–	128 (83.1)	–	56 (36.4)	–
No	46	15 (32.6)	0.01	33 (71.7)	NS	05 (10.9)	0,00
Parity							
≤5 deliveries	128	65 (50.8)	–	110 (85.9)	–	48 (37.5)	–
≥6 deliveries	72	34 (47.2)	NS	51 (70.8)	0.01	13 (18.1)	0,00
Contraception							
Yes	111	55 (49.5)	–	97 (87.4)	–	37 (33.3)	–
No	89	44 (49.4)	NS	64 (71.9)	0.01	24 (27.0)	NS
Total	200	99(49.5)	–	161 (80.5)	–	61 (30.5)	–

NS: Non-significant; BFR: basic food rations

Table 4 - Attitude of women regarding Papanicolaou smears and reasons needing the test. Puerto Leoni, Misiones, Argentina. 2003 (N=200)

Characteristics	N	%
Attitude		
Adequate	161	80.5
Inadequate	39	19.5
Reasons for needing the test		
As a preventive measure	88	44.0
As a diagnostic measure	41	20.5
Heard about it	7	3.5
Physician mentioned	2	1.0
Find it necessary but do not know why	7	3.5
Others	16	8.0
Does not apply*	39	19.5

*Did not find the Pap smear necessary

cervical cancer is not, by itself, sufficient for reducing the mortality by this type of cancer among women. The positive effect of the test depends on it being properly utilized by the target population.[4] The practice of taking the test, in its turn, depends on a range of factors, some of which are related to the healthcare system and its professionals and others which are related to the women themselves. In the present study, we have focused on practice from the perspective of women only.

Our results show that although almost all women interviewed had heard about the Pap smear, less than one-half of them was classified as showing adequate knowledge. Furthermore, a considerable percentage of women was classified as showing adequate attitude, but again less than half of these women had taken the test at least once in their lifetimes, and an even smaller share had done so within the three years preceding the interview.

Our results show a lower proportion of women who had undergone Pap smears when compared to those of another study conducted in Argentina,[5] which reported that 86.8% of the women interviewed had taken the test at least once in their lifetime and that 69.4% had done so in the three years before the study. These differences are partly explained by the characteristics of the women in that study, since these women were included in a program for the early detection of breast cancer, and thus potentially better informed about health-related issues or with greater access to healthcare services.

Some surveys show a direct relationship between income and schooling and the practice[7,12] and knowledge[1] of Pap smears. Our results show a greater proportion of adequate practice among women with higher income, but no association was found in relation to schooling. As to knowledge and attitude, we found an association of these variables with schooling, but not with income.

The absence of an association between age and Pap smear practice is worthy of note. Other studies[5,13,*] have shown that women in reproductive age undergo Pap smears more frequently than those already outside this age group, possibly due to a connection

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Table 5 - Practice and adequacy of the practice of Papanicolaou smears and impediments to undergoing the test reported by interviewed women. Puerto Leoni, Misiones, Argentina, 2003. (N=200)

Characteristics	N	%
Practice in lifetime		
Yes	93	46.5
No	107	53.5
Adequate practice		
Yes	61	30.5
No	139	69.5
Impediments to practice		
Physician does not request	63	31.5
Does not feel ill or show symptoms	46	23.0
Lack of money	35	17.5
Carelessness	29	14.5
Embarrassment	20	10.0
Did not know about the test	13	6.5
Place of consultation too far	13	6.5
No doctor/no shift	8	4.0
No one to care for children/relatives	7	3.5
Does not like to	7	3.5
Cannot miss work	3	1.5
Others	37	18.5
Dopes not apply**	93	46.5

*More than one answer possible for each woman (sum >100%)
**Underwent the test at least once in lifetime

with routine procedures during antenatal care or as part of family planning.

Another important finding is the significant association between low parity and adequate practice and attitude towards Pap smears. In other words, high parity, in the present study, behaved as an obstacle to having taken the test in the last three years and to the construction of an adequate attitude towards it. Difficulties in avoiding pregnancy may be linked to these findings.[5] A point in favor of this interpretation is the fact that a lesser proportion women that reported not using contraceptive methods showed an adequate attitude towards the test.

Women who worked outside home showed a greater proportion of adequate attitude concerning Pap smears. Working outside home may be associated with other factors related to the gender issue. Thus, aspects such as submission to partners and lack of contact with other groups of people for discussing health-related issues may hinder the construction of an adequate attitude towards Pap smears. From this perspective, educational activities developed by healthcare teams must contemplate gender issues. Providing wide-ranging information to the couple about the benefits of the Pap test may be a useful strategy. We also found a lesser proportion of adequate practice among women married or living with partners. Although this result was not statistically significant, it indicates a need for implementing measures aimed to increase the awareness of husbands and partners, which could favor positive female attitudes towards the exam via incentives or by providing the means for the woman to have access to the test (e.g., money for transportation, taking care of the children).

The origin of knowledge regarding the Pap test is an important aspect to be considered when evaluating knowledge. If we consider the source of knowledge about the Pap as an indicator of the responsibility of healthcare professionals in promoting educational measures to improve population health, we may conclude that these professionals are informing women to a lesser extent than the mass media, friends, and relatives. These results show a need for increasing the information provided to the public, especially by healthcare services and professionals. This idea is reinforced by the associations, found in this and other studies, between attendance to healthcare facilities and the adequate practice[12] and knowledge[1] of the Pap test.

We also found that the main impediment to the preventive test mentioned by women was the physician or healthcare professional not requesting the exam. This finding may indicate that many women either do not feel they have the right, or do not possess enough knowledge to require the exam during appointments at healthcare facilities. Therefore, losses to prevention may be generated at the healthcare facility itself, and this may be interpreted by the women as a lack of importance of the Pap test.

Moreover, not being ill or showing gynecological symptoms was also an important impediment to taking the test mentioned by the women. Such a scenario may indicate a lack of knowledge about preventive measures by the women included in the study, who believe that one must be ill in order to undergo the test. The presence of gynecological symptoms has been reported in other studies as one of the major factors associated with taking the Pap test.[3,6]

The present study used as subjects women from a particular socioeconomic stratum – the great majority of the women interviewed earned less than the value of one basic food ration and showed low levels of schooling. It is possible that studies conducted among women of different socioeconomic profile show results that either corroborate or rectify the results found in the present survey, thus allowing for a better understanding of adherence to Pap testing by the female population.

There are certain limitations inherent to the design of the present study, regarding mainly the sectional character of the analyses and the method used for estimating the practice of Pap smears – namely self-reported test history. Questions related to the Pap test assume prior knowledge of the sub-

ject. Furthermore, women tend to overestimate the frequency of tests and to underestimate the time of the last test.[12]

Finally, it is important to highlight that the assimilation of the practice of Pap smears requires first of all an awareness of the test's benefits, its efficacy, and importance by healthcare managers as well as by the teams working in basic units.[4,*] Lost opportunities for Pap smears would be minimized if healthcare professionals used each contact with their clientele to request the test, according to the established criteria, or to provide information on the subject, thus increasing knowledge and the chances of prevention. On the other hand, managers should provide healthcare professionals with conditions to develop their activities effectively, contributing towards a change in the profile of morbidity and mortality due to cervical cancer among the female population.

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