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Article

Assessing the Level of Knowledge and Experience Regarding Cervical Cancer Prevention and Screening among Roma Women in Romania

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Abstract: *Background and Objectives:* Romania ranks among the countries with a notably high rate of preventable deaths due to inadequacies in prevention, screening, early detection, and timely management processes. Cervical cancer (CC) is a significant contributor to these preventable deaths, particularly affecting patients from marginalized backgrounds, rural regions, and the Roma population. The purpose of this article was to identify correct and consistent information of the Roma population about the risk of CC, as well as the importance of understanding the causes of the disease and awareness of the available prevention methods. *Materials and methods:* A cross-sectional study was conducted using a self-administered questionnaire applied only to Roma women in Romania. *Results:* We enrolled 759 patients in the study. These were divided into 2 groups, Group 1 comprised 289 (38.1%) women who had been tested for HPV infection, while Group 2 included 470 (61.9%) women who had never been tested for HPV infection. Characterization of women in Group 1: mostly aged between 25-54 years, with high school education, married, who started sexual activity under the age of 18 years, with only one sexual partner and with over 5 pregnancies. Regarding contraceptive methods, 35.7% of women do not know/ use any contraceptive method, and 32.2% use hormonal contraceptives. Two thirds of the women tested had heard of HPV, and 19.7% were vaccinated against HPV with at least 2-3 doses. A percentage of 8.7 had a diagnosis of CC, compared to those who were not tested (p-0.0001), whereas 63% of the tested women do not know much about CC, as opposed to 85.7% of the group of untested women. *Conclusion:* Cervical cancer (CC) continues to be a public health issue in Romania, particularly in patients belonging to vulnerable groups. Promotion campaigns for HPV vaccination and CC screening are necessary to reduce the associated mortality and morbidity.

Keywords: Roma women; screening; prevention; cervical cancer; HPV

1. Introduction

The healthcare system faces numerous challenges. Low funding and inefficient use of public resources limit the effectiveness of the healthcare system. At the same time, access to adequate healthcare services is still difficult for groups of the female population in Romania, especially those belonging to poor or vulnerable households, rural settlements and small towns, as well as the Roma population.

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Despite recent improvements, the health of the Romanian population is still poor, with a life expectancy still under the European Union (EU) average, this being 75.3 years in 2016, compared to 81 years for the EU. Moreover, life expectancy of Romanian citizens belonging to the Roma minority is on average 6 years lower than that of the rest of the non-Roma population in the country **[1,2]**.

In addition, Romania has one of the highest rates of potentially avoidable deaths through healthcare and prevention, which should not occur under conditions of prompt and effective healthcare [1].

A clinical area affected by the inefficiency of the system is represented by chronic diseases that are equally tributary to late diagnosis (failure of early detection, absence of active screening) along with poor control of known cases, such as cervical cancer (CC), the organization of regional screening programs being a necessity derived from the extremely unfavorable epidemiological profile of this malignant condition among women in Romania [1].

CC is the fourth most common type of cancer in women worldwide and the second most common in Romania [3]. The incidence of CC and mortality rates in Romania are three times higher than in the other European countries 22.6 and 9.6 per 100,000 women **[3,4]**. Current estimates show that, every year, 3,380 women in Romania are diagnosed with CC and 1,805 die from the disease [5].

Among the possible causes that make a cancer with curable potential to have such a high impact on mortality in women in Romania we can list: low awareness of the risk of disease, lack of HPV vaccination, suboptimal screening for CC, late presentation to the doctor, fear of a bad diagnosis, primary diagnosis of CC established in advanced stages of disease, reduced opportunities for access to diagnosis and treatment, low number of medical oncologists, lack of multidisciplinary teams for CC management.

In 2012, the Romanian Ministry of Health implemented a national program which provided for the testing of women aged 25-64 years, at five years interval, by conventional cytological smear. [6]. Coverage of the regional pilot program was 21% for all ethnic groups by the end of 2008 [7].

Industrialized countries have reconsidered screening programs with the recommendation of HPV testing of women over 30 years of age, as an alternative to the cyto-vaginal smear, as well as the gradual transition to HPV testing due to the high efficacy compared to cytology **[8–10]**.

Currently, Romanian national projects [11], on the long term, are aimed at: reducing mortality through CC; changing population behaviors by promoting health-friendly ones and reducing those that increase the risk of disease; prolonging the duration of active life in which people can carry out their professional activity and perform family duties independently; decreasing the incidence of CC; decreasing the severity of CC cases, reducing the number and severity of their complications, reducing the need for hospital care, their costs and disabilities caused by complications; increasing the demand for preventive services, developing an expectancy to receive such services and not only curative ones.

All these projects have been initiated in direct response to the identified needs of vulnerable groups, including Roma populations, and aim to address the following key issues: enhanced access to quality healthcare services, especially for residents in rural areas and vulnerable communities who often face limited healthcare access, which, in turn, has a negative impact on the health of the population; reduction in the number of CC cases: through the detection of precancerous lesions, the screening procedures have the potential to significantly decrease or even eliminate the risk of developing CC; fewer cases of advanced-stage cancer: by detecting cancer in its early phases, before it has a chance to metastasize, these programs can substantially reduce the number of cases of advanced cancer; decreased cancer mortality: early-stage cancer benefits from more effective treatments with higher chances of cure, detecting cancer in its early stages significantly lowers the risk of cancer-related deaths.

In Europe, the Roma are the largest transnational minority, currently reaching 11 million, the vast majority living in Central and Eastern Europe [12].

In Romania, according to the 2021 census, the Roma accounted for 569,500 people (i.e., 3.4% of the total population), being the second largest minority ethnic group in Romania. Of these, over 60% live in rural areas [13].

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There are perspectives suggesting that the estimated figure may not accurately reflect reality due to the fact that many individuals may be unwilling to disclose their ethnicity. According to sociological studies, the actual Roma population in Romania is believed to range between 1.5 and 2 million people [14].

Within various ethnic groups, including the Roma population, there is a lower rate of participation in screening activities compared to the broader Romanian population [15]. This trend can be attributed to the fact that many Roma women are unaware of the existence of the screening program, they harbor doubts about its cost-free nature, and hold skepticism regarding the potential health benefits of participating in such screenings [16].

The purpose of this study was to ascertain the accuracy and consistency of information within the Roma population concerning the risk of CC. Furthermore, it sought to underscore the significance of comprehending the underlying causes of the disease and fostering awareness regarding the available prevention methods.

2. Materials and Methods

A cross-sectional study was conducted using a self-administered online questionnaire exclusively for the Roma women in Romania. The questionnaire included 31 items with questions about: 1) demographic information, 2) information about sex life, 3) knowledge about HPV infection, 4) knowledge about CC, 5) attitude to the prevention of genital tract infections, 6) knowledge of the vaccine that prevents HPV infection, 7) evidence for carrying out the cervico-vaginal cytological examination. Most of the questions were of open type, closed with ordered answers, closed with unordered answers, but also binary questions, with a maximum required time of 15 minutes to complete.

For each question, there was a request for either a single answer or the possibility of multiple answers. The header of the questionnaire included details about the purpose of the study, anonymity and confidentiality of the answers. For individuals who were unable to read, a member of the research team verbally read out the questions. The survey was conducted between January and August 2023. This study was approved by the Ethics Committee of the University of Medicine and Pharmacy (no. 205 of 21.06.2019).

Statistical Analysis

Statistical analysis was performed using the Statistical Package for Social Sciences (SPSS, version 23, Chicago, IL, USA). $\chi 2$ test was used for categorical variables (expressed by numbers (%). Bivariate analysis (chi square tests) was used to assess the associations between each of the independent characteristics and the different variables of interest. All tests were interpreted in relation to statistical significance $p = 0.05$, and statistical significance was considered for p-values under the significance threshold.

3. Results

3.1. Demographic Characteristics of the Study Group

For statistical analysis of the data, we divided the 759 women surveyed in the study into two groups, Group 1 comprised 289 (38.1%) women who had been tested for HPV infection, and Group 2 comprised 470 (61.9%) women who had never been tested for HPV infection. Most tests were conducted in the 35-54 age range (46.1%). Most of the respondents had secondary education (53.2%), and of those with tests carried out, 51.2% had high school education. By marital status, 69.9% of married women had done an HPV test, but many single women had not. Most of the respondents do not consume alcohol or smoke, however among those who have been tested for HPV, 18.7% smoke an average of 11-20 cigarettes a day and 18.3% use alcohol 1-2 times a week. Mixed nutrition predominates in women who have had tests done (Table 1).

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Table 1. Demographic characteristics of the study group by HPV testing.

Variables		Have you ever been tested for HPV?		p value
		Group 1 Yes (289)	Group 2 No (470)	
What age group are you in?	< 18 years	7 (2.4)	129 (27.4)	0.0001
	19-24 years	53 (18.3)	73 (15.5)	
	25-34 years	75 (26.0)	171 (36.4)	
	35-44 years	73 (25.3)	43 (9.1)	
	45-54 years	60 (20.8)	39 (8.3)	
	55-64 years	21 (7.3)	15 (3.2)	
Origin	Rural	154 (53.3)	359 (76.4)	0.0001
Education	No schooling	29 (10)	84 (17.9)	0.0001
	Secondary education	98 (33.9)	306 (65.1)	
	High school education	148 (51.2)	80 (17.0)	
	Undergraduate education	14 (4.8)	0 (0.0)	
Marital status	Married	202 (69.9)	183 (38.9)	0.0001
	Unmarried	66 (22.8)	279 (59.4)	
	Divorced	14 (4.8)	0 (0.0)	
	Widow	7 (2.4)	8 (1.7)	
How many cigarettes do you smoke on average per day?	Under 5/ day	28 (9.7)	43 (9.1)	0.0001
	5-10/ day	21 (7.3)	91 (19.4)	
	11-20/ day	54 (18.7)	82 (17.4)	
	Over 20/ day	18 (6.2)	8 (1.7)	
	I do not smoke	168 (58.1)	246 (52.3)	
Do you use alcohol?	1-2 times a week	53 (18.3)	0 (0.0)	0.0001
	I do not use alcohol at all	236 (81.7)	470 (100)	
Which of the following eating habits do you employ?	Exclusively meat products	0 (0.0)	36 (7.7)	0.0001
	Exclusively vegetables	0 (0.0)	14 (3)	
	Mixed diet	289 (100)	420 (89.4)	

3.2. Features of the Group according to Sexual Life

Of the respondents, 738 had started their sex life, of these 572 had started it under the age of 18. About 2/3 of the people in Group 1 began their sex life under 18 years of age. The majority have only one sexual partner and regarding the frequency of vaginal sex, 90.3% of the women tested disclosed under 3 intercourses per week. According to pregnancies/ miscarriages, 36.3%; 21.6% of the tested people, have over 5 pregnancies and over 3 abortions, compared to 30.6%; 18.1% of the untested women who have over 2-3 pregnancies as well as an abortion. Regarding the contraceptive methods used, 35.7% of Group 1 women do not know of or use any contraceptive methods, and 32.2% use hormonal contraceptives. Of the women who have never been tested for HPV infection, 63.8% do not know of/ use any contraceptive method (Table 2).

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Table 2. Group features according to sex life vs. testing for HPV infection.

Variables		Have you ever been tested for HPV?		p value
		Group 1 Yes (289)	Group 2 No (470)	
At what age did you start your sexual life?	under 18	184 (63.7)	388 (82.6)	0.0001
	over 18	105 (36.3)	61 (13)	
	I have not started my sex life	0 (0.0)	21 (4.5)	
What is the number of your sexual partners?	1	150 (51.9)	236 (50.2)	0.001
	2-5	118 (40.8)	184 (39.1)	
	Over 5	21 (7.3)	29 (6.2)	
	None	0 (0.0)	21 (4.5)	
What is the frequency of vaginal sex?	Under 3/ week	261 (90.3)	373 (79.4)	0.001
	Over 3/ week	28 (9.7)	76 (16.1)	
	I have not started my sex life	0 (0.0)	21 (4.5)	
How many pregnancies have you had?	1	37 (12.8)	83 (17.7)	0.0001
	2-3	87 (30.1)	144 (30.6)	
	4-5	25 (8.7)	141 (30)	
	Over 5	105 (36.3)	74 (15.7)	
	None	35 (12.1)	28 (6)	
Of the total number of pregnancies, how many miscarriages have you had?	1	40 (15.7)	80 (18.1)	0.0001
	2-3	50 (19.7)	48 (10.9)	
	Over 3	55 (21.6)	33 (7.5)	
	None	109 (42.9)	281 (63.5)	
What contraceptive methods do you use?	Contraceptive barriers	11 (3.8)	21 (4.5)	0.0001
	Coitus interruptus	7 (2.4)	0 (0.0)	
	Hormonal contraceptives	93 (32.2)	62 (13.2)	
	Intrauterine devices	33 (11.4)	14 (3)	
	Calendar method	42 (14.5)	7 (1.5)	
	I do not know of/ use any contraceptive method	103 (35.7)	300 (63.8)	
	Sterilization	0 (0.0)	66 (14)	

3.3. Information about CC, Prevention

Table 3 provides information about the history of CC, as well as about their families, about gynecological examinations, treatments, and prevention. Of the women who had ever been tested for HPV, 8.7% had a diagnosis of CC. Within the family of these women, 17.3% have a family member with a diagnosis of CC, while 28.4% with other types of cancer. All subjects who have been tested for HPV have undergone lifelong gynecological examinations, and 75.4% in the past year. Two thirds of the women tested had heard of HPV, and 19.7% were vaccinated against HPV with at least 2-3 doses

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of the available vaccine. Of the women tested, most have had a cervico-vaginal cytological examination, in 3.8% of them cancerous cells were found, in 2.4% HSIL or LSIL type cells. The question: Have you ever had a genital tract infection? was answered positively by 62.6% of the women tested, and, apart from HPV, they reported candidiasis and urinary tract infections. Of the women tested, 29.4% had had surgery for gynecological diseases compared to 22.8% of the group of untested women (Table 3).

Table 3. Knowledge about CC, genital tract infections, diagnosis, treatment, prevention.

Variables		Have you ever been tested for HPV?		p value
		Group 1 Yes (289)	Group 2 No (470)	
Are you registered with a general practitioner?	Yes	289 (100)	448 (95.3)	0.01
	No	0 (0.0)	22 (4.7)	
Have you ever had a CC diagnosis?	Yes	25 (8.7)	0 (0.0)	0.0001
	No	264 (91.3)	470 (100)	
Is there anyone in your family with a CC diagnosis?	Yes	50 (17.3)	50 (10.6)	0.008
	No	239 (82.7)	420 (89.4)	
Do you have any family members with other types of cancer?	Yes	82 (28.4)	64 (13.6)	0.0001
	No	207 (71.6)	406 (86.4)	
Have you ever undergone gynecological examinations?	Yes	289 (100)	387 (82.3)	0.0001
	No	0 (0.0)	83 (17.7)	
If so, how long ago?	Within the last year	218 (75.4)	257 (54.7)	0.0001
	Within the last 2 years	21 (7.3)	50 (10.6)	
	Within the last 5 years	50 (17.3)	80 (17)	
	Never	0 (0.0)	83 (17.7)	
Have you ever heard of HPV?	Yes	182 (63.0)	140 (28.8)	0.0001
	No	107 (37.0)	330 (70.2)	
Have you been vaccinated against HPV?	Yes, with at least one dose	47 (16.2)	91 (19.3)	0.002
	Yes, with 2-3 doses	57 (19.7)	48 (10.2)	
	No	185 (64.1)	331 (70.5)	
Have you ever had a cervico-vaginal cytological examination?	Yes	282 (97.6)	0 (0.0)	0.0001
	No	7 (2.4)	470 (100)	
Following the Pap test, what types of cervical intraepithelial lesions were found?	Cancerous cells	11 (3.8)	0 (0.0)	0.0001
	HSIL type cells	7 (2.4)	0 (0.0)	
	LSIL type cells	7 (2.4)	0 (0.0)	
	Inflammatory cells	21 (7.3)	0 (0.0)	
	Normal cells	201 (69.6)	0 (0.0)	
	I do not know	35 (12.1)	0 (0.0)	
	No such testing	7 (2.4)	470 (100)	
If you have undergone treatment, was the lesion treated?	Yes	56 (19.4)	0 (0.0)	0.0001
	No	18 (6.2)	0 (0.0)	
	No treatment	215 (74.4)	470 (100)	
Have you ever had a genital tract infection?	Yes	181 (62.6)	264 (56.2)	0.079
	No	108 (37.4)	206 (43.8)	
If so, what infection did you have?	Candidiasis	63 (21.8)	43 (9.2)	0.0001
	HPV	28 (9.7)	0 (0.0)	
	Urinary infection	146 (50.5)	250 (53.2)	
	Vaginitis	7 (2.4)	7 (1.5)	
	No infection	108 (37.4)	206 (43.8)	
Have you ever had surgery for gynecological diseases?	Yes	85 (29.4)	107 (22.8)	0.048
	No	204 (70.6)	363 (77.2)	

4. Discussion

The overall health of a population is significantly shaped by lifestyle, education (including health education), and access to healthcare services, particularly preventive care. From this standpoint, prioritizing disease prevention and health maintenance is deemed more effective than disease treatment. However, it is noteworthy that individuals residing in rural areas and vulnerable

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communities often face restricted access to healthcare services, which invariably has adverse repercussions on the overall health status of the population.

The primary objective of our study was to gauge the level of accurate and consistent information within the Roma population regarding the risk of CC. Specifically, we aimed to understand the extent to which Roma women prioritize comprehending the underlying causes of the disease and familiarizing themselves with the available prevention methods.

The 759 people included in the study were divided into two groups according to whether or not they had ever been tested for HPV. Group 1 included women who had been tested for HPV, women mostly between the ages of 25-54, with high school education, married, who had started sexual activity under 18 years of age, with only one sexual partner and with over 5 pregnancies. Women in Group 2, who had never been tested for HPV, were mostly younger, under 34, with secondary education, unmarried, under 18 years of age, with only one sexual partner, and between 2-5 pregnancies.

Health status indicators highlight a significant disparity in the health of the Roma population when compared to the general population. Notably, Roma women experience more frequent health issues at earlier stages of life. Moreover, concern arises as a considerable number of Roma respondents lack medical insurance or remain uncertain about their insurance coverage status **[16–18]**.

CC stands out as the most preventable type of cancer with an 80% preventability rate achievable through regular testing in organized screening programs. Vaccination against persistent HPV infection and screening of adult women to detect precancerous lesions of CC are the optimal protection strategy against CC.

Considering Romania's distressing second-place ranking in Europe for a significantly high number of cervical cancer (CC) related deaths, it becomes evident that there is a substantial deficiency in public education regarding HPV infection, its role in CC development, and the efficacy of HPV vaccination as a preventive measure. The inadequate participation in screening programs and parental resistance to vaccination serve as indicators of limited awareness regarding HPV infection and its long-term consequences. This situation elevates the significance of addressing HPV infection as a matter of national concern, exerting a profound impact on women's morbidity and mortality **[5,19]**, transcending ethnic boundaries.

Of our respondents, 67.9% had not received any vaccine dose to prevent HPV infection and only 37.1% had ever had a cervico-vaginal cytological examination.

It is estimated that 3 lifetime tests, between ages 30-45, reduce the risk of CC by up to 50%. Attention to symptoms and rapid access to healthcare services allow for increased survival with CC [20].

HPV infection is an important condition, but insufficient for the development of CC. Numerous cofactors have been identified: first sexual intercourse at an early age, infections caused by Herpes simplex virus Type 2 or Chlamydia trachomatis, frequent change of sexual partners, long-term use of oral contraceptives, smoking, low intake of fruits and vegetables, obesity, multiple pregnancies, childbirth before the age of 17, and a family history of CC **[21,22]**.

Of the respondents included in our study, 572 had started their sex life under the age of 18, of the women who had ever been tested for HPV infection, about 2/3, had started their sex life under 18. Most had only one sexual partner, and regarding the contraceptive methods used, 35.7% of Group 1 women were unaware of or used any contraceptive method, while 32.2% used hormonal contraceptives.

Other studies have also shown that the vast majority of Roma women have one or two sexual partners in their lifetime **[15,23]**.

Of the women who have never been tested for HPV infection, 63.8% do not know/ use any contraceptive method (Table 2). Most of the respondents do not consume alcohol or smoke, however among those who have been tested for HPV, 18.7% smoke an average of 11-20 cigarettes a day, and 18.3% use alcohol 1-2 times a week. Mixed nutrition predominates in women who have been tested. Regarding the history of CC, 8.7% of women who had ever been tested for HPV, had a diagnosis of

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CC. Within the families of these women, 17.3% have a family member diagnosed with CC, while 28.4% have a family member with other types of cancer. Regarding pregnancy, 36.3% of the tested women have had over 5 pregnancies, compared to 30.6% of the untested ones who have had over 2-3 pregnancies. As such, of the known risk factors, only a part were identified in the Roma population surveyed in our study: first sexual intercourse at an early age, multiple pregnancies, childbirth before the age of 17, and a family history of CC.

Abstaining from sexual activity (for example, abstaining from any genital contact with another person) is the safest way to prevent HPV infection. Individuals can also reduce their chances of becoming infected with HPV by being in a monogamous relationship with a partner, limiting their number of sexual partners, and choosing a partner who has had no or few previous sexual partners. However, even people with only one sexual partner can be infected with HPV. Consistent and correct use of a condom can reduce the risk of HPV and HPV-associated diseases (e.g., genital warts and CC).

According to data of our study, of the women ever tested for HPV infection, 9.7% were detected with this virus. The study of Ilisiu [24] on screening for CC hr-HPV analyzed the results of 2,060 women aged 18 to 70 years. The highest prevalence rates of hr-HPV were observed in Romanian women (17.9%; 95 CI: 15.5–20.7%), Hungarian ethnicity (16.6%; 95% CI: 13.1–20.8%), Russian women (15.6%; 95% CI: 11.3–21.3), and women living in urban areas (20.0%; 95 CI: 18.5-28.0%). Hr-HPV prevalence rates were lower for the Roma population (7.8%; 95% CI: 4.7-12.5%). This study also mentions that a higher proportion of Romanian women were tested in public hospitals (43.4%), while 71.0% of Roma women were tested by their general practitioners.

In our study, the majority of women were registered with a GP (97.1%), and 25.3% had had surgery for gynecological conditions.

A serious problem identified in our study was the lack of information about everything that means HPV infection and CC: symptoms, prevention through screening programs, vaccination, etc. The survey also asked the question: How much do you know about CC and how can it be prevented, most answers were obtained from the group of women tested, but the percentage of positive answers did not exceed 7%: CC can also develop because of HPV, we must have at least 1 Pap test per year, but I do not know exactly how we can prevent it (2.4%); about CC I know that when you bleed between menses or during sexual intercourse or you have great pain during sexual intercourse, or if you have an abundant discharge with blood veins, then you must see a gynecologist (2.4%); it is deadly, we must have regular check-ups; it is transmitted genetically (3.8%); transmission through sexual intercourse (2.4%); we must see a specialist (3.8%); if it is in an advanced stage, it cannot be treated (3.8%); it can be prevented by vaccine (6.2%). Of the women tested 63% do not know much about CC, as opposed to 85.7% of the group of untested women.

A cross-sectional study, conducted through a structured questionnaire among both Roma and Romanian women, revealed that the primary obstacle hindering their participation in screening was a lack of awareness regarding the existence of the screening program. Additionally, financial constraints, especially the inability to cover expenses associated with positive test results, and exclusion from the free screening program in Romania were significant barriers faced by both ethnic groups [23].

A study on (non)participation of Roma women in CC screening in Romania found major differences in screening perceptions between users and providers. The study recommended that, to improve attendance, all women should be involved in planning, mobilizing, implementing and evaluating the program to build trust between those offering screening and potential participants [16].

The Roma community is subject to its own rules of life, which are often not known/ shared by the majority population, which can lead to misunderstandings, even conflicts between communities. The use of health mediators, who are aware of these rules, who have the knowledge and means to address the Roma population, can facilitate the access of Roma women to screening programmes. An important role would also be played by the GP, because our study also found that when Roma women are tested for CC, they do so with a GP rather than at a public or private hospital.

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Limitations of our study. The majority of our Roma sample was recruited using an online survey with respondents who were asked to declare their Roma ethnicity, these being the only eligible subjects to be included. Therefore, our sample could consist of Roma with different traits and living conditions and, as such, our results could overestimate the difference between Roma categories by including Roma respondents mainly from more socially disadvantaged communities. However, the use of a relatively large sample should have partially addressed this potential selection bias. Secondly, some respondents who completed the questionnaire aided by a member of the study team may have been reserved in giving correct answers, especially to questions about sexual activity, although they were assured of the anonymity and confidentiality of their answers.

5. Conclusions

CC is a priority area of public health in Romania, being one of the national chronic conditions that can be diagnosed/ treated in an early stage, having a stronger impact on poorer and vulnerable people, such as the Roma female population; access to primary health and prevention services (screening) aimed at prevention, early detection, diagnosis, and treatment of precancerous lesions of the cervix, including the most vulnerable segments of populations living in more precarious socio-economic conditions and with less accessibility to healthcare services contributes to the promotion of social cohesion through health. Given the multitude of social disadvantages faced by the Roma community, there is an urgent need for comprehensive information campaigns concerning the risk of CC. These campaigns should be conducted at the individual, group, and community levels, aiming to ensure that women gain a thorough understanding of the underlying causes of the disease and become cognizant of the available preventive measures. Such information campaigns should adopt a sustainable, equitable, and optimized approach, with the primary goal of educating and raising awareness within vulnerable populations regarding their unique healthcare requirements, their rights as patients, and the vital importance of life-saving screening tests.

6. Patents

Author Contributions: VS designed the study, prepared the material, statistically processed and analyzed the data, interpreted the results, developed and edited the manuscript. BR coordinated and monitored the study activities and critically reviewed the manuscript. BAM analyzed the data and critically revised the manuscript. CU, RFF and ZK reviewed the material used for the study and critically reviewed the manuscript. AEB helped to collect and enter the questionnaires into the study database. All authors read and approved the final manuscript.

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