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Educational level and cervical cancer screening programs in a Venezuelan urban area.

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Key words: Pap smear, educational level, cervical cancer screening program, Venezuela.

Abstract. The purpose of this study was to investigate, in a group of Venezuelan women, the knowledge and understanding of the purpose of the Pap smear and the correlation of this knowledge with their educational level. Women were recruited for a cervical cancer screening program and answered a questionnaire concerning what a Pap smear is used for. Three hundred one women were included in the study. Two hundred eighty six women (95%) answered that they knew about Pap smear. Two hundred sixty eight patients (89%) knew that the Pap smear is used for cervical cancer screening. One hundred sixteen women (38.5%) had a low educational level. One hundred and four of them (89.7%) knew that Pap smear is used to screen cervical cancer. Ninety two percent of women who did not complete elementary school had the knowledge of the purpose of vaginal cytology. Two hundred eighty one patients (93%) mentioned that they had at least one Pap smear. One hundred sixty four patients (58.3%) reported to have ≥ 4 Pap smears in their life time. Two hundred fifty seven women (91.5%) remembered when the first Pap smear was taken. Twenty one patients (7%) had a Pap smear for the first time. The conclusions are: 1) low educational level in an urban area is not a limitation for knowing about and having a cervical cytology test taken; 2) high percentage of Venezuelan women in an urban area know what the Pap smear is used for.

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Nivel educacional y los programas de pesquisa del cáncer de cuello uterino en un área urbana venezolana.
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Palabras clave: Citología cervico-vaginal, nivel educacional, programas de pesquisa, cáncer del cuello uterino, Venezuela.

Resumen. El propósito de este estudio fue investigar, en un grupo de mujeres venezolanas, el conocimiento y entendimiento del objetivo de la citología cervico-vaginal (CCV) y la correlación de este conocimiento con su nivel educacional. Las mujeres fueron reclutadas para una jornada de pesquisa del cáncer del cuello uterino (CC). Las pacientes respondieron un cuestionario donde se preguntaba para que se emplea la CCV. Trescientas una mujeres fueron incluidas ene el estudio. Doscientas ochenta y seis (95%) respondieron que ellas sabían para que se emplea la CCV. Doscientas sesenta y ocho pacientes (89%) sabían que la CCV se usa para la pesquisa del cáncer del CC. Ciento diez y seis mujeres (38,5%) tenían un nivel educacional bajo, 104 de ellas (89,7%) sabían que la CCV se usa para la pesquisa del CC. Noventa y dos por ciento de las mujeres que no habían completado la educación primaria tenían el conocimiento del propósito de la CCV. Doscientas ochenta y una pacientes (93%) mencionaron que se habían realizado al menos una CCV, 164 (58,3%) reportaron haberse realizado ≥ 4 CCV en su vida. Doscientas cincuenta y siete mujeres (91,5%) recordaron cuando se realizo su primera CCV y 20 de las pacientes (7%) se realizaron la CCV por primera vez. Este estudio permitió concluir: 1) el nivel educacional bajo no es una limitación para saber para qué sirve la CCV y para practicársela; 2) un alto porcentaje de mujeres venezolanas que viven en áreas urbanas tiene el conocimiento para que sirve la CCV.

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INTRODUCTION

Cervical cancer (CC) is the second most common cancer in women worldwide (1). Eighty percent of cases are diagnosed in developing countries (2). In most developing countries, CC is the leading female malignancy and the leading cause of death by cancer, especially among middle-aged women (3).

In most developed countries, screening programs utilizing Pap smear have decreased the incidence and mortality of CC (4, 5). In developing countries screening programs have proved to be ineffective. Despite the existence of infrastructure, resources and screening facilities; the incidence and mortality of CC remain high in developing countries, with many patients presenting with late stage disease (5-7).

The discrepancy between developed and developing countries concerning rates of incidence and mortality of CC seems to correlate with the educational level and knowledge of CC and its prevention (8).

Sources of information and knowledge about CC screening programs extend beyond health care providers to include family

and friends, health education classes (high school and university students), and mass media such as newspapers, magazines, radio, books, and the internet (9). However, women informed about the importance and benefits of a Pap smear test may still be reluctant to have it performed (8), despite the presence of official screening programs.

The objective of this study was to assess, in a group of Venezuelan women recruited to participate in a CC screening program, their knowledge and understanding of the purpose of the Pap smear and the correlation of this knowledge with their educational level.

MATERIALS AND METHODS

Study population. A total of 301 women were studied. Women were personally invited by health care workers or radio to participate in a CC screening program. The study was carried out three times per week between the period of August 2nd and August 19th, 2005. Patients with previous hysterectomy and treatment of premalignant or malignant lesion of the cervix were excluded from the study.

This study was performed at the Gynecological Out-Patient Clinic in the Manuel Noriega-Trigo Hospital, which is a tertiary and urban referral hospital serving to middle and low socio-economic classes in the southern part of the city of Maracaibo, Venezuela.

The study was approved by the ethics committees of the Manuel Noriega Hospital and Faculty of Medicine, University of Zulia. All participants read and signed an informed consent agreement before enrolment in the study. The patients were also informed of the anonymity and confidentiality of the survey.

Each patient was asked to fill in a questionnaire before she had the Pap smear and gynecological examination. The following information is contained in the questionnaire: age, birthday, birthplace, civil status, job, pregnancies, deliveries, first sexual intercourse, educational background, knowledge of what Pap smear is used for, date of first Pap smear, how many Pap smears had the patient taken in the past and the date of the last one taken.

Statistical analysis

Mean values and SD of all continuous variables were calculated. Categorical variables were expressed as percentages of each group. To determine statistical relevance of the various parameters of the questionnaire Chi Square and Fisher tests were performed. A p-value of less than 0.05 was considered statistically significant. Odds ratios (OR) and 95% CI were calculated using logistic regression.

RESULTS

Three hundred one women were included in the study. The mean age was 39.3 ± 11.2 years old (mean ± SD) (range: 17-72). One hundred twenty seven women (42.1%) were married. One hundred thirty one (43.5%) were housewives. Eighteen (n= 54) percent were workers. Two hundred seventy eight (92.4%) had pregnancies with 90.7% (n=273) reporting deliveries. Sexual and reproductive data are shown in Table I.

Two hundred eighty six women (95%) answered that they knew about Pap smear; 217 patients (76%) were ≥ 31 years old (p = 0.001, OR: 0.145; CI: 0.049-0.430). Two hundred sixty eight patients (89%) knew that the Pap smear is used for cervical cancer screening and 248 (82.4%) mentioned that Pap smear is also used to detect vaginal infections. One hundred sixteen women (38.5%) had a low educational level: 13 (11.2%) did not finish primary school and 103 (88.8%) just finish primary school. Fifty five (29.7%) of 185 women who finished

high school studies, got a university degree. A hundred four of them (89.7%) knew that Pap smear is used to screen cervical cancer as it shows in Table II. Other answers mentioned by the patients were: to find a disease, myomas, inflammatory processes, etc.

Two hundred eighty one patients (93%) answered that they had at least one Pap smear. One hundred sixty four patients (58.3%) reported that they had ≥ 4 Pap smears in their life time. One hundred thirty seven of 220 (62.3%) women ≥ 31 years old reported that they had ≥ 4 Pap smears in their life time. Data are summarized in Table III. When compared to women in the same age group with ≥ 3 Pap smears taken, a statistically significant difference was found (p=0.001; OR: 0.306; CI: 0.147-0.634).

Data regarding the frequency of Pap smears are summarized in Table III, 47.3% of the women had a Pap smear between the past 1 and 3 years.

Two hundred fifty seven women (91.5%) remembered when their first Pap smear was taken. One hundred ten (42.8%) answered that the first Pap smear was performed after their first delivery, 88 patients (34.2%) during their first prenatal exam and 59 (23%) after their first sexual intercourse. Pap smear was taken in 21(7%) for the first time. Ten (47.6%) did not have any knowledge of what Pap smear is used for. Thirteen (62%) reported previous pregnancies. Nineteen (90.5%) were ≤ 30 years old (p=0.0001; OR: 34.262; CI: 7.765-151.171).

DISCUSSION

Since the 1940s, the Pap smear has become a widespread and routine screening tool for CC. In Venezuela, the Ministry of Health recommends to start taking Pap smear in every woman who has begun to have sexual intercourse. Our country has organized screening programs and women with abnormal Pap smears have access to health care for diagnosis and therapeutic procedures. However, after more than 40

TABLE I
SEXUAL AND REPRODUCTIVE VARIABLES

Variables	No	SD	Range
1st SI*	19	3.8	13-37
No Partners	1.72	0.96	1-8
No Pregnancies	3.16	1.85	1-10
No Deliveries	2.9	1.6	1-9

1er SI: Age of 1st Sexual Intercourse. SD: Standard Deviation.

TABLE II
EDUCATIONAL LEVEL AND DIFFERENT ANSWERS GIVEN BY THE PATIENTS

Educational Level	Screening No (%)	Vaginal Infection No (%)	Other No(%)
No finish elementary school (1-6)	12 (92.3)	11 (84.6)	4 (30.7)
No finish high school	92 (89.4)	88 (85.5)	30 (29.1)
Complete high school (7-11)	169 (91.4)	159 (85.9)	52 (28.1)
Complete superior level	50 (90.9)	49 (89.1)	10 (18.2)

TABLE III
NUMBERS OF PAP SMEAR TAKEN IN THEIR LIFE TIME AND FREQUENCY

	No Patients	%	Cumulative %
Number			
1	28	10	10
2-3	89	31.7	41.6
4-5	68	24.2	65.8
6-10	58	20.6	86.5
> 10	38	13.5	100
Total	281	100	
Interval			
< 1 year	69	24.6	24.6
1-3 years	133	47.3	71.9
4-5 years	44	15.7	87.9
6-10 years	22	7.8	95.4
> 10 years	13	4.6	100
Total	281	100	

years of running the Venezuelan Official CC screening programs, CC remains first in genital cancer morbility and mortality. The problems are multifactorial and need a prompt solution. We have problems like other developing countries such as the Pap smear transportation to laboratories for processing and interpretation, thereafter the results need to be communicated to the referring clinic or center and to the women who have been screened. This delay in itself is known to be a significant barrier to screening because a large number of women do not return for results (10). Other problem is that once the women have the diagnosis of premalignant or malignant lesion of the cervix, they can have difficulties to access treatment (10). Besides, women in developing countries usually are poorly educated which has influences over their total quality of life, healthcare access, and their ability to generate income (10).

In Venezuela, as in most countries in the world, female populations can get information regarding Pap smear from healthcare providers (nurses, social workers, physicians), newspaper, radio, TV, magazines, internet and others sources (5, 7, 9-12).

The present study was done in a population of lower middle and low socioeconomic individuals in which 4.3% of the women did not finish elementary or primary school, and 34.2% finished primary school but not finished high school. In spite of a high level of health coverage, especially cancer screening, low socio-economical and educational levels have been associated with a low use of medical services (13-16). Lamadrid (11) found, in a Pap smear screening program, that 38.5% had not finished high school and 18% had completed high school level out of 299 interviewed women. Lazcano-Ponce *et al.* (7) and Torres

Mejía *et al.* (12) reported similar findings in an interviewed population of middle and high socio-economic levels.

In Mexico, the same authors (7, 12) found that 58.6% and 87.5% of women respectively, knew what a Pap smear test was. Similarly in Chile, Lamadrid (11) found that 85.7% of women knew what a Pap smear test was for. In South Africa, Wellensiek *et al.* (8) reported an absence of knowledge regarding Pap smear in 54% and 79.3% of a gynecological out-patient clinic group and a CC patient group, respectively. Lamadrid (11) found that approximately 30% of the women with no, incomplete or complete primary education or incomplete high school education had a poor or complete lack of knowledge about what a Pap smear is used for. Lamadrid (11) reported that only 14% of 272 women < 45 years old and 18.5% of 27 patients > 45 years old had poor or complete lack of knowledge about what Pap smear was. Our investigation found that 10.3% of the participants with no, incomplete or complete primary education or incomplete high school education did not know that a Pap smear is used for CC screening. Also, this study found that 76% of 286 women who answer that they knew what a Pap smear is used for, were ≥ 31 years old. This could explain why most of women knew about what a Pap smear is used for. During their lifetime they have been able to get the knowledge about what the cytology is used for.

This study also found that a high percentage of the patients (93%) had at least one Pap smear before this survey was performed, even at the lowest educational level. In contrast, in South Africa Wellensiek *et al.* (8) reported that 75.3% women had not had a previous a Pap smear. Torres-Mejía *et al.* (12) found that 83.9% women had a Pap smear. Lazcano-Ponce *et al.* (7) and Wellensiek *et al.* (8) reported that women with an education equal to or greater than undergraduate university level were more likely to have a Pap smear compared to those who were illiterate.

There is some disparity as to how often the Pap smear should be done. The American Society of Colposcopy and Cervical Pathology (17) recommend that routine screening should be repeated every 12 months. The American Cancer Society (18) recommends that cervical screening should be also performed annually with conventional cervical cytology or every 2 years using liquid-based cytology; at or after the age of 30, while women who have had 3 consecutive satisfactory normal/negative cytology results should be screened every 2-3 years. Some European countries, Belgium, Denmark, France, Italy, Spain and Sweden, recommend a screening interval of 3 years following negative result (5). Other countries; England, Finland, Ireland, and the Netherlands, perform a Pap test at longer intervals (3-5 years). In Austria, Germany and Luxembourg a much shorter interval applies, 1 year. In Greece and Portugal, the first repeat Pap smear is scheduled for 12 months and then, following a negative result, the screening interval is 2 or 3 years (5). In Venezuela, the Ministry of Health recommends cervical cytology screening every 12 months.

The present investigation found that 72% women had a cervical cytology in the last 3 years and one third of them mentioned that the last Pap smear taken was < 1 year. Walter *et al.* (19) mentioned that women can either overestimate or subestimate the time to have the next Pap smear since the last one. A factor could be the fear of having a premalignant or malignant in the cervix. Wellensiek *et al.* (8) found that 18% had a cervical cytology < 3 years ago. Torres-Mejía *et al.* (12) found that women, who had been screened at least once, were more receptive to an invitation for further screening. An Australian

study (20) showed that women who had been screened more recently were likely to have a positive response to a new invitation, independently of the recall system.

In spite of the low number of patients in this study who did not have a Pap smear taken, almost 91% were ≤ 30 years old, why had these patients not had a Pap smear taken before? Reasons for women's nonattendance for CC screening have been studied extensively. These include fear of pain, fear of knowing of having CC or other vaginal or cervical disease, fear of being criticized by the doctor for not having a Pap smear done before, fear of bleeding as a result of the test, and embarrassment, particularly when the test is carried out by a male doctor, etc. (7, 10, 21). Lamadrid (11) reported fear of procedure in 8.4% women.

This investigation found that the older the patient, the higher the number of Pap smears. It was also found that more than 50% of the women over 30 years old had ≥4 Pap smears. Parous women had Pap smears more often (8, 12) which may be due to increasing age but also might be related to the fact that antenatal clinics offer a cervical cytology test as part of a CC screening program. The present study found that 34% of the women had their first Pap smear during their first prenatal control.

Some of the findings in the present study are comparable to similar ones done in other countries (5, 7, 8, 11, 12). The study showed that a low educational level does not seem to correlate with knowledge about of what Pap smear is used for. In Mexico, Torres-Mejía *et al.* (12) reported similar findings. Newspapers, magazines, TV and radio are different ways for low educational level women to get the knowledge that Pap smear is a test used for CC screening. So, why is CC the first cause of incidence and mortality in genital cancer in Venezuela, if most Venezuelan women have knowledge of what a Pap smear is used for? In Venezuela, the CC screening programs should be assessed in order to uncover the causes of this problem. This investigation has some limitations. It can not answer why women, knowing what Pap smear is used for do not have the cytology every year as the Venezuela Ministry of Health recommends. Also, the present study did not look when and how they get the information about what the cytology is used for. Follow up studies are investigating the group of women who have not had a Pap smear done before and the group of women that do not have a Pap smear even though they know what it is used for and they do not assist to have a routine one.

This investigation showed that educational level is not a barrier to know what Pap smear is used for and why is important to have a Pap smear every year in Venezuela. So, Venezuelan Health Authorities should improve the CC screening programs. The authorities should build and/or improve the necessary infrastructure to increase the number of patients to have a Pap smear every year and to send the Pap smears to laboratories for processing and interpretation. Thereafter, the results need to be sending back to the referring clinic and the women who have been screened. This delay in itself is known to be a significant barrier to keep the screening every year, with large numbers of patients not returning for the results. Also, they should establish high-quality cytology laboratories, maintain a close supervision of quality control programs, and keep training the cytotechnologists (10).

Beside, the authorities should increase the information why the Pap smear has to be done once a year using the mass media such as newspapers, magazines, radio, books, and the internet.

In summary, this study suggested that: 1) low educational level in an urban area is not a limitation for knowing about and hav-

ing a cervical cytology test taken; 2). a high percentage of Venezuelan women living in an urban area knows what a Pap smear is used for.

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